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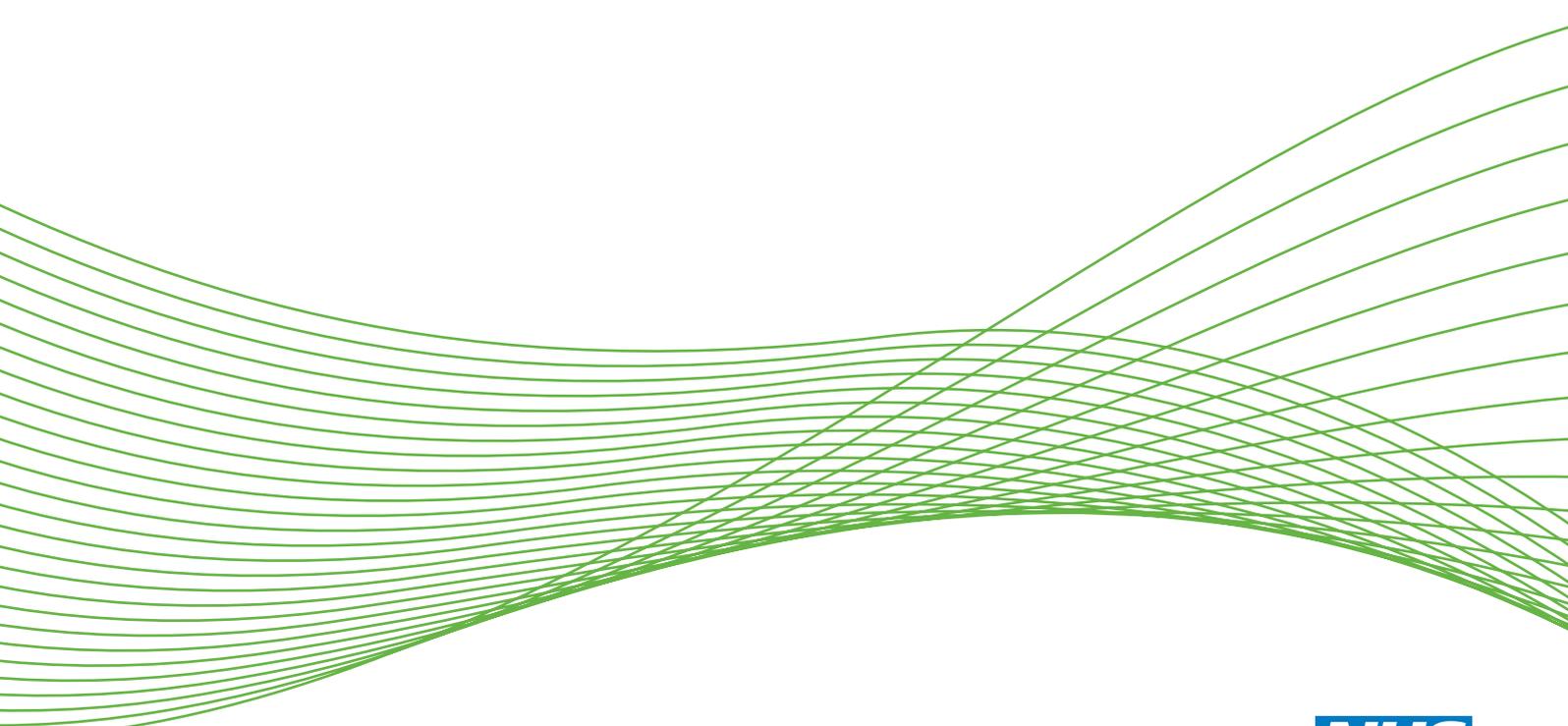
National Institute for Health Research

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This report

Abstract

Crime, fear of crime and mental health: synthesis of theory and systematic reviews of interventions and qualitative evidence

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Background: Crime and fear of crime may impact negatively on health and well-being. Interventions to reduce crime and fear of crime, particularly interventions in the physical environment, may be a promising way to improve population-level well-being.

Project components: (1) Mapping review of theories and pathways; (2) systematic review of effectiveness; (3) systematic review of UK qualitative data; and (4) focus groups and interviews with stakeholders.

Methods: (1) The mapping review was a pragmatic non-systematic review focusing on theoretical literature and observational quantitative studies and development of a theoretical model of pathways. (2 and 3) The systematic reviews followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidance. In total, 18 databases including EMBASE, MEDLINE, PsycINFO and Science Citation Index were searched from inception to 2010. Studies presenting data on the built environment and the fear of crime were included. Quality assessment was conducted. Data synthesis was conducted narratively for the intervention review, with harvest plots to synthesise data on inequalities, and by thematic analysis for the review of qualitative evidence. (4) Semistructured interviews with nine stakeholders working in community safety and two focus groups with members of the public were conducted to inform the methods of the project and the dissemination of findings. Data were analysed thematically.

Results: (1) There are complex and often indirect links between crime, fear of crime, environment, and health and well-being at both individual and population levels. Fear of crime is associated with poorer health outcomes. There is considerable debate about the measurement of fear of crime. Both fear of crime and crime are associated with a range of environmental factors. (2) A total of 12,093 references were screened on abstract for the two systematic reviews. Of these, 47 effectiveness studies (22 controlled and 25 uncontrolled) were included in the systematic review of effectiveness, with 36 conducted in the UK, 10 in the USA and one in the Netherlands. There is some evidence that home security improvements and non-crime-related environmental improvements may improve some fear of crime outcomes. There is little

evidence that the following reduce fear of crime: street lighting improvements, closed-circuit television, multicomponent environmental crime prevention programmes or regeneration programmes. The evidence on housing improvement is mixed. Very few data on the health and well-being outcomes of crime reduction interventions were located and the study quality overall is poor. (3) A total of 39 studies were included in the systematic review of qualitative data. Several factors in the physical environment are perceived to impact on fear of crime. However, factors in the local social environment appear to be more important as drivers of fear of crime. There is considerable evidence for limitations on physical activity as a result of fear of crime, but less for mental health impacts. (4) Stakeholders see fear of crime as harder to address than crime and as linked to health and well-being. Environmental interventions, such as Secured by Design, are widely used and positively regarded.

Limitations: The review is relatively restricted in its scope and a number of relevant interventions and themes are excluded. The underlying evidence base is of limited quality, particularly for the effectiveness review, and is heterogeneous.

Conclusions: Broader social interventions appear more promising than crime-focused environmental interventions as a means of improving fear of crime, health and well-being. The qualitative evidence suggests that fear of crime may impact on physical activity. More broadly, crime and fear of crime appear to be linked to health and well-being mainly as aspects of socioeconomic disadvantage. This review indicates the following gaps in the literature: evaluation research on the health impacts of crime reduction interventions; more robust research on interventions to reduce fear of crime; systematic reviews of non-environmental interventions to reduce fear of crime and systematic reviews of qualitative evidence on other crime-related topics.

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ASSIA	Applied Social Sciences Index and Abstracts	HMIC	Health Management Information Consortium
BME	black and minority ethnic	MARAC	Multi-Agency Risk Assessment Conference
CCTV	closed-circuit television	NCJRS	National Criminal Justice Reference Service
CINAHL	Cumulative Index to Nursing and Allied Health Literature	PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
CIS	critical interpretive synthesis		
CPTED	Crime Prevention through Environmental Design	QALY	quality-adjusted life-year
CSP	Community Safety Partnership	RCT	randomised controlled trial
EPPI	Evidence for Policy and Practice Information and Co-ordinating Centre	SES	socioeconomic status
		SF-36	Short Form questionnaire-36 items
ERIC	Education Resources Information Center		

Scientific summary

Background

Crime and fear of crime may impact negatively on health and well-being in a range of ways. This includes indirect community-level impacts as well as direct negative impacts on victims. Crime and the fear of crime may affect a range of physical and mental health status outcomes, health behaviour outcomes (e.g. physical activity) and social well-being outcomes (e.g. social cohesion). Crime and the fear of crime are particularly of interest as potential mediators of environmental influences on health and well-being outcomes and as potential targets of environmental interventions. This project aimed to synthesise quantitative and qualitative evidence on the environment, crime and the fear of crime, and health and well-being.

Objectives

The objectives of the project were to:

1. review theories and empirical data about the links between crime, fear of crime, the environment and health and well-being, and to develop from this a conceptual 'map' that underpins the types of intervention that stem from the theories
2. synthesise the empirical evidence (quantitative and qualitative) on the effects on mental health and well-being of community-level interventions, primarily changes to the built environment [such as changes to local environments, 'target hardening', security measures, closed-circuit television (CCTV) and other interventions]
3. summarise the evidence on whether the interventions in question have the potential to reduce health and social inequalities
4. produce policy-friendly summaries of this evidence that can be used to inform decisions about policy and disseminated to appropriate policy/practice audiences.

Methods

The project contains four distinct components.

1. *Review of theories and pathways*. This component used a pragmatic non-systematic review methodology with targeted, iterative searching and selection. The data were used to develop a meta-theoretical causal map providing an overview of theoretical links between the following areas: crime; fear of crime; health and well-being; the built environment; the social environment; and national-level policy and other factors. Data on associations between factors were drawn from quantitative observational research to provide an indicative assessment of the strength of the links involved.
2. *Systematic review of effectiveness*. This component followed standard (Preferred Reporting Items for Systematic Reviews and Meta-Analyses or PRISMA) guidance for systematic reviews.

   o Searching – 18 databases including EMBASE, MEDLINE, PsycINFO and Science Citation Index were searched from inception to 2010 and other sources were used to locate grey literature. Search terms referred to crime, fear of crime and the built environment.
   o Screening – The following inclusion criteria were used: (i) Does the study evaluate an intervention intended to reduce crime and/or the fear of crime, or report data on crime and/or fear of crime

outcomes? (ii) Does the study report data on at least one of the following outcomes: fear of crime, mental health status, physical health status, health behaviours or social well-being? (iii) Does the study report data on an intervention of which a major component involved changes to the physical built environment? (iv) Is the study a primary research study reporting quantitative outcome data that were measured both before and after the intervention and/or in which assignment to intervention and control groups was random? (v) Was the study conducted in a country that is a current member of the Organisation for Economic Co-operation and Development (OECD)?

○ Quality assessment and data extraction – Quality was assessed using a modified version of the Hamilton tool, including the following domains: selection bias; study design; confounders; blinding; data collection; and withdrawals and dropouts. Data were extracted on the following characteristics of the studies: study design; location; area characteristics; sampling methods and eligible population; recruitment methods and response rate; sample demographics; intervention content; interventions received by comparison group; sample size; data collection methods; comparability of intervention and comparison groups; analysis methods; power calculations; length of follow-up; attrition rate; outcomes measured; findings; study limitations; and study funding.

○ Data synthesis – Data were synthesised narratively within seven categories of intervention. Median differences were used to summarise quantitative information on effect sizes. A summary table of effect direction and significance was also used for synthesis.

3. *Systematic review of UK qualitative evidence*. This component followed standard (PRISMA) guidance for systematic reviews.

○ Searching – 18 databases including EMBASE, MEDLINE, PsycINFO and Science Citation Index were searched from inception to 2010 and other sources were used to locate grey literature. Search terms referred to crime, fear of crime and the built environment.

○ Screening – The following inclusion criteria were used: (i) Does the study report substantive data on the fear of crime? (ii) Does the study report substantive data on some aspect of the physical built environment? (iii) Is the study a primary qualitative study, for example interviews, focus groups, ethnography? (iv) Was the study conducted in the UK?

○ Quality assessment and data extraction – Quality was assessed using Hawker *et al.*'s tool, which covers the following domains: abstract and title; introduction and aims; methods and data; sampling; data analysis; ethics and bias; results; transferability or generalisability; implications and usefulness. Data were extracted on the following characteristics of the studies: location; research question or focus; theoretical approach; sampling methods and eligible population; recruitment methods; sample demographics; data collection methods; data analysis methods; study limitations; study funding. Qualitative findings were coded line by line.

○ Data synthesis – The first stage of qualitative synthesis was a thematic analysis using a grounded theory approach. Following this, a framework derived from the theory review was used to categorise the themes emerging from the data. In a second stage of synthesis, akin to a 'lines of argument' synthesis, broader explanatory concepts were developed from the themes. Finally, an informal cross-study synthesis was conducted, drawing together the findings from the review of theory, the review of effectiveness and the review of qualitative data.

4. *Stakeholder interviews and focus groups*. Semistructured interviews were conducted with nine stakeholders working in the field of community safety. Interviews focused on practitioners' perspectives on reducing crime and the fear of crime as well as exploring links to health and well-being. The use of evidence and research in promoting community safety was also explored. Two focus groups were also conducted with members of the public. Data were analysed thematically.

Results

1. *Mapping review of theories and pathways*

The concept of fear of crime has been subject to considerable debate and there is little consensus around its value. In particular, fear of crime appears to be only weakly correlated with actual crime rates, and to reflect a range of broader perceptions and affective reactions. A range of explanations has been proposed to account for the wide variance in fear of crime outcomes. However, fear of crime does appear to be consistently, although not strongly, associated with several health and well-being outcomes at an individual level. Crime has been shown to be associated with a range of poorer health outcomes at an area level, although the causal pathways involved are unclear.

A range of environmental approaches to crime reduction are current, of which the most widely used is CPTED (Crime Prevention through Environmental Design); there is some empirical support for CPTED but the evidence is mixed. Environmental factors may also be associated with fear of crime independently of any effect on crime (e.g. physical 'incivilities' such as litter and abandoned buildings).

2. *Systematic review of effectiveness*

A total of 12,093 references were screened on abstract for the two systematic reviews, of which 47 studies were included in the systematic review of effectiveness, including one randomised controlled trial, 21 non-randomised controlled studies and 25 uncontrolled before-and-after studies. Most studies investigate only fear of crime outcomes and do not measure health or social well-being outcomes. The interventions fall into seven categories:

1. *Home security interventions (five studies)*. These interventions include a range of environmental interventions focused on increasing the security of homes. Three studies show some positive effect on fear of crime (two controlled and one uncontrolled). One uncontrolled study shows some evidence of improved mental health and social well-being outcomes.
2. *Street lighting improvements (16 studies)*. Of four controlled studies measuring the impact of street lighting improvements on fear of crime outcomes, three show no clear effect and one shows a significant improvement. Of 12 uncontrolled studies, most show a positive trend towards reduced fear. No studies measure any health or social outcomes.
3. *Closed-circuit tevision (CCTV) (six studies)*. Three controlled and three uncontrolled studies measure the impact of CCTV on fear of crime outcomes; none shows any consistent and significant trend towards reduced fear. No studies measure any health or social outcomes.
4. *Multicomponent crime prevention interventions (nine studies)*. These include a range of interventions, many based on CPTED theory, intended to reduce crime rates in a specific area using environmental measures, often in conjunction with other measures such as policing. Of five controlled studies, three show trends towards reduced fear, although their significance is unclear, and two show no change. Of four uncontrolled studies, three show trends towards reduced fear whereas one is more mixed. Five studies measure social well-being outcomes such as social cohesion, with most showing no marked effect.
5. *Housing improvement (seven studies)*. These interventions include both improvements to existing housing and relocating residents to improved housing. Of four controlled studies, two show a trend towards reduced fear of crime (although their significance is unclear), one is mixed and one shows a significant adverse effect (increased fear). Of three uncontrolled studies, two show significant reductions in fear.
6. *Regeneration and area-based initiatives (two studies)*. These interventions include large-scale regeneration programmes with social and economic as well as environmental components. One controlled study shows significant reductions in fear of crime in both the intervention group and the comparison group; one uncontrolled study shows no change.

7. *Improvements to public areas (two studies)*. These interventions include environmental improvements in public areas that were not mainly crime or security focused. One controlled study finds a significant improvement in fear of crime; one uncontrolled study shows mixed findings, with significant improvements in some outcomes.

Overall, the most promising categories of interventions appear to be home security (1) and environmental improvements (7). Housing improvement (5) includes some promising findings but also some negative ones. The evidence on regeneration programmes (6) is challenging to interpret and does not support strong conclusions on effectiveness. For street lighting (2), promising findings from the uncontrolled studies are not borne out by the controlled studies, and there is little evidence that CCTV (3) or CPTED-type crime prevention programmes (4) reduce fear of crime. However, there is insufficient high-quality evidence for any intervention category to support conclusive messages on effectiveness.

Findings on subgroup effects with respect to age are mixed; with respect to gender there is a slight tendency for greater effects on women than on men; and there are few data on ethnicity and none on socioeconomic status. A wide range of outcome measures are used to measure fear of crime, which may limit the validity of the synthesis.

3. Systematic review of qualitative evidence

In total, 39 studies were included in the review of qualitative evidence. Physical environmental factors, such as street lighting and neglect, were frequently reported by participants as determinants of fear. The layout of the built environment is also important, particularly a sense of 'openness' and visibility, as is the presence of other people. However, several participants suggest that the physical environment determines fear less in itself than because of its social meanings, for example as an indicator of disadvantage or low social cohesion. Environmental factors may be more important in public areas than in residential areas.

Many participants report feeling safer in their own area than in areas that are unfamiliar. Social cohesion is also important in that having a network of interpersonal relationships in an area protects against fear. Several groups of participants – including women, black and minority ethnic participants, lesbian and gay participants, participants with mental health problems and parents of young children – report more pervasive fear and greater impacts of fear on well-being. Several other determinants of fear are mentioned, including perceived vulnerability, victimisation experience, individual factors and attitudes to crime, but the impact of these appears to be limited.

In terms of the consequences of fear, the most frequently mentioned impact is to limit people's everyday activities. This may particularly lead to limitations on social interaction and physical activity. Children and young people report that parents limit their activities as a result of fear of crime. Fear of crime may also lead to particular areas, and their residents, being socially stigmatised.

4. Stakeholder interviews and focus groups

Stakeholders in Community Safety Partnerships were of the view that they had made considerable progress in reducing crime and antisocial behaviour based on a combination of national trends and particular local factors. However, much less progress had been made in reducing fear of crime, which was more difficult to both measure and influence. Environmental interventions, such as security measures and alley gating, were commonly used to address specific crime issues such as burglary and also to promote community safety. Changes to the physical environment were invariably part of more complex initiatives that involved the intelligence-led use of resources in particular localities. Community safety practitioners considered reducing fear to be linked to improving health and well-being on the basis of their professional experience although there was limited formal research evidence that they could draw on to support this view.

Conclusions

The theory review suggests that, although both crime and fear of crime have impacts on health, they operate through largely distinct pathways. Crime and fear of crime also appear to be associated with different environmental determinants. Thus, fear of crime may be of greater conceptual value to researchers as a dimension of the environmental determinants of well-being than as a specifically crime-related outcome. However, there remain serious unanswered questions about the validity and interpretation of fear of crime measures.

The qualitative findings may illuminate debates in the theoretical literature. In particular, they suggest that local-level social determinants of fear of crime are more important than either physical environmental factors or higher-level social or political factors. They suggest that risk of crime is unlikely to generate fear in itself, at least at low levels of risk, unless other factors make the risk experientially salient; these factors may include social inequalities and discrimination, as well as environmental factors.

Overall, the findings suggest that interventions which impact on the broader social determinants of fear of crime are more likely to reduce fear than interventions that aim narrowly at preventing crime, although it remains unclear whether this is an effective way to improve well-being.

The findings indicate a number of gaps in the primary evaluation literature. In particular, there is a major gap around the health impacts of interventions to reduce crime or the fear of crime. There are also areas where further systematic reviews would be valuable, particularly around interventions to reduce fear of crime that fall outside the scope of the present review (e.g. policing interventions). Systematic reviews of qualitative evidence have also been little employed in criminology or the sociology of crime and have a potentially valuable contribution to make.

Funding

Chapter 1 Introduction

Background

The burden of mental health problems is immense. About 14% of the global burden of disease has been attributed directly to mental disorders; moreover, mental illness contributes to other health problems, including injuries and communicable and non-communicable diseases.[1] The *National Service Framework for Mental Health*[2] also noted that, at any one time, one adult in six suffers from mental illness of one form or another, and it documents the immense costs in personal and family suffering and to the economy: mental illness costs in the region of £32B in England each year. Mental health problems are also strongly socially patterned and an important dimension of health inequalities.[3]

The promotion of mental health and well-being can be located within current public concerns about the effects of places or neighbourhoods on health. Nationally, the need to undertake mental health impact assessments[4] is emphasised in the *National Service Framework for Mental Health*,[2] the public health White Paper *Choosing Health*[5] and the health and social care White Paper *Our Health, Our Care, Our Say*.[6] These policies prioritise improving mental health and well-being through local strategies. Identifying the links between the local environment and crime and fear of crime is also key to local mental health promotion strategies that aim to integrate mental health into local policy, sometimes referred to as creating 'mentally healthy public policy'.

An important dimension of how place may influence mental health and well-being is through crime and the fear of crime. The World Health Organization (WHO) Commission on Social Determinants of Health has emphasised that protection from crime is an important component of the healthy living conditions in which people are able to thrive,[7] but the pathways through which crime and fear of crime influence individual and population health are only partially understood. Crime, particularly violent crime, obviously has direct effects on physical health through injury and death. However, the effect of crime and fear of crime on mental health and well-being, although less visible, may be just as important. As crime is highly unequally distributed at an area level, the well-being impacts of fear of crime may also be important drivers of social inequalities in mental health outcomes.

There is a lack of robust evidence syntheses on the broader effects of crime reduction interventions. Although there is a substantial amount of data on the effectiveness of crime reduction, particularly in the reviews conducted by The Campbell Collaboration Crime and Justice group, health and well-being are rarely included as outcomes in Campbell reviews (with the exception of interventions that target drug use). There is a need to understand how crime and the fear of crime may impact on mental health, and on well-being more broadly, including physical health, health behaviours and social well-being.

Objectives of the research

The objectives of the project are as follows:

i. to review theories and empirical data about the links between crime, fear of crime, the environment and health and well-being, and to develop from this a conceptual 'map' that underpins the types of interventions that stem from the theories
ii. to synthesise the empirical evidence (quantitative and qualitative) on the effects on mental health and well-being of community-level interventions, primarily changes to the built environment (such as changes to local environments, 'target hardening', security measures, CCTV and other interventions)

iii. to summarise the evidence on whether the interventions in question have the potential to reduce health and social inequalities

iv. to produce policy-friendly summaries of this evidence that can be used to inform decisions about policy and disseminated to appropriate policy/practice audiences.

Structure of the project

The project contains four components:

1. a mapping review of theories and pathways, mainly directed towards objective (i)
2–3. systematic reviews following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines[8] for effectiveness and qualitative evidence, directed towards objectives (ii) and (iii)
4. consultation and interviews with stakeholders and the public, aimed at objective (iv) but also intended to inform the project as a whole.

Component (1) is reported in *Chapters 2* and *3*; components (2) and (3) are reported in *Chapters 4–6*; and component (4) is reported in *Appendix 12*.

Research questions (systematic reviews)

The research questions for the review of effectiveness are as follows:

- What interventions in the built environment are effective in reducing fear of crime?
- What crime reduction interventions in the built environment are effective in improving health status, health behaviour or social well-being outcomes?

The research question for the review of qualitative evidence is as follows:

- What is known about the views and attitudes of the UK public with regard to fear of crime and the built environment?

Chapter 2 Review of theories and pathways: background and methods

The first stage of the project was to conduct a review of theories and pathways. The purpose of the review of theory is to provide an overview of the theoretical background and of relevant empirical data for the project as a whole. As set out below, a wide range of different fields, types of data and theoretical perspectives are covered in the review of theory.

The first section sets out the methodological background for the review of theory. In this section we outline current thinking regarding the use of theory in general, and causal mapping techniques in particular, to inform systematic reviews, and briefly set out some of the main issues and challenges involved. We then describe the methods used for the review of theory and set out the context and previous methodological work on which we drew in developing them.

Models and theories in evidence synthesis

Our thinking about the review of theory was initially informed by reflection on the use of causal models or maps to understand intervention effectiveness. By a model or map, we mean a schematic representation of the causal interactions between factors within a system. As used in this report, the term refers to qualitative models designed primarily to clarify theoretical or conceptual relationships, as opposed to statistical methods such as systems dynamics modelling that are designed to facilitate the analysis of quantitative data.[9] (There are emerging methods within statistics, particularly that of Pearl,[10] which explicitly distinguish qualitative intuitions about causal relationships from quantitative statistical relationships and seek to develop more powerful tools by combining both; to our knowledge, there has been little contact between such methods and the more informal causal theories discussed here, and this may be a promising avenue for further research.) Causal models are often represented graphically using boxes and arrows. They can be seen as having two main dimensions: the identification of the key factors or concepts (the boxes) and the identification of the links between them (the arrows). The term 'causal' is used here in a loose sense: causal models are not limited to direct cause–effect relationships, but may, as we will see later (see *Chapter 3*, *Fear of crime: measures and contexts*, *Background*, and *Built environment, social environment and fear of crime*), include more complex and holistic linkages, as well as relations that are arguably conceptual or expressive, rather than narrowly causal.

The simplest type of causal model is the linear logic model of the following form: inputs ⇒ activities ⇒ outcomes ⇒ impacts. Such logic models have been widely used in the development and delivery of intervention programmes.[11] They seek to clarify the conceptual underpinnings of an intervention to guide its planning and evaluation. As such, they can be seen as expressions of the basic theory that underlies the intervention. They may be particularly valuable in the development of complex interventions as they make explicit the underlying model through which effects are expected.[12–14]

The use of models in evidence synthesis builds on the logic model principle. However, in synthesising evidence on complex and/or heterogeneous interventions or factors, considerably more complex models are often required, depicting inter-relations between multiple factors on a wide range of scales from national and international policy to individual behaviour. These more inclusive models, which we will refer to as causal maps, are generally not linear in structure but include multiple overlapping relationships.

Causal maps have been identified as valuable for evidence synthesis, particularly of complex and/or heterogeneous interventions, for several reasons. By elucidating causal pathways at multiple levels, they can be used in the development and application of theories to categorise and evaluate complex interventions, hence clarifying the evidence landscape.[14–16] Causal maps have been identified as particularly

promising in the field of public health, because the causal pathways involved in determining community- or national-level health outcomes are generally long and subject to unpredictable confounding.[17,18] Along similar lines, researchers in systems science have emphasised the value of mapping in making sense of dynamic, adaptive systems with multiple feedback loops, and have argued for the relevance of such approaches to public health.[19,20]

Complex causal maps have been identified as particularly useful in synthesising evidence on the health impacts of policy[21,22] and on the impact of interventions on health inequalities[23–26] because of the nuanced and transdisciplinary approach required to address such questions. In particular, these questions often require the synthesis of diverse types of evidence because, for many relevant intervention types and outcomes, robust outcome evaluations are lacking. In this context, causal maps can help to assist researchers and policy-makers in putting together the 'evidence jigsaw'.[27] By elucidating the pathways through which interventions or policy options may impact on health and well-being outcomes, causal maps can help to guide evidence syntheses in areas where robust outcome data are unavailable.[18,24,28]

Several more specific advantages have been suggested from the use of causal maps as a priori guides to complex systematic review projects. First, they can help to identify promising points for intervention within the causal network and hence suggest innovative forms of intervention.[9,20,29] Vandenbroeck *et al.*[9] describe these points as 'leverage points' or 'hubs', where the focused application of effort and resources may bring about substantial change. Second, they can isolate 'feedback loops',[9,22] which may act either to amplify or to frustrate interventions, depending on their place in the causal network. Third, they can be valuable tools in the exploration of policy scenarios, whereby the potential impact of high-level policy choices can be qualitatively explored in detail.[9] Fourth, they can assist in the development of recommendations for future research by identifying promising pathways that have not been subject to rigorous evaluation.[18] A final point, which has not been widely discussed in the literature, is that the use of causal maps may help to increase the transparency of the systematic review process by providing some insight into the process by which the review question was developed and refined.

The methodological question of how maps themselves should be constructed has not received focused attention in the literature. Some studies have used workshop or focus group methodologies, bringing together experts and stakeholders face-to-face.[9,13,20,29] Others, like this one, have been based primarily on non-systematic reviews of the published theoretical and empirical literature.[17,30] In either case, it is implicitly recognised in the literature that the construction of causal maps is a pragmatic process, without a clear a priori methodological framework (as part of the purpose of constructing the map is to provide such a framework). This means that it is generally impossible to construct maps in accordance with rigorous systematic review procedures. However, this is a developing field and there is limited methodological guidance available. *Methods for the review of theory* describes the methods adopted for this review and some of the reasoning behind our choice of methods.

Causal mapping in the evidence synthesis context is not without certain challenges and potential problems. Three of these are particularly relevant here. First, causal maps are themselves suggestive rather than descriptive in nature, and may draw on a wide range of data, including pure theory, empirical research of various types, policy documents and expert opinion. It is generally impossible to quantify the reliability of the evidence relating to particular links within the map. Of course, the links should be based on robust evidence as far as possible. However, especially with large or complex maps, this will not always be possible, and some links may be imputed on the basis of expert opinion or prima facie plausibility. Even when individual proximal linkages are well supported by evidence, the composite pathways between distant factors may fail to hold. In addition, as noted above, even when causal maps are evidence-based, they generally do not use full systematic review methods, which may limit the reliability of the findings.[18] Hence, although the pathways set out in the map can provide useful suggestions about the broader implications of particular research findings, they will usually not make robust empirical predictions. It has been observed that well-intentioned programmes can have negative effects;[31] causal maps can help to

mitigate this possibility by clarifying the pathways through which interventions may operate and the potential countervailing factors that may frustrate them, but they cannot remove it altogether.

Second, causal maps generally go beyond what is known from robust evaluation research; as noted above, this is one of their strengths. Of the potential pathways identified by the map, many may not be amenable to intervention for practical, ethical or political reasons. Of those interventions that have been attempted, not all will have been rigorously evaluated. Hence, the map may not correspond closely to the evidence landscape – particularly to that part of it concerned with the effectiveness of interventions – and cannot be used directly to delimit the scope of an evidence synthesis. Rather, the map provides a means of formalising and making explicit knowledge about the context of the review at multiple levels, and providing a framework for the evaluation of how and why interventions are effective.[17]

Third, a reliance on causal maps may bring with it certain biases in terms of how the field of research is understood. The assumption that major causal factors can be identified in a context-independent and value-neutral way, and cleanly isolated from each other, may lead to a systemic failure to adequately integrate the insights of research using more contextually sensitive methods. For example, these insights may relate to the ways that the causal factors operate and are negotiated by individual actors in concrete situations; the social meanings and ethical values that may crystallise in particular factors; or the social and political commitments that may be embodied in methodological decisions. More specifically, causal maps tend to homogenise differences in terms of how factors are linked, and may perpetuate the assumption that these links can be conceptualised in terms of external cause–effect relations, when in some cases they may be better thought of as internal, hermeneutic or expressive relations. For this project this is particularly important as the value to be attached to many of the key outcomes of interest is not unquestionable; for example, reducing fear of crime, or increasing social cohesion, may not constitute positive outcomes in every case, even if this is true on the whole. To our knowledge, this issue has not been explicitly addressed in the causal modelling literature.

Methods for the review of theory

Aim and methodology of the review

The aim of the review of theory is to synthesise the available theoretical frameworks regarding the pathways between crime, fear of crime, health and well-being and the built environment, to develop a logic model for interventions and a causal map of relevant contextual factors. The findings of the review of theory were used to inform the design and interpretation of the systematic reviews that form the main part of the overall evidence synthesis.

The methodology employed for the review of theory was a pragmatic non-systematic review. The searching and selection of material were iterative, with phases of literature searching alternating with phases of synthesis and theory construction and testing. Search sources included Google Scholar, MEDLINE, Criminal Justice Abstracts and suggestions from subject experts within the review team. In addition, there was a strong emphasis on 'pearl growing' methods such as citation chasing. The selection of studies was purposive and context-sensitive and informed by the emerging theoretical picture at each stage; a priori inclusion criteria were not applied. As far as possible, selection was guided by the goal of theoretical saturation, although, because of the broad scope of the review, saturation could not be achieved in every area of the review. In the selection of theoretical studies, those with a scope similar to that of the present review and those that most adequately took into account the complexity of the relevant factors and their inter-relations were prioritised. In the selection of empirical data, studies with a robust methodology, particularly systematic reviews, were prioritised, as far as possible and appropriate. However, this prioritisation was purely informal in nature. Because of the widely varying quality of the evidence base in the different fields and questions investigated, consistent and explicit criteria could not be used.

The synthesis of data was based initially on an identification of similar theoretical concepts across the literature and an integration of these concepts into an overarching framework. The linkages between concepts were drawn initially from the most relevant theoretical literature and then filled out with reference to the empirical literature. As discussed in the following sections, our method was highly interpretive, with a strong emphasis on theory construction as an essential part of synthesis.

The synthesis resulted in two separate but linked models: a complex map of relevant contextual factors and a simpler and more linear logic model of interventions. This dual method of causal mapping has not been widely used in previous studies. It was adopted here because, owing to the scope and complexity of the larger map, intervention points and mechanisms could not be clearly identified within it. In addition, we had already made an a priori decision to focus on only one of the potential areas of intervention within the larger map, namely the built environment, so the logic model of interventions helped to clarify the consequences of this decision.

Appendix 1 includes a selection of theoretical models from previous research, with brief comments indicating how these have been utilised in the construction of our causal model. The selection of models focuses on those relating to fear of crime and/or crime and health; although we utilised causal models from the theoretical literature on other topics, such as the built environment and health, our use of these was generally more selective.

Methodological context

In this section we present some background to the choice of methods described in the previous section. We examine three methodological theories that have formed our thinking: realist synthesis, critical interpretive synthesis (CIS) and Baxter *et al.*'s recent work on conceptual frameworks.[18] These theories are relevant, first, because all three have addressed the challenges of synthesising diverse types of evidence and, second, because they have all, in different ways, addressed the relation between evidence synthesis and theory construction. This section presents a brief overview of the three theories and then situates the methods used for this review with respect to these theories and the broader methodological landscape.

The realist synthesis approach has been recommended as particularly appropriate for the synthesis of disparate and complex data.[16,32,33] The characteristic feature of realist synthesis is an emphasis on the theory-laden and context-dependent nature of praxis within intervention programmes, systems and institutions. Hence, the synthesis of evidence about interventions or systems is inseparable from an engagement with the theories implicit in those systems. This engagement may frequently take the form of an analysis of causal pathways (although in most realist syntheses these analyses have been relatively linear, in the sense described in *Models and theories in evidence synthesis*). For proponents of this method, the synthesis of diverse evidence types (effectiveness data, qualitative data and theory), and the use of iterative searching and purposive selection, are required to understand 'what works, for whom, how, and in what circumstances'.[33]

Critical interpretive synthesis[34,35] is similar to realist synthesis in some respects. One difference is that CIS emerged from the development of methods for qualitative synthesis rather than the synthesis of effectiveness data, for which there has generally been a stronger emphasis on theory construction as part of the synthesis process.[36] However, the proponents of CIS argue that it is not limited to the synthesis of qualitative data but can also be used for the synthesis of multiple types of evidence. CIS draws on Noblit and Hare's[37] method of meta-ethnography to develop the fundamental distinction between an 'aggregative' or 'integrative' approach, such as a traditional meta-analytic review of quantitative data, and an 'interpretive' approach, exemplified by CIS. Aggregative approaches seek primarily to draw together the available evidence and summarise it, and rely on the existence of well-specified concepts that can be used to carry out the summary without any deeper critical engagement. Interpretive approaches, by contrast, involve engaging critically with the conceptual frameworks found in the literature and developing overarching 'synthetic constructs'. Here, CIS draws particularly on Noblit and Hare's[37] 'lines-of-argument synthesis', a type of synthesis in which the construction of new theoretical content is indispensable, by

contrast with 'reciprocal translational analysis', which is limited to translating between studies to develop common concepts.

The third approach examined is that adopted by Baxter et al.[18] They present a methodology for developing a causal map for complex interventions (which the authors explicitly describe as integrative rather than interpretive in Dixon-Woods' sense).[34] Initially the authors used a previously agreed framework[38] to categorise the potential causal influences in the field under discussion. They conducted a non-systematic review of diverse types of evidence, consulted with an expert reference group and then coded the selected papers in depth using an approach derived from qualitative analysis. From these data, a causal map was constructed and revised using an iterative process. Although useful, Baxter et al.'s methodology is less theoretically elaborated than those described above, and their description of the synthesis process is brief and does not draw on the methodological literature on qualitative synthesis (as reviewed by Barnett-Page and Thomas[36]).

Our methodology does not exactly line up with any of the three described above. It is closest to that of Baxter et al.[18] in the focus on causal mapping as the representation of theoretical content. However, our coding procedure was less formalised than that of Baxter et al.;[18] in addition, we would categorise our overall approach in Dixon-Woods et al.'s terms[34] as interpretive rather than aggregative (although see the discussion of this point below). On a practical level, the main item of guidance we draw from the three approaches described here is the use of iterative searching and purposive selection of studies, informed by emerging theoretical constructs. More broadly, we draw on their insights about the relation between synthesis and theory construction, and have sought to link these to relevant recommendations from the literature on causal mapping. (To our knowledge, few studies – with the partial exception of that by Baxter et al.[18] – have attempted to bridge these two distinct bodies of theory.)

However, our review diverges from these methodologies in two ways. The first point concerns the place of our review of theory in the overall evidence synthesis project. Like the methodologies described above, our review of theory includes diverse types of evidence including empirical data as well as theoretical constructions. However, unlike them, it is not designed to stand alone but to stand alongside the systematic reviews, which form a clearly separate phase of the project. Realist synthesis and CIS are comprehensive approaches explicitly designed to be an alternative to traditional systematic reviews, not a supplement to them (this point is less clear with regard to Baxter et al.[18]). Hence, the greater synthetic power of these approaches must be set against the fact that they are substantially less transparent and reliable than systematic reviews, in those areas where systematic reviews are possible and appropriate. Our methodology represents an attempt to utilise the strengths of both approaches by combining a non-systematic critical review of theory with conventional systematic reviews in a way that maximises the potential to transfer insights and concepts from one to the other, while maintaining their methodological separation intact.

The second point of difference concerns the implicit assumption in all of these methodologies that the synthesis is different in kind from the primary materials included in the review, and that it stands, as it were, above rather than alongside the latter. Even in realist synthesis, with its emphasis on the theoretical content of interventions, it is clear that the theory developed in the synthesis is intended to be more inclusive and powerful than that implicit in the primary studies. By contrast, many of the 'primary' studies included in our review of theory are themselves exercises in wide-ranging theoretical mapping and hence of the same character as our review itself. The relation of the review to the included theories might be described as one of dialogue, rather than inclusion. Hence, the distinction between interpretive and aggregative approaches may not be applicable, as much of the primary material that is being synthesised consists itself of synthetic constructs, and so requires interpretation before it can be aggregated.

This was particularly true for our review of theory because we located no body of theory covering the whole scope of the review, or any shared consensus on the framework to be adopted. As set out in *Chapter 3*, there are highly sophisticated bodies of theory within particular areas, including crime

prevention; the social and individual determinants of fear of crime; the links between the built environment and health; and the links between fear of crime and health or health behaviours. However, few researchers have attempted to map out the pathways between all of these factors simultaneously. Moreover, even within specific fields, consensus on the theoretical frameworks is often lacking. This is particularly true of theories of fear of crime (discussed in *Chapter 3*, *Fear of crime: measures and contexts*), on which researchers in the field frequently disagree on fundamental questions of methodology and definition.

Moreover, these diverse bodies of theory come from a wide range of disciplinary perspectives, including criminology and policing, sociology, psychology, public health and urban planning. Concepts in one field may not line up with those in another. For example, the concept of the built environment is only imperfectly translated to the policing field by the concepts of physical disorder, a narrower concept with a focus on visible problems, or place-based strategies, a concept that includes the social as well as the physical environment and is more closely linked to interventions.[39,40] More deeply, the theoretical bases underpinning work in different fields may be incompatible; for example, much recent fear of crime research has drawn on an expressivist paradigm that emphasises the social meanings of individual action,[41,42] whereas the literature on environmental crime prevention largely remains within a rational choice perspective.[43]

As a result, the synthesis could not proceed on the basis of a commonly defined vocabulary of concepts, as no such vocabulary was available, but had to proceed by drawing together heterogeneous theoretical constructs. In this context, the attempt to aggregate and translate between concepts to build a coherent causal map necessarily involved interpretation.

For reasons of space, this report does not present a systematic overview or glossary of all of the concepts used in the theories that form the sources for our synthesis, nor a full discussion of the deeper paradigms that underlie them. Hence, a full account of the issues raised above, and a record of all of the decisions made in constructing the synthesis, cannot be given. We have described specific issues in the relevant sections of *Chapter 3* when they are consequential for the design or interpretation of the causal models.

Chapter 3 Review of theories and pathways: findings

Causal map: key concepts and definitions

This chapter presents the findings of the review of theory. This section presents an overview of the causal map; *Fear of crime: measures and contexts* outlines debates around the definition and measurement of fear of crime and relates them to the map; *Causal map: relationships* explores in more detail the relationships between the different factors in the map; and *Intervention pathways (logic model)* presents a simplified logic model based on the causal map, setting out how interventions might have an impact on health and well-being outcomes.

Figure 1 shows the overall causal map arising from the review of theory. The map shows six key concepts (the large hollow boxes) and a larger number of subconcepts (the smaller shaded boxes), together with the hypothesised relations between them. There are some areas where the key concepts overlap with each other. The map is broadly organised by scale, with individual (micro-level) factors nearer the top, meso-level factors in the centre and broad macro-level determinants nearer the bottom. In this section we summarise the six key concepts and provide definitions of the subconcepts; in the following section we consider some of the relationships that are important for the review.

Crime and disorder

In principle, all types of crime are included in the theory review; however, three broad categories are likely to be especially relevant. For simplicity, only these are included as subconcepts in the model. Violent or potentially violent crimes against the person, such as rape, assault and mugging, are likely to cause substantial physical and/or psychosocial health harms for the victim and may often form the focus of fear. Drug- and alcohol-related crimes include a range of offences, such as violence, criminal damage, driving and public order offences, and crimes such as theft and burglary to fund drug habits; they often have a spatial patterning reflecting the locations of drug markets, alcohol outlets and the night-time economy. 'Environmental' crimes are those that impact directly on the quality of the physical environment, such as criminal damage, vandalism and graffiti; this category may also include non-criminal forms of antisocial behaviour such as littering. Of course, these are very different phenomena. In particular, the inclusion in the same concept of environmental crimes and serious violent crimes does not imply an endorsement of a punitive agenda towards the former. In general, the scope of this project precludes a fully critical perspective on the concept of crime and disorder.

[Two further points should be added here on the definition of crime. First, some non-violent crimes against property, such as burglary and car theft, are also salient in that they may have substantial psychological and emotional impacts and be widely feared[44] (on the distinction between crimes against the person and crimes against property relative to the fear of crime, see *Chapter 3*, *Emotional response: further considerations*). Second, given the environmental dimension of the review project as a whole, 'domestic' crimes such as child abuse and intimate partner violence will be less salient than 'stranger' crimes. This is in no way to minimise the extent or impact of domestic crimes, only to observe that they are of less relevance within the overall conceptual framework adopted for the review.]

Fear of crime

Fear of crime is a complex concept that raises a number of challenging definitional and methodological issues and is discussed further in *Fear of crime; measures and contexts*. The two most important subconcepts here are the individual's perceived risk of being a victim of crime and his or her emotional responses to crime, such as worry or anxiety. The model also includes individual attitudes (e.g. beliefs
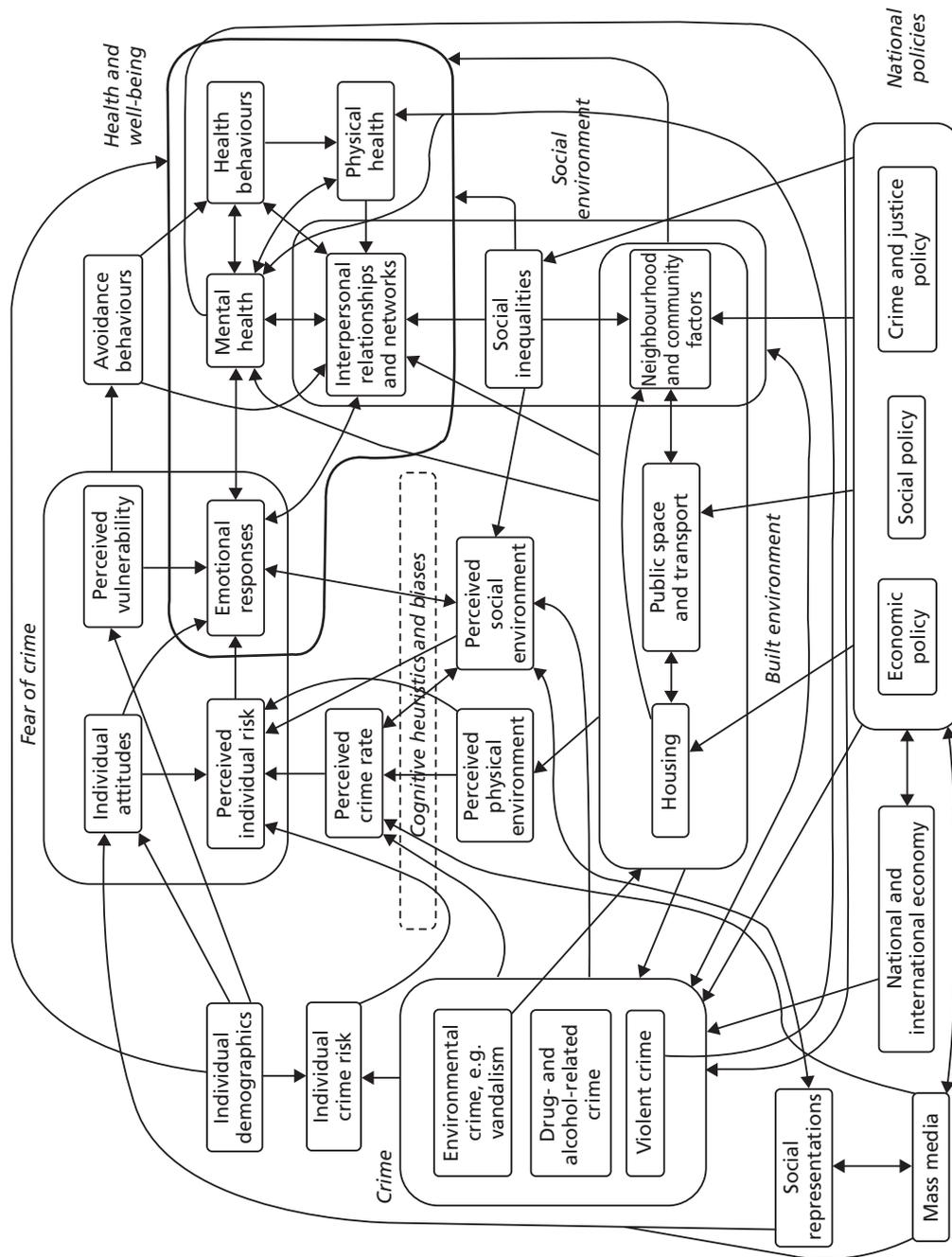
FIGURE 1 Causal map.

about the nature and extent of crime) and perceived vulnerability to crime, as these are known to be closely bound up with fear. However, the perceived and actual rates of crime in the local area, and the individual's objective risk of crime, are not included within the fear of crime concept, although they are linked to it. As discussed in *Fear of crime; measures and contexts*, it is difficult to draw a clear boundary around the concept of fear of crime, given its complex linkages with the social environment and individual psychology, and our definition represents a particular theoretical position that is not shared by all researchers in the field.

Health and well-being

Our perspective on health and well-being is comprehensive, including all forms of physical and mental health outcomes; health behaviours such as physical activity, and social well-being broadly conceived, including interpersonal interaction and social capital. As such, our concept of health and well-being overlaps substantially with the concept of the social environment (see *Social environment*).

Built environment

The built environment includes factors relating to the physical environment insofar as they are shaped by human activity. In particular, it includes the design of public spaces such as streets and parks, land use policy more generally (e.g. zoning regulations), public and private transportation and the architecture and design of residential housing. In the model, these are summarised with the subconcepts 'housing' and 'public space and transport'. It also includes people's interactions with the environment and the physical and geographical distribution of social factors. This category includes, for example, the sociodemographic make-up of communities, or social or legal restrictions on people's movement within the built environment. In the model this is represented by the subconcept 'neighbourhood and community factors', which overlaps with the social environment.

Social environment

The subconcepts in the social environment cluster are based on a previous review of theory.[45] 'Neighbourhood and community factors' are defined in the *Built environment*. 'Social inequalities' refers very broadly to the effects of sociodemographic factors such as socioeconomic status (SES), ethnicity and gender, including structural inequalities and individual discrimination. 'Interpersonal relationships and networks' includes more local-level dimensions of social interaction and can be taken to include measures such as social capital and social cohesion or integration. As such, it overlaps with the health and well-being concept, as we take the latter to include the social dimensions of well-being as well as individual physical and mental health.

National policies

The role of national policies is not specified in detail in the model as a full discussion of their effects, particularly on health and well-being outcomes, lies outside the scope of this project. For our purposes, the main influences of interest are on the built environment and on crime. However, it is important to bear in mind that all of the other factors and relationships are shaped, more or less directly, by government policy, as well as by other macro-level determinants such as the economy.

Fear of crime: measures and contexts

Background

In this section we explore fear of crime in further depth. Fear of crime receives particular attention here for two reasons. First, there are complex relationships between the subconcepts that may be relevant for understanding the evidence and specifying the scope of the project. Second, there has been considerable debate about the concept's meaning and coherence, and about the appropriateness and interpretation of the measures used. In discussing the findings of the fear of crime literature in the following sections, we have not always been able to give detailed attention to these issues, so this section serves as an overall guide to interpretation. This section is itself limited in scope: we do not engage with the full body of

evidence on the determinants of fear of crime, only those that are of relevance to the model. In addition, we cannot here engage with the broader context of the debates around fear of crime research, particularly its political role, although the highly politicised nature of many apparently technical debates should be borne in mind.[46–50] Some of these issues are addressed further in the following sections.

Because of its extent and the ongoing contestation of fundamental issues, it is difficult to give a clear and uncontroversial overview of the field of fear of crime research. One basic distinction might be between, first, an older tradition, going back to the 1960s, which has been based on a broadly positivist, data-driven model of research, and which has focused on using observational research to explore the determinants of fear; and, second, a newer critical tradition, drawing on psychology and symbolic interactionist sociology, and strongly influenced by feminist thought, to understand fear as expressive of a broad range of attitudes and anxieties, and as rooted in the day-to-day reality of individual lives. Broadly, the two research paradigms have tended to correspond to a methodological divide, with the older positivist tradition emphasising quantitative survey measures and the newer critical tradition emphasising qualitative and ethnographic research. Only relatively recently, particularly with the work of Stephen Farrall, Jonathan Jackson and colleagues,[49,51] has a viewpoint that draws together these two perspectives, and which utilises both qualitative and quantitative methods, emerged.

Within the first, more data-driven tradition, four main theories, in the sense of perspectives emphasising particular causal factors, can be distinguished in the literature.[52–56] Different authors divide up the theoretical field differently (e.g. some would include sociodemographic factors as a theoretical perspective in its own right), but these four are the main theories identified in the literature. The first is vulnerability theory, which emphasises the role of vulnerability to crime (defined further in *Perceived vulnerability*) in producing fear of crime and focuses particularly on explaining differences in fear between sociodemographic groups. The second is social disorder theory or social disorganisation theory, a more ecological approach that emphasises the role of local physical and social environments in engendering fear. The third is victimisation theory, which sees fear of crime as primarily driven by actual crime victimisation, and holds that it can be explained by the same factors as crime itself. The fourth is social integration theory, which emphasises the role of strong social networks and attachments at a local level as protective factors that may reduce fear.

Researchers with a more synthetic perspective have seen these theories as reducing in turn to two paradigms, a rationalist and a symbolic paradigm.[57] A rationalist view of fear of crime would see it as based primarily on approximately correct estimates of the risks and potential consequences of victimisation, whereas a symbolic view would see fear as bound up with the social meanings and representations of crime and disorder. However, this division does not line up perfectly with the theories described above. Victimisation theory is clearly rationalist; vulnerability theory is rationalist to some extent, but may need to appeal to symbolic accounts in explaining how estimates of the consequences of crime spill over into assessments of risk. Social disorder and social integration theories are usually expressed in symbolic terms, but they may have a strongly rationalist component in that disorder and low social integration may be causally linked to crime and function as roughly accurate indicators of actual risk (see *Social environment and crime*). As discussed further below (see *Chapter 3*, *Perceived risk and emotional responses*), teasing apart the rational and symbolic, or cognitive and affective, components of people's behaviour may frequently be difficult, particularly in the context of secondary research. More generally, some researchers in the critical tradition have questioned the construct of 'rationality' in this context, arguing that judgements of rationality or (implicitly) irrationality are difficult to justify with reference to fear[58] and that the dichotomy is in any case a blunt instrument in understanding the place and meaning of fear of crime in individuals' lives and social relationships.[59,60]

In terms of our model, each theory can be seen to emphasise a different set of factors in terms of the strength of the hypothesised links to fear of crime outcomes. Accordingly, further information on the empirical grounding of each theory is divided between the relevant sections of the report. Vulnerability is discussed further in *Perceived vulnerability*; social disorganisation and social integration theories focus on

the links between the social and physical environments and the fear of crime and are examined primarily in the section on these links (see *Built environment, social environment and fear of crime*); and victimisation, likewise, is examined in terms of the link between crime and fear of crime (see *Crime and fear of crime*). However, before examining these links, it is necessary to clarify what exactly is being measured in fear of crime research.

The unclarity in this central question has often been remarked on in the literature. Ferraro and LaGrange[61] reviewed the measures used in fear of crime research, finding that many heterogeneous and not directly comparable measures had been used and that many measures were inadequately validated. Although considerable methodological work has been carried out since, the points that they make are still substantially valid today.[49,55] Studies that describe themselves as measuring 'fear of crime' may measure perceived risk of crime, perceived crime rate, feelings of safety, general anxiety or episodes of worry about crime (and many particular measures are possible for each type of outcome). This makes it challenging to interpret the findings of these studies, as apparently subtle differences or ambiguities in the measures used may have a substantial and unpredictable impact on the findings.

In addition, even when the measures themselves are valid, the responses may be subject to bias. For example, social desirability bias relating to gender roles has been argued to account for almost all of the observed gender difference in affective fear outcomes.[62,63] The immediate context in which questions are asked, such as the time of day, may have an impact on responses.[64]

Because of these problems, some researchers have concluded that the concept of fear of crime, as used in these studies, is largely an artefact of the methods used to measure it, and that it does not correspond to a meaningful social reality.[65] Other researchers have argued further that the confusion is not purely adventitious but reflects the fact that fear of crime is an inherently vague and inclusive phenomenon that acts as an attractor for a wide range of ill-defined worries[66] or for a general 'urban unease' engendered by the density and loose social controls of urban environments.[67]

The critical tradition in fear of crime research has developed this latter point further, exploring how fear of crime may embody and express broader attitudes towards social change and diversity, politics and policy, and 'security' in a deeper sense than statistically low risk.[49,59,68–73] This work has emphasised the social construction of crime, risk and fear and argued that these high-level concepts may obscure the diversity and complexity of individual experiences of fear. It has also highlighted the way in which discourse about fear of crime in research and policy has functioned to perpetuate social hierarchies, by treating crime and fear in an uncritical fashion which occludes the social inequalities that underlie fear, especially the prevalence of male violence against women,[70,71] and the question of whose interests inform the accepted definitions of fear.[72]

Much of this theoretical work is rooted in detailed qualitative research, the findings of which cannot be engaged with in detail here; the more detailed findings are discussed in *Chapters 6* and *7*, to the extent that they overlap with our reviews of empirical data. In the context of this chapter, four theoretical points are particularly relevant. First, fear of crime is not a free-floating social phenomenon (as both abstract causal modelling and the more positivist tradition of research sometimes imply), but makes sense only when situated in particular physical locations, and in individuals' lives and personal concerns.[68,70] Perceptions of space and the physical environment at a local level may interact with the broader determinants of fear in complex and unpredictable ways.[70] Second, this research suggests that some of the links hypothesised by the model between fear and other factors, such as the environment or individual attitudes, may be better thought of as expressive relations between social meanings than as cause–effect relations between really distinct factors (see also *Chapter 2, Models and theories in evidence synthesis*). In particular, the simplistic dichotomy between 'subjective' fear and 'objective' crime rates may obscure the social dynamics underlying both phenomena.

Third, as suggested earlier, the impacts of fear of crime are highly unequally distributed, and these inequalities tend to closely shadow the existing power relationships within society. The experience of fear of crime as a pervasive factor in one's day-to-day existence is one that disproportionately affects women, ethnic minorities and people living in material disadvantage. For many people, fear of crime may refer as much to the latent violence that is implicit in discriminatory social structures as to the manifest violence that is measured by crime statistics; the inescapability of such fear, and its symbolic resonance with the marginalisation and devaluation of oppressed groups, may amplify its effect on mental health and well-being. Some scholars have utilised the concept of 'spirit injury' to encapsulate this link between individual victimisation and structural inequality.[74,75]

Fourth, this literature provides a holistic sense of how fear of crime may act as a window into high-level social structures and dynamics, by acting as an illustration of how individuals' deep psychological need for security is played out at the social level. Ulrich Beck's[76] thesis of the 'risk society', which suggests that risk is the central trope of contemporary societies, that the nature of risk transcends quantitative estimations of likelihood and that people tend to seek individual solutions for social or trans-social risks, has been a productive theoretical reference point for some of this work.[68] A somewhat different approach is represented by the work of Taylor and Jamieson,[66,77] who see the fear of crime as a symbolic nexus that expresses concerns about national as well as personal status. We cannot here engage in any depth with these sociological theories, but one important potential implication is that the vague and inclusive nature of fear of crime may be as much a strength as a weakness, as it may enable researchers to grasp a complex domain of social and psychological reality with a single measure.[49,78]

In any case, it is clear that any attempt to synthesise the findings on fear of crime, and draw them into a more inclusive theory, will need to carefully distinguish the subconcepts that make it up and the different measures that may be used to investigate fear. Our model includes four subconcepts: perceived risk, or the individual's estimate of how likely he or she is to become a victim of crime; emotional responses, including the whole range of affective reactions to crime or the threat of crime; perceived vulnerability and individual attitudes. These subconcepts and their inter-relations are examined briefly in the remainder of this section. The research linking fear to the other factors included in the model is covered in *Causal map: relationships*.

Perceived risk and emotional responses

In our model, the central axis of fear of crime is made up of the two subconcepts of perceived risk and emotional response, or one's estimation of the likelihood of victimisation and one's feelings of anxiety or worry about crime, which can broadly be described as the cognitive and affective components of fear respectively.[79] [The action-oriented or 'conative' component, which some researchers include as a third dimension,[55,79] is regarded as a separate concept ('avoidance behaviours') in our model.] The relation between them is complex. They may not always be closely linked: it is possible to know that one's risk of crime is high without being emotionally concerned, or conversely to be highly worried while estimating the risk as low. At the same time, there may not always be a clear subjective separation between the two for individuals. Studies that have directly compared perceived risk and the emotional dimensions of fear have been inconsistent in their findings, but have generally found that they are never perfectly, and rarely very strongly, correlated;[80–85] these findings are reviewed by Chadee *et al.*[85] The strength of the association between perceived risk and emotional responses has been found to vary substantially depending on demographic variables such as gender and on the specific crime types investigated.[81,83,86]

Perceived risk and emotion have not always been clearly separated in the research. Given the weak correlation between them, this means that interpreting the findings of such research may be problematic. For example, questions such as 'Do you feel safe in your area at night?', which have been used in many fear of crime studies, could be interpreted as referring either to one's affective 'feelings' of safety or danger or to one's estimate whether one actually is safe.[61] In addition, even if risk and emotion could be cleanly separated (as, for example, in Ferraro's[87] risk interpretation model), there are numerous potential indirect links, as shown in the model: emotional responses may be driven by a number of factors that also

influence perceptions of risk (e.g. perceptions of the environment) but in different ways. A further complication (which is not explicitly included in the model) is that, as well as individuals' own risk, the perceived risk of others, particularly partners or children, may have an impact on fear and behaviour. This 'altruistic' or 'vicarious' worry appears to be widespread.[88,89]

Given the inconsistency of the findings on perceived risk and affective fear, it is difficult to isolate factors that may help to explain the relationship. One complex of factors that may be relevant concerns the social and moral meanings of crime. Jackson *et al.*[42] observe that, unlike other negative outcomes that may be feared, crime represents a deliberate attack on social norms and the social order. The 'how dare they' factor involved in affective reactions to crime, then, may complicate the link to perceived risk. This may explain why other harms that have a negative impact and which have been found to form the focus of fear more often than crime, such as illness, accidental injury or unemployment,[90,91] do not appear to have the same affective valence, because their social meanings are different. (However, Jackson *et al.*[42] do not explore the broader social meanings of 'the "how dare they" factor', for example in relation to social inequalities; see the discussion of 'spirit injury' in *Background*.) A related point is that anticipatory emotional responses, such as those involved in fear of crime, tend to relate to a repertoire of mental imagery more than to a detailed analysis of risk.[47,55] This may drive the tendency noted earlier for fear of crime to act as a point of articulation for broader social concerns. Some researchers have argued on this basis for much more complex multidimensional quantitative instruments to capture fear, although this proposal has not been widely taken up.[55]

Emotional response: further considerations

Apart from the basic distinction between perceived risk and emotional response, a number of further refinements have been suggested regarding the measurement of the latter. The first is the temporal dimension of fear, particularly the distinction between ongoing 'dispositional' fear and 'transitory' or episodic fear. The second is the distinction between normal, reasonable fear and fear that is excessive or pathological. The third, which also bears on perceived risk, has to do with the specific types of crime that are feared.

Psychological research on fear and anxiety distinguishes 'state' anxiety, which is episodic in nature and responsive to particular situations, from 'trait' anxiety, which is a relatively stable and ongoing property of individuals.[92] State and trait anxiety are generally conceived in this research as intraindividual tendencies and, as such, have been found to be not strongly correlated with fear of crime.[93] More broadly, however, the distinction can be usefully adapted in the fear of crime context to distinguish ongoing 'dispositional' anxiety about crime and 'transitory' fear of crime, which is experienced as a discrete event.[79] These distinct constructs can then be accessed using general, non-time-specific measures of anxiety (e.g. 'How much are you afraid of . . .') and measures that ask about the frequency of worry in a given time period respectively. Several empirical studies show that measures of frequency give substantially different results from generic measures.[49,55,94–96] Using measures of frequency tends to lead to substantially lower estimates of fear, that is, a large number of respondents say that they are anxious in general, but report no or very few specific instances of worry. In addition, the two types of measure appear to be influenced by different factors, suggesting that two distinct constructs are in play. In particular, frequency of worry has been found to be fairly well predicted by perceived risk.[60]

It has been further argued that transitory fear tends to occur in response to particular situations, particularly the immediate threat of victimisation, whereas dispositional fear is driven by broader factors beyond the particular situation. Some researchers have seen this as a way to distinguish 'formless' or 'expressive' anxiety from 'concrete' or 'experiential' fear,[49,65,95,96] and thus to isolate that component of expressed fear of crime which is responsive to actual crime, rather than to broader social attitudes and concerns. The argument in these papers is highly sophisticated and draws on a wide range of evidence and cannot be adequately discussed here; briefly, however, one might question whether time-specific fears necessarily correspond to concrete threats (rather than, for example, to expressive concerns about particular places or people encountered) and non-time-specific fears correspond to broad expressive factors

(rather than, for example, to concrete but ongoing indicators of high crime levels). In addition, as noted earlier (see *Background*), researchers in the critical tradition might argue that latent structural violence – such as that involved in maintaining gender or ethnic inequalities – is as important as manifest violence in explaining fear of crime and should not be dismissed as merely 'expressive'.

The second clarification is to distinguish normal or 'functional' fear, which acts as a cue to behave in an appropriately cautious manner (e.g. by locking doors), from excessive or 'pathological' fear, which generates anxiety sufficient to lower one's quality of life and which is not assuaged by routine precautions.[97,98] (It should be noted that this is not the same as the distinction between 'rational' and 'irrational' fear, as the focus is on the effects of fear rather than its relation to objectively measured crime.) The distinction is important, as normal or functional fear may well not be problematic or especially negative, contrary to the presumption in much research and policy discourse that all fear of crime is a problem per se. Many people who report worry about crime also report that this worry has no effect on their quality of life.[98] Across the population as a whole, 64% of respondents to the British Crime Survey report that fear has a low impact on their quality of life, 31% report that it has a moderate impact and 5% report that it has a high impact, although the proportion reporting a high impact is considerably higher for some groups in the population.[91]

The third point regards what specific types of crime are feared. Many studies have used generic measures such as 'Is there any area near where you live, that is, within a mile, where you would be afraid to walk alone at night?'[99] Other researchers have criticised the lack of specificity of such questions and have preferred to use measures that can explore the differences between different crimes. For example, the British Crime Survey[100] uses a multiple measure of worry that includes worry about the following crimes: burglary from the home; mugging, car theft; theft from the car; rape; physical attack by strangers; being insulted or pestered and being attacked because of skin colour, ethnic origin or religion.

Again, like the time-specific measures discussed above, crime-specific measures have received some attention as a means to distinguish realistic fears driven by crime risk from more formless expressive anxieties. However, as discussed in *Crime and fear of crime*, there appears to be relatively little reason to think that such measures do reflect more accurate judgements of risk.

There is also a debate in the literature about how many different crimes need to be measured to obtain an accurate picture of fear of crime. Some studies using multiple measures have found that fear of different crimes can largely be reduced to, first, fear of crimes involving physical harm and, second, fear of crimes involving loss of property.[101] Others argue that certain crimes, particularly rape and sexual assault for women, may be particularly salient in terms of fear and create a 'shadow' effect across fear of crime in general.[102] It is clear that crime-specific measures cannot be straightforwardly regarded as accessing different parts or aspects of fear of crime. Some findings show that substantially greater numbers of people report worry about specific crimes than report feeling unsafe in general.[103]

In addition, decisions about which types of crime to investigate with respect to fear often depend on previous methodological decisions (often linked to broader sociological or criminological perspectives). The question of what counts as 'crime' is highly important for the interpretation of fear[55] but has received limited attention, particularly in more data-driven quantitative research. In particular, most of the fear of crime literature has tended to focus on crimes committed by strangers in public places. The fear of violent crime in private spaces, committed by known offenders or intimate partners, has not been a salient theme in most fear of crime research, although research indicates that it is widespread and serious.[70,104]

One general point that emerges from this literature is that the effort to distinguish realistic from expressive fear of crime on the basis of more precise quantitative measures, and thus resolve the 'risk–fear paradox', has had limited success overall, although research on this point is ongoing. Moreover, the critical tradition provides cogent reasons to think that the distinction itself may be based on a misconception (see *Chapter 7, Fear and rationality*). In terms of the model, it might be hypothesised that, if a sharp distinction

were shown to be tenable, this would lead to stronger links between crime and realistic fear on the one hand, and expressive fear and health and well-being outcomes on the other, but a less coherent model overall, in the sense that realistic and expressive fear would themselves represent two substantially distinct phenomena. The resolution of the risk–fear paradox would thus tend to block any attempt to see fear as linking crime and well-being outcomes at a community level. However, the considerations in this section suggest that the paradox has not been satisfactorily resolved. If so, there may be more scope to see risk and crime as linked to well-being outcomes in a holistic way, even if the evidence for the individual links is frequently ambiguous.

We return in *Fear of crime and health and well-being* to the question of how different measures of fear relate to health and well-being outcomes. To anticipate, the distinction between cognitive and affective measures may, tentatively, be reflected in the research findings, which appear to suggest that emotional responses have a greater impact on health and well-being than perceived risk; this is intuitively plausible and is reflected in the model by the more direct connections of the former to health and well-being. Both dispositional and episodic measures of fear have been found to be associated with health outcomes. However, the other distinctions explored here do not seem to have been explored with regard to their health and well-being impacts. Intuitively, it might be expected that pathological fear is more damaging than normal fear, and fear of serious violent crimes more damaging than fear of less serious crimes and crimes against property. Further research would be valuable here.

Perceived vulnerability

Vulnerability has been seen as encompassing three concepts: risk, perceived negative consequences of crime and perceived control.[60,105] For our purposes, the concept of risk is not included in vulnerability, as it has its own subconcept in the model; vulnerability can then be seen as the combination of an individual's perceptions of the severity of the consequences of crime and his or her ability to exert control, that is, to defend him- or herself against attack. These factors may relate to an individual's ability to defend him- or herself physically, to the social resources on which one can draw to counteract crime, or to situational factors such as the presence of other people who may be able to assist.[105,106]

Vulnerability has been of interest particularly in explaining inequalities in the social distribution of fear.[103] That is, it may help to explain why certain groups, particularly women, older people and socioeconomically disadvantaged groups, have a greater fear of crime but less objective risk of victimisation; their fear is a response to their greater vulnerability and the greater impact that crime has when it does occur. However, assessing the value of vulnerability in explaining these differences is challenging. Many studies have not sought to measure vulnerability directly but have used demographic variables directly as proxies for vulnerability.[56,103] However, when self-rated vulnerability has been measured, it has been found to be a better predictor of fear than age, gender or disability.[107] The effects of perceived consequences and control have been found to be substantially less important than those of perceived risk, which is not a dimension of vulnerability by our definition.[60] In addition, some of the findings on demographic differences in fear have been questioned. As noted earlier, some researchers have questioned whether differences between men and women may not be an artefact of the measures used;[62,63] others have found that the purported difference between older and younger people tends to disappear, or even reverse, when the questions focus on fear of specific crimes.[87,108,109] As a result, although it remains true that vulnerability is associated with fear of crime and has a role in explaining the genesis of fear for individuals, its value in explaining the social distribution of fear remains open to debate. For our purposes, the most important insight of vulnerability theory is that factors other than perceived risk may have a substantial impact on fear, and hence reducing risk may have a limited impact on fear.

Individual attitudes

The model also includes an 'individual attitudes' subconcept. To some extent, this serves to capture the broader expressive factors outlined earlier, relating, for example, to the social meanings of crime as they impact on individual judgements and emotional responses. More specifically, a range of attitudes may be relevant in explaining the fear of crime, including perceptions of police effectiveness or attitudes to

policing[110] and broader political and social attitudes, such as those regarding law and order or social change.[111] Again, as with vulnerability, attitudes are included in the model primarily to indicate the halo of factors that may impact on individuals' fear, and as a reminder that the central drivers in the model do not fully account for fear of crime outcomes.

Causal map: relationships

The map attempts to show the linkages between both the main concepts and the subconcepts. In some cases links are shown in detail, whereas in others they are more schematic. For example, the influence of individual demographics on health and well-being outcomes is not broken down according to the different outcomes of interest. In addition, not all potential pathways are shown, only those that are of interest for the review. In this section we summarise the theoretical bases of some of the key relationships and a selection of the relevant empirical evidence.

Crime and health

Crime may impact on health in a range of ways,[112] which can broadly be grouped into two categories, namely direct and indirect impacts.[113] Direct impacts include physical injuries caused by violent crimes against the person and the psychological trauma that may accompany crimes involving violence or the threat of violence, or crimes such as burglary that involve intrusions into the private sphere. In the model, this is represented by the link from violent crime to physical and mental health. Indirect impacts include a wide range of negative effects that crime can have at a community level, for example by exacerbating social problems that impact on health. This distinction corresponds roughly to that between an individual perspective on crime and health and a social perspective.

The individual perspective, which focuses on the direct impacts of victimisation on individuals, has been the primary focus of the literature on crime and health.[113–115] These physical and mental health impacts on victims are often substantial and long-lasting.[116,117] 'Domestic' crimes, including child abuse and intimate partner violence, may have particularly serious health impacts.[118–120] However, at a community level, the health impacts are likely to be less substantial, because serious violent crime is relatively rare. In 2010–11 there were approximately 2.2 million incidents of violent crime in England and Wales,[121] representing approximately 42 incidents per 1000 people per year. Dolan et al.[122] estimate the total health loss from the direct physical and psychological impacts of violent crime as being equivalent to 0.0024 quality-adjusted life-years (QALYs) per person per year. However, this may be an underestimate as it includes costs relating to victims only rather than also including those relating to witnesses or victims' families or friends, and the figures on which it is based may underestimate certain types of crime, particularly domestic crimes. In addition, crime and the health burdens of crime are highly unequally distributed, so the health impact is likely to be substantially higher than the average for some subgroups of the population.

The community- or social-level perspective on crime and health presents a more complex picture. Violent crime has been found to be associated with a wide range of negative health status outcomes at a neighbourhood level, including all-cause mortality,[123] coronary heart disease[124] and preterm birth and low birthweight,[125] as well as health behaviour outcomes such as lower levels of physical activity.[126,127] Exposure to community violence is also known to be associated with negative physical and psychological health, particularly for children and young people.[128,129] However, although these associations are well established, the causal pathways involved remain open to debate in many cases.

Taking a social perspective on crime and health also demands a theoretical shift, analogous to that from the individual perspective of clinical medicine to the population perspective of public health and epidemiology. Perry[130] argues that approaches to the prevention of violent crime still have much to learn from public health more generally, in that approaches known to be valuable within public health have not been widely applied to questions of crime. In particular, violence prevention has tended to focus on 'high-risk' subgroups in the population, rather than shifting the mean of the population as a whole,

and on secondary rather than primary prevention. Taking a public health-informed approach to crime would imply de-emphasising questions of why specific individuals engage in criminal activities in favour of asking why crime rates and types vary across populations and areas. Perry also argues, drawing on Farmer,[131] that it would imply a greater focus on the 'structural' violence latent in unequal and unjust social orders, not only on the manifest violence measured by crime statistics. This point relates to the idea of 'spirit injury' discussed earlier (see *Background*), and suggests that a population-based approach to crime and health will need to take into account the indirect as well as the direct impacts of crime, and to engage critically with the concept of crime itself.

As already discussed, such a population-level approach has been widely adopted in the observational epidemiological literature on crime and health. However, it has generally not informed the development of intervention strategies. Winett's[132] review on violence in the USA as a public health problem found that, although authors tended to identify social and structural causes for violence, the interventions that they proposed targeted individual behaviour change and improved public health practice and de-emphasised social factors. Winett's[132] findings suggest a need for a more contextually informed understanding of crime and health and of the potential for interventions to ameliorate the health impacts of crime.

A further body of research has examined the links between alcohol availability or use and violence. These links may be complex: alcohol consumption may increase risky behaviour, inhibit the ability to avoid violence, increase the risk of being a victim of violence and increase the risk of violent tendencies developing in those exposed to alcohol in utero.[133] A summary of the epidemiological and criminological literature[134] notes that, although problem drinking is associated with intergenerational transmission of intimate partner violence and of violence perpetration and victimisation for both men and women, and is significantly related to violent offending, the causal link between alcohol consumption and violent behaviour remains questionable. (Throughout this report, when an association or finding is referred to as significant, we mean 'statistically significant' unless otherwise stated.) However, the author notes that the economic literature does suggest a causal link through studies examining price changes and alcohol outlet density. This potential link is of particular interest for our purposes. Two systematic reviews of studies examining the effects of changes in alcohol outlet density have found a positive association between alcohol outlet density and increased alcohol consumption and related harms, including injuries and violence.[135,136] The causal direction of the link between high outlet density areas and alcohol consumption rates is unclear,[136] although outcome evaluations of interventions do exist in addition to observational studies.

Finally, as well as the pathways from crime to health described above, there may also be pathways in the other direction, insofar as people with health problems, particularly serious mental health problems, may be at greater risk of crime;[137–139] this is represented in the model by the pathway from mental health to crime.

Crime and fear of crime

The link between crime and fear of crime is conceptually obvious but empirically complex. Until recently a long-standing truism of fear-of-crime research was that objective risk of crime was poorly correlated with perceived risk and affective fear outcomes. Victimisation theories of fear of crime posit that fear is largely driven by the lived experience of victimisation. However, this theory does not appear to be strongly supported by the data. Although research does tend to show some relationship between victimisation experience and fear, it is not as strong as might be expected.[140–142] However, this may depend on the measures used. Some researchers have found that victimisation is associated with frequency of worry, as opposed to dispositional measures.[49] Repeated or multiple victimisation may also be more strongly associated with fear than one-off or occasional victimisation,[117] although it is less clear that it has more severe mental health impacts.

At a broader level, it is unclear to what extent individuals' perceptions of their own risk represent accurate estimates of the probability of victimisation (as measured by area-level crime rates or individual-level

predictors of risk), or are responsive to changes in the latter. Some studies have found that most individuals are 'pessimists' in that their estimated risk of crime is substantially higher than their actual measured risk.[143] However, other studies with a more specific focus have found the opposite result; for example, women's estimations of the risk of sexual assault have been found to be relatively 'optimistic'.[144] Such results have led some researchers to speak of a 'risk–fear paradox'.[145,146]

Empirical studies of the correlation between risk and fear tend to show that there is a relation between the two, but that it is not very strong. Most studies do find that there is a statistically significant relationship, but also that it explains only a small amount of the variation in fear. Again, there is considerable controversy about which measures of fear best access the relationship. For example, some researchers hypothesise that measures which access worry about specific crimes (as, for example, the British Crime Survey measure) may be more closely related to objectively measured crime rates than those that access anxiety about crime in general. However, there does not appear to be any trend towards a stronger relationship with objective risk in studies that use the former type of measure of fear[147,148] than in studies using more global measures of anxiety.[149–151]

The conclusion would seem to be that the strong formulation of the 'risk–fear paradox', which states that there is no relationship at all, should be rejected, but that in a weaker form – namely, that the primary explanation of fear, however defined, must be sought elsewhere than in objective risk – the paradox is borne out by the observational quantitative data. Without reviewing these data systematically and dealing in depth with the methodological issues, this conclusion cannot be fully secure; nonetheless, it seems probable (see *Chapter 7*, *Fear and rationality*).

The question that then arises is which other factors may explain variation in fear, given the relatively limited importance of objective victimisation risk. One type of explanation that has received considerable attention is the various factors that may affect individuals' estimations of risk. In the model, this is shown, first, by the cognitive heuristics and biases that influence individuals' judgement of crime rates and of their own risk of being victimised in relation to actual (objectively measured) crime rates and risk; and, second, by the various other factors, including the perceived social and physical environment, social and media representations of crime, and interpersonal relationships, that influence fear outcomes. As we use it here, the distinction between objective and subjective risk refers simply to two types of measure. We are neutral with regard to the epistemological debate over whether divergences between them should be understood as subjective distortions and misunderstandings of an objective reality, or whether they constitute two equally valid, but potentially incompatible, ways of constructing reality. The role of environmental factors is discussed in *Built environment, social environment and fear of crime*; here, we focus on the role of social and media representations and risk heuristics.

Media representations and reporting of crime have often been put forward as a source of people's understanding of crime and risk. However, the empirical data on media consumption and fear of crime are equivocal: although some studies support a link,[152] others do not.[153,154] Some theorists have argued that the media do not act alone in influencing individuals' perceptions, but in association with a repertoire of social knowledge, perceptions and imagery that derives from others' experiences and perceptions of crime and disorder; in addition, as briefly noted earlier, these perceptions relate to people's broader views about politics and social change.[145,155] Hence, these perceptions may also be influenced by individuals' structural position within a community and their relationship to it,[70,73,155] and by the wider structures of socioeconomic, political and cultural relations within society.[78,103,156] The role of the media and social representations, therefore, inter-relates with that of national policy and social inequalities, as well as with local-level features of individuals' social networks and environments.

The notion of cognitive heuristics is drawn from psychological research on individual decision-making under conditions of risk and uncertainty. This research derives from the classic work of Tversky and Kahneman[157] who define three commonly used heuristics: representativeness, availability, and anchoring and adjustment. Representativeness is when people judge the probability of a hypothesis (e.g. related to

our focus here, 'I may be a victim of crime') by considering how much the situation resembles available data (previous experience, media and social representations). Availability is when individuals estimate the frequency of an event (criminal acts), or a proportion within a population ('who commits crimes'), based on how easily an example can be brought to mind. Anchoring and adjustment is the tendency for people to base their assessments or judgements about risk on one piece of information or 'anchor'.[158] In crime research, anchoring and adjustment can be seen at work in people's answers to crime surveys, with perceptions of how the rates of particular crimes have altered differing between common crimes, in which the anchor tends to be personal experience, and serious violent crime, in which the anchor is more likely to be national media coverage.[159] These heuristics are likely to create substantial divergence between actual and perceived risk of crime (and may possibly account for the potential for intensive policing interventions to increase fear by raising awareness of crime[160]).

A further dimension in the perception of risk, which is not explicitly represented in the model, is that the social and psychological levels are not independent but may be mutually reinforcing. That is, these cognitive heuristics may act not only on an individual level but also on a social level, particularly in the choices made by mass media about when and how to report crime news.[47] Theoretical frameworks such as the social amplification of risk theory[161] emphasise the role of differential communication patterns in constructing the social meanings of risk. Media representations draw on people's everyday concerns and create feedback loops connecting them to the social and political discourses around crime, as well as policy and practice, hence 'amplifying' these concerns at a social level.

Built environment and crime

The theorising of links explaining the relations between the built environment and crime, and to inform the development of interventions, goes back to the 1960s. These theoretical approaches have focused on identifying features of the built and social environment that provide opportunities for or encourage criminal acts, which may be then adjusted to reduce or discourage criminality.[162] These theories, which include 'defensible space' and 'broken windows' theories,[43] as well as the 'space syntax' approach developed by Hillier *et al.*,[163,164] are perhaps best summarised in terms of Crime Prevention through Environmental Design or CPTED.[162,165,166] It should be noted that, although the 'broken windows' theory is of clear relevance to this review, its application in policing practice has tended to emphasise more traditional approaches, with an emphasis on increasing prosecutions for minor crimes (also known as 'zero tolerance' policing) and on reducing 'social disorder' such as public drinking, with the built environment a relatively minor theme.[167,168] As such, 'broken windows' policing is tangential to our concerns here.

'Design' in the CPTED paradigm covers a wide range of permanent and semi-permanent physical and social environment features at different levels, from individual houses to whole neighbourhoods. Also important are physical features resulting from human activity, which fall into one of two clusters: signs of lack of caring or incivilities (litter, graffiti, vandalism, abandoned buildings, vacant lots) or signs of investment and involvement.[169] CPTED includes a range of strategies that focus on territoriality, surveillance, access control, activity support, image management and target hardening.[170] CPTED approaches emphasise the creation of environments that foster a strong sense of 'ownership' or 'territoriality', as this improves the chances for natural surveillance ('eyes on the street'). Such surveillance reduces the likelihood of potential offenders committing crimes as they perceive a greater chance of being 'caught in the act', and is further strengthened by designing in formal surveillance measures (CCTV, security patrols, Neighbourhood Watch). Controlling access to areas aims to reduce access to potential targets for crime, thereby creating an increased sense of risk in potential offenders. A further aspect of this is target hardening, which aims to increase the efforts that offenders make in carrying out crimes by restricting access through the use of physical barriers, such as fences, gates, locks, alarms and lighting, and security patrols. In contrast, activity support includes using design features to encourage specific patterns of usage of public space. This may be to locate 'unsafe' activities (e.g. monetary transactions) in 'safe' areas (e.g. those with good surveillance) or to encourage natural surveillance opportunities through mixed usage of public spaces and the numbers of 'eyes on the street'. Avoiding the neglect of public spaces and routine maintenance sustains a positive image of places/spaces and thus avoids them becoming 'magnets'

for criminal activity.[170] CPTED approaches have been taken up in larger-scale policy initiatives such as Secured by Design,[171] which recommends the integration of crime prevention into the design and planning process.

This approach to crime prevention views much criminality as being the result of situational opportunities, that is, that the built or social environment provides (or fails to restrict) opportunities for individuals to commit crimes. The theoretical underpinnings of this view rely heavily on classical rational choice theory, which posits that criminal behaviour (like all behaviour) results from rational, self-interested action that maximises individual utility. Thus, criminal activity occurs when the individual perceives that the potential benefits outweigh the potential costs (punishment, social stigma). This approach also draws on two further theories. Routine activity theory suggests that crime occurs when there is a temporal and spatial intersection of a motivated offender, an attractive target and a lack of capable guardianship. The theory of social disorganisation suggests that, within disorganised communities, or communities lacking in collective efficacy, the breakdown of informal social controls facilitates the emergence of criminal cultures.

One potential weakness of CPTED approaches is the potential for crime to be displaced to an adjoining area, another time, other targets, by other means or a different type of crime – the emphasis on securing a particular space or physical area from crime leads to the spatial displacement of crime to another area nearby.[170] Thus, evaluation of the effectiveness of CPTED in reducing crime or fear of crime needs to include analysis of any displacement effects of the initiatives. The approach has also been criticised for focusing on public outdoor spaces to the neglect of private indoor or domestic spaces, which may be the sites of serious abuse.[172] Similar criticisms can be levelled at the focus on fear-of-crime theories and practices that assume private or domestic spaces to be places of safety. Another criticism is the potential of CPTED approaches to produce a 'bunker mentality', leading to reduced social cohesion or withdrawal of certain parts of the community behind the lines of defensible space;[170] more broadly, CPTED has been critiqued as an aspect of the privatisation and 'securitisation' of formerly public space, and the sanitisation of (what is perceived as) social disorder.[173]

The empirical evidence base for CPTED and related theories is mixed. Observational studies (reviewed by Schneider and Kitchen[43]) have found some links between crime and variables such as density, traffic volume and street connectivity. However, many are cross-sectional with inadequate controlling for confounders, and systematic research syntheses are lacking, so the reliability of this literature is limited (although the 'space syntax' theorists mentioned earlier have started to develop more sophisticated methodologies for investigating these questions). The literature on the effectiveness of interventions at the level of the built environment in reducing crime is considerably more robust, and several rigorous systematic reviews have been conducted. Welsh and Farrington[174] find that CCTV is effective in reducing crime although, when disaggregated by setting, a significant effect was observed only for car parks and not for any other setting (public transport, public housing, city centres). Improved street lighting and neighbourhood watch schemes are effective in reducing crime.[175,176] Multicomponent interventions using CPTED approaches are effective in reducing robberies in retail settings.[177] There is little robust data on the effectiveness of CPTED-type approaches in residential or community settings, although some findings are promising.[39] Finally, there is some evidence that Secured By Design approaches are associated with reduced property crime.[178]

The relation of these theories and empirical findings to the further outcomes that we are interested in – health, well-being and fear of crime – is unclear. Few studies have sought to directly evaluate the health or well-being benefits that may accrue to the population from successful crime reduction interventions. Fear of crime outcomes are discussed in *Built environment, social environment and fear of crime*; the theories discussed above have tended to see the reduction of crime and fear of crime as going hand in hand, although it is unclear to what extent this is empirically supported (we return to CPTED theory in *Chapter 7, Crime Prevention through Environmental Design*).

Social environment and crime

A comprehensive overview of theories of crime causation and the social environment, and relevant empirical data, is beyond the scope of this study. In particular, the relations between social inequalities and crime cannot be explored here. However, one theoretical perspective that is relevant centres on the idea of 'collective efficacy'. This perspective emphasises the influence of the social environment on rates of crime and criminal motivation. Collective efficacy, defined as the level of social cohesion (based on informal social controls) within a neighbourhood or community, along with the willingness of its members to intervene on behalf of the (perceived) common good, has been suggested as a means to explain differences in crime rates, including homicide, between neighbourhoods with similar aggregate demographic characteristics.[179] Collective efficacy is embedded in the structural and cultural characteristics of a neighbourhood, which either support or undermine the density of social ties of kinship, friendship and familiarity and the levels of participation in collective action.[179] The original theorists focused on informal social controls of the activities of children and young people, although more recent work has examined the role of collective efficacy in intimate partner violence and homicide.[180] The idea of collective efficacy also underpins community development approaches to crime reduction, within which residents are supported to establish their own organisations to address issues within the community, including crime and fear of crime.[181–183] Rather than specific actions designed to influence individual criminal behaviour, this approach 'is a framework for action which establishes the necessary preconditions through which individual criminal motivation or behaviour can be changed through routine practice' (p. 422).[181] Thus, the focus is on relationship building within the community, the development of institutional, structural and economic assets, collective engagement and actions and sustainable institutionalised change.[181]

It should be noted that the theory that collective efficacy protects against crime has been subject to critique, on the basis that certain forms of social connectedness and collective action may in fact serve to condone and perpetuate certain kinds of crime, for example by providing social capital to offenders within criminal subcultures, or by promoting norms of inequality that provide social legitimation for crimes such as intimate partner violence.[184,185] As with many of the other links examined in this review, then, the relation between the social environment and crime is not straightforward, and quantitative variables describing social structures may be either positively or negatively associated with crime, depending on the precise measures used, the types of crime considered and the broader social context.

Broader social factors may also have an impact on crime. For example, socioeconomic inequality has been found to be associated with violent crime at a national level.[186,187] However, space precludes any detailed discussion of such broader links.

Built environment, social environment and fear of crime

The model presents the built and social environments as each acting independently on both perceived crime rates and perceived individual risk, to reflect the fact that these environmental variables may act 'globally' on crime and perceptions of crime, or locally on perceived individual risk (e.g. particular people or locations encountered in one's daily routine that are perceived as dangerous). These local variables and pathways may be very specific in nature and the model does not distinguish the specific factors that may be involved. This section covers the built and social environment together because the main theoretical paradigms have tended to treat both as aspects of the same underlying issue.

The pathways linking the environment to fear of crime have often been seen as closely related to those linking the environment to crime (examined in *Built environment and crime* and *Social environment and crime*). The pathways in the case of fear may be somewhat more challenging to investigate. Environmental factors may affect fear not only cognitively, by affecting people's perceptions of crime rates or individual risk, but also by directly affecting their emotional responses to their environment and exacerbating feelings of threat or anxiety, which may be expressed as fear of crime. In addition, as noted above, some researchers argue that fear of crime is a nebulous concept that may often reflect broader dissatisfaction with the physical and/or social environment. Hence, in some cases, it may be more appropriate to think of

the perceived environment as a dimension of fear in its own right, rather than as distinct from and causally linked to fear.

Among the theories of fear of crime discussed earlier (see *Fear of crime: measures and contexts*), social disorder theory most clearly focuses on the role of environmental factors. The central concept here is that of 'incivilities' or 'disorder', which encompasses both problems in the built environment, such as vandalism and abandoned properties, and problems in the social environment, such as people dealing or using drugs. The most usual form of this theory is symbolic rather than rationalist, in Elchardus *et al.*'s[57] terms. That is, 'disorder' in the form of problems in the built or social environment may play the role of a symbolic indicator of social problems, economic deprivation or political neglect, and hence increase fear independently of its effect on actual crime.

Other theories posit both broader symbolic influences from the environment on fear of crime, and factors that may act rationalistically on fear by increasing actual crime risk. The former include social integration theory, which emphasises the role of local-level social networks (a dimension of the social environment in our model) in increasing fear and may be linked to the collective efficacy theory of crime (see *Social environment and crime*), which suggests that weak social integration and collective norms tend to exacerbate crime. However, researchers have hypothesised both positive and negative associations between social integration and fear. Some suggest that social support or social capital may act as a buffer and help to lessen fear of crime; others suggest that higher social interaction may increase fear of crime by increasing communication regarding crime and heightening the perception of risk.[188] The latter include the theories examined earlier linking certain features of the built environment, and weak social integration or collective norms, to crime (see *Built environment and crime* and *Social environment and crime* respectively), which suggest that environmental problems may form part of a complex of causal factors that increase crime.

Social disorder theories in their narrow form appear to be borne out by the observational data, which show a consistent association between perceived social and physical disorder and perceived risk or fear of crime.[149,189–194] The association of perceived disorder with affective measures of fear has been found to be weaker than its association with perceived risk,[84,190] although other findings indicate that the link between the physical environment and fear of crime persists even when perceived risk is controlled for.[149] Perceived disorder has also been found to correlate more strongly with fear of property crime than with fear of personal crime; this has been hypothesised to relate to the more 'patterned and predictable' nature of the former.[190] These findings suggest that disorder impacts on fear primarily as an indicator of crime risk.

However, other research indicates that individuals' perceptions of social and physical disorder are a better predictor of their fear than objectively assessed measures of these problems;[195,196] in the model, the environment is separated from the perceived environment to reflect this distinction. This finding may relate to the point made earlier about expressive and causal links. That is, it suggests that the observed association between disorder and fear may result less from individuals using disorder as an indicator of risk than from the fact that the perception of environmental conditions is already laden with social attitudes and judgements,[197] such that the observed relation between perceived disorder and fear is more an expressive linkage between two nexuses of social meaning than a cause–effect relationship.[198] (This type of link may also be expressed as a correlation between the perceived built environment and the perceived social environment, directly or through broader constructs such as 'neighbourhood attachment'.[199])

Theories that posit a broader role for the environment are less clearly supported by the empirical data. Regarding the built environment, some research has found larger residential buildings to be associated with fear of crime while being more weakly associated with actual crime rates; this has been linked to 'defensible space' theories discussed in *Built environment and crime*.[200] However, other studies have not found an association between building size and fear.[201] With regard to the broader urban environment, green space has been found to be associated with better perceived safety, although this is less true in dense urban areas.[202] Non-residential land use has been found to be associated with lower feelings of

safety, although the association does not survive controlling for actual crime rates.[203] It is also unclear to what extent the potential pathway from the built environment to fear of crime extends to the health and well-being consequences of the latter. One study finds that the association between perceived crime and mental health outcomes was increased by *better* residential environments.[204]

Regarding social integration or social cohesion, as measured, for example, by people's perceptions of their relationships with their neighbours or their participation in community organisations, the literature does not suggest a relationship with fear in either direction. Some studies find a significant association between stronger social interaction or social cohesion, at least on some measures, and a lower fear of crime.[194,205,206] However, many studies find no consistent association.[52,207–212] It should be noted that these studies are heterogeneous in the measures used for both fear of crime and social integration, and a more detailed analysis might reveal a clearer pattern. Many of these studies also present more complex analyses looking at different environmental factors. For example, one study finds that social interaction may buffer the negative effects of the built environment on fear.[210]

Moreover, it is clear that there are correlations between the social environment and the built environment, although this linkage cannot be explored in detail here. Of particular interest are potential correlations between built environment factors, such as patterns of land use, and collective efficacy outcomes.[213,214]

Local-level factors such as area SES have also been found to be correlated with fear, although the pathways involved are not entirely clear.[215] Moreover, national policies may have an effect on fear of crime. One study finds that more generous social welfare policies are associated with higher levels of perceived safety.[78]

The potential for interventions at the level of the built environment is discussed further in *Intervention pathways (logic model)*. Interventions at the level of the social environment may include crime reduction interventions such as Neighbourhood Watch, as well as broader programmes to promote social integration and cohesion. Police-initiated programmes to engage and educate communities about crime and risk may also be seen as social environmental interventions.

Built environment and health and well-being

There is a substantial body of literature linking factors in the built environment to health and well-being outcomes, which can be only very briefly summarised here. The main theory has been environmental stress theory, which sees well-being as determined by the balance between stressors, such as noise, traffic, poor housing, overcrowding or the threat of crime, and countervailing protective factors, such as social integration.[216,217] The causal interactions here may be complex, as some psychosocial protective factors may themselves be influenced by the environment. In addition, a number of longer pathways may operate: the pathways from the built environment to crime and fear of crime may join up with those that lead to health and well-being; and, similarly, the built environment may affect health through its impact on the social environment. These pathways are often hard to distinguish in practice, and also difficult to isolate from the impacts of socioeconomic disadvantage on individuals and communities.

Many of the associations between the environmental stressors listed above and poorer mental health outcomes are well supported by robust empirical research.[216,218] Several of these factors, particularly traffic and poor housing conditions, may also impact directly on physical health. There is some evidence that built environment interventions, particularly housing improvements, can have positive health impacts.[219]

The environmental stress concept is useful for our purposes because it forms a framework for thinking about crime and fear of crime as pathways between environmental determinants and health outcomes, and substantiates the general concept that poor environments can impact on health by increasing day-to-day stress and anxiety. Thus, crime has been investigated as part of a larger complex of environmental stressors.[220] More specifically, three longer pathways may link the built environment, health and crime or fear of crime. First, what we have called 'environmental crime' has impacts on the built

environment, although it is unlikely that these make a substantial contribution to the health impacts of the latter. Second, features in the built environment may also be linked to the social environment and social well-being in ways that are relevant to crime and fear of crime. Third, the built environment may make a difference to health behaviours, particularly outdoor physical activity. The perceived and actual qualities of the built environment, such as accessibility and aesthetic qualities, are known to be associated with physical activity;[221,222] such perceptions may interact with the determinants of crime and fear of crime in the built environment.

Fear of crime and health and well-being

There are three types of potential pathway from fear of crime to health and well-being. First, the worry and anxiety induced by fear of crime (in the affective sense) may impact on mental health more broadly; in addition, the psychological distress involved in fear is a mental health outcome in its own right, hence the overlap in the model. In the other direction, poorer health may also exacerbate fear of crime and its health effects. Second, fear of crime may lead to avoidance behaviours such as limiting one's movements outside the home, which may impact negatively on health behaviours such as physical activity and on social interaction. Third, fear of crime may impact on social well-being at a community level by decreasing social cohesion and increasing neglect, with consequent effects on residents' well-being; it may further influence some the decision of some residents to move home, hence potentially changing neighbourhood composition in ways that may have community-level well-being impacts.

The literature on fear of crime and health is relatively small but reasonably consistent, once the measures are disaggregated. Several studies have found that affective measures of fear of crime, worry about crime or feelings of unsafety are associated with poorer mental and physical health.[208,223–228] The study by Jackson and Stafford[229] is not included here because it focuses on the opposite causal pathway (see next paragraph) and because it uses the same fear of crime data as Stafford *et al.*[227] Several outcomes have been found to be associated with fear, including self-reported general health,[223,224,226] mental health,[208,223,226–228] physical functioning,[227] quality of life[227] and a composite index of self-reported general health and physical functioning.[225] There is also some evidence of an association between higher perceived crime, or lower perceived safety, and poorer health and well-being outcomes, although the findings here are more equivocal and complicated by the strong association of both types of outcome with SES;[204,230] other studies have found no clear association.[231,232]

The main pathway accounting for the effects found in these studies appears to be the first listed above, namely the psychological distress created by fear of crime and the further effects of this distress. In addition, poor health, particularly mental health, may increase perceived vulnerability and hence fear of crime. The British Crime Survey[91] found that 20% of those with bad or very bad health said that fear of crime had a high impact on their quality of life, compared with 5% across the population as a whole. Qualitative studies have also found that fear of crime tends to have particularly negative impacts on those with existing mental health problems.[233] This indicates that, as well as the pathways from fear of crime to health outcomes, there are also pathways going in the opposite direction.[229] The direction of causality is difficult to establish from the quantitative data alone, but there is reason to think that the reverse pathway – from poor health to fear – may be substantial. This should be borne in mind when assessing the theoretical possibility of improving well-being by reducing fear because, if much of the association between the two outcomes is explained by this reverse pathway, the impact of fear reduction on well-being may be limited.

As noted earlier (see *Emotional response: further considerations*), many researchers have called for greater precision in the measurement of fear of crime, on several dimensions. With respect to the distinction between perceived risk and emotional responses, the findings cited earlier may suggest that the latter have a greater impact on health and well-being outcomes although, because of the non-systematic nature of this review, this finding should be regarded as indicative only. With respect to the distinction between dispositional fear and episodic fear, both have been found to be associated with health outcomes; of the studies cited earlier, five use non-time-specific measures[208,224,226–228] and two measure frequency of

worry.[223,225] With regard to the distinction between functional and pathological fear, limited data are available on health outcomes, although this would be a promising avenue of investigation. Studies have elicited respondents' perceptions of the impact of fear on quality of life[91,98] and used this to make the distinction between functional and pathological fear, but we did not locate any studies that make the distinction independently and then measure the association with quality of life or other well-being outcomes. Potential differences in the health impacts of fear by type of crime have also, to our knowledge, not been investigated.

The mental health impacts of fear of crime are probably relatively limited across the population as a whole. The utility loss has been estimated at 0.00065 of a QALY per person per year or around one-fifth of the mental health impacts of crime itself,[122,234] although to our knowledge no modelling work has been carried out on the basis of more in-depth empirical studies such as that by Stafford et al.[227] to provide more accurate estimates.

The second pathway linking fear of crime to health outcomes is through the behaviours adopted to lessen the perceived risk of victimisation. This pathway may operate at a place-specific level: the percentage of respondents avoiding certain areas or neighbourhoods because of their concern about crime has been measured at 48% in a sample of the general US population[99] (see Table 2.40) and 84% in a sample of women in the UK.[88] However, it may also operate on a more global level, particularly for women, as constraints on behaviour resulting from fear become internalised and normalised as an attitude of constant vigilance[235–237] that intersects with the broader dynamics of gender norms and the social control of women's behaviour.[70,88]

These avoidance behaviours may be linked to health and well-being outcomes in two ways. First, avoidance behaviours may limit interpersonal interaction, leading to poorer mental health.[227] Again, there may be a feedback loop here whereby limiting social interaction also increases fear in its turn.[140] Second, concerns about neighbourhood safety may lead people to change their behaviour to limit outdoor physical activity, leading to poorer physical health. This pathway has received considerable attention in the theoretical literature.[238] There is some evidence for an association between perceived safety and physical activity, although the findings in the literature are mixed.[239,240] The association appears to depend substantially on demographic characteristics, with safety having a greater effect on physical activity for older people[209] and women.[209,241] Measures of affective fear are also associated with lower physical activity.[223] The extent to which these pathways influence the further health consequences of lower physical activity is unclear. One study found that measures of avoidance behaviour (not going outdoors) because of fear are associated with several mental and physical health status outcomes in a sample of older people;[242] interestingly, the associations are generally stronger for men than for women in this study. In addition, some findings suggest an association between lower perceived safety and obesity, although the effect is only borderline significant.[243] In addition, as discussed below, physical activity appears to mediate at least some of the association between fear of crime and health outcomes.

The third pathway hypothesises that fear of crime leads to decreased trust and cohesion within communities and to individual withdrawal, with a series of feedback loops at community and policy levels leading to progressive decline in the social and physical environments, with consequent well-being effects at a social level.[55,188] In the model, this can be seen as the loop that goes from fear of crime to interpersonal relationships, and from there (as part of the social environment) directly and/or via the built environment to the perceived environment and back to fear of crime. However, although this pathway has received considerable theoretical attention, it is difficult to substantiate empirically because, as noted earlier (see *Built environment, social environment and fear of crime*), research findings on fear of crime and the social environment are not consistent and, even when a link is well established, the direction of causality is not clear. In particular, as actual environmental problems appear to predict fear considerably less well than perceived problems, the existence of strong feedback loops between fear and actual environmental change remains to be proven.

The relative importance of the pathways is difficult to quantify. Ross[223] investigates psychological distress and physical activity as mediators of the effects of fear on general health. Stafford et al.[227] investigate physical activity and social interaction as mediators for mental and physical health outcomes. Both find that a substantial amount of the association is explained by these pathways, but not all. Possible measurement error aside, this may suggest a role for broader effects such as those hypothesised by the third pathway above, or it may reflect pathways from other variables not included in these studies.

Intervention pathways (logic model)

Figure 2 shows the logic model for interventions. The logic model was derived by simplifying the causal map, aggregating the key concepts (built environment; crime; fear of crime; social environment; health and well-being), disregarding some of the pathways linking these to each other and rearranging to focus attention on pathways that may be amenable to intervention. The main focus of interest regarding interventions is modifications to the built environment (box 1). However, such environmental interventions are frequently combined with other components, such as changes to policing practice or the criminal justice system (box 2), and community- or policy-level interventions to improve the social environment, for example by encouraging social cohesion (box 3). These form the intervention level of the logic model.

The mechanisms through which these interventions may lead to improved health are specified in boxes 4–8. Very broadly, two main types of pathway can be distinguished. The first consists of interventions seeking to reduce crime (box 4). If successful, such interventions may reduce individuals' fear of crime (box 6), with resulting positive impacts on psychosocial health and well-being (box 9). (Such interventions may also impact on health outcomes (boxes 8 and 9) by reducing the direct physical or mental health impacts of crime victimisation; these pathways are marked by dotted lines to distinguish them from the community-level impacts.) Interventions such as CCTV and street lighting and approaches based on CPTED are examples of this pathway.

Two subpathways may also operate in some contexts. First, environmental interventions may seek to reduce fear of crime (box 6) directly by reducing the perceived risk of victimisation, for example by changing street layouts to remove hiding places for attackers; this may be beneficial whether or not the
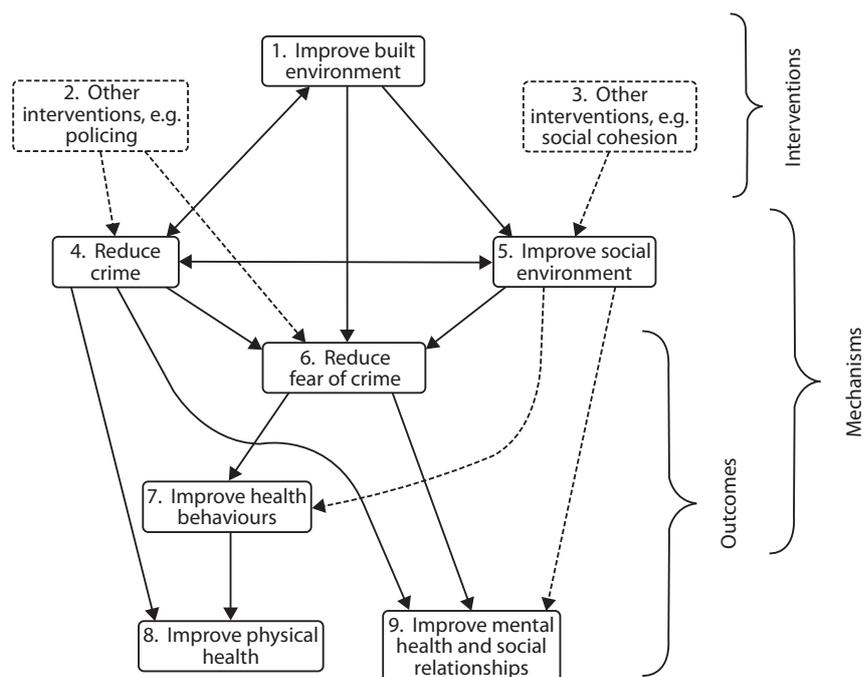
FIGURE 2 Logic model of intervention pathways.

intervention reduces the actual crime rate. (Interventions such as CCTV may also have such an impact on fear, by acting as a visible deterrent, independently of their impact on crime.) Second, as many types of crime or antisocial behaviour (such as graffiti, vandalism and illegal dumping of rubbish) have a direct impact on the built environment, reducing rates of these crimes will improve the latter.

The second pathway consists of interventions seeking to improve the social environment (box 5), hence improving residents' relations with their environment and reducing fear of crime (box 6), as the latter is known to be strongly linked to the social environment. [Such interventions may also have impacts on psychosocial health (box 9) and/or health behaviours (box 7) that are unrelated to crime, although these lie outside the scope of the review; these pathways are marked with dashed lines in *Figure 2*.] Urban regeneration and housing improvement are examples of interventions on this pathway. Interventions that seek to increase social integration or social cohesion may also have the aim of reducing actual rates of crime.

A further pathway that may coexist with either of the above two is that reducing fear (box 6) may improve health behaviours (box 7), particularly physical activity, hence leading to improved physical health (box 8). (The intervention model does not attempt to capture the links between physical health, psychosocial health and health behaviours.)

Chapter 4 Systematic reviews: methods

This chapter sets out the methods for the two systematic reviews, one of effectiveness and one of UK qualitative evidence. Searching and screening for both of the reviews were carried out simultaneously and the methods are reported here for both reviews. Protocols were not registered for either systematic review because at the time of writing the main systematic review registration database (PROSPERO) included only reviews of the effectiveness of health interventions for health outcomes and so neither review would have met its criteria.

The reviews were conducted in accordance with PRISMA guidelines[8] (see *Appendix 11*). However, because of the broad scope required to obtain an adequate picture of the relevant evidence base, the review questions are arguably less focused than might be the case for most systematic reviews in health-related fields, with a fairly broad range of both interventions and outcomes considered. The quality assessment process, particularly for the review of effectiveness, was also less detailed than standard practice in health-related fields would indicate. The breadth of the review means that many of our more general conclusions, particularly the broader reflections in *Chapter 7*, should be regarded as indicative only.

Searching

The following databases were searched for the systematic reviews of effectiveness and of qualitative evidence. Databases were searched between November 2010 and January 2011. Each database was searched without date limits, that is, from inception to the search date.

- Applied Social Sciences Index and Abstracts (ASSIA)
- Cumulative Index to Nursing and Allied Health Literature (CINAHL)
- Conference Proceedings Citation Index – Science
- Criminal Justice Abstracts
- Dissertation Abstracts
- EconLit
- EMBASE
- Education Resources Information Center (ERIC)
- Health Management Information Consortium (HMIC)
- Inside Conferences
- MEDLINE
- National Criminal Justice Reference Service (NCJRS)
- PsycINFO
- Science Citation Index
- Social Policy & Practice
- Social Science Citation Index
- Sociological Abstracts
- Urban Studies Abstracts.

The search strategy took the following form:

((fear of crime) OR (crime) OR (antisocial behaviour)) AND ((built environment) OR (built environment interventions))

The full MEDLINE search strategy can be found in *Appendix 2*. Searches for other databases used a modified form of the MEDLINE search strategy. No further limitations (e.g. by language or date of publication) were used in the searches.

The following additional sources were also used to locate studies:

- Google and Google Scholar (using a simplified version of the main search string and screening the first 50 hits from each)
- citation chasing from the studies included in the review
- citation chasing from relevant systematic reviews located by the searches (i.e. that met all of the inclusion criteria except that relating to study design)
- searches of websites of various government bodies, research groups and other relevant organisations (the full list can be found in *Appendix 3*)
- consultation with members of the research team and the advisory group.

Screening

The records from the searches were deduplicated and uploaded to EPPI-Reviewer 4 (Evidence for Policy and Practice Information and Co-ordinating Centre, Institute of Education, London, UK) for screening. Two reviewers coded an initial sample of records independently, with differences resolved by discussion and reference to a third reviewer when necessary. In total, 9% of the records were screened by two reviewers independently ($n = 1108$). Agreement on inclusion prior to reconciliation was 90.6%, with Cohen's kappa = 0.45. The remaining abstracts were screened by one reviewer alone.

Initial inclusion criteria
The following inclusion criteria were applied sequentially (i.e. studies had to meet all criteria to be included):

1. Does the study report data on crime, safety and/or the fear of crime or evaluate an intervention intended to reduce crime and/or the fear of crime? (Note: crime or fear of crime need not be the sole or primary focus of the study. Violence and antisocial behaviour are considered to be crime outcomes, but illegal drug use per se is not. Conduct problems, behaviour problems or aggression are not crime outcomes and studies on these without crime or fear of crime data were excluded.)
2. Does the study report data on at least one of the following: fear of crime (including perceived safety or risk, worry or anxiety about crime, or fear of specific crimes or of crime in general, but not including perceived crime rates or perceptions of crime, e.g. the extent to which crime is 'a problem'); mental health; physical health; health behaviours (e.g. physical activity), or social well-being (e.g. social interaction)? (Note: violence is considered to be a health outcome for this criterion, as is illegal drug use; however, crime or antisocial behaviour, if not further specified, are not. Educational attainment is not a health outcome. This criterion should be interpreted strictly for quantitative studies, but broadly for qualitative studies.)
3. Does the study report data on variables relating to the built environment, on an intervention that involves some change to the built environment or on perceptions of the environment? (For qualitative studies this should be interpreted at abstract stage to include factors relating to the local-level social environment, e.g. social cohesion, collective efficacy.)
4. Is the study a primary research study or a systematic review? (A systematic review is one that clearly reports its search strategies and inclusion criteria. Systematic reviews were retained for reference searching but were not included in their own right.)
5. Was the study conducted in a country that is a current member of the Organisation for Economic Co-operation and Development (OECD)? These are Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, the Republic of Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, the UK and the USA.
6. Is the study either a qualitative study (e.g. one that involves in-depth or semistructured interviews, focus groups, ethnography) or a study that evaluates an intervention and presents quantitative outcome data that were measured both before and after the intervention and/or for both an intervention and a

comparison group? To be included here the study had to *sample* both an intervention and a comparison group; studies with data from one group and one time point that compared these outcomes with data from other sources (e.g. the British Crime Survey) were excluded.
7. (For qualitative studies only) Was the study conducted in the UK?

We attempted to retrieve the full texts of all studies that met the inclusion criteria at abstract stage. When the full text was located it was rescreened using the same criteria. Of the full-text studies, 79% were screened independently by two reviewers ($n = 498$), with differences resolved by discussion. Agreement on inclusion prior to reconciliation was 96.0%, with Cohen's kappa = 0.92. The remainder were screened by one reviewer alone.

After this initial screening process several further exclusion criteria were adopted to focus the reviews further. These criteria differed between the review of effectiveness and the review of qualitative evidence.

Focused exclusion criteria

For the review of effectiveness the following exclusion criteria were applied (the numbers refer to the corresponding code in the initial inclusion criteria):

1. (E*2) exclude studies in which the only relevant outcome is violence
2. (E*3) exclude studies of interventions in which the change to the built environment was not a substantive component, that is, that involved minor environmental change as part of an intervention whose main focus was not the built environment
3. (E*6a) exclude studies using a purely observational design, for example cross-sectional surveys that are analysed with exposure to some intervention as an independent variable
4. (E*6b) exclude studies that present only post-test and not pre-test data and in which allocation to intervention and comparison groups is not random.

For the review of qualitative evidence the following exclusion criterion was applied:

1. (Q*2/3) exclude studies that do not present substantive data on the fear of crime and the built environment.

Data extraction and quality assessment

Data were extracted from the studies using a standardised form and included information on the context and setting of the study, the population, the methodology and the findings. Data extraction and quality assessment for all studies were carried out by a single reviewer and double-checked in detail by a second reviewer.

Quality assessment for the effectiveness review was carried out using a modified version of the Hamilton tool[244] (see *Appendix 4*). The Hamilton tool was originally developed specifically for the evaluation of intervention studies in public health. The modified version used here draws on the version used by Thomson *et al.*[219] This tool includes six domains: selection bias; study design; confounders; blinding; data collection; and withdrawals and dropouts. These domains were used to produce an overall quality rating – A (high quality), B (medium quality) or C (low quality) – using the algorithm set out in *Appendix 4*.

Quality assessment for the qualitative review was carried out using Hawker *et al.*'s[245] framework (see *Appendix 5*). This tool includes nine domains: abstract and title; introduction and aims; method and data; sampling; data analysis; ethics and bias; results; transferability/generalisability; and implications and usefulness. Again, these domains were used to produce an overall rating of A, B or C, using the algorithm set out in *Appendix 5*.

Data synthesis

For the review of effectiveness, quantitative meta-analysis was not carried out because of the small quantity of robust evidence and the heterogeneity of the studies. A narrative synthesis was carried out with the studies categorised by type of intervention. Effect sizes were analysed as change scores (i.e. differences between pre and post) and relative change scores (i.e. differences between change scores in the intervention and control groups). Ordinal outcomes (e.g. 10-point Likert-type scales) were standardised to 0–100. To summarise effect sizes across several distinct outcomes and/or studies, median change scores were calculated to provide an indicative measure of effect size for each study. Within intervention types, outcome data were synthesised separately for controlled and uncontrolled studies, with particular attention paid to any divergence between these two groups. Harvest plots were used to synthesise evidence of differential subgroup effects.

For the review of qualitative evidence, the synthesis was initially thematic in nature. A grounded theory approach was used to identify themes emerging from the data, and each appearance of each theme was coded with the appropriate code. Following this, a framework derived from the theory review was used to categorise the themes emerging from the data. In a second stage of synthesis, akin to a 'lines of argument' synthesis, broader explanatory concepts were developed from the themes.

For the cross-study synthesis we attempted to bring together the findings from the two systematic reviews, the review of theory and the stakeholder interviews. We used a pragmatic approach that focused on: (1) generating implications for interventions from the qualitative review and testing them against the review of effectiveness and (2) investigating to what extent the theories covered in the review of theory are confirmed by the findings of the two systematic reviews.

Flow of literature through the review

Figure 3 shows the flow of literature through the review. A total of 12,093 references were screened on abstract. After application of the initial criteria, 290 full-text reports were included; after adoption of the additional focused exclusion criteria, this was reduced to 134 primary study reports and two systematic reviews (which were not included in the review in their own right but whose lists of included studies were searched). Forty-nine of these reports were 'linked', that is, distinct reports that published data from the same study. A total of 85 primary studies were included in the review, including 47 in the review of effectiveness and 39 in the review of qualitative evidence (one study was included in both reviews).

Database searches deduplicated (*n*=11,985)

Disaggregated references (*n*=43)

Web searches and citation chasing (*n*=65)

Unique references screened (*n*=12,093)

Excluded on abstract (*n*=11,439)

1) Not crime (*n*=2295)
2) Not fear/health outcome (*n*=1155)
3) Not built environment (*n*=3564)
4) Not primary study/systematic review (*n*=1678)
5) Not OECD country (*n*=259)
6) Not intervention or qualitative study (*n*=2641)
7) Non-UK qualitative study (*n*=185)

Included on abstract (*n*=654)

Full text unsourceable (*n*=26)

Screened on full text (*n*=628)

Excluded on full text (*n*=338)

Included in map (*n*=290)

Excluded post map (*n*=154)

E*2) Intervention with only violence outcomes (*n*=12)
E*3) Intervention with built environment not main focus (*n*=75)
E*6a) Intervention observational design (*n*=1)
E*6b) Intervention non-randomised study and only post-test data (*n*=8)
Q*2/3) Qualitative study with no substantive FoC and built environment data (*n*=63)

[Note: references mapped for both effectiveness and qualitative review (*n*=5)]

Included post map (*n*=136)

Linked references (*n*=49)

Systematic reviews (*n*=2)

Included in review (*n*=85)

Included intervention studies (*n*=47)

Included qualitative studies (*n*=39)

FIGURE 3 Flow of literature through the review.

Chapter 5 Systematic review of effectiveness: findings

Characteristics of the studies and quality assessment

A total of 47 studies were included in the systematic review of effectiveness. *Table 1* provides the study design, the quality rating assigned, the location in which the studies were conducted and a brief description of the intervention. Further details about the studies can be found in the evidence tables (see *Appendix 9*) and about the quality assessment process can be found in *Appendix 4*.

As *Table 1* shows, a range of interventions were included. The majority of studies ($n = 36$, 77%) were conducted in the UK and most of the rest ($n = 10$) were conducted in the USA, with one study from the Netherlands.

In terms of study design, one study was a randomised controlled trial (RCT); 21 were controlled before-and-after studies, 11 of which followed the same participants over time and 10 of which used repeated cross-sectional samples from the same population; and 25 were uncontrolled (single-group) before-and-after studies, 11 of which followed the same participants over time and 14 of which used repeated cross-sectional samples from the same population.

In the quality assessment, 10 studies were graded as high quality (A), three as medium (B) and 34 as low (C). The high-quality studies are all controlled before-and-after studies; the medium-quality studies include one RCT and two uncontrolled before-and-after studies (the RCT received a relatively low rating because of low scores on the 'selection bias' and 'withdrawals' domains); and the low-quality studies include 11 controlled and 23 uncontrolled before-and-after studies. The generally low ratings primarily reflect two aspects of the evidence base: the large number of uncontrolled studies, or studies using an inadequately matched control group (reflected in the 'confounders' section of the quality assessment); and the incomplete reporting of methods, particularly relating to sampling and recruitment ('selection bias').

A further reason for these limitations is that crime, rather than fear of crime, was the primary outcome of interest for almost all of the included studies. By and large, these two types of outcome are measured using entirely separate data sets (police-recorded crime for crime outcomes and survey data for fear outcomes), with distinct sampling, data collection and data analysis procedures (this is not universally the case and many studies do measure self-reported crime using survey instruments as well as or instead of police-recorded crime); and, as fear is almost always a subsidiary outcome, the methods and reporting for the fear component are usually less robust than those for the crime component. Were our review focused on crime outcomes, many of the quality ratings for the individual studies would probably have been higher.

TABLE 1 Characteristics of the effectiveness studies ($n = 47$)

Study	Design	Quality assessment[a]	Location	Intervention content	Fear of crime outcome?	Health outcome?[b]	Social outcome?[b]
Category 1: home security interventions							
Allatt[246,247]	CBA(S)	A	Newcastle and Gateshead, UK	Improvement of residential security on deprived housing estates (locks and window bolts)	✓		
Brownsell[248]	CBA(S)	A	UK, location not reported	Telecare package in sheltered housing for older people (CCTV, fall detectors, door alarm, contact monitors, etc.)	✓	✓	
Halpern[216]	UBA(S)	C	UK, location not reported	Comprehensive renovation programme on housing estate with substantial but not exclusive emphasis on security (traffic calming, new kitchens, bathrooms, front doors, windows, fencing and lighting, landscaping, alley gating)	✓	✓	✓
Matthews a[249]	UBA(D)	C	Leicester, UK	Multicomponent crime reduction strategy (residential security improvements, Neighbourhood Watch, 'social measures', crime prevention information)	✓		
Matthews b[250]	UBA(D)	C	Leicester, UK	Multicomponent crime reduction strategy (residential security improvements, Neighbourhood Watch, 'social measures', crime prevention information)	✓		
Category 2: street lighting							
Atkins[251]	CBA(S)	A	Wandsworth (London), UK	Comprehensive relighting programme	✓		
Bainbridge[252]	UBA(S)	B	Birmingham, UK	Relighting to BS 5489	✓		
Barr[253]	UBA(S)	C	Manchester, UK	Relighting to BS 5489	✓		
Burden[254]	UBA(D)	C	Leeds, UK	Relighting; no information reported	✓		
Davidson[255]	UBA(S)	C	Hull, UK	Relighting to BS 5489	✓		
Herbert[256,257]	UBA(S)	C	Cardiff, UK	Relighting of five streets to BS 5489	✓		
Knight[258]	UBA(S)	C	St Helens, UK	Change from normal (yellow) sodium lighting to white ceramic metal halide lights	✓		
Painter a[259,260]	UBA(D)	C	North London, UK	Relighting to BS 5489	✓		

Study	Design	Quality assessment[a]	Location	Intervention content	Fear of crime outcome?	Health outcome?[b]	Social outcome?[b]
Painter b[260,261]	UBA(D)	C	East London, UK	Relighting to BS 5489	✓		
Painter c[260,262]	UBA(S)	B	West London, UK	Relighting to BS 5489	✓		
Painter d[263]	CBA(S)	A	Dudley, UK	Relighting to BS 5489	✓		
Painter e[264]	CBA(S)	A	Stoke-on-Trent, UK	Relighting to BS 5489	✓		
Painter f[265]	CBA(S)	A	Dudley, UK	Same intervention as Painter d[263]	✓		
Payne[266]	UBA(S)	C	Rugby, UK	Relighting; no details reported	✓		
Vamplew[267]	UBA(D)	C	Middlesbrough, UK	Relighting to BS 5489	✓		
Vrij[268]	UBA(D)	C	Enkhuizen, the Netherlands	Brighter bulbs and installation of one extra lamp post	✓		
Category 3: CCTV							
Brown[269]	UBA(D)	C	Birmingham, UK	Installation of 12 CCTV cameras in city centre	✓		
Ditton[270]	CBA(D+)	C	Glasgow, UK	Installation of 32 CCTV cameras in city centre	✓		
Gill[271,272]	CBA(D–)	C	Several locations, England	Nine different CCTV systems, of which four in town/city centres, five in residential areas	✓		
Musheno[273]	CBA(D+)	C	New York City, USA	CCTV in public housing project with transmission to residents' television sets	✓		
Squires a[274]	UBA(D)	C	East London, UK	Installation of CCTV in town centre	✓		
Squires b[275]	UBA(D)	C	Brighton, UK	Installation of 10 CCTV cameras in housing estate	✓		
Category 4: multicomponent crime prevention interventions							
Arthur Young[276,277]	CBA(S)	A	Chicago, IL, USA	Multicomponent intervention in a housing estate (locks, security personnel, entry systems, fencing, various social components)	✓		
Baker[278]	CBA(D–)	C	Pennsylvania, USA	Multicomponent intervention in a park (CCTV, fencing, lighting, locks, signage, cleaning, community policing, Neighbourhood Watch)	✓		
Donnelly[279,280]	UBA(D)	C	Dayton, OH, USA	Multicomponent community-based programme (road closures, various social components, community-oriented policing)	✓		✓

TABLE 1 Characteristics of the effectiveness studies (*n* = 47) (*continued*)

Study	Design	Quality assessment[a]	Location	Intervention content	Fear of crime outcome?	Health outcome?[b]	Social outcome?[b]
Felson[281]	UBA(D)	C	New York City, USA	Extensive physical redesign of bus station using CPTED principles (redesign, renovation, cleaning, lighting, information, social and policing interventions for homeless people)	✓		
Fowler[282–285]	CBA(D+)	C	Hartford, CT, USA	Multicomponent community-based programme (road closures, landscaping, community-oriented policing, resident organisations)	✓		✓
Kaplan a[286]	CBA(D−)	C	Broward County, FL, USA	Extensive renovation work in schools on CPTED principles (renovation, reconstruction, fencing, alarms)	✓		✓
Kaplan b[287–289]	UBA(D)	C	Portland, OR, USA	Multicomponent community-based intervention with emphasis on commercial premises (security advice, lighting, traffic calming, landscaping, cleaning, bus shelters, business organisation, social programmes)	✓		✓
Mazerolle[290,291]	RCT	B	Oakland, CA, USA	Police-led intervention with focus on reducing disorder in the physical environment by enforcing building/housing codes	✓		✓
Webb[292]	CBA(D+)	C	London, UK	Multicomponent crime prevention project on the London Underground (CCTV, passenger alarms, manned kiosks, mirrors, lighting, policing patrols)	✓		
Category 5: housing improvement							
Barnes[293]	CBA(S)	C	West London, UK	Refurbishing housing association housing and relocating tenants to new improved housing	✓		
Blackman[294,295]	UBA(S)	C	Newcastle, UK	Housing renewal programme (environmental improvements, refurbishment, demolition, security and road safety improvements)	✓		
Critchley[296]	CBA(S)	A	Liverpool, UK	Housing redevelopment with main focus on energy efficiency; security improvements (entry systems, CCTV, lighting)	✓		
Foster[297]	CBA(D−)	C	East London and Hull, UK	Tenant management programme including environmental improvements (security, maintenance, landscaping, entry systems)	✓		

Study	Design	Quality assessment[a]	Location	Intervention content	Fear of crime outcome?	Health outcome?[b]	Social outcome?[b]
Glasgow Centre for Population Health[298,299]	CBA(D+)	C	Glasgow, UK	Several types of regeneration and housing programme ranging from extensive rebuilding to minor renovation works	✓		
Nair[300]	UBA(S)	C	Glasgow, UK	Relighting, landscaping, housing renovation including security improvements	✓		
Petticrew[301,302]	CBA(S)	A	Several locations, Scotland	Relocation of social housing tenants to new housing	✓		
Category 6: regeneration and area-based initiatives							
Beatty[226,303,304]	CBA(S)	A	Various locations, England	New Deal for Communities (a broad regeneration programme including a wide range of specific initiatives)	✓		
Rhodes[305]	UBA(S)	C	Various locations, England	Single Regeneration Budget (a broad area-based initiative seeking to impact on multiple outcomes)	✓		
Category 7: improvements to public areas (non-crime focused)							
Cohen[306]	CBA(D+)	C	Southern California, USA	Improvements to public parks	✓		
Palmer[307]	UBA(D)	C	Durham, UK	Bus station repainted and graffiti removed by offenders serving Community Service Orders	✓		

BS, British Standard; CBA(D+), controlled before-and-after study with different participants pre and post and with evidence of change in population (or change unclear); CBA(S), controlled before-and-after study with same participants pre and post; UBA(D), uncontrolled (single-group) before-and-after study with different participants pre and post; UBA(S), uncontrolled (single-group) before-and-after study with same participants pre and post.
a Quality assessment ratings: A = high, B = medium, C = low.
b Shaded boxes represent outcomes that were not extracted from the studies.

Findings

Categorisation of the effectiveness studies

As a wide range of interventions are included in the effectiveness review, the findings are presented by intervention category. The studies have been divided into seven categories of interventions. Of these, categories 1–4 include interventions whose main aim was to reduce or prevent crime and/or the fear of crime, whereas categories 5–7 include interventions that did not have such an aim but which measured relevant outcomes in the evaluation:

1. interventions with a main focus on improving the security of homes
2. the installation and/or improvement of street lighting
3. the installation of CCTV systems
4. multicomponent interventions for crime prevention with a main focus on public areas, several of which are based on the principles of CPTED
5. housing improvement and/or relocation schemes
6. large-scale multicomponent area-based regeneration initiatives
7. smaller-scale environmental improvements in public areas.

In the following sections the evidence for each category of intervention is discussed in detail. For crime-focused interventions (categories 1–4), all relevant outcomes are included in the synthesis, including fear of crime, health status and health behaviour outcomes, and social outcomes (e.g. social interaction). However, relatively few studies measured health and social outcomes: only two studies (both in category 1) measured health outcomes and only six (in categories 1 and 4) measured social outcomes; no studies in categories 2 or 3 measured any health or social outcomes (i.e. fear of crime outcomes were the only ones within the scope of the review for these intervention types). For non-crime-focused interventions (categories 5–7), only fear of crime outcomes have been synthesised as robust systematic reviews already exist on the health outcomes of these types of interventions.[219,308] (For more detail on the outcomes included under fear of crime, see *Appendix 8*.)

It should be recalled here that interventions not involving a substantial change to the physical built environment were excluded (criterion 3). In particular, this excluded policing and judicial interventions such as increased police patrols or changed models of policing practice such as 'hot spots' policing; changes to judicial or sentencing practice, such as drug courts; and interventions working with offenders, for example in the probation system. Interventions aiming to target the broader social determinants of crime without an environmental dimension, such as alcohol taxation or educational interventions, were also excluded. (Some of the included interventions may have included components of these types, but interventions that focused only on these strategies were excluded.)

A summary of the direction of effect and significance of the findings for each study and outcome category can be found in *Appendix 6*. For the synthesis in this section, as described in *Chapter 4* (see *Data synthesis*), overall effect sizes have been summarised using median change scores. The statistical significance of the findings in each case is based only on the analyses presented by the study authors (we have not carried out further tests for statistical significance). Within each section, findings from controlled studies are presented first, followed by those from uncontrolled studies. The studies are identified by the author names in the left-hand column of *Table 1* rather than by references to specific reports, as in many cases the information reported is drawn from several distinct linked reports.

1. Home security interventions

This category includes five studies, two controlled and three uncontrolled before-and-after studies. All studies in this category were conducted in the UK. Two studies received an A quality rating (Allatt, Brownsell) and the remaining three a C rating (Halpern, Matthews a, Matthews b). Health outcomes are available for two of the studies (Brownsell, Halpern) and social outcomes for one (Halpern); the other three assessed fear of crime outcomes only.

Controlled studies

In terms of intervention content, only one of the five studies (Allatt) was exclusively focused on improving the security of residential properties. The intervention evaluated in this study primarily aimed to reduce burglary, and the fear of burglary, by fitting locks and window bolts to tenants' homes in a 'difficult to let' housing estate with high levels of socioeconomic deprivation. The design used was a controlled study ($n = 660$), with control subjects matched at area level for housing type and SES variables, following the same individuals over time. Follow-up took place approximately 1 year after the intervention. This study found that for three fear variables – worry about crime, fear of burglary and fear sufficient to adversely affect living patterns – there was a statistically significant reduction in the intervention group and no reduction in the control group (time–treatment interactions were not assessed for significance). The median within-group change for fear outcomes was −9% and the median relative change was −15%. Subgroup analyses indicated that the intervention was particularly effective for middle-aged and older people (aged > 45 years).

The controlled before-and-after study by Brownsell *et al.* evaluates a rather different intervention from most of the others in this section (Brownsell). The intervention was directed at older people living in sheltered housing; components included various adaptations intended to reduce the risk of falls and accidents as well as security-focused components including secure entry systems and intruder alarms. The design was controlled and longitudinal ($n = 52$), with the control site chosen for similarity at site level (although not matched specifically). The evaluation measured fear of crime (the exact measure used for this is unclear) and feelings of safety during the day and at night; the Short Form questionnaire-36 items (SF-36) scale was used to measure health outcomes. This study found that all three fear of crime variables improved significantly in the intervention group relative to the control group (−10% within-group and −16% relative change in fear of crime; median +2% within-group and +5% relative change in perceived safety). Results for SF-36 scores showed only a slight improvement (median +2% within-group and +2% relative change). Most of these changes in SF-36 were not statistically significant, with only one subdomain attaining significance (a +8% relative improvement in the 'social functioning' subdomain).

Uncontrolled studies

In the two uncontrolled before-and-after studies by Matthews and Trickey (Matthews a, Matthews b), improvements to home security were combined with a Neighbourhood Watch scheme, multiagency collaboration, youth outreach services and interventions in schools. The design used was cross-sectional ($n = 636$ and $n = 907$ respectively) and there are substantial limitations to the design and reporting of both of the studies. Fear was assessed through a large number of variables measuring fear of specific crimes (14 and 15 respectively). In both cases no clear trends in these outcomes were found (median within-group change across both studies −0.1%). One study (Matthews a) also measured two avoidance behaviour outcomes for women; these outcomes were slightly worse after the intervention (median within-group change +4.7%).

The uncontrolled before-and-after study by Halpern ($n = 55$) evaluates perhaps the most extensive intervention in this category, which included a comprehensive renovation programme for homes in the intervention area as well as improvements to public areas including lighting, landscaping and alley gating (Halpern). (Although staged implementation of the intervention is described, potentially allowing for a controlled design, the data are not analysed as such.) The evaluation measured 'concern' about several specific crimes as well as perceived safety in general; in addition, measures of perceived social support and social interaction were used, and validated tools were used to measure anxiety, depression and self-esteem. This study found substantial improvements after the intervention in fear of crime (median within-group change −15.5%) and perceived safety (+40%), although statistical significance was not tested for these outcomes. Anxiety and depression, measured on the Hospital Anxiety and Depression Scale, improved significantly (−10.3%), and self-esteem, measured on the Rosenberg Self-Esteem Scale, improved non-significantly (+8.4%). Social support (+15%) and the perceived 'friendliness' of the area (+19%) improved significantly.

Summary and discussion

Overall, the studies in this category indicate that home security improvements may be effective in reducing fear of crime. Two of the better-quality (A rating) studies show that such interventions are associated with significant improvements in fear outcomes (Allatt, Brownsell). Of the two studies to measure health outcomes, one (Brownsell) finds no effect and one (Halpern) a significant effect on anxiety and depression, albeit using an uncontrolled design. However, the interventions, populations and settings differ across the studies; there is also considerable variation in the effects observed across the studies, and the relatively small body of data makes it difficult to isolate factors that may explain the variation. One possible explanation might be that the interventions that were not effective for fear (Matthews a, Matthews b) formed part of a programme that involved substantially raising public awareness around crime more generally. By contrast, Allatt's study focused narrowly on security improvements and the remaining two (Halpern, Brownsell) were not presented to their target populations as primarily crime reduction measures but were set within a broader context (of, respectively, environmental regeneration and improved care and monitoring). However, this explanation is speculative, given the limitations of the data.

2. *Street lighting*

The single largest category of interventions in the review consists of street lighting improvements ($n = 16$ studies). Four studies use controlled before-and-after designs (Atkins, Painter d, Painter e, Painter f); the remainder are uncontrolled. All but one of these studies were conducted in the UK, most between the late 1980s and late 1990s. Only fear of crime outcomes are measured; no study assessed health or social outcomes. Four studies are rated A for quality (Atkins, Painter d, Painter e, Painter f), two B (Bainbridge, Painter c) and the remainder C (Barr, Burden, Davidson, Herbert, Knight, Painter a, Painter b, Payne, Vamplew, Vrij).

Two studies (Knight, Vrij) investigate the short-term effects on fear of improvements to lighting in a small well-defined area, with follow-up times of a few weeks. The other 14 studies are more ecological in nature, seeking to investigate the longer-term effects of improving lighting over areas ranging from a few streets to whole neighbourhoods. Of the latter, 10 are uncontrolled before-and-after studies whereas four use control groups, generally matched for demographics and area type. Because of the seasonal nature of the hypothesised intervention effect, follow-up times are generally either 1–3 months or around 1 year. Most of these studies involved improvements to lighting rather than its installation in areas that were previously unlit, and refer to the BS 5489 standard as the minimum standard of illuminance achieved by the intervention; in some cases there were further changes such as the replacement of low-pressure yellow bulbs with high-pressure white ones. A wide range of fear-related outcomes were measured, with several studies including 10 or 20 distinct outcomes. A feature of this category of studies is the use of measures of avoidance behaviour (e.g. 'Are there areas you avoid at night because of crime?') in conjunction with measures of affective fear (on these measures, see *Appendix 8*).

Controlled studies

Of the four controlled studies (Atkins, Painter d, Painter e, Painter f), two indicate no clear trend in fear outcomes. Atkins *et al.*, using a matched control group design ($n = 379$) and multivariate regression analyses, find few significant changes in any of a range of 17 worry or perceived safety outcomes, analysed by interaction with age and gender (change scores are not reported); of the analyses that reached statistical significance, two showed an improvement and three an adverse effect (Atkins). Painter and Farrington (Painter e), using a matched control group design ($n = 405$), find no significant differences between intervention and control groups at post test for any of 11 avoidance behaviour, worry and perceived unsafety outcomes (median within-group change −1.6%, relative change +1.5%).

The remaining two studies present two distinct data sets relating to the same lighting intervention, one with the general population (Painter d) and one with young people aged 12–17 years (Painter f). Both studies used a matched control group design ($n = 874$ and $n = 307$ respectively). The former, using comparisons between intervention and control group at post test, found significant improvements in perceived unsafety after dark and in perceived risks for women, but not for avoiding going out alone after dark, perceived risks

for men or feelings of unsafety (aggregating all of these fear-related outcomes, the median within-group change was −1.7% and the median relative change −2.7%). The latter, using an index measure comprised of several fear and perceived unsafety outcomes, found a significant improvement in the intervention group relative to the control group (within-group change −6.8%, relative change −9.8%).

Uncontrolled studies

Of the 10 uncontrolled studies of lighting improvement across a substantial area (*n* between 143 and 820), aggregating across all fear-related outcomes, seven show positive trends (median within-group changes are −5.6% (Bainbridge), −8% (Burden), −8% (Davidson), −6% (Herbert), −22% (Painter a), −17% (Painter b) and −35% (Painter c). Meanwhile, three show zero or negative trends: +1% (Barr), +6% (Payne) and 0% (Vamplew). As these findings indicate, there is wide variation between the studies. However, in only one of these ten were outcomes tested for statistical significance (Davidson). This study finds significant improvements in six different avoidance behaviour outcomes (median within-group change −26%) and in the perception that fear is a problem (−26%), but no significant changes in any of eight 'worry' outcomes (median within-group change −1%); feelings of unsafety improved significantly for men (−11%) and non-significantly for women (−11%).

The remaining two studies looked at shorter-term effects of lighting changes in a single location. One (Knight) focused on changing the type of lighting from conventional sodium bulbs to ceramic metal halide bulbs with a whiter light, whereas the other (Vrij) focused on increasing brightness. Using uncontrolled designs (*n* = 125 and *n* = 160 respectively), both of these studies found significant improvements in fear outcomes, Knight on the measure 'Does the lighting here makes you feel safe?' (median within-group change +19.7%) (Knight) and Vrij and Winkel on feelings of safety and perceived likelihood of victimisation (within-group change +18.1% and −12.2% respectively) (Vrij).

Summary and discussion

Overall, the evidence regarding lighting improvements is mixed. Although many of the uncontrolled studies show a trend towards reduced fear (and a few show dramatic reductions), the four studies using a controlled design give less indication that lighting is effective in reducing fear, with two finding no effect, one finding an effect for some outcomes and only one showing clearly positive results. Thus, there appears to be little strong evidence that lighting reduces fear of crime. One factor that might explain the variance between the studies is that the one controlled study that clearly shows a lighting intervention to be effective for fear of crime (Painter f) focuses on young people, who may be more likely than older people to spend time outdoors after dark and who may therefore be more likely to be affected by lighting interventions. [This said, the only study to present full analyses of the effectiveness of a lighting intervention by age subgroup (Herbert) found it to be more effective for middle-aged and older people (those aged > 35 years) than for younger adults (those aged 17–35 years); this study, like most others, excluded the younger teenagers who are the focus of the study by Painter and Farrington (Painter f), but the argument above would probably apply to both teenagers and younger adults.]

3. *Closed-circuit television*

Six studies, three controlled and three uncontrolled before-and-after studies, evaluate the effectiveness of closed-circuit television (CCTV). Only fear outcomes are measured by these studies, with none including health or social outcomes. All but one (Musheno) of the studies were conducted in the UK, and all six received a low (C) quality rating. Five of the studies evaluate the installation of local CCTV systems, with four looking at one system each (Brown, Ditton, Squires a, Squires b) and one (Gill) evaluating nine separate systems as part of a national evaluation for the Home Office; the sixth (Musheno) evaluates a slightly different CCTV programme.

Controlled studies

The study by Ditton uses a controlled design (*n* = 1018) but outcome data are reported only very selectively and incompletely, and statistical significance is not reported (Ditton). From what can be gathered from the available report, there seem to have been no marked changes in fear-related outcomes.

Musheno *et al.*'s study evaluates an intervention in which CCTV was not only installed in public indoor areas of a housing estate but also broadcast to residents' televisions so that they could monitor the cameras at any time (Musheno). Using a controlled design ($n = 61$), this study found very mixed results; the median within-group change across all outcomes (feelings of unsafety and avoidance behaviours) was −4.5% and the relative change was −9.8%, but relative changes in specific outcomes vary widely, from a 29.1% improvement in feelings of unsafety at night to a 15.3% worsening in numbers of people curtailing activities because of crime. The study findings are thus difficult to interpret overall.

The third study (Gill) is by some way the largest ($n = 6526$), presenting data on nine separate CCTV systems across England (11 areas). The outcome measures included feelings of safety (day and night) and worry about crime. Analyses in the main report are conducted by site.[271] These analyses appear to show a trend towards reduced fear between baseline and post test within the intervention group (with a median within-group change of −5% for worry and +6% for feelings of safety). However, this trend largely disappears when the comparison group is taken into account, although full change scores for the control group are not reported, only ratios of effect size. Comparisons with the control group show a relative improvement in only four of seven analyses for worry (two of them significant) and two of nine analyses for feelings of safety (neither of them significant). In a distinct, separately published analysis of these data,[272] the authors aggregate the data across all sites and also include data on avoidance behaviours. This analysis shows significant within-group improvement for the intervention group in both worry and feelings of safety, as well as in daytime (but not night-time) avoidance behaviours, with the control group showing no change in worry or avoidance behaviours and a significant worsening in feelings of safety. However, the comparison between intervention and control groups is not tested for significance in this latter analysis. It is thus hard to interpret the findings of the study overall. The study authors conclude that CCTV probably had little effect on fear or avoidance behaviours.

Uncontrolled studies

Of the three uncontrolled studies (n between 243 and 750) of the installation of specific CCTV systems (Brown, Squires a, Squires b), none shows any marked change in fear-related outcomes (and none reports testing findings for statistical significance). The median within-group scores for feelings of safety are +2% (Brown), +2.5% (Squires a) and −7.5% (Squires b).

Summary and discussion

Overall, although there are considerable limitations in the evidence base, with all studies rated low quality (C), the data on CCTV that do exist are not promising and strongly suggest that CCTV is ineffective at reducing fear of crime.

4. *Multicomponent crime prevention interventions*

This category (nine studies) includes a range of complex, multicomponent interventions with a focus on reducing crime through changes to the built environment. Intervention components often include those examined in the previous sections (security improvements, lighting improvements and installation of CCTV) as well as more general environmental improvements (such as landscaping or graffiti removal). In addition, many include non-built-environment components such as changes to policing practice (e.g. community-oriented policing) and/or social programmes (e.g. drug treatment, employment initiatives). Several of these interventions (Donnelly, Felson, Kaplan a, Kaplan b) were explicitly based on CPTED theory (on CPTED more generally, see *Chapter 3*, *Built environment and crime*, and *Chapter 7*, *Crime Prevention through Environmental Design*), and even those that do not employ the technical vocabulary of CPTED appear to use similar ideas. Thus, they emphasise the role of features such as natural surveillance, access control and territoriality, as part of a broad-based approach to addressing crime and the fear of crime through the built environment. In terms of study design, one was a RCT, five used controlled before-and-after designs and three were uncontrolled. However, many of the controlled studies used non-equivalent control groups. In terms of study quality, all were rated C except one that was rated B (Mazerolle) and one that was rated A (Arthur Young). All but one (Webb) of the evaluations in this category were carried out in

the USA. The main outcomes of interest to this review are fear-related although several studies also measure social outcomes; none measure health outcomes.

Controlled studies

The controlled before-and-after study of the Cabrini Green project (Arthur Young) evaluated a comprehensive crime prevention programme in a deprived housing project. The intervention included a specific environmental component (Architectural Security Program) that focused mainly on installing locks, fences and secure entry systems in public areas. In addition, there was an extensive programme of social interventions including youth work, crime prevention education, programmes for offenders and school-based counselling services, as well as the opening of dedicated 'outposts' where residents were employed by the housing authority to address other residents' security concerns. The evaluation design ($n = 1070$) was complex and two analyses are presented: one compares buildings on the target estate receiving both the environmental programme and the other components with those that received only the non-environmental components; the other compares the target site as a whole with a comparison site (matched for building size only). No tests for statistical significance are reported. In both analyses a trend towards lower fear at later time points can be seen in both groups, but relative reductions in the intervention group compared with the comparison group are more modest (for the former analysis, median within-group change in fear is −17%, relative change −5%; for the latter analysis, median within-group change is −12.5%, relative change −6%). One limitation of the evaluation is that considerable work had already taken place by the first time point of the evaluation, so there is no true baseline measure of outcomes. In addition, insufficient information on the two groups is reported to ensure comparability. Finally, not all outcome measures on which data were collected appear to be reported.

The controlled study by Fowler *et al.* evaluated an intervention whose main environmental component was road closures along with more general landscaping and environmental improvement work; it also included community policing and neighbourhood development initiatives (Fowler). Although the study used a controlled design ($n = 891$), the comparison group covered the rest of the city and was therefore not strictly comparable with the intervention group. Outcomes were measured at approximately 1 year and 3 years after the intervention. Outcome measures included composite indices of fear and worry for two crimes (burglary and robbery) as well as stranger recognition and an index of neighbourhood social support. The two fear outcomes showed modest improvements (median within-group change +0.8%, median relative change −4%); the study authors report that relative changes in both outcomes reached statistical significance, but their analysis is non-standard, as well as applying to non-comparable groups, and may not be reliable. The analysis tests the difference between the post-test value in the intervention group and an 'expected' post-test value calculated as (intervention baseline) × (control post test)/(control baseline). Social outcomes showed significant within-group improvements (+10% within-group and +5% relative change in ease of stranger recognition; +8.2% within-group and +7.7% relative improvement in the social support index measure).

The study by Mazerolle *et al.* is the only RCT included in this review ($n = 398$) (Mazerolle). The intervention involved police officers visiting locations identified as 'hotspots' for crime or antisocial behaviour and working with property owners and other stakeholders to address environmental problems. Thus, although the evaluation did not measure a specific environmental change, it was intended to address problems in the environment related to crime. Fear of crime and social cohesion outcomes were measured with a sample of the 'place managers' who had agreed to work with the police to address problems (the findings may, therefore, not be generalisable to the population at large). The findings show that both fear of crime and perceived social cohesion were slightly and non-significantly worse at intervention sites than at control sites at post test (change scores are not reported but correlation coefficients with intervention exposure are +0.1 for fear of crime and −0.07 for social cohesion).

Kaplan *et al.*'s study of schools (Kaplan a) used a controlled design with repeated cross-sectional measures ($n = 2772$); the intervention was carried out in secondary schools (high schools) and included extensive renovation work as well as 'border definition' measures such as fencing round the outer perimeter of the

sites, and some security measures such as burglar alarms. The evaluation compared the four intervention sites with the other 16 schools in the same county (the comparability of the two groups is unclear). Outcome measures are incompletely reported; full data are reported for two fear variables and two questions about the social environment of the school. Both types of outcome show a slight worsening over the period of the evaluation (fear: median within-group change +8.1%, relative change +3.8%; social: median within-group change −4.1%, relative change −2.0%). None of the within-group changes in fear outcomes were reported to attain statistical significance (no significance tests comparing intervention and comparison groups are reported); significance tests for the social outcomes are not reported.

The study by Webb and Laycock (Webb) used a controlled design ($n = 1120$) and evaluated a crime prevention programme in several London Underground stations, which included the installation of CCTV, manned kiosks, and improvements to visibility and lighting; non-environmental components included intensified police patrols in some sites. Each of the three intervention sites was assigned a comparison site elsewhere on the Underground network, although their comparability is unclear. Outcomes included two perceived safety measures; the findings show a modest improvement (median within-group change +3.9%, relative change +7.5%) although significance tests are not reported.

Uncontrolled studies

The study by Baker and Wolfer (Baker) evaluated an intervention focused on a park that had become known as a hotspot for crime, particularly drug dealing. The intervention included repairs to fencing, installing CCTV and improved lighting and cleaning and improving the appearance of the park. Non-environmental components included increased police patrols, and police outreach work with young people was also instituted as well as a Neighbourhood Watch scheme. Formally speaking, the intervention was evaluated using a controlled design ($n = 461$): the intervention group was defined as residents in the immediate vicinity and the control group as residents in the same borough living further away from the park. However, the 'control' group did in fact use the park and hence benefited from the intervention, so it cannot be considered a true control group and the study should be regarded as uncontrolled. On this basis, for three measures of feelings of safety, both intervention and 'control' groups showed statistically significant within-group improvement (the median change score in the intervention group was +29.8%; aggregating both groups and taking a within-group score across the whole study sample gave a median change score of +35.9%). (If the control group is taken as a true control group, the relative change score in feelings of safety is +8.1%.)

The uncontrolled before-and-after study by Donnelly and Kimble (Donnelly) evaluated an intervention designed by Oscar Newman, one of the main early proponents of CPTED theory, the main environmental component of which was road closures, intended to increase 'territoriality' and reduce access for potential offenders; there were also substantial community development and advocacy components. The evaluation used an uncontrolled design with repeated cross-sectional measures ($n = 191$), with the final follow-up approximately 6 years after the intervention was implemented. Outcome measures included perceptions of safety, interaction with neighbours and knowing them by name, involvement in neighbourhood organisations and stranger recognition. The within-group change in perceived safety was +6% and the median within-group change for all social cohesion outcomes was +2.5%, but only one of these outcomes at one time point ('involvement in church group') attained statistical significance.

The uncontrolled study by Felson et al. evaluated another intervention that was explicitly based on CPTED theory and designed to reduce crime in a large bus station (Felson). Components included redesigning entrances and exits, removing 'dark corners', improvements to lighting and general renovations. A particular focus was to reduce the number of homeless people living rough in the site. The non-environmental components of this intervention were relatively limited but did include some changes to services for homeless people. The intervention was evaluated using routine annual surveys of users of the bus station over a period of 4 years ($n = 3581$). No significance tests are reported. The findings show a clear trend towards improvement in several perceived safety outcomes over time (median within-group change +21% between baseline and final follow-up). However, this trend appears to continue

considerably after the completion of the intervention, which might suggest that factors other than the intervention were having some effect.

The second study by Kaplan *et al.* (Kaplan b) focused on commercial properties and the intervention included lighting improvements, landscaping and traffic calming; non-environmental components included advice to residents and businesses about reducing crime, and creating a 'businessman's [sic] organisation' to co-ordinate activities between businesses. The evaluation used an uncontrolled design with separate samples of businesspeople and residents (*n* = 311). The final follow-up was approximately 3 years after the intervention. Outcomes included a range of perceived safety and fear of crime variables, as well as perceptions of social cohesion; however, the findings are incompletely reported. For fear-of-crime outcomes in the sample of residents, there is a statistically non-significant worsening for fear of burglary or robbery (median within-group change +1.5%) at the 3-year follow-up, but a significant improvement in feelings of safety at night (median within-group change +11%); social outcomes show no significant change (full data not reported). Apart from the incomplete reporting of findings, this evaluation is also limited by the fact that a considerable part of the intervention had already taken place by the first time point of the evaluation.

Summary and discussion

Overall, although many of the interventions are promising, there is no strong evidence that large-scale multicomponent crime prevention programmes with an environmental dimension are effective in reducing fear or improving social outcomes. The positive trends that are observed in controlled studies are modest and generally do not attain statistical significance, and several studies show an adverse trend. There are serious limitations even to the relatively more robust studies, including the widespread use of non-comparable control groups and uncertainty around the implementation and timing of the interventions, so the findings are not conclusive.

5. *Housing improvement*

Seven studies evaluated the effect of housing improvement programmes, or the construction of new housing, on fear of crime outcomes (Barnes, Blackman, Critchley, Foster, Glasgow Centre for Population Health, Nair, Petticrew). (It should be noted that pure relocation interventions, such as the Moving to Opportunity intervention in the USA,[309] were excluded from this review as they do not directly involve changing the environment.) All of these studies were conducted in the UK. Three studies included renovation of existing housing (Blackman, Foster, Nair), one focused on the provision of new housing (Petticrew) and three (Barnes, Critchley, Glasgow Centre for Population Health) included elements of both. In terms of design, five used a formally controlled before-and-after design and two an uncontrolled design; however, only one of the controlled studies (Critchley) clearly reported comparative data for the outcomes of interest to this review, with the others reporting only within-group findings or incomplete data. In terms of quality, two studies were rated A (Critchley, Petticrew) and the remaining five C (Barnes, Blackman, Foster, Glasgow Centre for Population Health, Nair).

Controlled studies

Barnes' study (Barnes) compared outcomes between tenants who were relocated or had their accommodation refurbished and those who did not; it is thus formally a controlled design (*n* = 284), although the groups were not comparable. Participants were followed up at 6-monthly intervals, with the last usable data coming from the fourth time point (18 months). Relevant outcomes included feelings of safety indoors and outdoors, perceptions of the health effects of crime and fear of crime; all outcomes showed some improvement, with a median within-group effect size of +6% and a relative effect size of +7%.

The study by Critchley *et al.* includes two evaluations of two separate interventions in the same area (Critchley). The first, which uses an uncontrolled design, was a programme of security improvements on a housing estate including lighting, CCTV and home security. However, the evaluation used routine data to provide a baseline (i.e. the researchers collected data at only one time point). Hence, on its own this study

would not have met the inclusion criteria for this review. Disregarding this (and bearing in mind that this intervention alone would naturally belong to category 1 or category 4), the findings show a slight trend (+5%) towards increased feelings of safety after the intervention; statistical significance is not reported. The second study, which uses a matched control group design ($n = 407$), evaluated a relocation scheme in which tenants were moved out of tower blocks to newly built low-rise accommodation; the new houses had been designed on the principles of Secured by Design, a UK crime prevention initiative with affinities to CPTED, and incorporated a range of security improvements. This second evaluation finds a slight trend towards increased feelings of safety (median within-group change +5.5%, relative change +2.5%); significance for these findings is not reported.

The controlled study by Foster *et al.* evaluated the Priority Estates Project, which aimed to involve tenants on deprived housing estates in their management to address environmental problems (Foster). Improvements included a range of maintenance and improvement tasks within housing units as well as improvements to public areas, and some security measures such as entry systems. The design used two separate control sites matched for demographics and followed up the same participants over time ($n = 1682$). Relevant outcomes included several worry variables and feelings of safety. However, the reporting of the findings is incomplete. Feelings of safety appear not to have changed significantly, whereas worry about specific crimes improved in the intervention site relative to the control in one site but not the other (change scores are not reported).

Finally, the GoWell study ($n = 6008$) looked at a range of housing improvement programmes across Glasgow, some of which also had a broader urban regeneration dimension (Glasgow Centre for Population Health). The study compared five types of site, from those undergoing extensive demolition and rebuilding to those that received only minor improvements. The study can thus be considered a comparative design in that it compared distinct interventions, although the main interest of the study authors was in within-group changes and there is no non-intervention comparison group. This study found substantial and significant decreases in feelings of safety in all five groups from baseline to post test (median within-group change in feelings of safety −19%). It is the only study in the review to show statistically significant adverse effects of an intervention on a fear of crime outcome.

Uncontrolled studies

The uncontrolled study by Blackman *et al.* ($n = 415$) evaluated a comprehensive housing renewal and refurbishment programme that included internal and external repairs as well as security and road safety improvements (Blackman). Follow-up was approximately 5 years. The study finds a substantial improvement in feelings of safety over this period (median within-group change +16.1%), with the change attaining statistical significance in three of four analyses.

The uncontrolled study by Nair *et al.* ($n = 69$) was originally conceived as a study of street lighting improvements (Nair). However, a wide range of other improvements was implemented in the study area during the study period, including improvements to public areas, security improvements and 'massive' renovation of housing stock, so the study is included here rather than under category 2. Follow-up was approximately 3 months. The study finds no clear trend in fear-related outcomes (median within-group improvement in fear of crime and perceived unsafety variables −1.5%).

The study by Petticrew *et al.* evaluated the construction of new social housing at several different sites in Scotland (Petticrew). The design included a control group matched on demographic and housing-related variables ($n = 723$). However, for the outcome of interest here, only within-group findings are reported, so the study is considered uncontrolled for the purposes of synthesis. The relevant outcome was an index measure combining perceived safety and feelings of safety and the findings show a significant improvement within the intervention group (within-group change +9.1%); data on the control group are not reported for this outcome.

Summary and discussion

Overall, the findings from studies of housing interventions are very mixed and difficult to interpret. The evidence base is limited, and some studies show no effect, but several do show promising trends towards improvements in fear. However, one study also shows a substantial adverse effect (Glasgow Centre for Population Health). Only one study (Critchley) presents full data on a fear-related outcome comparing an intervention group and a control group, and this study shows only a small and probably non-significant positive trend. It is unclear what may account for the substantial variation in outcomes within this intervention category. The authors of the GoWell study argue that the negative effects observed in their study were probably due to the disruption of social networks resulting from relocating people to new housing.[298] However, in this study, the negative change is almost as marked in the sites undergoing limited renovation without relocation as in those where residents were relocated. Moreover, looking across the studies, there is no clear trend for interventions involving relocation (Barnes, Critchley, Petticrew) to show less positive effects on fear of crime outcomes than for interventions that do not involve relocation (Blackman, Foster, Nair).

6. *Regeneration and area-based initiatives*

Evaluations of two national regeneration initiatives in the UK (New Deal for Communities and the Single Regeneration Budget) were included in the review (Beatty, Rhodes). Both of these interventions were very wide-ranging programmes including many different local initiatives: some focused on crime prevention but the majority targeted other issues such as employment or housing or community development. Both evaluations, one a controlled study (Beatty) and one an uncontrolled before-and-after study (Rhodes), were conducted on timescales of several years and measured a wide variety of outcomes. One study was rated A (Beatty) and one C (Rhodes).

Controlled studies

The New Deal for Communities programme had a very broad focus with component initiatives including a wide range of interventions (Beatty). The two largest areas of expenditure were housing and community development; projects with a main focus on crime accounted for 10% of the expenditure. The design of the evaluation was controlled ($n = 23,633$), with comparison groups matched to intervention sites on area-level SES (Index of Multiple Deprivation). Relevant outcomes included feelings of unsafety after dark and nine outcomes relating to worry about specific crimes. Within-group findings show that both feelings of unsafety and worry improved substantially and significantly over the 6 years of the evaluation in the intervention group (median within-group change −13.5%). Subgroup analyses showed that both men and women, and people of all ages and ethnic groups, experienced this improvement; it was particularly marked for younger people (aged 16–24 years). However, comparison between the intervention group and the control group showed that the latter also experienced substantial improvements in fear outcomes over the evaluation period, such that there was no clear trend towards greater relative reductions in fear in the intervention group (median relative change +2.5%). Of 10 relevant outcomes, only two showed greater improvement in the intervention group than in the control group (neither significantly), one showed no difference and seven showed a greater improvement in the control group than in the intervention group (five significantly). Thus, it is not clear that the improvements observed in the intervention group can be attributed to the New Deal for Communities intervention alone.

Uncontrolled studies

The second study (Rhodes) evaluated the Single Regeneration Budget, the predecessor to the New Deal for Communities, which focused mainly on employment and economic regeneration in deprived areas. The two largest areas of expenditure were the physical environment and housing. The study design was uncontrolled ($n = 3459$) although some informal comparisons are made with the British Crime Survey for outcomes of interest to this review. Although feelings of safety improved slightly between baseline and post test in the intervention sites (within-group change +2%), this change does not appear to have been significant.

Summary and discussion

Overall, the findings regarding large regeneration programmes are difficult to interpret, for two main reasons. One is the very broad nature of these programmes, which included a wide range of initiatives; little data are available from either programme that disaggregate relevant outcomes by individual initiative or intervention site. The other is that, as the New Deal for Communities evaluation shows, fear of crime appears to have been falling in comparable populations who did not receive the intervention over the time frame of the evaluation. It is unclear what might have been driving these substantial improvements; although outcomes improved for the general population over this timescale, the changes seen in both the intervention areas and the comparison areas are considerably greater. As measured by the British Crime Survey,[310] worry about burglary decreased by 4% in the general population between 2002 and 2008, but by 21% in the intervention areas and 22% in control areas of the New Deal for Communities evaluation; worry about violent crime decreased by 7% in the general population, whereas worry about physical attack decreased by 14% in the intervention areas and by 18% in control areas of the New Deal for Communities evaluation.

7. Improvements to public areas

Two studies, one controlled and one uncontrolled, looked at environmental improvements to public areas that were not primarily intended to prevent crime. Both studies were rated low quality (C).

Controlled studies

The study by Cohen *et al.* evaluated improvements to public parks in low-income areas in California, USA, primarily involving the installation of new gym equipment but also some more general landscaping and environmental improvement (Cohen). The evaluation was mainly focused on increasing physical activity and used a controlled design ($n = 1535$) with comparison areas matched for site and population characteristics. This study found a substantial and significant increase in perceived safety in the intervention group relative to the control group (change scores are not reported but the ratio of odds ratios was 1.35).

Uncontrolled studies

The study by Palmer *et al.* evaluated an intervention in which a bus station in the UK was cleaned and repainted by offenders serving community service orders (Palmer). The evaluation was based on an uncontrolled design ($n = 290$). Relevant outcomes included feelings of safety and perceived likelihood of four crime types. The study found no significant change in feelings of safety (full data not reported) but a reduction in perceived likelihood of victimisation (median within-group change −8.1%). For three of the four perceived likelihood variables, this within-group change attained statistical significance. Subgroup analyses indicated that this reduction in perceived risk held for both male and female respondents (median within-group change −10.8% for males and −5.3% for females).

Summary and discussion

Overall, the findings of these two studies suggest that relatively modest interventions to improve the appearance of the environment may have significant benefits with respect to some fear-related outcomes. Both studies were rated low quality (C) so more robust evaluation of such interventions would be required to validate the findings. It is also noticeable that the study by Palmer *et al.* found significant effects only for perceived safety and not for feelings of safety (Palmer), whereas that by Cohen *et al.* measured perceived safety alone, so there is no evidence for any effect on affective or behavioural outcomes as opposed to cognitive outcomes (Cohen) (see *Appendix 8*).

Discussion

Summary of findings

In general, the evidence base covered in the review of effectiveness has considerable limitations. As noted earlier (see *Characteristics of the studies and quality assessment*), study quality is generally poor, with very few studies using a robust design with adequately matched control groups. The analyses conducted by

study authors were often rudimentary, with many not conducting any tests of statistical significance: of the 47 included studies, almost half ($n = 22$) did not report testing for significance on the relevant findings at all (Arthur Young, Bainbridge, Barr, Brown, Burden, Critchley, Ditton, Felson, Herbert, Kaplan a, Matthews a, Matthews b, Musheno, Nair, Painter a, Painter b, Painter c, Payne, Squires a, Squires b, Vamplew, Webb); only 10 analysed differences over time between an intervention group and a comparison group, and the analysis method used was questionable even in some of these (Atkins, Beatty, Brownsell, Cohen, Foster, Fowler, Gill, Halpern, Mazerolle, Painter f). Another concern about the effectiveness evidence is the high degree of heterogeneity in the outcome measures aggregated as 'fear of crime' in this report; this issue is discussed further in *Appendix 8*. There is also considerable heterogeneity within several categories in terms of intervention, population and setting. Finally, to the extent that the findings can be synthesised, they frequently present conflicting results, with no clear direction of effect.

The findings thus do not support any strong conclusions on the effectiveness of interventions. To the extent that tentative conclusions can be drawn, the evidence suggests that most of the interventions considered are not effective in reducing fear of crime. When positive findings appear to emerge from single-group studies, they are rarely confirmed by more robust designs with matched comparison groups. The interventions that are most promising appear to be home security interventions (category 1), at least in certain contexts, and improvements to public areas (category 7). CCTV (category 3) appears to be the least promising of the interventions, with consistent evidence of ineffectiveness for fear outcomes. Findings in the other four categories are more mixed, with some positive findings, but they do not provide strong evidence of effectiveness for fear outcomes. Evidence from one study[298,299] indicates that there may be a possibility of adverse effects for some interventions.

One factor that may explain some of the variation in intervention effectiveness is the extent to which interventions are primarily conceived, and presented to the target audience, as efforts to reduce crime. Interventions that are explicitly directed towards crime and have strong police involvement – particularly CCTV (category 3) and most of the multicomponent crime prevention interventions (category 4) – appear to be largely ineffective for fear outcomes. By contrast, most of the more promising interventions appear not to have been presented or conceived as primarily crime reduction initiatives. This finding tends to support the concern, already noted in the review of theories [see *Chapter 3*, *Intervention pathways (logic model)*], that crime reduction interventions may have an adverse 'iatrogenic' (or 'alytogenic') effect on fear, by raising awareness of crime among the targeted population. Although our review did not find any evidence of significantly increased fear as a result of such interventions, this effect may explain why little evidence of decreased fear was observed.

In terms of broader health and social outcomes, limited evidence is available [note that data on these were extracted only from crime-focused interventions, that is, categories 1–4 (home security, street lighting, CCTV and multicomponent crime prevention interventions)]. Several of the studies in category 4 measure social cohesion outcomes such as perceived trust or friendliness; the findings, although inconclusive, suggest that these interventions are generally ineffective for such outcomes. The study by Brownsell *et al.* provides some promising evidence of improvements in health status outcomes, although most are not significant (Brownsell). However, given that the population and intervention investigated in this study (telecare for older people in sheltered housing) are rather unusual with respect to the review as a whole, this finding is arguably of limited relevance. Only one study (Halpern) attempted to measure health status outcomes of a crime reduction intervention in the general population. Although this study is small and methodologically not very robust, its findings are positive, with significant improvements in mental health status and promising findings for social cohesion outcomes. Other than this, however, there is a lack of evidence on whether environmental crime reduction interventions can improve population health outcomes.

Study funding

The question of study funding is particularly relevant with respect to the studies of street lighting (category 2). Many of these studies are funded by the lighting industry. Of the 16 studies, nine explicitly report being funded wholly or partially by lighting companies (Barr, Davidson, Herbert, Painter a, Painter b,

Painter c, Painter d, Painter e, Painter f), with the author of a further study being affiliated to a lighting company (Knight). In three cases funding is unclear (Bainbridge, Burden, Vrij), and only three studies appear to be wholly independently funded (Atkins, Payne, Vamplew). It is noticeable that the three that are independently funded show decidedly less improvement than the average across the studies, with two studies finding no change in fear outcomes (Atkins, Vamplew) and one a slight trend towards increased fear (Payne). Although it obviously cannot be concluded that the industry-funded studies are problematic per se, and included here are several of the more robust studies in this category, the question of funding should be borne in mind in interpreting the findings.

Population subgroups and inequalities; fear of crime outcome measures

Findings on the targeting of interventions and differences between subgroups are set out in *Appendix 7*. Findings on differences in effectiveness between age groups are mixed. There appears to be little difference in effectiveness between men and women. There is very little data on ethnicity and none on SES.

Findings on the outcome measures used for fear of crime are set out in *Appendix 8*. Many different measures are used for fear of crime. The heterogeneity of outcome measures is a potentially serious limitation of the effectiveness results. Of particular concern are those studies that measure only cognitive outcomes (i.e. perceived safety or risk), as these may have limited impact on affective outcomes or well-being more broadly (see *Fear of crime and health and well-being* and *Chapter 7*, *Fear and rationality*). Several of the studies with substantial positive effects (Cohen, Felson, Palmer, Webb) actually only measure such cognitive outcomes, and it is open to question whether positive effects on these outcomes have any impact on well-being.

Limitations of the review

The review of effectiveness was carried out using full systematic review methodology, with highly sensitive searches, using no date or language restrictions and using robust procedures for screening, quality assessment and data extraction. However, there are some limitations to the review.

The scope of the interventions included in the review was restricted, and interventions without a substantial environmental component were excluded. This means that we do not know to what extent interventions such as policing may be able to reduce fear of crime.

Only a restricted range of outcomes were extracted from the included studies. In particular, we did not look at crime outcomes, for reasons of practicability (as extracting crime outcome data not only would have been a substantial task in its own right but also would have complicated the methodological data extraction and quality assessment). As a result, we cannot say how the findings on fear of crime relate to the effectiveness of the interventions in reducing crime (which was in almost all cases their primary aim). However, as noted earlier (see *Crime and fear of crime*), observational research tends to find that crime rates and fear of crime are not closely associated. As set out in the theory review, then, the pathway that runs from interventions to crime reduction to reductions in fear of crime may not necessarily be the most promising one. Hence, our inability to substantiate this particular pathway in detail may not be as serious a limitation as it seems. This issue is discussed further in *Chapter 7* (see *Broader implications for interventions*).

Although quality assessment was carried out and is fully reported in this chapter, and was used to inform the interpretation of the study findings, lower-quality studies were not excluded and inclusion criteria relating to study design were not stringent. As a result, many of the included studies are not reliable, and the findings tend to show that positive results in lower-quality studies are not replicated in higher-quality ones. Hence, the findings should be regarded as indicative only. This is true throughout the review, especially for those categories of intervention in which few or no high-quality studies were available (particularly categories 3, 4 and 7).

Chapter 6 Systematic review of qualitative evidence: findings

To complement and inform the review of effectiveness evidence, we also conducted a systematic review of qualitative evidence from the UK, focusing on data on fear of crime and perceptions of the environment. This chapter presents the findings of that review. The review question was, 'What is known about the views and attitudes of the UK public to fear of crime and the built environment?' The methods used for the review are described in *Chapter 4*.

Characteristics of the studies and quality assessment

In total, 39 studies were included in the review of qualitative evidence. *Table 2* gives a brief description, for each study, of the location of the research, the research question or focus and the populations included (for full details see the evidence tables in *Appendix 10*) and the results of the quality assessment (see *Appendix 5*).

As shown in *Table 2*, studies came from a range of locations across the UK. In terms of population, 11 studies focused specifically on young people, three on older people, nine on women and three on parents. Eight studies received a high (A) quality rating, nine a medium (B) quality rating and 22 a low (C) quality rating; the quality ratings are discussed further at the end of this chapter (see *Limitations of the review*). No studies were excluded on quality grounds.

Categorisation of the qualitative findings

As described in *Chapter 4* (see *Data synthesis*), the initial qualitative coding process used a grounded theory-type method in which codes were developed inductively from the data, without an a priori framework. Only those findings that were reported as direct quotes from participants were coded. After the initial coding process, the codes were categorised into broad thematic areas. The concepts developed in the review of theory (see *Chapter 3*) were used as a guide to this categorisation, as far as possible and appropriate. The main distinction is between themes that appear as determinants of fear of crime and themes that appear as consequences of fear of crime. The former category is further subdivided into physical environment, social environment and other determinants. (In the analysis process, it rapidly became clear that the data could not be limited to the physical environment and that a substantial amount of data on the social environment would also need to be extracted.) *Table 3* shows the structure of the themes. The codes in the physical environment category also, to some extent, reflect the categorisation of interventions for the review of effectiveness, to facilitate comparison between the two reviews.

The qualitative findings under each theme are set out in the following sections. As with the effectiveness review, several studies are reported in a number of distinct papers, so citations are given by study rather than by paper, according to the author names in the left-hand column of *Table 2*. Demographic details for participants are also given when available.

TABLE 2 Characteristics of the qualitative studies (*n* = 39)

Study	Location	Research question or focus	Population included	Quality assessment
Airey[311,312]	Edinburgh	Effects of place on well-being, especially physical incivilities	Women (45–59 years)	A
Alexander[313,314]	Newcastle upon Tyne	Effects of fear of crime on social inclusion and citizenship	Young people (16–25 years)	C
Bannister[315]	Glasgow	Relations between physical environment and fear of crime	General population	C
Burgess[316–318]	Hertfordshire and nr Nottingham	Perceptions of woodland and associated fear of crime	General population, especially women	B
Cozens[319]	South Wales	Perceptions of safety in railway stations	General population	C
Crime Concern a[320]	NR	Perceptions of safety on pedestrian journeys	General population	C
Crime Concern b[321]	Various (England and Wales)	Perceptions of safety and fear of crime on public transport	General population	C
Davis[322]	Birmingham	Perceptions of risk, especially with respect to transport	Children and young people (9–14 years)	C
Day[323]	Glasgow and environs	Effects of physical environment on well-being	Older people (> 60 years)	A
Dixey[324]	Leeds	Parents' perceptions of child safety	Mothers of primary school-aged children	B
Farrall[49,325–327]	London and Glasgow	Perceptions of crime and the environment	General population	B
Goodey[328,329]	Northern England	Gender differences in fear of crime	Young people (11–16 years)	C
Hollway[330,331]	NR	Experiences of fear of crime	General population	C
Hopkins[332]	Glasgow	Experiences of fear of crime	Young Muslim men (16–25 years)	C
Innes[333]	Blackpool, Oldham and London	Perceptions of crime, antisocial behaviour and physical incivilities	General population	C
Jones[334]	NR	Perceptions of risk and constraints on behaviour; ethnic differences	Young women (11–14 years), mostly Asian	B
Koskela[88,335,336]	Edinburgh	Relation between fear of crime and the built environment	Women	B
Little[337]	Devon	Fear of crime in rural areas	Women	B
Mitchell[338]	North-east England	Mothers' perceptions of risk for children	Young mothers (15–24 years)	C
Moran[339–341]	Manchester and Lancaster	Fear of violence and its relation to spatiality	Lesbians and gay men	C
Nayak[342]	North-east England	Experiences of fear of crime	Young people (12–15 years)	C
Nelson[343]	Cardiff, Gloucester and Worcester	Perceptions of security shutters	General population	C

TABLE 2 Characteristics of the qualitative studies (*n* = 39) (*continued*)

Study	Location	Research question or focus	Population included	Quality assessment
Pain a[344,345]	Newcastle upon Tyne and environs	Perceptions of crime	Older people	C
Pain b[346]	Newcastle upon Tyne	Perceptions of safety	General population	B
Pain c[347,348]	Gateshead	Perceptions of risk and leisure time; role of mobile phones	Young people (10–16 years)	C
Pain d[349]	Northumberland	Perceptions of street lighting and fear of crime	General population	B
Parry[350]	West Midlands	Effects of community factors on health	Young people (16–20 years) and older people (> 60 years)	B
Seabrook[351]	Northern England	Perceptions of risk, place and leisure time	Girls and young women (10–17 years)	C
Squires[275]	Brighton	Evaluation of CCTV system	General population	C
Taylor[352]	Manchester and Sheffield	Well-being and social change	General population	C
Trayers[353]	South-west England	Views on planned neighbourhood renewal intervention	General population	A
Turner[354]	Glasgow and environs	Perceptions of risk and safety	Children and young people (8–14 years)	A
Valentine a[355–358]	Reading	Fear of male violence and perceptions of public space	Women	A
Valentine b[359]	Peak District	Parents' views of children's safety in rural area	Parents of 8- to 11-year-old children	C
Walklate[73,360,361]	Salford	Perceptions of risk, fear of crime and community	General population	C
Waters a[362]	Glamorgan and Loughborough	Perceptions of safety on university campuses	University staff and students	A
Waters b[363,364]	South Wales	Perceptions of crime, fear of crime and community	Older people (> 65 years)	A
Watson[365]	Leeds	Experiences of risk with regard to leisure time	Young mothers	C
Whitley[233,366]	London	Impact of fear of crime on mental health	General population; people with mental health problems	A

NR, not reported.
a Quality assessment ratings: A = high, B = medium, C = low.

TABLE 3 Categorisation of themes used in the qualitative analysis

Category	Themes
Determinants of fear	
Physical environment	Security measures
	Street lighting/darkness
	CCTV
	Visibility
	Cleanliness/neglect
	Presence of others
Social environment	Area knowledge
	Social cohesion/interpersonal networks
	Young people as threat
	Alcohol and drug users as threat
	'Self-policing'/'grassing'
	Ethnicity
	Gender
	Sexuality
	Domestic/intimate partner violence
	Parents and children
	Talk about crime
Other	Experiences of victimisation
	Mass media
	Individual factors
	Crime as social symptom
Consequences of fear	
	Psychological stress
	Restricted movement/activities
	Parental restrictions on children
	Social isolation/lack of cohesion
	Social stigma/area reputation
	'Functional fear'

Findings 1: physical environment

Security measures

Participants' views of physical security measures, such as locks, fencing or other physical access control measures and secure entry systems, are mixed. Several participants report feeling safer as a result of having locks or entry systems (Farrall, Whitley) and some participants report increased fear as a result of the perceived inadequacy of physical security measures (Farrall).

However, negative perceptions of security measures are also frequently expressed. One participant argues that visible security measures would increase risk: 'Of course I haven't put a burglar alarm in. I can't afford it. Anyway if I did something like that they'd only think I'd got something worth nicking' (participant, female, 30s, Squires).

Further, there is a widespread perception that visible security measures increase fear. One study (Nelson) that focuses on security shutters for shop windows found that several participants saw them as increasing fear – and as creating an unpleasant atmosphere more generally in areas where they are widely used, described by participants as 'creepy' and 'dead' – and two other studies (Taylor, Waters a) found similar perceptions of shutters and security gates. The metaphor of a fortress or prison is frequently used by participants to express the unwelcoming and depressing effect of excessive visible physical security in the home (Farrall, Pain a, Waters a, Whitley).

This perception of security measures as increasing fear is also linked to a broader theme of anger at the need to install them. Participants link the need for physical security measures to a broader anger at the breakdown of social order that crime represents (see further *Crime as a social symptom* on the social meaning of crime). This particular theme elicits reactions of anger that are not as noticeable with respect to other environmental crime prevention strategies such as lighting or CCTV (Farrall, Koskela).

> *I've got locks on my windows, I've got the place like a blooming fortress you know? And I don't really see that one should have to live like that, I mean I'm vexed with society, for having to live like that.*
> *Participant, Farrall*

Street lighting

Participants who are asked for their views on how to reduce crime or the fear of crime frequently mention improved lighting (Alexander, Cozens, Crime Concern a, Crime Concern b, Valentine a, Waters a). Participants in seven studies mention that dark or poorly lit locations are particularly associated with fear of crime (Crime Concern a, Crime Concern b, Koskela, Pain b, Pain d, Valentine a, Waters a), and in a further five studies that their fear is greater at night (Farrall, Innes, Little, Nelson, Taylor). Darkness is mentioned as a cause of fear particularly by women and older people, but is expressed across all study populations:

> *We have a lane right next to us which I avoid when it's getting dark. Anywhere on my own, either by myself or even with my husband, if there's not much lighting there I feel very nervous.*
> *Participant, female, 20s, Koskela*

> *You feel a little bit more aware at night and the kind of situations you put yourself in.*
> *Participant, Waters a*

There appear to be two inter-related ways in which lighting is seen to impact on fear (which are not strictly separate and may be linked by the idea of cognitive mastery over the environment; see the discussion in

Fear and knowledge of the physical environment). The first is that it increases visibility and minimises places where attackers can hide (Koskela, Valentine a, Waters a) (see also *Environmental visibility*):

> *I mean the lighting is totally inadequate for ladies walking through on their own. [. . .] you couldn't actually see anything which was worrying because you expect someone to leap out of a dark corner. [. . .] if anyone was set on attacking you there are plenty of places they could hide.*
>
> *Participant, female, Valentine a*

The second is that good lighting makes locations feel more pleasant and welcoming. This may be linked to other physical determinants of fear such as cleanliness and building layout. In particular, the threatening aspect of poorly lit locations is strongly associated with their being isolated, with few other people around (Crime Concern b, Koskela, Valentine a, Waters a) (see also *Presence of others*):

> *This part of the station is cleaner, brighter and there's no litter. It makes you feel more comfortable, it looks as though someone is responsible and it is looked after.*
>
> *Participant, male, Crime Concern b*

> *It's a perception thing isn't it? You might not actually be any safer but you feel safer because you think there must be someone in there if there's lights on.*
>
> *Participant, Waters a*

Corresponding to these two mechanisms, the link between improved lighting and reduced fear may fail to work for two reasons. First, even where lighting is good, visibility may remain poor because of the layout of the built environment (Crime Concern a). Second, in many cases, broader contextual factors may outweigh the effect of lighting in determining the emotional resonance of particular locations:

> *I mean when I was a child we lived in the country and it was all dark lanes with no lights, but we never felt afraid.*
>
> *Participant, Valentine a*

> *[W]hen I was in Pakistan, I went out to the shops at night, and walked round to visit people, and yet I wouldn't do that here, which is silly really because statistically it's far more dangerous in Pakistan than in England.*
>
> *Participant, Watson*

One study focusing on the perceived relationship between lighting and crime found considerable scepticism about a link (Pain d), and in one further study participants who recommended improved lighting also expressed serious doubt about its likely effectiveness in reducing fear (Koskela). These more sceptical attitudes may be related to the more complex views of lighting mentioned above, and suggest that other factors associated with poor lighting, such as the absence of other people, are more important as determinants of fear:

> *In some areas we do need more lighting.*

> *Q: Would that make you feel safer?*

> *Not really because I think it's going to happen anyway. Alleyways where there's no housing, definitely I wouldn't want to walk down, even with lights.*
>
> *Participant, female, 20s, Koskela*

Several specific aspects of lighting are also identified as important by participants, including colour and brightness (Crime Concern a, Pain b, Pain d, Waters a), consistent levels of illumination (Crime Concern a, Waters a) and maintenance (Pain d, Valentine a).

Apart from the direct link between darkness and fear as it applies to both the spatial distribution of light (i.e. poorly lit locations) and its temporal distribution (night vs. day), there are also indirect links to do with the way that spaces are used socially. That is, locations that are unlit are also seen as threatening because of the presence of young people or drug users, and part of the fear experienced after dark is to do with the different social norms that apply late at night, for example the presence in city centres of groups of drunk people (Innes; Valentine a) (see also *Alcohol and drug users as threats*).

Closed-circuit television

Relatively few data are reported in the included studies on perceptions of CCTV. The views that are reported are mixed. Several participants express the belief that CCTV is a deterrent to crime (Crime Concern b, Squires, Waters a) or suggest CCTV as a crime prevention measure (Alexander, Cozens). A few participants express strong support for CCTV (Crime Concern b, Cozens, Pain b). However, only a few participants explicitly say that CCTV reduces their fear, and one explicitly denies this: 'CCTV makes you feel that if anything happened, they might be caught. But I don't feel it makes me feel safer' (participant, Crime Concern b).

There is considerable scepticism about the effectiveness of CCTV in reducing crime. Several participants express doubt whether cameras are monitored (Crime Concern b, Squires), or observe that CCTV cannot directly, of itself, impact on crime (Crime Concern b, Nelson, Pain b, Squires): 'It's just a video camera – it just records you getting beat up!' (participant, Pain b).

The most detailed data on CCTV come from an evaluation of the installation of CCTV (Squires). Several participants in this study thought that crime and fear had been reduced as a result, but many thought that crime had just been displaced elsewhere, or even that young people involved in antisocial behaviour were 'playing up' for the cameras. Moreover, for several participants in this study, CCTV is an inadequate substitute for investment in infrastructure and policing, and exacerbates the sense that disadvantaged areas are not a priority for policy-makers:

> *What's the point of putting up **** cameras. The estate is just crap. They should spend their **** money improving this dump . . . there should be more things for the kids, decent places for them to go, youth clubs and the like.*
>
> *Participant, female, 30s, Squires*

> *Why are they doing this? It is the housing that needs the money spent on it.*
>
> *Participant, female, 20s, Squires*

Environmental visibility

An important dimension of the built environment that relates to fear is environmental visibility, both in the sense that one can be seen by other people and in the sense that one can see them. Both aspects of visibility relate to lighting (see earlier section on street lighting) and to the layout of the built environment. The first aspect of visibility relates to what in CPTED theory is called 'natural surveillance' – the sense that the environment allows others to see what is going on. In this sense the importance of visibility in reducing fear is made explicit by several participants (Cozens, Crime Concern b, Koskela) and seems to be implicit in much of the data concerning the presence of others (see *Presence of others*). Non-residential environments are sometimes seen as more threatening because of the lack of visibility in this sense (Koskela).

The second aspect of visibility – the sense that the surrounding environment is visible and contains no hidden areas – is also very important. As with many of the qualitative themes, this has both a practical and a more symbolic side. On a practical level, visibility reduces fear by ensuring that potential attackers can be seen. Environments that present obstructions to visibility are consistently seen as threatening. Particularly problematic in this regard are vegetation, obstructions such as pillars and hiding places such as side alleys (Crime Concern a, Crime Concern b, Koskela, Valentine a, Waters a).

On a more symbolic level, visibility contributes to a sense of 'openness' and resonates with a broader sense of the readability of the environment, both physical and social (Burgess, Farrall, Waters) (see the discussion in *Fear and knowledge of the physical environment* and *Fear and knowledge of the social environment*):

> Participant 1: *I think the key to it all is sight, being able to see all around you, not just in front [. . .]*
>
> Interviewer: *So you need to be able to get away?*
>
> Participant 1: *Yes, you need the space.*
>
> *Participant, female, 45–65 years, Burgess*

As this quote indicates, visibility in this sense is also associated with freedom of movement. Areas with restricted visibility often also create a sense of being 'trapped' (Crime Concern a, Waters a).

Cleanliness and neglect

Dirt, decay, graffiti and evidence of physical neglect – what is known in the criminology literature as 'physical incivilities' – are mentioned as drivers of fear by participants in 11 studies (Cozens, Crime Concern a, Crime Concern b, Farrall, Goodey, Innes, Little, Parry, Valentine a, Waters a, Waters b).

To a substantial extent, this association appears to be driven by a number of more specific considerations that link to other determinants of fear. First, environments that appear cared for are associated with the presence of others and the potential availability of help, which help to protect against fear (Crime Concern b, Waters a) (see *Presence of others*).

Second, neglected physical environments are an indicator of problems in the social environment and of the breakdown of social cohesion (on which see *Social cohesion and interpersonal networks* and *Crime as a social symptom* respectively). Evidence that residents and others are not committed to the maintenance of the physical environment is taken to entail a lack of commitment to broader social norms. Similarly, in institutional settings [such as in Waters' study of universities (Waters a)], care for the physical environment indicates a broader commitment to the welfare of the people who use that environment:

> *The house the other side of me [. . .] the people who own the houses they were from, they were living away and filling them up with unsatisfactory people really because they don't care a fig. They don't look after the place, it's in a terrible state.*
>
> *Participant, Waters b*

Third, a personal environment that is pleasant and cared for contributes to a general sense of well-being, which in turn creates a sense of safety (Farrall, Parry, Whitley):

> Participant 1: *Well you need all your repairs done, you need all your repairs done, you need everything doing to your house so it looks nice, you need your walls and fences putting up so it looks decent when people are walking around there*
>
> Participant 2: *You need to feel safe.*
>
> *Participants, Parry*

Fourth, there is an association between the appearance of neglect, specific styles of planning and architecture, the perception of material and social disadvantage and perceived risk of crime. These form a nexus of meaning that amplifies the link between neglect and fear of crime, by associating it with a set of broader perceptions of the character of specific locations or neighbourhoods (Farrall, Valentine a, Waters a):

[B]ut you get into the sort of grotty areas and you see all the vandalism and the litter and you just realise what kind of area you are in. If I was on my own I think I would be very nervous, you know in those sort of areas.

Participant, female, Valentine a

[T]he pre-fabricated and the tower block [. . .] I don't like that it reminds me of a bad neighbourhood, a council, derelict place, but after seeing the rest of the place it really felt more community and a much safer place, a much nicer place.

Participant, Waters a

Finally, for children specifically, the presence of physical hazards such as dog faeces and broken glass, and particularly the presence of debris from drug use, contribute to a more general feeling of unsafety, in which the danger of accidental physical injury and the risks of a high-crime environment are not clearly distinguished (Goodey, Trayers, Turner).

Presence of others

As already mentioned, an important determinant of fear is the absence of other people. Places where there are other people around are experienced as less threatening (Burgess, Crime Concern a, Crime Concern b, Koskela, Pain b, Waters a, Valentine a). 'When I come off the train late, most important is seeing people around, for me that's most important in making me feel safe' (participant, Crime Concern b, female).

This perception is expressed by participants across all population groups. However, women in particular mention the threatening aspect of isolated places more often, and link it specifically to scenarios of attack (Burgess, Crime Concern a, Koskela, Valentine a):

Well, I don't often see people when I've been in the forest. [. . .] If I did meet a big man there, I mean it would be so easy to do things to me because there's no one around. I think that's very frightening.

Participant, female, 16 years, Burgess

However, the association between isolated places and fear is not universal and may be specific to residents of urban areas. In one study, residents of rural areas expressed the opposite perception, that crowded environments increase fear (Crime Concern a).

Several participants make the point that not all people are equally reassuring. Studies of particular settings – public transport (Crime Concern b) and university campuses (Waters a) – emphasise the reassuring effect of a visible staff presence in such settings. More generally, participants recognise that their fear of crime is by its nature a fear of other people, especially those who are 'odd' or not 'normal'. In many cases the theme of the presence of other people is implicitly coded with expectations about how the latter are likely to behave:

[B]ut I wouldn't cross it after dark . . . the trees, odd people hanging about and long distances where there's no one else about.

Participant, male, Crime Concern b

I mean what really makes me feel safe is just seeing other people, other normal people around. I mean there's safety in numbers whether they're strangers or not.

Participant, female, Valentine a

Perceptions of specific groups as threatening, particularly young people in groups and alcohol or drug users, are discussed further in *Young people as threat* and *Alcohol and drug users as threat* respectively. However, in some cases, even people who may be perceived as a threat in other contexts are preferable to the absence of others (Crime Concern a).

Findings 2: social environment

Area knowledge

A consistent finding in the qualitative studies is that areas with which one is familiar are perceived as less threatening than areas that are not known well (Crime Concern a, Koskela, Valentine a):

> *How true it is that one often feels safer in your local area . . . I just feel safer because it's my local area and I know what happens there and I feel more confident.*
>
> *Participant, female, Crime Concern a*

> *I mean I feel safer walking around this sort of area than I do in the town centre, but you get people who don't come from Whitley, they'd rather walk round the town centre at night than Whitley. I've always lived here. I know the area pretty well.*
>
> *Participant, female, Valentine a*

The link between familiarity and reduced fear is often direct in that knowledge of an environment makes it feel less threatening regardless of its characteristics. In several cases, participants recognise that those unfamiliar with their area might see some aspects of it as cues for fear, but because of their familiarity with it they do not see these aspects as threatening (Crime Concern b, Watson): 'I think it's all right round here, I mean you see gangs of kids but they're only young and it doesn't bother me because it's familiar, I mean I've always lived round here' (participant, Watson).

Along similar lines, two studies find that clear and accurate signage and information, for example in public transport settings, can help to reduce fear (Crime Concern b, Waters a).

Part of the fear-reducing effect of familiarity has to do with perceptions of risk. Bannister's study provides a particularly clear illustration of this. Participants were asked to mark on a map areas seen as unsafe at night. Most participants marked as unsafe only areas that they did not know well, such that a large proportion of residential areas were seen as unsafe by at least one participant, but none by all of the participants (the only areas seen as unsafe at night by all participants were parkland and a shopping centre). Thus, crime is generally perceived to occur 'somewhere else':

> Participant 1: *That place is horrible, it's full of junkies.*

> Participant 2: *[immediately] No, it's not, that's where I live.*

> Participant 1: *Oh, I'm sorry, it's just that I've not been there recently.*
>
> *Participants, Bannister*

However, there are also more complex links between familiarity and reduced fear, which relate to a number of other themes. Of particular importance are interpersonal relationships and social cohesion at area level, which appear to be highly important determinants of fear (see *Social cohesion and interpersonal networks*); much of the reassuring effect of familiarity appears to relate to one's social networks in known areas. To some extent it may also be an artefact of the different processes by which risk is estimated in areas known through direct experience compared with areas that are known mainly by reputation (see further *Social stigma and area reputation*) or media reports (see *Mass media*). The remainder of this section focuses on the more direct association between familiarity and reduced fear.

Much of this association is practical in nature in the sense that knowing an area helps to reduce one's vulnerability to or risk of attack. Knowledge can reduce vulnerability in that physically evading an attack, if necessary, will be easier in an environment (either physical or social) that one knows well (Valentine a). It can also help one avoid higher-risk areas (Moran, Seabrook).

Familiarity may also help to reduce the perceived risk of being victimised. Ethnic minority and lesbian and gay participants mention how their perceptions of different spaces affect their assessments of risk (see *Ethnicity* and *Sexuality* respectively). Young people in several studies also mention that leaving their 'own' areas may be intrinsically risky, as outsiders are likely to be the targets of attack regardless of their behaviour or appearance:

Interviewer: *Would you go into different schemes [areas]?*

Participant 1: *Never.*

Participant 2: *I wouldn't go in [area].*

Interviewer: *Why?*

Participant 1: *It's no in Newhouse and they just fight whoever they don't know.*

Participants, Turner

What you can't do is expect to be safe if you go up the other end and into someone else's area.

Participant, male, 14 years, Walklate

More speculatively, the theme of familiarity may also link to the 'legibility' of the social environment in general, that is, the broad predictability of others' social behaviour. This connection is discussed further in *Fear and knowledge of the social environment*.

Social cohesion and interpersonal networks

The sense of belonging socially to a specific neighbourhood, and knowing a range of people locally, appear to be important protectors against fear. Participants frequently observe that they are not fearful because they know people around them, particularly when they are long-established residents and have rich social and family networks (Farrall, Innes, Valentine a). As already suggested, the tendency for people to feel less fearful in their own areas (see *Area knowledge*) may be largely explained by the effect of interpersonal relationships:

I think it's the whole atmosphere living in the Glodwick. Everyone knows everyone, so you're not a stranger in your own town. And you just feel so safe, just in your own street and your own area.

Participant, Innes

Here I feel safe. It's funny it's mostly been the same families, the mothers have had the houses and then the daughters have carried on, and their sons have carried on. [. . .] I know a lot of people in this area. I grew up here, my friends are here.

Participant, female, Valentine a

This link between social belonging and reduced fear is complex. In some cases, such as those cited above, social belonging appears to directly create a sense of personal security. In other cases, people's sense of being 'known' in an area may refer more specifically to having a reputation such that potential criminals know it would be unwise to attempt crimes against them, or to the knowledge of a semi-explicit 'code' of values that rules out committing crimes against people who are known locally (Farrall, Squires, Valentine a, Walklate). These more practical concerns link to the theme of 'self-policing', which, as discussed in *'Self-policing' and 'grassing'*, suggests a more ambivalent side to social cohesion:

We don't get any trouble, I've a lot of friends and family on this estate and we can look after ourselves . . . if you know what I mean

Participant, male, 50s, Squires

Given the associations between interpersonal knowledge and perceived safety, fear tends to focus specifically on outsiders coming into the area. A sense that neighbours recognise each other helps to ensure that outsiders will be recognised and observed, which is seen to reduce risk (Farrall, Valentine a, Valentine b).

Some participants suggest that maintaining social relationships can help to reduce fear, even when they are relatively superficial; they need not involve close friendships or extensive day-to-day interactions:

> *Community spirit is there in that sense. We all have each others' phone numbers on this street, and while we never go into each others' houses we would all use them if we thought something was up. So you don't feel isolated, not at all.*
>
> *Participant, Pain a*

However, even these more distant but still trusting relationships may be absent in some contexts. SES appears to be a relevant factor here. One study that directly compares a more middle-class area and a more working-class area finds considerably greater perceived social cohesion in the latter, helping to reduce fear (Valentine a). Residents of the middle-class area reported shallower and less trusting relationships with those living nearby, and less close interaction with them, which may increase fear.

Finally, to a much greater extent than with the theme of interpersonal familiarity, that of social cohesion links explicitly to theoretical discourses about the causes of crime. Crime is seen by participants in several studies [this is particularly a focus of Farrall *et al.*'s study (Farrall), but is also echoed elsewhere] as driven by a breakdown in trust and social cohesion. This links to the theme of crime as social symptom, discussed later.

Young people as threat

Several specific types of people are mentioned as cues for fear. Young people are frequently mentioned in this regard, particularly when they are 'hanging about' in groups (Crime Concern a, Crime Concern b, Little, Nayak, Pain a, Squires, Valentine a, Walklate):

> *When I go to get my pension I am very aware of teenagers hanging about and such like, you feel they're watching you.*
>
> *Participant, Pain a*

> *There is a problem with teenage children hanging around. They are hanging around at the moment, well they've been there for a while now at the bottom of the school drive.*
>
> *Participant, female, Valentine a*

Although participants in several studies discuss specific experiences of crime and antisocial behaviour by young people (Farrall, Nayak, Pain a, Walklate), in many cases the fear of young people does not appear to be motivated by any direct experience. Several participants explicitly recognise that this sweeping fear is ill-founded (Crime Concern b, Day, Pain b):

> *My old age group, I find a lot of people, when they see a gang of youths, they get a scowly grumpy face, [. . .] And I've found quite often if they're walking past and I give them a smile, I get a smile back.*
>
> *Participant, female, 70s, Day*

Young people themselves are also aware of, and explicitly criticise, the tendency to stereotype them (Nayak, Seabrook, Walklate). In particular, young people in several studies complain of being hassled by the police on the basis of such stereotyped views (Alexander, Nayak, Pain b).

The lack of specific motivation in many cases for the fear of young people, and the prominence of the theme of 'hanging around', suggest that this fear is mainly driven by the particular way in which young people use public spaces, rather than by a direct estimate of risk.

Alcohol and drug users as threat

Another group who are often the focus of fear are people drinking or using drugs. The main threat from alcohol and drug users is the possibility of verbal or physical aggression, or being mugged for money (Crime Concern a, Crime Concern b, Day, Farrall, Innes, Waters b). Some participants express this more broadly in terms of the unpredictability of people's behaviour when they are under the influence of alcohol or drugs (Farrall, Valentine a). The presence of large groups of drunk people at pub closing time is particularly threatening (Crime Concern a, Moran, Valentine a). As noted earlier (see *Cleanliness and neglect*), the presence of drug-related detritus such as used needles is also a particularly threatening aspect of the physical environment, especially for children.

'Self-policing' and 'grassing'

In certain contexts – generally highly cohesive but materially and socially disadvantaged communities – there may be a considerable amount of 'self-policing'. This term refers to people administering informal punishments for crime themselves, without involving the police. Particularly severe punishments are reserved for co-operating with the police or 'grassing'. This phenomenon is particularly a focus of the study by Walklate *et al.* (Walklate), but the findings of that study are echoed in several others.

Many participants report feeling reassured by knowing that their community is willing to police infractions of its moral code. This is seen to both reduce the risk of crime occurring – at least for 'insiders' to the community – and increase the chances of an effective response when crime does occur. This is linked to the theme of social cohesion (see *Social cohesion and interpersonal networks*) in that effective self-policing requires both strong interpersonal relationships and a widely shared set of norms (Farrall, Innes, Squires, Walklate):

> *There's a low chance of people our age group getting robbed. Not round here, it's quite a close community [. . .] I don't know how to say it but like, if there is a problem, it's going to be sorted . . . We look after our own.*
>
> *Participant, Innes*

> *There's also a positive side sometimes. [. . .] It has its own rules as well. They sort things out their selves.*
>
> *Participant, Walklate*

Such strategies may also operate within more specific communities: ethnic minority participants in two studies describe cases in which crimes were resolved without police involvement as a result of strong pre-existing relationships within the ethnic communities affected (Innes, Valentine a).

An important dimension of self-policing is that there is a 'code' that governs criminal activity and proscribes victimising 'locals' (Farall, Walklate). To this extent it is clear that the potential protective effect of self-policing is limited only to 'locals' or social insiders; the impact on outsiders is likely to be negative: 'Oldtown is a great area if you are a member of the community, went to the local school and grew up with the local villains, but terrible if you're an outsider' (participant, female, Walklate).

Moreover, in self-policing communities, getting a reputation as a 'grass' is likely to lead to considerable harassment and in some cases serious violence (Squires, Walklate).

Ethnicity

Ethnic minority participants in several studies report the perception that they are at greater risk because of their ethnicity (Burgess, Crime Concern a). A few participants report a serious fear of racially motivated attacks, which has had a substantial impact on their lives (Hopkins, Squires):

> We get people throwing stones at the house and swearing at us. . . . When I go out people are saying '**** black bastard' it is terrible. [. . .] This place is like a prison. I can't go out, I [. . .] can't sleep [. . .] because of what they might do.
>
> Participant, male, 50s, Asian, Squires

The ethnic coding of different neighbourhoods, and its relation to fear, is particularly a focus of two studies (Hopkins, Innes). They find that areas are strongly coded in terms of the majority ethnicity of their residents, and that this has an impact on fear, for white as well as for minority ethnic participants: 'I wouldn't feel happy walking down this area here, just outside my area, it's like a white area. I wouldn't be happy walking down there because I'd feel more vulnerable' (participant, Innes).

This ethnic coding appears to reinforce the effects of familiarity and social relationships (see *Area knowledge* and *Social cohesion and interpersonal networks* respectively) to produce strong differentials in perceived risk, although it can make a difference even in unfamiliar areas (Hopkins).

Several participants express a fear of minority ethnic people, particularly black men, although in many cases they also express a critical attitude towards their own fears (Hollway, Valentine). As with a number of the other themes examined in this section, a sense of unfamiliarity and unpredictability appears to underlie this fear: 'Blacks are threatening because you can't see the expressions on their faces so you can't tell what they're thinking' (participant, female, Valentine).

Several participants in the study by Farrall *et al.* link these ethnic fears to broader theoretical discourses, particularly a critique of multiculturalism (Farrall), although this link is not clearly reported in other studies.

Gender

Women's and men's experiences of fear of crime appear to be substantially different. In general, much fear of crime might be more accurately characterised as women's fear of being attacked by men (Crime Concern a, Pain a, Valentine a). 'Our main fear is attack from a man, especially where it is isolated and lonely . . . the whole issue about walking at night is about being attacked by a man' (participant, female, Crime Concern a). (It should be noted here that almost all of the included studies focus on fear of stranger attack; the small amount of data on intimate partner violence is set out in *Domestic and intimate partner violence*.)

Several different factors appear to explain the difference in fear between men and women. To a substantial extent, the difference reflects a difference in the crimes that are feared. In particular, sexual assault or rape is the main focus of women's fear (Goodey, Koskela, Valentine a): 'I think without a shadow of a doubt, you know, I'd rather be killed than raped, you know, stabbed than raped' (participant, female, Koskela).

Some of the differences in expressed fear may also be due to the differences in gender norms, which make it less acceptable for men to express fear (Goodey). Such differences are reinforced by media reporting (see also *Mass media*), which is seen to focus on crimes against women, particularly rapes (Goodey, Valentine a). There is also a widespread perception that women are more vulnerable to attack because they are less physically strong (Pain a, Valentine a).

Some participants suggest that the pervasiveness of low-level sexual harassment and minor sexual crimes, such as indecent exposure, tend to maintain an awareness of the possibility of more serious crimes.

Valentine's study (Valentine a) focuses particularly on this as an explanation of women's fear, but her findings are echoed in other studies (Burgess, Taylor):

> *Whistling, that frightens me. [. . .] I walk from Reading to Newtown every morning, the quickest way is along the canal, but there's an awful lot of blokes there and they shout things to you. [. . .] I hate walking down there, I only go that way if I'm in a real hurry.*
>
> *Participant, female, Valentine a*

Women's fear of crime appears to be considerably more pervasive and inescapable than men's. This may partly be explained by the role of common, day-to-day reminders of the possibility of crime, as mentioned above:

> *You're never safe at any time. If somebody wants to go out and attack a woman, they'll do it.*
>
> *Participant, female, Koskela*

> *It can happen anywhere, anytime, so you can't really do anything about it. I suppose the onus is always on the woman to be on your guard.*
>
> *Participant, female, Valentine a*

One gender-specific environmental intervention on which views were sought is women-only carriages on trains (Crime Concern b). Participants in this study were generally sceptical about the idea.

An important aspect of gendered fear is what some writers have called 'vicarious' fear. Several male participants express vicarious fear for their wives or partners (Farrall, Pain a, Valentine a). In some cases, this vicarious fear may be a source of anxiety for the women involved (Valentine a) and may lead to substantial restrictions on women's activity (Farrall, Goodey, Pain a, Valentine a). Another form of vicarious fear that often takes a gendered form is parents' fear for their children, which is explored further in *Parents and children*. As discussed there, many parents express greater fears for girls than for boys and place greater restrictions on girls' behaviour.

The effects of fear of crime on women also appear to be more far-reaching than those on men, particularly relating to restrictions on activities. These differences are explored further in *Restricted movement and activities*.

To some extent, gender differences in the fear of crime are understood by many participants as being part of a broader context of power imbalances between men and women, although detailed data on this point are found only in one study:

> *I mean if men were getting raped and things were happening to them it wouldn't be so bad, but because it's just women, it's just so annoying. I mean a lot of things are equal, but a lot of things won't be exactly equal if women can't go out.*
>
> *Participant, Valentine a*

Perhaps because of this awareness of the broader issues involved in fear, many female participants express a high degree of scepticism about the possibility of effectively addressing it.

> *[Q: What would make you feel safer?]*

> *[. . .] I don't know. I don't think there is anything that would be kind of any safer. Nah, nah. Apart from maybe being in a wee fortress kind of thing.*
>
> *Participant, female, 30s, Koskela*

The one thing I would like would be to [. . .] be able to walk the streets how you want, what time you want and know you'll get home in one piece without being violently abused. It's the one thing [. . .] I'd love to see, but I can't see it ever happening.

Participant, female, Valentine a

Some participants express a sense that fear of crime is not related to objective risk or vulnerability, as any non-zero risk is seen to be unacceptable. The pervasiveness of women's fear of crime, and the widespread scepticism about solutions to it, relate to this sense that it is risk per se, rather than greater or lesser probability, that determines fear. Women's fear is similar to parents' fear for their children (see *Parents and children*) in this respect:

I don't want to put myself into a position where I feel threatened. I don't know how likely it is but I'm not prepared even to take the risk.

Participant, female, Koskela

It can happen anywhere, anytime, so you can't really do anything about it.

Participant, female, Valentine a

Several participants suggest an increase in their own fear, or in social attitudes relating to women's fear, over time, although it is unclear what the causes of this change might have been (Koskela, Valentine a).

Sexuality
One study focuses particularly on lesbian and gay participants (Moran). Several participants in this study report a fear of anti-gay attacks, frequently based on experiences of harassment ranging from relatively minor attacks to serious attacks. Participants describe a process of assessing the risk of violence in public spaces:

[Y]our subconscious is working a million miles per hour just calculating, 'Is this a nice safe place to go or is it dodgy? Should I go out again before I get my head panned in?'

Participant, Moran

Domestic and intimate partner violence
As already mentioned, very few data are presented on domestic violence or intimate partner violence as opposed to attacks by strangers (see further *Limitations of the review*). Only one study presents views on fear of intimate partner violence, specifically women's fear of spousal abuse, and relatively few data are reported (Koskela). Women in this study who had not experienced intimate partner violence tended to see their own risk as low. Generally, the data in this review do not support any conclusions on fear of domestic violence or intimate partner violence.

Parents and children
Another population who account for a substantial amount of fear of crime are parents, particularly parents of young children, who often express vicarious fear for their children. Abduction is particularly feared (Dixey, Farrall, Pain b). 'I think all parents' biggest fear is that somebody might abuse them, more than the fear of them getting killed or dying of an illness' (participant, Dixey).

As with some of the data on women's fear of sexual assault (see *Gender*), the fear of child abduction appears to be highly pervasive and not responsive to objective risk, because of the extreme seriousness of the feared outcome (Dixey, Koskela, Valentine b):

You hear so many stories, you know, and read so many things in the papers. And I know the chances are one in probably millions but you still always think, you know, it could be yours and you don't want it to happen, you don't want her to disappear.

Participant, female, Valentine b

Some parents report considerable impact on their psychological well-being as a result of this fear: 'It makes you so darn mad, it chews you up inside. When you talk to people in the pub, you find that they are also all wound up about these things too' (participant, Dixey).

However, in some cases parents report feeling social pressure to be seen to act in the interests of children's safety, which does not necessarily correspond to their own fears (Valentine a).

Some participants report a greater fear for girls than for boys (Valentine a), although others feel that there is little difference (Dixey).

As well as parents' vicarious fears for children, one participant expresses increased concern for her own safety since having a child:

> *I think it is different now, just in case anything happened to me, for her [daughter's] sake. [. . .] For years I'd walk home through the university and I was never really bothered, but I don't know, maybe round here it's different.*
>
> *Participant, Watson*

As a result of these fears, many parents report placing considerable restrictions on children's activities. These are discussed in *Parental restrictions on children*.

Talk about crime

Another feature of the social environment that may impact on fear is talk about crime. Several participants describe how their information about crime, and more generally their perceptions of safety, are shaped by discussions with others (Alexander, Goodey, Valentine a), although several participants recognise that such information is often unreliable (Valentine b):

> *Everything centres around the hairdressers, you hear everything there. You say I'm going out tonight and you say where you're going and they say [. . .] 'Such and such happened there', or 'My Jane's friend went there and got attacked', and so then you're wary of going there.*
>
> *Participant, female, Valentine a*

Crime talk in more formal contexts, such as those provided by Neighbourhood Watch or workplace safety schemes, may also increase fear (Farrall, Valentine a) (see also *Mass media*).

Talk about crime particularly drives the perception that certain neighbourhoods are unsafe (see *Social stigma and area reputation*) and may account for feelings of unsafety with respect to areas that people have little or no direct experience of (see *Area knowledge*).

However, talk about crime not only is a contributor to fear but also can form part of a more general sharing of experiences and resources that may help people deal with the threat of crime (Valentine a). More broadly, talk about crime forms part of the texture of social interaction, which contributes to people's local knowledge and sense of social belonging (see *Area knowledge* and *Social cohesion and interpersonal networks*); as such, it may indirectly reduce fear:

> Interviewer: *So what is it like to live here?*
>
> Participant 1: *It's canny like. Everyone knows everyone, an' if summat's gannin' doon, we're the first t'hear aboot it.*
>
> Participant 2: *Everyone's textin' us what's gannin' doon – we're always one step ahead!*
>
> *Participants, Alexander*

Findings 3: other determinants of fear

Experiences of victimisation

Previous experience of crime appears to be an important determinant of fear for many participants. Several participants, particularly those who have been the victims of violent crimes, report high levels of fear as a result, which in some cases may persist for years after the attack. These fears are often associated particularly with the location where the attack occurred, but also shape people's experiences more broadly. The most damaging experiences reported in the data appear to be violent hate crimes, including anti-gay attacks (Crime Concern a), rape (Valentine a) and racially motivated crimes (Squires, cited above, see *Ethnicity*). However, in one study (Farrall) some victims of burglary also report serious impacts. Vicarious fears, such as parents' fears for children, can also be increased by personal victimisation (Pain c), and witnessing crime can contribute to fear (Crime Concern b).

As noted earlier (see *Gender*), women's experience of relatively minor sexual crimes or harassment appears to be an important contributor to fear. Many female participants describe experiences of harassment, indecent exposure or the threat of sexual attack, which raise their awareness of the possibility of serious crime:

> Participant 1: *It is such a horrible feeling though [being flashed at]. It is so traumatic and dreadful. You don't want to bother risking it for the sake of having a walk.*
>
> Participant 2: *It is imposing on you and your space.*
>
> *Participants, female, 21–35 years, Burgess*

> *And these boys started asking me my name, and I didn't want to tell them. And then they started following me around. [. . .] You know, girls get raped, mugged, harassed, stuff like that.*
> *Participant, female, 13/14 years, Asian, Jones*

On the other hand, a few participants, particularly in the study by Farrall *et al.* (Farrall), say that experiences of crime have not made them fearful.

Mass media

Several participants describe television or newspaper reports as a source of fear. Sensational reports of violent crime are particularly a factor. Reporting of crimes that happen locally, in areas that people use on a regular basis, are especially likely to impact on behaviour (Farrall, Valentine a): 'Every time ye lift a paper or pit on the telly, yer hearing something. That's aw . . . it's just kept alive in the brain as for as I'm concerned' (participant, female, 58 years, Farrall).

However, some participants explicitly criticise the sensationalism of media crime reporting and its role in perpetuating feelings of fear (Crime Concern a, Farrall, Valentine a). There is also a recognition that the media reporting of crime is skewed in certain important respects. Participants critique the focus on sexual violence against women (Valentine a; see *Gender*) and the stigmatisation of certain areas and groups as stereotypical perpetrators of crime (Parry; see *Social stigma and area reputation*).

Individual factors

Participants identify a number of individual-level factors that may make a difference to fear. Several participants discuss people's pre-existing psychological dispositions and attitudes (Crime Concern a, Farrall, Pain a). This emphasis on individual psychological factors appears to be particularly characteristic of older participants: 'I've always been a fatalist in my life. And er I've never been afraid of anything. Not a single thing' (participant, male, older, Pain a).

Along similar lines, Hollway and Jefferson's[330] findings emphasise how different people may respond differently to 'objectively' similar risk situations depending on the personal values and anxieties that inform their reading of environmental factors.

Relatedly, several participants describe the importance of maintaining a confident appearance (regardless of one's emotional state) as a strategy to reduce risk (Crime Concern a, Pain b). Another important individual factor is one's perception of one's own vulnerability and resources to resist attack (Farrall, Squires): 'I've got a gun cabinet back there, you know. Two shotguns and a .22 rifle. And if anybody breaks in here, they can have some of that' (participant, male, 30s, Squires).

Crime as a social symptom

A theme already mentioned is the sense that crime represents not only the object of individual fear but also a symptom of social problems more broadly, often seen in terms of a historical narrative of decline over the last several decades (Burgess, Farrall).

> I think everyone needs to have a certain respect and for law, the police, for parents, for elder people. And I think that has disappeared. I don't think there's that same caring community spirit that there used to be.
>
> *Participant, Farrall*

Findings 4: consequences of fear

Psychological stress

Relatively few participants report serious psychological stress as a result of fear of crime. However, a number of participants report less severe psychological impacts of fear (Airey, Dixey, Taylor, Valentine a):

> [Y]ou can't live your life in hiding, you've just got to think ahead, just be prepared . . . you have to think it out. It's a terrible life, it's a stressful life, very stressful. [. . .] It's a dreadful way to live.
>
> *Participant, Taylor*

Those who report serious psychological stress as a result of fear generally fall into two groups: people who have been the victims of serious crimes, particularly sexual or hate crimes, and possibly repeated crimes (see *Experiences of victimisation*); and people who have a pre-existing mental health condition, who are the focus of one study:

> The worst thing? The violent people, the fear they are coming around and breaking and burning and hitting. [. . .] people are scared here because you don't know who is coming next to the door, people living in fear.
>
> *Participant, Whitley*

Other participants argue that fear of crime may impact on mental health as part of a broader nexus of individual and social stress and disadvantage (Airey).

Restricted movement and activities

A much more widely expressed consequence of fear of crime is to limit one's daily activities (Alexander, Crime Concern b, Pain b, Parry, Seabrook, Taylor, Valentine a, Whitley). Although participants from all population groups say that their activities are limited by fear to some extent, the effect appears to be considerably greater for particular groups: women, older people, people with physical disabilities and people with learning disabilities.

Interviewer: *So what do you get up to on a night time?*

Participant 1: *I just stay in.*

Interviewer: *Why is that?*

Participant 2: *Y'canna gan out at night, y'get hassled off the Charvers and Ragies . . . they're really scary like.*

Participants, 16–20 years, with learning disabilities, Alexander

I'll go to my nana's after school but most of the time just go in, 'cos you don't feel safe hanging around the streets.

Participant, 13 years, Seabrook

I just don't go places or do things where I'll be at risk.

Participant, female, Valentine a

Parents' restrictions on children's activities are a particular concern (these are discussed in *Parental restrictions on children*).

Of particular concern from the point of view of the health impacts of fear of crime are potential limitations on physical activity. Many participants report not participating in physical activity as a result of fear of crime (Burgess, Farrall, Koskela, Valentine a). In particular, several participants say that they will drive somewhere rather than walk because of the perceived risk of crime. Again, this is particularly the case for women.

I used to sort of cycle and everything, but I just don't anymore. You can't really can you? You can't cycle anywhere, you can't walk anywhere on your own, not when it's dark, it's not worth the risk.

Participant, female, Valentine a

Several female participants report that restrictions to activities become routinised in such a way as to become unconscious. That is, daily activities may be restricted or reorganised to avoid areas or situations perceived as dangerous, without this being a consciously expressed perception (Farrall, Koskela, Valentine a):

[I]n my mind I must be aware that I'm taking precautions, but you know I'm not aware of it. I've never really thought about it till we've had this conversation. [. . .] You're doing it and you're not aware of it.

Participant, female, Koskela

Parental restrictions on children

As described earlier (see *Parents and children*), many parents report vicarious fear on behalf of their children. This fear is often serious and pervasive. As a result, many parents report restricting their children's activities (Davis, Dixey, Jones, Koskela, Squires, Valentine a, Valentine b). Again, outdoor physical activity may particularly be reduced: 'I haven't got any places to play because even if I do play outside my Mam says it's too dangerous' (participant, male, 9–11 years, Davis).

Several parents express regret that such restrictions are necessary, and recognise the potential negative effects of such limitations on children's independent mobility (Dixey, Koskela, Valentine a, Valentine b). In some cases they recognise that they allow less freedom to their children than they themselves enjoyed at the same age (Valentine a, Valentine b).

I worry that I'm not telling her enough and that I'm not letting her play out enough. I'm stopping her from doing a lot of things that she should be doing, because of my worries, and I feel guilty about that.

Participant, Dixey

I don't let the kids out late, like as soon as it's dark I call them in from the streets. They have to sit in from six o'clock, which isnae fair on them really. It's like an added worry because you're worried about yourself anyway.

<div align="right">*Participant, female, Koskela*</div>

Children and young people themselves also describe the negative effects of these restrictions. Two studies (Davis, Jones) describe how young people perceive a contradiction between public health messages encouraging physical activity and the strict rules that govern their behaviour. 'If you go to the park then you are obviously going to get raped or something. If you go to the gym then you are going to get chucked out' (participant, female, 13–14 years, Davis).

As noted in *Parents and children*, parents' fears appear to frequently be gender specific, with several participants expressing greater fears for girls than for boys. Several participants report that greater restrictions are placed on girls' activities than boys' activities (Davis, Goodey, Jones, Valentine a). Media reports (see earlier section on mass media) may play a role in motivating parental restrictions, and, again, this appears to be more of a factor for girls (Jones, Valentine a):

When I ask my Mum can I go out with my friends she like says no. [. . .] if you were a boy you would have been OK, because then you'll be able to look after yourself more. Because you're a girl you might get raped, and all these things.

<div align="right">*Participant, female, Asian, 13–14 years, Jones*</div>

Parental restrictions may create conflict within families, as children and parents disagree over perceptions of safety and allowable activities (Davis, Jones, Pain c). Several children and young people describe giving misleading or incomplete information to their parents, to avoid generating worry that will lead to further restrictions (Davis, Pain c).

Social isolation and lack of cohesion
A further consequence of people restricting activities may be to impinge on their social relationships. As described earlier (see *Restricted movement and activities*), several participants report being unable to engage in social activities as a result of fear (Day, Farrall, Parry, Valentine a).

More broadly, some participants see fear of crime as having a negative effect on the texture of social interaction at a community level. This links to the theme of crime as a symptom of social decline (see *Crime as a social symptom*), such that fear of crime is seen as both a consequence and a cause of reduced social cohesion:

Community spirit's different now to what it used to be, because as I say people are afraid to go out. At nights here it's very quiet, you never see anybody walking about. They just don't leave the house for fear of being burgled or attacked.

<div align="right">*Participant, male, older, Pain a*</div>

Social stigma and area reputation
As several themes have already suggested, fear of crime tends to attach to particular areas or neighbourhoods, sometimes as a result of personal experience but more often through social discourses and media reporting about dangerous areas:

Whitley they say isn't so nice and parts of Tilehurst I've heard, and West Reading (Oxford Road area) they say isn't so good. People just say 'Oh it's rough round there I wouldn't go that way'.

<div align="right">*Participant, female, Valentine a*</div>

As described earlier (see *Area knowledge*), although this kind of local knowledge may be protective against fear for individuals, in that it enables them to avoid areas that induce fear, it also leads people to

see unfamiliar areas as more dangerous than their own. Thus, when areas are known to have a reputation as dangerous, residents of those areas tend to see this reputation as undeserved and stigmatising. The difference between their perceptions of their own area and outsiders' views creates a sense of unfairness of the latter (Airey, Alexander, Farrall, Squires, Taylor, Walklate). Moreover, as such reputations go along with material and social disadvantage, they link to broader social prejudices:

> *You say 'Kirkhead', some of the reactions are actually incredible, and uh they therefore tar you with being somebody who comes from a council estate and uh therefore has nae brains and you know no etiquette, [. . .] they just can't believe that you could be well brought up and educated.*
>
> *Participant, Airey*

> *It's a real shame about the reputation of this place because it makes it embarrassing to say where you live. But actually, there is no problem living here.*
>
> *Participant, male, 20s, Squires*

Feelings of unsafety with respect to particular neighbourhoods also tend to reinforce stereotypes of their residents as criminal (Parry, Squires, Valentine a, Whitley), which, as noted earlier (see *Young people as threat*), may particularly affect young people's relations with the police.

> *You tell someone you are from [area] they automatically think you have got something to do with guns or drugs, and you are a part of a public gang.*
>
> *Participant, Parry*

> *Whitley, you say you're from Whitley, and people look at you as if you're going to pull a knife on them, that's horrible.*
>
> *Participant, female, Valentine a*

'Functional fear'

In contrast to the other data reported in this section, several participants report that, although they may feel fearful at times, this has no serious impact on their behaviour or well-being (in addition to those who report not feeling fear at all; see *Individual factors*). 'I'm conscious it could happen and I'm aware of it and I want to do something to prevent it, if possible, I'm not sitting anxious about it and thinking maybe somebody will do it ye know' (participant, male, 49 years, Farrall).

Discussion

In this section we develop some broader lines of argument that cut across the themes identified in the data. These are then developed further in *Chapter 7*, where we draw together the findings from the three reviews (theory, effectiveness data and qualitative data) and consider the implications of our findings in a broader context.

Fear and knowledge of the physical environment

A key factor influencing fear is knowledge of one's surroundings. As we have seen, much of this can be explained by the fear-reducing effects of social belonging or 'insidership' and the presence of strong social networks in local areas. However, knowledge may also help to reduce fear even in the absence of strong social networks. We suggest that the construct of 'cognitive mastery' links together a number of the themes, particularly those of familiarity and visibility. The sense that one's physical environment is open to perception and understanding helps to reduce fear in general. As already noted (see *Environmental visibility*), the theme of visibility or 'openness' is linked with a sense of freedom of action: an environment that is cognitively transparent is also seen as clearly understood in terms of the 'affordances' or resources for agency it provides, such as alternative routes.

Fear and knowledge of the social environment

Another important dimension of knowledge, which, again, is independent of the findings on social networks, is the adequacy of one's knowledge of the social environment. The criminology literature has extensively investigated the role of 'social incivilities', such as public drinking or drug use, in driving fear, and the qualitative findings bear out much of this research (see further *Chapter 7*, *Incivilities*). They also help to explain some of the pathways through which this association functions. The findings on drinkers and drug users (see *Alcohol and drug users as threat*) and on young people 'hanging about' (see *Young people as threat*) suggest that such groups are a source of fear insofar as they behave unpredictably and depart from social norms, particularly norms about the use of public space. The findings on familiarity and social cohesion (see *Area knowledge* and *Social cohesion and interpersonal networks* respectively) indicate that the fear-reducing effects of social belonging are also substantially driven by a sense of having reliable expectations of others' behaviour. Common to all of these themes, then, is the sense that much fear of crime arises from the breaking of social norms governing everyday behaviour and interactions, especially interactions between strangers in public space.

The pervasiveness of this sense of social predictability allows us to extend the idea of 'cognitive mastery' to the social as well as the physical environment. As with the physical environment, knowledge of the social environment reduces fear both directly and by providing means to avoid crime or to minimise its impact. That is, cognitive mastery is linked to the pragmatic mastery of the social environment and an ability to effectively use the resources it offers. It should be noted that this knowledge is relative to context, and not universally associated with the same phenomena. When the fears of different groups play out conflictually – between young people and older people (see *Young people as threat*), for example, or between residents of disadvantaged areas and outsiders (see *Social stigma and area reputation*) – this often appears to result from clashes between divergent sets of social norms. In the case of self-policing communities (see *'Self-policing' and 'grassing'*), considerable effort goes into maintaining the transparency of the social framework at a community level so that transgressors against norms can be dealt with.

Public and residential areas

The distinction between public areas (such as shopping areas, public streets and squares, parkland or open countryside) and residential areas seems to be important in shaping perceptions. It should be noted that this is not the same as the distinction between public and private, as particularly deployed in the CPTED concept of 'territoriality' (examined further in *Chapter 7*, *Crime Prevention through Environmental Design*). The latter is a much sharper and finer-grained distinction, which runs, for example, between a house (or garden) and the street, whereas the public/residential distinction operates at a neighbourhood, or at least street, level.

Many of the determinants of fear explored earlier appear to be specific to one or the other type of area. For example, familiarity appears to reduce fear primarily with respect to residential areas and has little impact on the fear of public spaces. In public areas, factors to do with the physical environment appear to predominate as determinants of fear, whereas in residential areas – particularly one's own area – the social environment appears to be much more important. Relatively few participants report physical factors such as lighting or neglect as major determinants of fear in the neighbourhood in which they live and, when they do, these appear to be 'read' mainly in terms of their social meaning rather than directly as cues for fear (see the following section).

Social meanings of the physical environment

One clear implication of the qualitative findings is that the physical environment affects fear more through its social meanings than directly. Several themes show a consistent link between specific environmental determinants (particularly lighting, visibility and neglect) and fear. Nonetheless, social factors appear to be more central and can frequently over-ride the effects of the physical environment. For example, several participants observe that their knowledge of, and sense of socially belonging to, their own areas outweighs the potentially fear-inducing effects of factors such as neglect or poor lighting. Again, this

appears to be particularly the case with residential areas; in public areas such as shopping streets or parks, physical factors may have more importance as determinants of fear.

The fear-inducing effect of such socially coded physical factors is partially a question of perceived risk: environmental indicators of disadvantage are an important part of the complex of cues that enable people to judge the riskiness of different neighbourhoods. However, they also have broader symbolic meanings. Characteristics of the built environment such as the use of prefabricated concrete are seen as threatening, even in contexts such as university campuses, because of a residual association with disadvantaged residential areas (Waters). Evidence of physical neglect points to broader social and political narratives of neglect, disadvantage and inequality. The imagery of disadvantaged residential areas – concrete, high-rise blocks, graffiti and so on – becomes associated with fear within a broader complex of associations that link such environmental factors to poverty and thence to high crime rates. As discussed further in *Chapter 7* (see *Crime Prevention through Environmental Design*), these findings cast doubt on theories such as CPTED which suggest that environmental improvements alone are likely to reduce fear. If the fear-inducing effects of environmental factors are primarily indirect, through their role as indicators of social, economic or political factors, interventions that address the former while ignoring the latter are likely to have only limited and short-term impacts on fear.

More generally, these findings highlight the complexity and theoretical sophistication of the discursive and conceptual contexts within which fear is articulated. People's perceptions of their environments are not simple reactions to stimuli, but are irreducibly linked to their views about the communities and the broader society in which they live. The qualitative findings suggest that much of the available theory and data on fear of crime, particularly in the more positivist research tradition, has underestimated its theory-laden and context-sensitive nature. In particular, views of and reactions to crime are closely bound up with views about politics and policy. In some cases – of which Squires' data on CCTV provide a clear example – this may lead to strongly negative perceptions of environmental crime prevention interventions. It is not just that such interventions raise awareness of crime, and hence fear (although this may often also be the case), but that they are seen explicitly as inadequate substitutes for more substantive (and expensive) solutions, and hence as indices of the unimportance of disadvantaged neighbourhoods to policy-makers. In addition, the perception of certain neighbourhoods as safe or risky is based on a complex of factors that are sometimes justified in terms of their physical appearance or layout, but which are also centrally informed by social stereotypes about the populations of those neighbourhoods (see *Social stigma and area reputation*).

Fear and risk

The relation between fear and risk (what we described in the theory review as the 'affective' and 'cognitive' components of fear of crime; see *Chapter 3*, *Fear of crime: measures and contexts*) cuts across many of the qualitative findings. It is clear from the qualitative data that perceptions of risk are often closely linked to fear. Many participants describe extensive and fine-grained assessments of risk, and detailed mental maps of particular neighbourhoods and places. Some sources of information for risk assessment are direct in the sense of constituting information about crime rates: personal experience, others' reported experiences, media reports and so on. Other sources are more indirect and build on specific contextual cues in the social or physical environments to inform assessments of risk.

However, it is also clear that such processes for assessing risk are themselves often saturated with symbolic ideas and judgements. This is already the case on an individual level but is amplified further at the social level, as discourse about crime and risk taps into, and thereby perpetuates, prevalent social stereotypes. As a result, it is difficult to separate out a cognitive or rational component and an affective or symbolic component, as many theorists have attempted to do. The qualitative data also underline the importance of minor crime and antisocial behaviour, or concrete threats of crime, in the genesis of fear. Such experiences are reported particularly by women, minority ethnic participants and lesbian and gay participants. These findings suggest that the relationship between perceptions of risk may inform fear in complex ways

that cannot be captured by simply comparing statistical risk of a given crime with expressed fear of it. We return to these questions in *Chapter 7* (see *Fear and rationality* and *Inequalities and spirit injury*).

Two further points should be noted here. First, subjective risk may function much of the time unconsciously, for example in shaping avoidance behaviours, without emerging into consciousness as an explicit estimate of risk. Although qualitative data alone can illuminate this question to a limited extent only, it appears that much of the 'processing' of risk cues may take place unconsciously, and possibly that the impact on fear may itself be unconscious.

Second, the risk–fear relation appears to vary considerably depending on the type of crime in question. It is clear that some crimes are feared much more than others, particularly rape, sexual assault and child abduction. For several participants, the notion of objective risk appears to have little meaning as applied to these most serious crimes. The mere possibility of any risk at all is seen to outweigh any other considerations, or, more exactly, to mean that it would be inappropriate to attempt to quantify and balance the risk against other risks and benefits. This suggests one reason why reducing fear of crime has proved so difficult: as the risk can never be eliminated altogether, responses to crime are unlikely to track changes in perceived risk (nor, a fortiori, changes in actual risk).

Population subgroups and inequalities

Several differences between population subgroups emerge from the qualitative data. Although it is difficult to say on the basis of these data to what extent fear is more serious in some groups than in others, there is considerable evidence that fear has greater impacts on behaviour for some groups, particularly women but also (although fewer data are available) people with disabilities, people with mental health problems and possibly black and minority ethnic (BME) and lesbian and gay people. The findings in older people appear to be more mixed, with some reporting substantial impacts and others few or none.

There appear to be some congruences between the experiences of women and those of minority ethnic participants and gay and lesbian participants in the way that fear of crime is linked to broader dynamics of social inequality. Participants from all of these groups report a pervasive fear, driven by everyday experiences of discrimination and harassment, which supports an awareness of the possibility of more serious crime. Perceptions of risk also appear to inform their experience of the environment at a more fundamental level, in the sense that they constantly 'scan' public spaces for risk, consciously or unconsciously. In addition, for women particularly, their own fears are often reinforced by 'vicarious' fears on the part of husbands, boyfriends or parents. These points are taken up in the discussion in the following chapter (see *Inequalities and 'spirit injury'*). It should also be noted, however, that parents of young children report a similar kind of pervasive fear but without the same experiential grounding, so this phenomenon cannot be explained in any one-dimensional way.

The perceptions of children and young people are distinct from those of adults in several ways. For younger children in particular there appear to be specific environmental cues for fear that are distinct from those of adults (see *Cleanliness and neglect*). Older young people (teenagers) also report different determinants of fear. Young people in disadvantaged areas appear to face considerably greater risk of violence when leaving their own areas. This may indicate that the fear of unfamiliar areas is more directly grounded in realistic estimates of risk, and experiences of victimisation, for young people than it is for adults. Finally, children and young people have limited autonomy in responding to risk and their movements are often restricted by their parents (although they have various ways of getting around such restrictions); they are conscious of the dissonances between their own and their parents' estimates of risk and often aware of ways in which the latter are misinformed.

The perceptions of older people also seem to some extent to be distinct. Two sets of themes appear to be particularly characteristic of this population. The first is the broader meaning of crime as a symptom of social decline, the belief that crime is increasing and the linking of discourses about crime to broader understandings of social trust and cohesion. These perceptions are by no means expressed only by older

participants, but they appear to be more strongly expressed by them. The second is the perceived importance of individual-level factors, such as psychological dispositions. Older people appear to be more likely to trace fear back to questions of one's own attitudes to the world and less likely to situate it in the wider environment. This may arguably reflect a broader long-term shift within British culture, with participants born before the Second World War more likely to explain emotional responses 'subjectively', in terms of individual propensities and character, and later generations more likely to explain them 'objectively,' in terms of the aspects of reality to which they respond.

People with mental health problems appear to suffer particularly seriously from fear of crime (see *Psychological stress*). However, the data do not allow any further elaboration of the pathways involved here.

Limitations of the review

Like the review of effectiveness, this review of qualitative data was carried out using full systematic review methods. However, there are a number of potential limitations that should be borne in mind when considering the findings.

The thematic analysis method used to prepare the initial synthesis of findings focused on the development of common themes and reciprocal translation between studies. The strength of this method is that it maintains transparency as far as possible and highlights those aspects of people's attitudes and experiences that appear in different populations and contexts. By the same token, however, it may tend to decontextualise the findings. In addition, it gives greater weight to themes that are reported more frequently than to those that may be most fundamental in determining people's experiences and behaviour. Moreover, only direct quotes from participants were coded for the analysis; study authors' interpretations were not coded. For several studies this meant that data on some themes were not included in the synthesis, as the study authors reported only their interpretations of these data without reporting direct quotes. We return in the following chapter to the theoretical implications of the findings, seeking to draw together the findings from this chapter with those from the review of theories (see *Chapter 3*), so these broader contexts have not been lost entirely from the synthesis. Nonetheless, our analysis does not take account of much of the interpretive work carried out by the primary researchers. This issue is addressed further in *Chapter 7* (see *Using theory to inform the review of qualitative evidence*).

The scope of the included studies is limited in certain respects. The search terms and syntax used may have failed to locate relevant studies. In particular, the use of terms for environmental interventions and for crime and fear of crime may have excluded studies that did not use this vocabulary. These limitations may account for the absence of several themes that appear prima facie relevant. For example, studies of domestic or intimate partner violence were probably not located because of not using terms for environmental interventions or fear; and the relatively limited amount of data on CCTV might be because of the failure to locate studies focusing on this topic that were not indexed using crime or fear terms.

As is often the case with systematic reviews of qualitative evidence, the inclusion criteria may appear arbitrary in liminal cases. The synthesis eventually included a considerably wider range of themes than were envisaged in the criteria. Although studies were required to present substantive data on fear of crime and the built environment, the findings show that, to make sense of both of these factors, they need to be set in the context of the wider social environment. Hence, a number of studies were excluded even though they could have made a useful contribution to the review. For example, the study by Girling *et al.*[69] was excluded because it does not focus on fear (the research question is to do with attitudes to crime in general) and the study by Stanko[367] was excluded because it does not present data on the built environment, but both studies report data on several of the themes in the final synthesis.

The included studies are highly heterogeneous in terms of population, setting, and research question and theoretical perspective, and generalising across them may create problems. They are also highly variable with respect to study quality, as rated by our tool.[245] However, it is debatable to what extent the tool used reflects the validity or usefulness of the studies' findings. This is not so much because of the particular characteristics of the tool, but because any reasonably transparent rating system for qualitative studies tends to emphasise the reporting of methods. This is particularly a problem for this review because many of the included primary studies come from a sociological or criminological tradition in which the detailed reporting of methods for sampling, data collection and so on is not part of the standard format for reporting. For this reason we have not attempted to weight the findings by quality rating nor excluded lower-quality studies.

The presence of systemic biases in the included studies cannot be ruled out. In particular, those studies that focus specifically on fear of crime (as do most of the studies that provide a substantial amount of data) may have overestimated its extent and seriousness relative to other problems and concerns, through biases in sampling, data analysis or elsewhere. The findings of Farrall *et al.*[49] indicate that using less purposive sampling techniques leads to the conclusion that fear of crime is less serious than many of the studies included in this review would suggest. Thus, although our findings may help to understand the thematic structure of fear of crime, they cannot quantify the relative importance of the latter in the context of individuals' lives or society as a whole. To the extent that our findings do support conclusions on the severity of the impacts of fear of crime, for example with respect to psychological well-being or social cohesion, they tend to show that these impacts are fairly limited (see *Psychological stress* and *Social isolation and lack of cohesion* respectively), although the effects on physical activity may be greater (see *Restricted movement and activities*).

Chapter 7 Cross-study synthesis

Introduction

In this chapter we bring together the findings of all of the components of the study: the systematic reviews of effectiveness and qualitative evidence, the review of theories and pathways and the interview and focus group findings. The methods used in this chapter have been largely informal, using a process of cross-translation between the themes to draw out the mutual implications between the different components of the project. (The more formal methods that are available – at least for the integration of qualitative evidence with effectiveness evidence, such as the EPPI-Centre methodology[368] – would probably not yield useful results for our data because of the low quality and heterogeneity of the effectiveness findings. Previous methodological work on the integration of qualitative research with theory is discussed further in *Using theory to inform the view of qualitative evidence*.)

Implications for interventions returns first of all to the findings of the effectiveness review, considering how the findings from the other components (particularly the qualitative systematic review) might further illuminate the data on effectiveness. Following this, *Broader implications for interventions* considers how the theoretical and qualitative data might be used to make suggestions for interventions for which evaluation data are so far lacking, and addresses some of the broader questions raised by the policy and practice context of such interventions. *Implications for theory* then turns to the theory review, drawing out some of the theoretical debates discussed there and considering how they might be informed by the evidence from the systematic reviews. *Methodological reflections* considers some of the methodological implications of the project as a whole, particularly with respect to the integration of reviews of theory into systematic reviews.

Structure of the chapter

Table 4 outlines the structure of the chapter, showing how each part of the cross-study synthesis draws on material from across the different components of the project. *Table 4* is not exhaustive and in particular does not show the connections between the different parts of this chapter itself, but it provides a guide to the main findings discussed in each section.

Implications for interventions

In this section we briefly draw together the effectiveness evidence, organised according to the categories in *Chapter 5*, with the other components. The limitations already noted in *Chapter 5* (see *Limitations of the review*), particularly the low quality of the effectiveness evidence and its heterogeneity with respect to intervention content and outcome measures, should be borne in mind throughout this section.

Home security interventions

The effectiveness review found mixed findings for home security with respect to fear-related outcomes. We speculated that some of the variation might be explained by whether interventions involve raising awareness around crime more generally (the less effective interventions) or are set in a broader context of environmental improvement (the more effective interventions). The qualitative data would seem to lend some support to this in that physical security measures were found to be potentially reassuring but were also associated with feelings of anger and with the view of crime as a symptom of social decline. Thus, the two bodies of data taken together suggest that physical security interventions may have limited potential to reduce fear in the context of strongly crime-focused intervention programmes, but that security enhancements may be promising as part of broader environmental improvements.

TABLE 4 Structure of the chapter

Chapter section	Effectiveness review (see *Chapter 5*)	Qualitative review (see *Chapter 6*)	Theory review (see *Chapter 3*)
Home security interventions	*Home security interventions*	*Security measures*	*Built environment and crime, Social environment and crime, Built environment, social environment and fear of crime*
Street lighting	*Street lighting*	*Street lighting*	
Closed-circuit television	*Closed-circuit television*	*Closed-circuit television*	
Multicomponent crime prevention interventions	*Multicomponent crime prevention interventions*	*Security measures, Environmental visibility, Cleanliness and neglect, Social meanings of the physical environment*	
Housing improvement	*Housing improvement*	*Cleanliness and neglect, Social cohesion and interpersonal networks, Public and residential areas*	
Regeneration and area-based initiatives	*Regeneration and area-based initiatives*	*Cleanliness and neglect, Findings (2): social environment, Discussion*	
Improvements to public areas	*Improvements to public areas*	*Cleanliness and neglect, Public and residential areas*	
Crime, fear of crime and well-being revisited	*–*	*Findings (4): consequences of fear, Social meanings of the physical environment*	*Fear of crime: measures and contexts, Crime and health, Crime and fear of crime, Fear of crime and health and well-being*
Environmental improvements	*Improvements to public areas*	*Cleanliness and neglect, Public and residential areas*	*Built environment and crime, Built environment, social environment and fear of crime, Built environment and health and well-being*
Integration of fear of crime reduction with broader initiatives	*Regeneration and area-based initiatives*	*Findings (2): social environment*	*Built environment and crime, Built environment, social environment and fear of crime*
Inequalities and targeting of interventions	*Population subgroups and inequalities: fear of crime outcome measures*	*Ethnicity, Gender, Sexuality, Social stigma and area reputation, Population subgroups and inequalities*	*Background, Perceived risk and emotional responses, Crime and health*
The policy context of fear of crime	*Chapter 5 passim*	*–*	*Fear of crime: measures and contexts, Built environment and crime, Appendix 12*
Implications of the findings for research and policy	*–*	*–*	*Fear of crime: measures and contexts, Crime and health*
Crime Prevention through Environmental Design	*Multicomponent crime prevention interventions*	*Findings (1): physical environment, Public and residential areas*	*Built environment and crime, Built environment, social environment and fear of crime*
Fear and rationality	*–*	*Fear and risk*	*Fear of crime: measures and contexts, Crime and fear of crime*
Fear as symbolic attractor	*–*	*Crime as a social symptom*	*Fear of crime: measures and contexts*

TABLE 4 Structure of the chapter (*continued*)

Chapter section	Effectiveness review (see *Chapter 5*)	Qualitative review (see *Chapter 6*)	Theory review (see *Chapter 3*)
Social cohesion and collective efficacy	–	*Area knowledge, Social cohesion and interpersonal networks, 'Self-policing' and 'grassing'*	*Social environment and crime, Built environment, social environment and fear of crime*
Incivilities	*Multicomponent crime prevention interventions, Regeneration and area-based initiatives, Improvements to public areas*	*Cleanliness and neglect, Young people as threat, Alcohol and drug users as threat*	*Built environment, social environment and fear of crime*
Inequalities and 'spirit injury'	–	*Ethnicity, Gender, Sexuality, Social stigma and area reputation, Population subgroups and inequalities*	*Background, Perceived risk and emotional responses, Crime and health*
Fear and well-being	–	*Findings (4): consequences of fear*	*Fear of crime and health and well-being*

Street lighting

The effectiveness review found limited evidence that street lighting reduces fear. There is some evidence of improved fear outcomes as a result of lighting improvement interventions from studies using non-comparative designs. However, studies using more robust controlled designs are more equivocal, with two showing no improvement, one with mixed findings and only one providing clear evidence of effectiveness.

The qualitative findings are arguably encouraging with respect to lighting interventions, given the recurring finding that inadequate lighting increases fear. However, the qualitative review also suggests that, in many cases, the direct impacts of lighting may be outweighed by social factors and that some participants were sceptical about the likely effect of lighting improvements on fear. This suggests that, although improved lighting may have some role to play in reducing fear as part of a broader intervention programme, it is not promising in isolation.

The qualitative findings also point to a number of more specific implications with regard to lighting interventions, such as the importance of consistency in lighting, the need to take into account the layout of the built environment and the overall visibility of areas in planning relighting, and the preference for white lights over yellow or orange ones; this last point is borne out by the effectiveness literature (Knight).

Closed-circuit television

The findings on CCTV appear to be consistent in that there is very little evidence that CCTV improves fear outcomes and few positive perceptions of it to be found in the qualitative data. The findings strongly indicate that CCTV is not a promising intervention for fear of crime (see also *Crime Prevention through Environmental Design* on 'natural surveillance').

Multicomponent crime prevention interventions

The effectiveness review found that multicomponent crime-focused interventions were generally ineffective for fear of crime or social outcomes, although the data are not unequivocal. A number of factors that are often a particular focus of these interventions can be related to the qualitative review. Arguably the most important are 'physical incivilities' such as run-down or abandoned buildings, graffiti and litter. The qualitative evidence is to some extent encouraging here, in that the association between such environmental evidence of neglect and fear of crime is a recurring theme; as noted in the theory review

(see *Chapter 3, Built environment, social environment and fear of crime*), this theme is also strongly borne out by the observational quantitative evidence (see further *Incivilities*). On this basis, one might speculate that the failure of interventions to demonstrate reductions in fear is either because of limitations in the available evidence or because of other components of the interventions negating the positive effects of a reduction in incivilities.

This said, the qualitative review also found that, in many cases, incivilities are associated with fear through their social (and politicoeconomic) connotations, rather than directly. [The quantitative observational evidence included in the review of theory has little to say about this question, although the finding in some studies (see *Chapter 3, Built environment, social environment and fear of crime*) that participants' perceptions of incivilities are a better predictor of fear than researcher-rated measures may be relevant.] It could be argued from the qualitative data that the underlying complex of social and material disadvantage is a more important determinant of fear than its physical symptoms, and hence that interventions with a primary focus on the latter are inherently limited. (Although several interventions in this category did also include social components, they were in most cases relatively limited and crime-focused and unlikely to impact on broader community-level problems.) However, the qualitative findings are by no means conclusive on this point and a more optimistic reading is possible; see further in *Improvements to public areas*.

Another factor is visibility or 'openness', which emerges from the qualitative evidence as a potentially strong determinant of fear. This may be addressed in interventions by, for example, removing vegetation or other obstacles to visibility, improving lighting and installing mirrors. Three intervention studies (Baker, Felson, Webb) particularly emphasised such components, all of which found broadly encouraging trends towards reduced fear. Finally, as already noted, the qualitative review found generally negative perceptions of security measures such as fencing and shutters. Interventions with a strong focus on measures such as locks, barriers, entry systems and road closures generally appear to be less likely to show evidence of effectiveness (Arthur Young, Baker, Donnelly, Fowler, Kaplan a). However, although these resonances between the two sets of data are suggestive, they involve sweeping generalisations about complex multicomponent interventions and highly equivocal data, and are very far from demonstrating the differential effectiveness of the intervention components.

Housing improvement

The effectiveness review found mixed evidence for an effect of housing improvement and relocation interventions on fear outcomes. The implications to be drawn from the qualitative evidence are also somewhat mixed. On the one hand, the qualitative data indicate the importance of a pleasant and welcoming physical environment in reducing fear, which would suggest that housing interventions are promising in reducing fear. On the other hand, the qualitative data also indicate the importance of social familiarity and interpersonal networks in protecting against fear (although, as the data on self-policing indicates, these factors are not invariably positive in their effects). This latter body of data suggests that interventions such as relocation may have adverse effects with respect to fear if they disrupt social networks, although this implication is not clearly borne out by the detail of the effectiveness data.

Regeneration and area-based initiatives

Taken in overview, the qualitative data strongly encourage an integrated, area-based approach that integrates crime prevention activity within broader environmental and social programmes. However, the small body of effectiveness data on such interventions is equivocal and does not strongly indicate that they are effective in reducing crime. As previous research has found,[308] it is very difficult to evaluate these broad interventions with respect to health or socioeconomic outcomes; our findings bear out this difficulty. There is a clear need for more robust evaluations of regeneration and area-based initiatives in general, and with respect to fear of crime outcomes in particular.

It is possible that the very substantial improvements in fear of crime outcomes seen in both the intervention group and the control group of the New Deal for Communities evaluation (Beatty) indicate

the effect of programmes targeted at deprived areas in general, and operating outside the New Deal for Communities framework, but, of course, this cannot be demonstrated from the available evidence. As already noted, the findings of the New Deal for Communities evaluation are consistent with evidence from the British Crime Survey showing a steady improvement in fear outcomes across the UK population over the last 15 years or so (see *Implications of the findings for research and policy*).

Improvements to public areas

The effectiveness review found that non-crime-focused environmental improvements in public areas can produce small but significant improvements in perceived safety outcomes. This again bears out the importance of physical incivilities as found in both the qualitative review and the theory review. Relatively small-scale and low-cost interventions appear to be promising when they address common environmental cues for fear such as graffiti, although it is unclear whether or not the improvements in cognitive outcomes (perceived risk) will feed through to improved affective and well-being outcomes.

More specifically, we may be able to relate the effectiveness findings to the distinction between public and residential areas with respect to determinants of fear that we tentatively proposed on the basis of the qualitative evidence. If we look again at categories 4 and 7 together (i.e. environmental improvements with and without a crime prevention focus respectively) and then divide by public or residential area, those with a greater focus on public areas, such as commercial areas or public transport (Baker, Cohen, Felson, Kaplan b, Palmer, Webb), are arguably, although not invariably, more likely to be effective than those with a main focus on residential areas (Arthur Young, Donnelly, Fowler, Mazerolle). [It is unclear on which side of the divide we should place schools, as we have little qualitative data on the school setting; arguably, the relatively persistent and substantive social relationships found in schools make them more like residential than public areas. This would make Kaplan *et al.*'s study of schools (Kaplan a) an exception to the general trend.] If this interpretation is tenable, it may suggest that environmental improvements generally (whether crime focused or not) are more promising in public areas than in residential neighbourhoods, where the effect of the physical environment in isolation is likely to be outweighed by social factors.

Broader implications for interventions

As well as providing some illumination of the patterns found in the effectiveness review, the qualitative and theoretical reviews, in conjunction with the stakeholder interviews, might help to make suggestions regarding interventions that go beyond the effectiveness data. In this section we briefly consider a few ideas along these lines; these are purely speculative and should be considered mainly as pointers to future research and theoretical work.

Crime, fear of crime and well-being revisited

The theory review found limited evidence for a strong link between crime, considered in isolation, and health and well-being at the population level (as distinct from the health impacts of crime on individual victims). Although there is a robustly established area-level association between higher crime and poorer health, it is unclear whether or not we need to posit a direct causal link to explain this association rather than an indirect one driven by shared determinants of the two outcome types, particularly socioeconomic disadvantage.

To the extent that such a link exists, most existing measures of fear of crime do not appear to be very useful in exploring it. Although there is some evidence for a modest association between fear of crime and health outcomes, fear of crime itself is only weakly related to crime and hence not a reliable mediator between crime and health. Any direct area-level link between crime and well-being is probably more likely to be explained by a general concept of psychological stress. The social impacts of crime are likely to be more accurately measured using existing measures of social well-being (e.g. social cohesion, trust) rather than measures of fear of crime.

The review of theory suggests that the true value of fear of crime as an explanatory mechanism is probably to be found elsewhere than in the link from crime to well-being. The associations observed between fear of crime and health and well-being outcomes on the one hand and environmental determinants on the other suggest that fear may be a mechanism for mediating the effects of environmental factors more generally, such as environmental neglect or poor housing conditions, on health and well-being. However, the findings of the qualitative review indicate that these factors need to be understood in a holistic way that integrates their social meanings, and not treated as purely physical determinants, to understand their impact on well-being. In addition, there remain a number of unanswered questions about the link between fear of crime and health outcomes, particularly with regard to the direction of causality underlying it and differences in its strength among different population subgroups.

Because of the unclarity of the crime–well-being link, it is difficult to reach any substantive conclusions on the extent to which crime reduction may be a promising way to improve health and well-being more broadly. This is exacerbated by the near-total absence of evaluation data measuring the health effects of crime reduction interventions. We located only a single study of a crime reduction intervention in the general community-living population that measured health status outcomes (Halpern). This study, although showing some promising findings, suffers from some methodological limitations. In addition, as the intervention evaluated included a substantial amount of more general, non-crime-focused environmental improvement, it could plausibly be argued that the positive mental health effects observed were a result of the generally improved housing stock and public environment, rather than anything to do with crime. Further research along these lines is clearly needed. The effectiveness findings regarding social outcomes such as social cohesion, although not quite as exiguous as those on health outcomes, are also highly inconclusive.

Thus, the available evidence base does not allow us to recommend any particular crime-related intervention or policy from the point of view of mental health, or of health and well-being more broadly considered. In general, the findings of the theory review and the effectiveness review do not indicate that narrowly focused crime reduction interventions are likely to be an effective or cost-effective way to improve well-being. However, the findings of the effectiveness review on reducing the fear of crime do provide some pointers as to how crime-related policies and interventions might impact on well-being, with the caveat that this implication relies on the links between fear of crime and well-being reported in the theory review, which are not based on a fully robust systematic synthesis of the evidence.

Environmental improvements
Arguably the single most promising category of interventions in the effectiveness review consisted of small-scale environmental improvements in public areas. It should be remembered that the effectiveness evidence here consists only of two, relatively low-quality studies (Cohen, Palmer), with methodological limitations in a number of domains including selection bias and study design, and which demonstrate effectiveness only for perceived risk and not affective fear outcomes. Nonetheless, it is suggestive that their findings are congruent with the qualitative evidence and with the relevant theory. These findings are particularly encouraging as such interventions are generally low cost and relatively easy to implement. In addition, the quality of life impact of minor environmental improvements is already on the policy agenda, in the shape of initiatives such as the Community Payback scheme (see www.gov.uk/community-sentences/community-payback; accessed 9 December 2013).

Further research on these interventions would be of value to more rigorously evaluate effectiveness, identify which components contribute to the intervention impact and establish whether or not there are impacts on broader well-being outcomes. As already noted, the most promising locations appear to be heavily used public areas, such as transport hubs, rather than primarily residential areas. The evidence suggests that addressing visible 'eyesores' such as graffiti and litter should be the main priority; it may also be of value to consider factors such as lighting, visibility and signage. The qualitative evidence also indicates that a number of more specific factors in particular environments may have an impact on fear. Hence, the design of interventions may benefit from integrating qualitative evidence, both the general evidence base

considered in this review and, if possible, further formative research conducted with reference to the specific location where the intervention is planned.

Integration of fear of crime reduction with broader initiatives

Although the effectiveness evidence is inconclusive – and leaving aside the challenges identified in the previous section – the qualitative and theory reviews suggest that narrowly focused interventions to reduce fear of crime (such as intensified policing, or the provision of information about crime) are less likely to be effective than interventions that address either general problems in the environment (e.g. environmental improvements, housing renewal, and urban regeneration more generally) or the social, economic and political determinants of fear. The latter might include, for example, interventions to promote social cohesion, reduce alcohol and drug use, address racism and other forms of discrimination and promote the empowerment and decision-making capacity of communities. The absence of a clear message from the available data on the effectiveness of these broader interventions is problematic, but the other data considered in this project indicate that such strategies are promising ways to reduce fear of crime, and further evaluation research would be valuable.

Inequalities and targeting of interventions

The qualitative review and elements of the theory review indicate that different groups within the population vary substantially in the determinants of their fear of crime and in the extent to which the latter affects well-being. There is little reason in the effectiveness evidence to think that any of the included interventions increase inequalities in fear of crime outcomes. It is unclear whether this is the case with respect to health and well-being outcomes. However, there are some promising (if inconsistent) effectiveness findings regarding avoidance behaviours. Given that the qualitative evidence (see *Fear and well-being*) supports the latter more than any other putative mechanism linking fear of crime and health and well-being – and suggests that it may generate inequalities, particularly by gender – this would be a valuable focus of future research.

Many interventions included in the review were targeted at high-crime and/or low SES areas, broadly defined. Although there are obviously good reasons for this, the qualitative evidence suggests some potential drawbacks. First, the social stigma attached to areas with a bad reputation is substantial and may have damaging impacts in its own right, and it is possible that intensive crime-focused interventions could exacerbate this. Second, the points made earlier about the relation of fear of crime to crime are also relevant to the question of targeting. Many participants recognise that their local areas suffer from high crime rates but express low levels of fear, because of the protection offered by their social insidership. Conversely, many residents of low-crime areas express considerable fear, which impacts substantially on their behaviour. Although the dynamics here are complex – for example, low-fear but high-crime areas might be accounted for in terms of residents 'normalising' their circumstances in a potentially problematic way – it is clear that areas or communities at high risk of crime are not necessarily those at high risk of fear of crime. Third, many participants are explicitly critical of what are perceived to be cosmetic fixes that do not address the underlying causes of crime and fear of crime. This perception particularly emerges from the data on CCTV, but there seems to be a more general point that superficial or ill-thought-out attempts at intervention can reinforce a sense that a community's problems are unimportant to decision-makers. (This should also be entered as a caveat against our recommendations on environmental improvement made earlier; see *Environmental improvements*.)

One population subgroup of particular interest is people with mental health problems. Although the data are not conclusive, there is reason to suspect that a substantial part of the observed population-level association between fear of crime and well-being may be accounted for by a strong association among the relatively small subgroup of the population who have clinical or subclinical mental health problems. In addition, and still more speculatively, people subject to repeat victimisation may suffer particularly strong well-being effects. If so, interventions addressing these populations specifically might be a more effective and cost-effective way to improve well-being through reducing fear of crime than interventions aimed at the whole population.

The policy context of fear of crime

As already noted at various points, there appear to be strong suggestions in all four components of the project that a more integrated approach is promising from the point of view of addressing fear of crime. To date, policy and research on fear of crime have tended to be strongly bound up with that on crime; the great majority of research has been carried out by criminologists, and the policy agenda on fear of crime has been almost exclusively driven by agencies with a main interest in crime and policing. Hence, the reduction of fear of crime has usually been pursued as a beneficial side effect of reducing crime, rather than as a primary goal in its own right.

There are obviously good practical reasons why fear of crime has remained largely within the orbit of crime. However, this situation is potentially problematic, as many policy-makers and researchers working in crime-related fields are well aware, because of the absence of any reliable link between crime and fear of crime. Both the observational quantitative data and the qualitative evidence, as well as the experiences of practitioners, illustrate how fear of crime does not closely track crime rates. Because of this, it is prima facie questionable whether or not a strongly crime-focused approach, led by police forces or by other stakeholders with a main focus on crime reduction, is the best way to reduce fear, and this scepticism tends to be borne out by the effectiveness evidence. (Indeed, there are serious questions as to whether or not currently widely used approaches to environmental crime prevention have been rigorously shown to be effective even with respect to crime outcomes; however, these questions lie beyond the scope of this review.)

More specifically, as Farrall *et al.*[49] observe, the centre of gravity of the fear-of-crime agenda in the UK – at least as far as evaluation is concerned – has shifted away from academic research and towards policy stakeholders since the mid-1990s. One side effect of this shift has been to dissociate evaluation research on fear of crime from broader sociological perspectives, which have largely been left to the critical qualitative tradition, and to shape it more in accordance with policy agendas. This raises a potential concern about the independence of this research, particularly given the findings of the effectiveness review that very few studies use robust designs that can minimise bias.

Some commentators on policy have suggested that this has made fear of crime research somehow complicit with punitive and authoritarian policy agendas on crime. This is a real concern, and the history of policy presents a number of examples of how research and theory on the well-being impacts of crime have been used to support such agendas, such as the 'broken windows' idea (see *Chapter 3, Built environment and crime*). On the other hand, our interviews with stakeholders (see *Appendix 12*) suggest that the opposite may often be the case, in that punishment-centred approaches to crime tend, in practice, particularly when there is pressure on resources, to crowd out any concern with fear, or more generally with the broader impacts of crime on communities. The interview data suggest that this has particularly been the case in the UK over the last couple of years, such that fear of crime has become a less central concern for decision-makers than in the 2000s, when, for example, fear of crime was explicitly included as a target in public service agreements.

Even where fear of crime remains a concern, the shift towards more policy-oriented research has arguably obscured its specific nature and significance. The goal of reducing fear of crime has often not been clearly distinguished from other goals to do with changing public attitudes, in particular promoting more realistic views about crime rates and risks, raising awareness of successes in crime reduction, and promoting more positive attitudes to the police and the criminal justice system. This has led to a certain amount of confusion about how research findings may inform policy. Of course, there are links between these broader attitudinal factors and fear of crime, as several studies have shown (see *Chapter 3, Individual attitudes*). Nonetheless, such factors are not the primary determinants of fear of crime. To the extent that attitudes to crime are linked to fear of crime, the broader social meanings of crime appear to be more important than views about its prevalence or the effectiveness of policies to deal with it, or about police–community relations. In addition, although these latter attitudinal outcomes may have some value for evaluation purposes, they seem prima facie unlikely to have any well-being implications.

The widespread conflation of fear of crime with such broader factors has not been conducive to a focused attention on what reduces fear.

Thus, the messages implied by research and theory on fear of crime – including here not only the more critical work conducted since the early 1990s but also the predominantly quantitative observational studies of the 1970s and 1980s – have not been widely taken up in a policy and practice context. Although academic researchers have continued to advocate a dissociation between crime and fear of crime at the conceptual level, and to see the latter as a broad complex of environmental perceptions that may not be closely related to crime, the policy and practice implications of such a dissociation have not been thought through in detail. The available evidence and theoretical reflections on fear of crime suggest that there is potentially value in making fear of crime a more mainstream part of the agenda in other policy fields, particularly public health, but also urban planning, social policy and social inclusion, so that the broader social and policy determinants of fear can be more effectively addressed.

There are some indications in the literature (including the existence of this project) that such a shift has already begun, and that fear of crime is becoming more recognised as a dimension of the well-being agenda in its own right, rather than as a subsidiary dimension of crime reduction. Combined with the suggestions that fear is becoming a less central issue for policy-makers and practitioners in crime-related fields, this suggests that a more general reorganisation of the evidence and policy landscape may be under way. Thus, this would seem to be an opportune moment to consider how policy and research on fear of crime might develop to take account of this changed context.

Implications of the findings for research and policy

Within research and policy on crime, the findings of this review indicate that – to the extent that fear of crime remains a policy concern – a broader recognition that reducing crime and reducing fear of crime often do not go hand-in-hand, and may even conflict, would be valuable. Further policy guidance and research to determine the relative importance of the two goals would be valuable here. This might, for example, include further work on costs and cost-effectiveness along the lines of Dolan *et al.*'s work,[122,234] or, more generally, further research to enable comparison of the well-being consequences of crime and fear of crime on a common metric. As discussed earlier, it is also important to distinguish fear of crime from more general attitudinal measures to do with crime and policing.

In terms of public health and social policy research more generally, the consequence of seeing fear of crime as a dimension of well-being would seem to be to encourage its use as part of a battery of measures examining people's perceptions of the social and physical environments, along with measures such as social cohesion, perceived trust, satisfaction with the environment and so on. Indeed, several of the studies of non-crime interventions in the effectiveness review do exactly this. Further uptake of fear of crime as an outcome measure in evaluations of social and environmental interventions – particularly along with measures of health behaviours and health status – would be a valuable contribution to the evidence base.

However, such an increased uptake of fear of crime as an outcome measure is likely to face a number of challenges. One is the difficulty of translating between distinct disciplinary 'framings.' As discussed in the review of theory, the irreconcilability of the different academic discourses required to understand the impacts of crime on health and well-being corresponds to serious differences between the conceptual frameworks used by different groups of stakeholders. In particular, the relatively narrow range of approaches that predominate in crime- and policing-related fields may pose a problem for communication with decision-makers in other policy and practice areas. This may partly account for the issue identified by Perry[130] that approaches widely recognised as valuable within public health, such as universal primary prevention, have generally not been taken up within crime-related fields (see *Chapter 3, Crime and health*).

Moreover, as discussed earlier (see *Chapter 3*, *Fear of crime: measures and contexts*), there are serious unanswered questions as to how to interpret fear-of-crime outcomes. Arguments for the basic incoherence of the concept have been repeatedly made, and do not seem to have become substantially less valid over time. The meaning of even strong trends in the empirical data on fear of crime, such as the substantial and steadily maintained year-on-year decline in worry about crime in the UK over the last 15 or 20 years, remains fundamentally unclear. British Crime Survey data[310] show worry about burglary declining steadily from a high of 26% in 1994 to 10% in 2010–11, and worry about violent crime declining similarly from 25% in 1998 to 13% in 2010–11. As noted earlier, the utilisation of the concept in the context of policy and practice has also been beset by ambiguities. These apparently insoluble problems have given rise to a widespread sense that the fear-of-crime agenda no longer provides an adequate theoretical framework, and that a transition to a more inclusive concept is required.[71]

Thus, it may be challenging to integrate fear of crime into a more general picture of environmental impacts on well-being, as it is still unclear what the environmental determinants of fear of crime really are, and what aspects of fear impact on well-being. Although we make a few suggestions below, it seems unlikely that the controversies around this issue will be settled in the foreseeable future. In other words, although there is reason to think that measuring fear of crime can help to access some dimensions of the environment–well-being link, it is far from clear exactly which dimensions these are. To some extent, these questions can be addressed only by further empirical research. However, it must be admitted that the long but inconclusive history of fear-of-crime research to date does not inspire confidence in the outcome of such a process.

Implications for theory

In this section we reconsider some of the debates in the theoretical literature, particularly on fear of crime, and make some suggestions as to how they might be illuminated by the findings of the systematic reviews. Inevitably, our summaries of the theoretical literature here will be somewhat selective: we focus on issues to which our findings seem to have a useful contribution to make. In addition, we organise the findings by separating out the theories, rather than attempting to integrate them as in *Chapter 3*.

Crime Prevention through Environmental Design

As discussed earlier, CPTED theory on fear of crime has rarely been developed in its own right, distinct from the theory on crime. The assumption has usually been that measures effective in reducing crime will also be effective in reducing fear. Moreover, the extent to which CPTED theory is borne out by the evidence with respect to crime outcomes is itself questionable. Nonetheless, CPTED theorists do put forward a coherent and detailed theory of environmental influences on fear of crime. The findings of this project bear out the predictions of CPTED theory in some areas, but indicate its inadequacy in others. In the following sections we set out the relevant findings according to the three foundational concepts of CPTED theory: access control, surveillance and territoriality.

Access control

The concept of access control is perhaps the point at which the distinction between CPTED as a theory of crime and CPTED as a theory of fear of crime is most problematic. Access control is arguably the most robustly evidence based of the three key CPTED concepts with respect to crime outcomes, but is much less securely grounded with respect to fear of crime. There are substantial indications in the qualitative evidence that aggressive and visible access control measures are likely to be ineffective, and may even be harmful, with respect to fear of crime outcomes, and the effectiveness evidence appears to be consistent with this. Access control measures, both those in public space such as shutters and gates and those used for home security such as improved locks, elicit generally negative perceptions and appear to be drivers of fear. Measures in public space are associated with a more general sense of alienation from the built environment, whereas home security measures are associated particularly with a sense of anger about crime.

Surveillance

Crime Prevention through Environmental Design theory predicts that 'natural surveillance' – the sense that a location is visible to others – will tend to reduce fear. This prediction is fairly strongly borne out by the qualitative evidence. Locations that are not visible to others, because of poor lighting or layout, or the nature of land use (e.g. non-residential areas), are generally felt to be fear inducing. More tentatively, it may be supported by the effectiveness evidence, with environmental interventions with a focus on visibility appearing to be more promising; in addition, to the extent that lighting is effective in reducing fear of crime, increasing natural surveillance appears to be a plausible mechanism. A related point, which is consistent with CPTED theory but has been less elaborated, is that the mere presence of other people often tends to protect against fear. (This said, 'surveillance' is a rather misleading term in this context as it misses the links from visibility to a sense of freedom and openness, and from the presence of others to a broader faith in social norms.)

However, some (if not all) CPTED theorists have also extended the concept of surveillance to include CCTV. Our findings suggest that this is not a valid extension of the concept. Most participants in the qualitative studies do not see CCTV as reducing fear nor link it to natural surveillance or visibility.

Territoriality

For CPTED theorists, crime and the fear of crime are exacerbated by an unclear distinction between the private and the public realms. The failure to clearly demarcate the two, leading to ambiguous areas such as the corridors and stairwells of high-rise public housing – a particular focus of CPTED theory – offends against people's sense of 'territoriality', generating anxiety about crime. Although there is some variation in the literature, the predominant sense of 'private' and 'public' here is a legal one: private space is that which is owned by a private individual, public space is that which is owned by a public agency. The divisions on which the sense of territoriality is based, then, are sharply defined and small in scale, running, for example, between a house or garden and the street on which it sits.

As already suggested, our findings tend to indicate that this is a misconception. There is a distinction in perceptions and determinants of fear between residential neighbourhoods and public areas such as shopping streets or parks, but no clear distinction at a smaller scale between privately owned space and public space. Moreover, issues of ambiguity in the definition of space rarely arise explicitly in participants' explanations of fear. To the extent that high-rise public housing is associated with fear, there appear to be better-supported explanations for this association. Hence, there seems to be little reason to take violations of 'territoriality' as a major determinant of fear, or to think that the construct itself is determinative in shaping people's perceptions of their environment.

This said, the distinction between home and street is obviously determinative of perceptions at some level. The idea of the home as a safe space is important, and the violation of this space by crimes such as burglary is often traumatic. However, there is little reason to think that this trauma would be reduced by a more sharply defined distinction between interior and exterior. The association between safety and being 'at home' appears more adequately explained by a broader reading of the affective valence of the latter concept, which does not tie it narrowly to legal ownership (see *Fear as symbolic attractor*).

In addition, a few findings suggest that the idea of territoriality may be more adequate in some contexts and types of physical environment than others. Valentine's findings (Valentine a) comparing higher and lower SES areas suggest that, in the former, where there is little use of 'public' space (in the CPTED sense) for non-instrumental ends, something like territoriality may be more determinative of fear; in the latter, which are characterised by a greater density of social interactions in public space, the territoriality construct is clearly less adequate for understanding perceptions of the environment, and there are few reasons to think that ambiguity of ownership might drive fear.

Conclusions

Overall, the findings of this review indicate that the promise of CPTED – to address fear of crime (and crime, although this is beyond the scope of this project) by modification of the built environment alone – is unlikely to be fulfilled. The effectiveness data, although not conclusive, do not provide strong support for the effectiveness of interventions based on CPTED (although it must be admitted that the other bodies of theory examined in this chapter have not been put into practice in the same way, much less submitted to robust evaluation); and many of the qualitative data do not align with the key concepts of the theory. More generally – aside from the specific predictions of CPTED theory – this review suggests that *any* attempt to address fear of crime through the physical environment in isolation, without considering the social environment or the socioeconomic or policy context, is unlikely to succeed.

Fear and rationality

As discussed in the theory review, some form of dualistic distinction between 'rational' and 'irrational' or 'symbolic' fear has been widely utilised as a fundamental distinction in the theoretical literature. Rational fear would be fear that responds to actual risk (i.e. in which the affective component is purely driven by the cognitive component), whereas all other fear – which has been hypothesised to be driven by a wide range of factors (see following section) – would then be irrational. This framing of the issue has perhaps been a factor in some researchers' and policy-makers' reluctance to separate questions about fear of crime from questions about crime (as we argue is necessary above; see *The policy context of fear of crime*), from an understandable desire to avoid labelling people's fears as irrational or 'merely' symbolic. However, many theorists have argued that this distinction is itself an oversimplification, and fails to take account of how estimations of risk and affective reactions actually inter-relate in the context of lived experience.

Some thinkers on fear of crime have attempted to produce revised versions of the distinction between the kind of fear of crime that responds to immediate risk and the kind that expresses broader symbolic resonances, which can take account of these critiques, such as Jackson's[111] distinction between 'experience' and 'expression'. However, it seems clear that such revisions still face problems in integrating existing theories premised on an absolute distinction between rationality and irrationality with a more critical perspective that would see rationality in more pluralistic or context-sensitive terms.

We would argue that the qualitative evidence tends to show the impossibility of isolating the rational dimension of fear from the symbolic dimension, for several reasons. One has to do with the complexity of the causal pathways, as discussed in the theory review. Even taking into account the various distortions that may affect cognitive assessments of risk, the latter do not explain more than a small amount of the variation in affective responses, and a wide range of other factors may impact on people's emotional experiences. Some factors (e.g. conditions in the physical environment) may be linked to both the cognitive and the affective aspects of fear in distinct ways, and interact in unpredictable ways depending on contextual or individual-level determinants. The practical difficulty of generalising about these pathways, such that the 'rational' core of fear, represented by the impact on affective fear from cognitive risk perceptions, could be isolated from the 'irrational' components represented by the impacts of other factors, is highly challenging.

More fundamentally, however, the identification of the cognitive component of fear with the perceived risk of victimisation is itself conceptually questionable. To the extent that fear responds to a range of environmental factors other than objective risk, its cognitive dimension cannot be limited to the estimation of the latter, but includes a wide range of situated knowledges about the conditions in the social and physical environment, at a range of scales. A particularly important dimension of this, as discussed later (see *Inequalities and 'spirit injury'*), is that the objects of the cognitive dimension of fear include the prevailing structural inequalities and relations of political and socioeconomic domination within a society. Women's fear of rape, for example, may in many cases be a rational, cognitively grounded response to social conditions, in ways that are obscured if it is simplistically juxtaposed to objective rates of rape. As argued by the 'risk society' theorists, then, what counts as risk – and hence what counts as a rational

response to the risk – is open to negotiation in the context of particular experiential regimes, and cannot be defined a priori by statistical generalisations.

Moreover, as the theory review suggests, it is primarily affective outcomes that are of importance from the point of view of well-being outcomes. Given the absence of a straightforward conceptual or empirical link between affective fear and perceived risk, it seems theoretically implausible that the latter is a major determinant of well-being in its own right, and the qualitative data tend to confirm this. Actual victimisation certainly has negative impacts on well-being, sometimes very serious impacts. The mere fact of risk, however, appears to have little impact on well-being unless it is made experientially salient. Salience may be increased by a number of factors, including features of the physical and social environments, but is largely independent of risk: the most experientially salient crimes in terms of fear (rape and child abduction) are usually recognised to be very rare occurrences. (This may depend on background risks being relatively low, such that most individuals are unlikely to be the victims of serious violent crime over timescales of years. In contexts with higher rates of serious violent crime, statistical risk may impact on well-being in the sense that more individuals suffer the direct effects of victimisation.) Thus, we would argue that statistical risk is not a useful way to think about fear with respect to well-being outcomes.

Fear as symbolic attractor

The absence of a strong link between risk and fear has led many theorists to search for the 'missing' drivers of fear: some have focused on specific determinants such as vulnerability, whereas others have cast their net much more broadly. Here we consider three such broader theories: first, the theory that fear reflects anger about the symbolic social meanings of crime, associated particularly with Stephen Farrall and colleagues; second, the idea that fear reflects broader insecurities about status, associated particularly with Ian Taylor; and, third, Hollway and Jefferson's theories on the psychodynamics of fear.

Fear and the social meanings of crime

Farrall *et al.*'s[49] analysis of the data from their own mixed-methods study (the qualitative component of which was included in the present review; see references under 'Farrall' in *Table 2*) emphasises a number of the same themes as our synthesis, including interpersonal interaction, the social meanings of environmental factors and the importance of individual-level psychological dispositions. However, the most distinctive aspect of their analysis emphasises a different component of fear, namely people's anger about the symbolic meanings of crime, and its role as a signifier for a more general breakdown of social order at a broad level. This component of the theory has parallels in the work of some other researchers, particularly Evi Girling *et al.*[69]

Although Farrall *et al.*'s[49] study provides a rich body of qualitative data on the social meanings of crime, there are limited confirmatory findings from other studies. This said, there are a number of points in which our findings could be interpreted in a direction more congruent with Farrall *et al.*'s theory, if the latter is broadened somewhat. In particular, we might focus on the concept of 'cognitive mastery' developed in the analysis of the qualitative data – the idea that fear is often driven by the perceived unpredictability or opacity of the social or physical environment. Such an anxiety about unpredictability can often be seen as embodying an implicit sense of social order (albeit a sense in which people's momentary encounters in public spaces are continuous with more substantive patterns of sustained face-to-face interaction).

Nonetheless, our findings diverge from Farrall *et al.*'s[49] in that we found little corroboration of the idea that attitudes about the social or moral meanings of crime itself are primary drivers of fear of crime. Although the kinds of angry emotional responses they discuss are expressed in the qualitative data (e.g. associated with the need for home security), they do not seem to be strongly linked with fear. Indeed, with some exceptions, it is hard to tell from Farrall *et al.*'s[49] own published reports to what extent the social meanings of crime are really seen by their participants as *explaining* their own fear; it seems as likely that a semistructured interview about responses to crime would naturally move from one to the other, without one necessarily having explanatory value for the other. It is thus hard to rule out the

possibility that much of the association between them is an artefact of the analysis. This said, it must be recognised that the generally high quality of Farrall *et al.*'s[49] study counts against any concerns about the analysis. In addition, our review almost certainly missed relevant material on the social meanings of crime, because of the search terms and criteria used, and it is possible that a more focused search would locate data confirming this aspect of their theory.

Fear and status anxiety

Another theory, expressed most cogently by Taylor and Jamieson,[66] holds that fear of crime mainly expresses individuals' anxieties about their own status and position, related particularly to a repressed awareness of the fragility of middle-class status, and to anxieties about national decline more generally. Such theories have some connections both to those examined in the previous section, in their emphasis on the broader social meanings of fear (although Farrall *et al.*[49] criticise them for downplaying the experiential dimensions of fear and the experience of working-class people), and to those examined below, in their focusing on fear of crime as a point of articulation for broader anxieties.

Relating this theory to the data is challenging in many ways, and it is not designed to make concrete empirical predictions (in particular, it is unclear that the theory provides substantive explanations of changes over time, or variations between groups or settings, with respect to fear). In addition, to the extent that it explicitly appeals to unconscious motivations, it cannot be directly addressed by data of the type collected in the qualitative review, or by an analysis that remains largely uncritical in its handling of the data.

To the extent that the theory can be related to data, its more distinctive claims do not seem to be strongly supported. The general idea that fear of crime may express anxiety about a range of other factors receives some support from our data – as well as being a mainstay of fear of crime theory from its earliest years – but the theory's more distinctive claims about the scope of these anxieties do not. Generally, the qualitative data indicate that factors at a relatively local level have a greater impact on fear than broad social and political factors. Participants do often express sophisticated political and economic theories of those determinants, but the connection between policy or economics and fear is generally indirect (through, for example, the physical environment, or policing practice at a local level).

Psychodynamic theories

Hollway and Jefferson's work[68,330] was included in the qualitative review but made relatively little contribution to the synthesis, partly because of the form of reporting and partly because the theoretical framework is hard to integrate with those used by other researchers. Their theory, based on an innovative methodology integrating insights from psychoanalysis and biographical narratives, is that much fear of crime, and the associated environmental perceptions, express deep-rooted personal anxieties, determined by individual histories and traumas.

It is somewhat challenging to relate this to the broader qualitative evidence, because no other studies utilise a methodology that would enable access to these deeper psychological dynamics. However, Hollway and Jefferson's theory does seem broadly congruent with our synthesis. In particular, it is useful in emphasising the deep roots of individuals' attachment to the environment. The qualitative data on familiarity and social interaction suggest that responses to the physical environment are strongly shaped by a deeper sense of 'belonging', or of being 'at home' in that environment. A theoretically grounded emphasis on this idea is potentially helpful in drawing together a number of themes from the qualitative data, including the notion of social insidership and the central role of familiarity as a protector against fear.

Hollway and Jefferson posit further that such belonging is not merely an interpersonal phenomenon, but is rooted in an individual's sense of personal security, and of the coherence and robustness of their own subjectivity. This seems to be less strongly supported by the qualitative data, although it is suggestive as a possible explanation of the negative impacts on fear of mental health problems. The emphasis placed by

a few respondents on individual dispositions (such as 'fatalism') as protectors against fear would also be interesting to examine from this perspective.

Thus, although it is difficult to evaluate the claims of Hollway and Jefferson's theory on the most general level, it is valuable as a counterweight to the tendency of other theories to see the physical and social environment in isolation from personal psychological factors, and as an illustration of the complexity of the latter.

Social cohesion and collective efficacy

Social cohesion and collective efficacy have been posited as fundamental determinants of fear of crime by a number of researchers. Our findings strongly bear this out on a general level in that social connectedness and interaction, and a more general sense of being 'at home' socially within a given community, is a substantial protector against fear of crime. Familiarity with one's own social environment, and particularly the sense of rootedness in it which comes from long-term residency, help to reduce fear considerably. Some theorists have raised the concern that social interaction could exacerbate fear by spreading concerns about crime; our data suggest that this possibility is largely outweighed by the value of such interaction in increasing cohesion, although several participants do mention talk about crime as potentially increasing fear.

However, a number of points should be raised against any notion of social cohesion as a panacea in dealing with crime. The protective effect of social cohesion appears to be limited in its spatial extent, and to operate usually only in one's immediate residential neighbourhood (it also appears to rely on long-term residency in an area). Because there is some reason to think that fear with reference to the immediate local neighbourhood has more substantial impacts on well-being than fear with reference to other areas, this is a relatively minor point, but should be borne in mind.

There is also a 'dark side' to social cohesion, as manifest in the data about self-policing communities. Even where cohesive communities do protect against fear for insiders, they may have exactly the opposite effect for outsiders. More generally, strong social cohesion depends on a shared set of values at a community level, which may conflict with the values officially espoused by policy-makers and other outsiders, and which may in many contexts provide social capital to offenders (again, the self-policing data are the most dramatic illustration of this). As a number of theorists have observed, then, social cohesion should not be regarded uncritically as a good.

Incivilities

The role of both physical and social 'incivilities' as drivers of fear is clearly substantial. Physical incivilities such as graffiti and litter, and social incivilities such as public drinking or drug use, are frequently cited in the qualitative data as determinants of fear; more tentatively, the importance of physical incivilities appears to be borne out by the effectiveness data.

However, our findings strongly suggest that physical and social incivilities are two entirely different phenomena, and the mechanisms of their effect on fear of crime are very different, such that it is misleading to include them both under the same term. As incivilities theorists argue, physical incivilities appear to drive fear as indicators of neglect at a community level: they show that an area is not well cared for and that social norms are weak. They also – a point less elaborated in the theory – function as symbolic indicators of low SES, high-crime, 'rough' areas; as such, they operate similarly to other features of the built environment such as high-rise housing, which usually do not constitute 'incivilities' at all, but simply serve to provide (correct or incorrect) information about the character of a neighbourhood.

By contrast, social incivilities drive fear mainly because they involve people seen to be unpredictable and threatening in themselves. We postulated earlier that drinkers, drug users and young people 'hanging about' are seen as threatening because they do not conform to norms concerning the use of public space. Whether this explanation is accepted or not, it is clear that these groups are feared directly, and specifically

regarded as likely to commit crimes; their role as indicators of environmental conditions appears to be of much less, if any, importance. It should also be noted that, although perceptions of what constitute physical incivilities seem to be fairly consistent across the population, the perception of social incivilities is relative to expectations that may vary substantially between different population groups. (Most incivilities research has ignored this point, using a purely etic concept of 'incivilities' that does not claim to directly translate emic categories.) Young people, in particular, appear to have different norms about the use of public space from older adults, and labelling one side of this conflict 'incivilities' detracts attention from the conflict of norms itself as a driver of fear. We would thus suggest that, although the theory that incivilities generate fear is well grounded in many respects, the concept itself conflates distinct phenomena and is probably not useful.

Inequalities and 'spirit injury'

Theories of 'spirit injury' posit that the well-being effect of crime at a community level is mainly due to its effect in maintaining social inequalities (e.g. of gender, ethnicity, SES or age). The symbolic resonances of crimes involving discrimination thus amplify risk and contribute to a pervasive sense of unsafety. Thus, according to these theories, the impacts of crime cannot be understood without referring to the broader social structures in which crime takes place, particularly structures of domination.

A substantial amount of qualitative evidence appears to support these theories. Again, the idea of salience introduced earlier (see *Fear and rationality*) helps to clarify the mechanism here: the well-being effects of fear operate less through the recognition of an abstract statistical risk than through other factors that maximise the salience of the risk. Spirit injury theory can then help to illuminate how the latter are socially patterned, such that the risk of crime resonates with a broader set of mechanisms that maintain the structural violence of social inequalities. For example, qualitative data from women, BME people and lesbian and gay people indicate that the everyday mechanisms through which inequality is perpetuated – from minor harassment or discriminatory remarks, to crimes such as indecent exposure and the threat of violence – function as reminders of the risk of crime in a way that does not form part of the experience of other groups. Spirit injury theory thus points to the way in which these experiences drive fear as part of a systemic apparatus of inequality. Other theories focus on factors such as differences in perceived vulnerability, or biases in media reporting, to explain differences in groups with respect to fear (particularly gender differences). Although there is some evidence that these play a role, there does also seem to be a need to take into account the social practices that reinforce such differences and reproduce them as inequalities.

Fear and well-being

The theory review distinguished four pathways through which fear of crime might be related to health and well-being outcomes: (1) fear has direct impacts on mental health; (2) mental health has direct impacts on fear; (3) fear has impacts on behaviour, leading to (a) reduced social interaction and (b) reduced physical activity; and (4) fear may reduce social cohesion at a community level and thus well-being.

The qualitative evidence is equivocal with respect to pathway (1). On the one hand, few participants explicitly report serious mental health problems linked to the fear of crime (there is more evidence for the mental health impacts of actual victimisation). On the other, there are methodological challenges in using qualitative evidence to illuminate impacts on subclinical mental health outcomes, particularly as few of the included qualitative studies took this as a main focus. It is clear that many people have a pervasive concern about the risk of crime and it is plausible that this concern has impacts on well-being.

Pathway (2) is supported by Whitley and Prince's study (Whitley), which indicates that people with mental health problems are more seriously affected by fear of crime than others; however, we located no other studies of this population. Pathway (3), particularly (3b), is strongly supported by the qualitative data, with many participants reporting that they limit outdoor physical activity as a result of fear of crime. This is particularly true for women, and also for children and young people, whose activities are limited by their parents' vicarious fears. Pathway (4), as discussed in the theory review, is by nature hard to evaluate on the

basis of the quantitative observational data. It is also hard to relate to the qualitative data, as the salience of crime and perceptions of social cohesion are to some extent bound up with prevailing social norms in a community, and it is hard to specify their effect independently of the latter. The findings of this project, overall, do not strongly support pathway (4), but also do not rule it out.

The effectiveness data are not very illuminating here. Only two studies measure the effect of an intervention on both fear of crime and mental health outcomes: one shows an improvement in both (Halpern), the other an improvement in fear of crime but not mental health (Brownsell). Several measure avoidance behaviours as well as fear of crime, which might help to illuminate pathway (3), but the results are very mixed and inconclusive (see *Appendix 8*). In general, therefore, although the systematic reviews support the idea that fear of crime may be a barrier to physical activity, they otherwise add little to what was already established in the theory review, namely that fear of crime does have some impact on well-being, but its extent is probably limited in most populations, and the pathways through which it operates are complex and unpredictable.

Methodological reflections

In this concluding section, we briefly consider some of the methodological implications of the project. In particular, the most methodologically innovative aspect of the project was the review of theories and pathways. In *Chapter 2* we discuss the methodology adopted for this component in detail. Here we briefly consider how it informed and was integrated with the other components.

As described in *Chapter 2* (see *Models and theories in evidence synthesis*), the methodology for the review of theory built on the idea of using logic models as a framework for reviews of complex interventions, but extended this to include a broader range of causal pathways. By using a pragmatic methodology, we were able to cover a wide range of material and form a holistic overview of the field as a whole. The non-systematic nature of the review of theory limits the reliability of the conclusions. Nonetheless, the review of theory was of considerable value in informing the reviews, particularly in interpreting the findings and clarifying the main messages of the reviews. It was also of some value in the cross-study synthesis as an aid to translation between the qualitative findings and the quantitative findings.

Using theory to inform the review of effectiveness
Much of the value of the review of theory in the context of the systematic reviews was to indicate where important conceptual distinctions needed to be made in interpreting the findings of the effectiveness review. Two areas were particularly important here. First, the substantial body of theoretical and empirical work around the measurement of fear of crime drew attention to the potential issues involved in synthesising research using distinct outcome measures (although not all of these issues could be fully addressed within the review of effectiveness itself). Second, the theory review helped to clarify the existence of at least two largely independent pathways from environmental determinants or interventions to well-being outcomes, one that goes via environmental perceptions and thence the fear of crime, and one that goes via actual crime rates. Thus, the theory review facilitated a more adequate picture of the underlying causal dynamics that may be affected by interventions. Both of these clarifications helped to guard against an overconfident interpretation of the effectiveness findings.

In addition, the review of theories helped to provide a more explicit basis for identifying important questions that have not been adequately addressed by the empirical research (e.g. the effectiveness of crime-related interventions in improving health and well-being). This helped us to formulate more focused and practical recommendations for research (see *Implications for future research*).

As discussed in *Chapters 2* and *3*, the theoretical map should be regarded as indicative only, and the methods used are of limited validity in some respects. We were unable to test the findings of the theory review against the effectiveness data because of the limitations of the latter. Future work on the use of

reviews of theory might seek to test whether they can be validated against empirical quantitative evidence. For example – along the lines of the EPPI-Centre methodology for mixed-methods synthesis[368] – one might use the theory review to generate hypotheses about the differential impact of aspects of intervention delivery and then test these by conducting subgroup analyses of the effectiveness studies; alternatively, data from the intervention studies on mediating variables identified as important in the theory review could be used to test hypotheses about causal pathways.

These difficulties aside, the theory review was invaluable in identifying where robust conclusions could or could not be drawn from the effectiveness evidence. Overall, our experiences support the value of reviews of theory in evaluating the effectiveness of complex interventions, although they also identify a number of potential difficulties. Further methodological work would be valuable here. In particular, it would be helpful to look at reviews of higher-quality effectiveness data, to explore how more sophisticated methods of quantitative synthesis – including standard meta-analysis, but also other techniques, such as mediator analysis – might inform and be informed by reviews of theory.

Using theory to inform the review of qualitative evidence

The relation of the review of theories to that of qualitative evidence was quite different. One reason for this is that, although we maintained a strict separation between the qualitative review and the theory review at the methodological level, there is considerable overlap in content, as many qualitative studies are theoretically informed and many theories are primarily based on qualitative data.

We adopted a two-stage approach: first the qualitative data were synthesised in a thematic analysis and then the findings of this analysis were brought together with the theoretical material in a cross-study synthesis. This contrasts, for example, with meta-ethnography, in which both 'first-order' data (participants' views) and 'second-order' data (primary study authors' interpretations) enter into the 'third-order' synthesis. A meta-ethnographic approach to this project, then, would not have included a separate review of theory, but would have relied on drawing out the theoretical implications from the analyses reported in the qualitative studies. [To some extent, these comments also apply to other qualitative synthesis methodologies incorporating a stage of 'meta-theory' construction (e.g. Paterson *et al.*'s 'meta-study'[369]); we focus here on meta-ethnography as the most widely used such method.]

Our approach has certain advantages relative to meta-ethnography. First, it allows a broader synthesis, including not only the theoretical constructs that happen to be reported in the included qualitative studies but also a considerably wider range of theories, as well as other kinds of data (e.g. quantitative observational studies). This allowed us to consider how the qualitative evidence might productively engage with broader theoretical debates (e.g. in risk psychology or CPTED theory) and not just with those that have been pursued most enthusiastically by qualitative researchers themselves. Second, our method provides a way to combine the strengths of different methodologies and reconcile the 'positivistic' goals of transparency and reproducibility with the richness of more theory-led approaches. Finally, it arguably allows for a greater appreciation of fundamental theoretical conflict than do meta-ethnographic methods, and does not require an ultimate reconciliation of divergent views. (This is a controversial point. Noblit and Hare[37] emphasise the idea of 'refutational synthesis', but this has received little attention in the subsequent development of meta-ethnographic methods, as Noblit himself recognises.[370]) More generally, it is unclear whether the idea of refutational synthesis can encompass some of the fundamental conflicts found in our review of theories. On the other hand, it is possible that a meta-ethnographic analysis of our data would bring out richer or more detailed connections between theory and data that were missed by treating the two separately.

Again, a number of methodological questions remain open. However, unlike the situation with effectiveness data, for which methodologies for the integration of theory remain at a relatively early stage, existing debates in qualitative methodology have already addressed many relevant points. We would welcome a critical engagement with our approach from researchers involved in qualitative synthesis or primary qualitative research to clarify the value of reviews of theory in this context.

Implications for future research

Primary research

The findings of the review identify a number of areas in which further primary research would be valuable. Most obviously, there is a clear need for robust primary studies of the health status and health behaviour impacts of environmental crime reduction interventions.

It may be possible to address this gap to some extent on the basis of the existing data through the use of modelling approaches, either conventional epidemiological or economic models, or newer methods such as agent-based modelling. Although we have been able to reach some tentative conclusions by informally combining effectiveness data on fear of crime with observational evidence on health and well-being outcomes, more rigorous quantitative work on this would be valuable.

The evidence base on interventions to reduce fear of crime is of limited reliability. More robust studies, using matched control groups and appropriate data analyses, are required. Studies of all of the intervention types covered in the review would be of value. A further improvement to the evidence base would be the greater use of validated measures for fear of crime outcomes. However, given the ongoing controversy over what fear of crime outcomes actually measure, it is rather unclear what this would mean in practice.

Systematic reviews

A systematic review of observational research linking fear of crime with health and well-being outcomes would be valuable. There is a substantial body of evidence here and this is currently an active field of research. A review would be valuable in establishing what is already known on this topic and, in particular, in providing a robust clarification of the evidence on the pathways through which these outcomes are connected, to inform future research. However, as with any question regarding fear of crime, such a review would need to be carefully conducted to ensure that distinct measures of fear are kept separate and not conflated. (Reviews of observational data on the social and physical environmental determinants of fear of crime, or on the crime–fear relation, would probably not be useful, for two reasons: the heterogeneity of measures is such that it is unclear whether any useful conclusions could be reached; and these are generally less active research agendas, so the practical value of the reviews is less obvious.)

The environmental determinants of crime outcomes would also be a potentially useful research question for a systematic review. This said, our findings suggest that the available evidence base is mostly of low quality and may not support substantive conclusions. Nonetheless, with appropriate safeguards (e.g. a reasonably stringent quality threshold), such a review might make a useful contribution.

Systematic reviews of the effectiveness for fear outcomes of other intervention types not included in our review of effectiveness would be valuable to complement our findings. In particular, there is a substantial body of research on the fear of crime impacts of interventions concerned with changing policing practice (e.g. community-oriented policing), and a certain amount on the provision of information (e.g. crime maps), and to our knowledge no systematic evidence synthesis has been undertaken on these questions. Such reviews would help to extend and complement the findings of this review, although they would also face similar challenges in terms of the synthesis and interpretation of findings. In principle, it would also be useful to know about the evidence on the health and well-being impacts of such interventions, but it seems likely that, as for our review, very little such evidence exists.

Finally, there is scope for other systematic reviews of qualitative evidence. Most obviously, our qualitative review covered evidence from the UK only, and experiences in other countries may differ, particularly countries with higher rates of violent crime. In addition, the qualitative review suggests a number of other potential questions for systematic reviews, including the experiences of victims of crime; perceptions of the urban environment and disadvantage; perceptions of policing; the social meanings of crime and disorder; and parents' and children's views of safety (in general, that is, not limited to crime).

In general, the methodology of the systematic review of qualitative evidence has not been taken up within crime-related disciplines nearly as much as it has in health-related disciplines. Thus, there are numerous areas in which substantial bodies of good-quality primary qualitative evidence exist, but in which no systematic reviews appear to have been conducted. In addition to the substantive value of such reviews, the increased uptake of qualitative synthesis methods in criminology and the sociology of crime would also make a valuable contribution to the methodological literature.

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Theo Lorenc (Research Fellow in Evidence Synthesis, London School of Hygiene and Tropical Medicine) led the development of the methods, conducted screening, data extraction and data synthesis for all components of the project and wrote the final report.

Mark Petticrew (Professor of Public Health Evaluation, London School of Hygiene and Tropical Medicine) was principal investigator for the project, formulated the original project plan and contributed to the interpretation of the findings.

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Stephen Clayton (Research Fellow, Public Health and Policy, University of Liverpool) conducted data collection and synthesis for the review of theory and screening for the systematic reviews, and contributed to the development of methods.

Kath Wright (Information Service Manager, Centre for Reviews and Dissemination, University of York) designed and conducted the database searches for the systematic reviews.

Hilary Thomson (Senior Investigator Scientist, MRC Social and Public Health Services Unit, University of Glasgow) conducted data collection for the focus groups, and contributed to the design of the project and the interpretation of the findings.

Steven Cummins (Professor of Urban Health, Queen Mary University of London) contributed to the design of the project and the interpretation of the findings.

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Appendix 1 Selected causal models from previous research

In this appendix, we reproduce a selection of the causal models from previous research and theoretical studies on which the theory review draws for the construction of our own causal map, and briefly remark on areas that are particularly relevant and any divergences.

Built environment, crime and physical activity: Foster and Giles-Corti

Our model draws on Foster and Giles-Corti's model[240] in seeing real and perceived safety as influenced by the physical and social environment and as in turn determining health behaviours. Their model is less specific about the nature of these environmental factors, but more specific about local-level determinants of health behaviours, which are not covered in our model, such as natural surveillance (which in our model would be an epiphenomenon of the built and social environments). Our model also does not explicitly take account of the feedback loop between outdoor activity, natural surveillance and safety.

Determinants of fear of crime 1: Farrall et al.

That part of our model which concerns the factors determining levels of fear draws substantially on Farrall et al.'s model.[49] This model is particularly useful in disaggregating the various perceptual and cognitive determinants of fear. Farrall et al.'s 'neighbourhood concerns' factors are represented in our model by the broader concepts of the perceived social and built environment. A slight difference is that, in our model, crime victimisation operates via risk and is not conceived as an autonomous category. Overall, however, the two models are structurally congruent.

Determinants of fear of crime 2: Jackson

Our model draws on Jackson's model[111] to describe the role of perceptions of the environment in explaining fear of crime. We have not disaggregated the 'individual attitudes' category, and 'consequences of crime' and 'perceived control' are both included in the 'vulnerability' concept in our model. Other than this, the part of our model dealing with determinants of fear is congruent with Jackson's model.

Fear of crime and health: Jackson and Stafford

Our model draws on Jackson and Stafford's model[229] in elucidating the connections between fear of crime and health. There are some structural differences insofar as some pathways that their model represents as relatively direct are more distal and/or subject to contextual influences in our model (particularly those relating to vulnerability and community participation), but the same pathways are present in both.

Fear of crime and health inequalities: Chandola

Our model draws on Chandola's model[224] in seeing the social environment as a key factor in the health impacts of fear of crime. However, we have separated the latter from the social environment to clarify the causal links between them. The description of the social environment in Chandola's model is slightly more

detailed than ours. The model also attempts to account for the biological mechanisms linking psychological factors and physical health, a dimension that is only implicit in our model.

Built environment and health: Northridge *et al.*

Northridge *et al.*'s model[217] is an example of the broader theoretical literature on which our model draws. We have utilised their model more for its broad structure, with the built and social environments as meso-level mediators between macro-level determinants and individual and interpersonal factors, and also for the categorisation of the specific factors (subconcepts). Northridge *et al.*'s model does not attempt to trace the specific connections between subconcepts and so was less useful for this aspect of the causal mapping. One apparent, although probably not substantive, difference is that Northridge *et al.*'s model sees health and well-being outcomes as determined only by individual and interpersonal factors, whereas our model allows for causal connections between meso-level environmental factors and health and well-being outcomes.

Appendix 2 Search strategies

The following databases were searched: ASSIA, CINAHL, Conference Proceedings Index – Science, Criminal Justice Abstracts, Dissertation Abstracts, EconLIT, EMBASE, ERIC, HMIC, Inside Conferences, MEDLINE, NCJRS, PsycINFO, Science Citation Index, Social Policy & Practice, Social Science Citation Index, Sociological Abstracts and Urban Studies Abstracts.

Applied Social Sciences Index and Abstracts

Via CSA Illumina
Search date: 17 November 2010
Records identified: 377

Search Query #10 ((DE=crime fear or DE=(personal safety) or TI=(fear* within 3 crime*) or AB=(fear* within 3 crime*) or TI=(worry* within 3 crime*) or AB=(worry* within 3 crime*) or TI=(worri* within 3 crime*) or AB=(worri* within 3 crime*) or TI=(anxiety within 3 crime*) or AB=(anxiety within 3 crime*) or TI=(anxious within 3 crime*) or AB=(anxious within 3 crime*) or (perceived safety) or TI=(perception* within 3 safety) or AB=(perception* within 3 safety) or TI=(insecurit* within3 crime*) or AB=(insecurit* within 3 crime*) or TI=((feeling within 3 safe*) or (feeling within 3 unsafe*)) or AB=((feeling within 3 safe*) or (feeling within 3 unsafe*))) or ((KW=crime or TI=((sexual offenses) or (sexual assault) or (sexual violence)) or AB=((sexual offenses) or (sexual assault) or (sexual violence)) or TI=(murder or rape or homicide) or AB=(murder or rape or homicide) or TI=((anti social behaviour) or (antisocial behaviour)) or AB=((anti social behaviour) or (antisocial behaviour)) or TI=((anti social behavior) or (antisocial behavior)) or AB=((anti social behavior) or (antisocial behavior)) or DE=(antisocial behaviour) or TI=((public disorder) or (social disorder) or rowdiness) or AB=((public disorder) or (social disorder) or rowdiness) or TI=((disorderly within 2 behaviour*) or (disorderly within 2 behaviour*) or hooligan*) or AB=((disorderly within 2 behavior*) or (disorderly within 2 behavior*) or hooligan*) or TI=(graffiti or vandalism or delinquency) or AB=(graffiti or vandalism or delinquency) or TI=((delinquent behaviour*) or (delinquent behaviour*) or mugging) or AB=((delinquent behavior*) or (delinquent behavior*) or mugging) or ((noise pollut*) or (noise nuisance) or litter*) or ((nuisance within 2 neighbor*) or (nuisance within 2 neighbour*) or (verbal abuse)) or (incivility or incivilities or (verbal abuse)) or (flypost* or flytip*) or ((fly post*) or (fly tip*)) or DE=civility or DE=litter or DE=graffiti) and (DE=health or DE=(mental health) or DE=(quality of life) or TI=health or AB=health or TI=((well being) or wellbeing or wellness) or AB=((well being) or wellbeing or wellness) or TI=(anxiety or depression or stress) or AB=(anxiety or depression or stress) or TI=((social within 2 integrat*) or (social within 2 cohes*) or (social within 2 isolat*)) or AB=((social within 2 integrat*) or (social within 2 cohes*) or (social within 2 isolat*)) or TI=(happiness or coping or resilience) and AB=(happiness or coping or resilience) or TI=(quality of life) or AB=(quality of life) or TI=((life satisfaction) or (self esteem) or (self concept)) or AB=((life satisfaction) or (self esteem) or (self concept))))) and ((((urban space*) or (urban design*) or (urban plan*)) or ((urban ecology) or (urban geography) or (urban renew*)) or ((urban regenerat*) or (city space) or (city design*)) or ((city plan*) or (city ecology) or (city geography)) or ((town plan*) or (town space) or (town design*)) or ((town ecology) or (town geography) or (public space*)) or (neighborhood* or neighbourhood* or (built environment)) or TI=(street or streets) or AB=(street or streets) or ((building design*) or (social housing) or (housing estate*)) or ((problem estate*) or (sink estate*) or (public housing)) or ((council housing) or (housing improve*) or (housing initiative*)) or ((housing design*) or (housing project*))) or (((renovat* within 2 home*) or (renovat* within 2 house*) or (renovat* within 2 housing)) or ((repair* within 2 home*) or (repair* within 2 house*) or (repair* within 2 housing)) or TI=(park or parks or playground*) or TI=(carpark* or campus or campuses) or (greenway* or (landscape plan*) or (landscape design*)) or ((physical environment) or (civic design*) or (civic plan*)) or ((civic space*) or (residential area*) or (city centre*)) or ((city center*) or (shopping center*) or (shopping centre*)) or ((shopping mall*) or (area based initiative*) or (area based intervention*)) or ((public transport*) or railway* or trains) or buses or AB=(park or parks or playground*) or AB=(carpark* or campus or campuses)

or DE=neighbourhoods or DE=built environment or DE=deprived areas or DE=social housing or DE=environmental aspects or DE=urban areas or DE=housing estates or DE=inner cities) or ((streetlight* or (street light*) or alleygat*) or ((alley gat*) or (neighbourhood* watch*) or (neighborhood* watch*)) or (cctv or (closed circuit television) or (video surveillance)) or ((security camera*) or (broken window*) or (hot spot polic*)) or ((gated communit*) or (defensible space) or (designing out crime)) or (CPTED or (target hardening))))

Cumulative Index to Nursing and Allied Health Literature

Via EBSCO
Search date: 11 November 2010
Records identified: 294

S76 S39 and S75

S75 S63 or S74

S74 S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73

S73 TI CPTED or AB CPTED

S72 TI designing N3 crime or AB designing N3 crime

S71 TI "target hardening" or AB "target hardening"

S70 TI "defensible space" or AB "defensible space"

S69 TI "hot spot*" or AB "hot spot*" or TI hotspot* or AB hotspot*

S68 TI "broken window*" or AB "broken window*" or TI "gated communit*" or AB "gated communit*"

S67 TI "security camera*" or AB "security camera*"

S66 TI cctv or AB cctv or TI "closed circuit television" or AB "closed circuit television" or TI "video surveillance" or AB "video surveillance"

S65 TI "neighborhood watch" or AB "neighborhood watch" or TI "neighbourhood watch" or AB "neighbourhood watch"

S64 TI streetlight* or AB streetlight* or TI "street light*" or AB "street light*" or TI alleygat* or AB alleygat* or TI "alley gat*" or AB "alley gat*"

S63 S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62

S62 TI repair* N3 hous* or AB repair* N3 hous*

S61 TI repair* N3 home* or AB repair* N3 home*

S60 TI renovat* N3 home* or AB renovat* N3 home*

S59 TI renovat* N3 hous* or AB renovat* N3 hous*

S58 TI housing N3 improv* or AB housing N3 improv*

S57 TI housing N3 initiative* or AB housing N3 initiative*

S56 TI "council housing" or AB "council housing" or TI "social housing" or AB "social housing"

S55 TI "problem estate*" or AB "problem estate*" or TI "sink estate*" or AB "sink estate*"

S54 TI housing N3 project* or AB housing N3 project*

S53 TI housing N3 design* or AB housing N3 design*

S52 TI housing N3 improv* or AB housing N3 improv*

S51 TI "housing estate*" or AB "housing estate*" or TI "public housing" or AB "public housing"

S50 TI area based N2 intervention* or AB area based N2 intervention*

S49 TI area based N2 initiative* or AB area based N2 initiative*

S48 TI "shopping centre*" or AB "shopping centre*" or TI "shopping center*" or AB "shopping center*" or TI "shopping mall*" or AB "shopping mall*"

S47 TI "civic design*" or AB "civic design*" or TI "civic space*" or AB "civic space*" or TI "civic plan*" or AB "civic plan*" or TI "residential area*" or AB "residential area*" or TI "city centre*" or AB "city centre*" or TI "city center*" or AB "city center*"

S46 TI greenway* or AB greenway* or TI landscape N3 plan* or AB landscape N3 plan* or TI landscape N3 design* or AB landscape N3 design* or TI environment* N3 design* or AB environment* N3 design* or TI "physical environment" or AB "physical environment"

S45 TI (park or parks or carpark*) or AB (park or parks or carpark*) or TI campus* or AB campus* or TI "public transport" or AB "public transport" or TI railway or AB railway or TI ((bus or buses)) or AB ((bus or buses))

S44 TI "public space*" or AB "public space*" or TI neighborhood* or AB neighborhood* or TI neighbourhood* or AB neighbourhood* or TI street or AB streets or TI "built environment" or AB "built environment"

S43 TI "town space*" or AB "town space*" or TI "town design*" or AB "town design*" or TI "town plan*" or AB "town plan*" or TI "town ecology" or AB "town ecology" or TI "town geography" or AB "town geography"

S42 TI "city space*" or AB "city space*" or TI "city design*" or AB "city design*" or TI "city plan*" or AB "city plan*" or TI "city ecology" or AB "city ecology" or TI "city geography" or AB "city geography"

S41 TI "urban geography" or AB "urban geography" or TI "urban renewal" or AB "urban renewal" or TI "urban regenerat*" or AB "urban regenerat*"

S40 TI "urban space*" or AB "urban space*" or TI "urban design*" or AB "urban design*" or TI "urban plan*" or AB "urban plan*" or TI "urban ecology" or AB "urban ecology"

S39 S12 or S38

S38 S27 and S37

S37 S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36

S36 TI "self esteem" or AB "self esteem" or TI "self concept" or AB "self concept"

S35 TI "quality of life" or AB "quality of life" or TI "life satisfaction" or AB "life satisfaction"

S34 TI resilience or AB resilience or TI stress or AB stress

S33 TI happiness or AB happiness or TI coping or AB coping

S32 TI depression or AB depression or TI "social* isolat*" or AB "social* isolat*"

S31 TI "social cohesion" or AB "social cohesion" or TI anxiety or AB anxiety

S30 TI wellness or AB wellness or TI "social integrat*" or AB "social integrat*"

S29 TI wellbeing or AB wellbeing or TI "well being" or AB "well being"

S28 TI health or AB health

S27 S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26

S26 flyposting or fly posting or fly tipping or flytipping

S25 AB litter*

S24 TI litter*

S23 TX incivility or TX incivilities or TX hooligan* or TX verbal abuse or TX mugging or TX rowdiness

S22 TX nuisance neighbor* or TX nuisance neighbour* or TX noise pollution

S21 TX graffiti or TX vandal* or TX noise nuisance

S20 TI delinquent behavior* or AB delinquent behavior* or TI delinquent behaviour* or AB delinquent behaviour*

S19 TI disorderly behavior* or AB disorderly behavior* or TI disorderly behaviour* or AB disorderly behaviour*

S18 TI public disorder or AB public disorder or TI social disorder or AB social disorder

S17 TI antisocial behavior* or AB antisocial behavior* or TI anti social behaviour* or AB anti social behaviour*

S16 sexual assault

S15 rape

S14 murder or homicide

S13 MH crime

S12 S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11

S11 S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11

S10 TI insecurit* N3 crime* or AB insecurit* N3 crime*

S9 TX "perceived safety" or TX perception N3 safety

S8 TI anxious N3 crime* or AB anxious N3 crime*

S7 TI anxiety N3 crime* or AB anxiety N3 crime*

S6 TI worried N3 crime* or AB worried N3 crime*

S5 TI worries N3 crime* or AB worries N3 crime*

S4 TI worry* N3 crime* or AB worry* N3 crime*

S3 TX "crime fear"

S2 TI fear N3 crime* or AB fear N3 crime*

S1 MH CRIME and FEAR

Conference Proceedings Citation Index – Science

Via Web of Knowledge
Search date: 26 November 2010
Records identified: 363

#30 #29 AND #15

#29 #28 OR #25

#28 #27 OR #26

#27 TS=("broken window*" OR "hot spot policing" OR "gated communit*" OR "defensible space" OR "designing out crime" OR CPTED OR "target hardening")

#26 TS=("street light*" OR streetlight* OR alleygat* OR "alley gat*" OR "neighborhood watch*" OR "neighbourhood watch*" OR cctv OR "closed circuit television" OR "video surveillance" OR "security camera*")

#25 #24 OR #23 OR #22 OR #21 OR #20 OR #19 OR #18 OR #17 OR #16

#24 TS=("area based initiative*" or "area based intervention*")

#23 TS=("city centre*" OR "city center*" OR "shopping centre*" OR "shopping center*" OR "shopping mall*" OR "public transport" OR transport OR bus OR buses OR railway*)

#22 TS=("landscape plan*" OR "landscape design*" OR "physical environment" OR "civic design*" OR "civic space*" or "civic plan*" OR "residential area*")

#21 TS=("home* repair*" OR "home* renovat*" OR "house* repair*" OR "house renovat*" OR park OR parks OR playground* or carpark* OR campus OR campuses OR greenway*)

#20 TS=(housing OR "social housing" OR "public housing" OR "council housing" OR "housing estate*" OR "problem estate*" or "sink estate" OR "housing improv*" OR "housing initiative*" OR "housing design*" OR "housing project*")

#19 TS=("public space*" OR neighborhood* OR neighbourhood* OR "built environment" OR "building design" OR street*)

#18 TS=("town area*" OR "town space*" OR "town design*" OR "town plan*" OR "town ecology" OR "town geography" OR "town renewal" OR "town regenerat*")

#17 TS=("city area*" OR "city space*" OR "city design*" OR "city plan*" OR "city ecology" OR "city geography" OR "city renewal" OR "city regenerat*")

#16 TS=("urban area*" OR "urban space*" OR "urban design*" OR "urban plan*" OR "urban ecology" OR "urban geography" OR "urban renewal" OR "urban regenerat*")

#15 #14 OR #3

#14 #13 AND #9

#13 #12 OR #11 OR #10

#12 TS=(stress OR "quality of life" OR "life satisfaction" or "self esteem" OR "self concept")

#11 TS=("social integrat*" OR "social cohes*" OR "social isolat*" OR happiness OR coping OR resilience)

#10 TS=(health OR "mental health" OR wellbeing OR "well being" OR wellness OR depression OR anxiety)

#9 #8 OR #7 OR #6 OR #5 OR #4

#8 TS=(incivility OR incivilities OR mugging OR "verbal abuse" OR rowdiness OR flyposting OR "fly posting" OR flytipping OR "fly tipping" OR litter*)

#7 TS=(vandal* OR graffiti OR "noise nuisance" OR "noise pollution" OR "nuisance neighbour*" OR "nuisance neighbor*")

#6 TS=("public disorder" OR "social disorder" OR "delinquent behavior*" OR "delinquent behaviour*" OR delinquency)

#5 TS=("anti social behaviour" OR "anti social behavior" OR "antisocial behaviour" OR "antisocial behavior" OR "disorderly behaviour" OR "disorderly behavior")

#4 TS=(crime OR "sexual offense*" OR "sexual assault*" OR "sexual violence" OR murder OR rape OR homicide)

#3 #2 OR #1

#2 TS=((perceived safety) OR TS=(perception* SAME safety) OR TS=(insecurit* SAME crime*) OR TS=(feeling SAME safe) OR TS=(feeling SAME unsafe))

#1 TS=((fear* OR worry* OR worried OR worries OR anxiety OR anxious) SAME crime)

Criminal Justice Abstracts

Via EBSCO
Search date: 11 November 2010
Records identified: 1219

S76 S39 and S75

S75 S63 or S74

S74 S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73

S73 TI CPTED or AB CPTED

S72 TI designing N3 crime or AB designing N3 crime

S71 TI "target hardening" or AB "target hardening"

S70 TI "defensible space" or AB "defensible space"

S69 TI "hot spot*" or AB "hot spot*" or TI hotspot* or AB hotspot*

S68 TI "broken window*" or AB "broken window*" or TI "gated communit*" or AB "gated communit*"

S67 TI "security camera*" or AB "security camera*"

S66 TI cctv or AB cctv or TI "closed circuit television" or AB "closed circuit television" or TI "video surveillance" or AB "video surveillance"

S65 TI "neighborhood watch" or AB "neighborhood watch" or TI "neighbourhood watch" or AB "neighbourhood watch"

S64 TI streetlight* or AB streetlight* or TI "street light*" or AB "street light*" or TI alleygat* or AB alleygat* or TI "alley gat*" or AB "alley gat*"

S63 S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62

S62 TI repair* N3 hous* or AB repair* N3 hous*

S61 TI repair* N3 home* or AB repair* N3 home*

S60 TI renovat* N3 home* or AB renovat* N3 home*

S59 TI renovat* N3 hous* or AB renovat* N3 hous*

S58 TI housing N3 improv* or AB housing N3 improv*

S57 TI housing N3 initiative* or AB housing N3 initiative*

S56 TI "council housing" or AB "council housing" or TI "social housing" or AB "social housing"

S55 TI "problem estate*" or AB "problem estate*" or TI "sink estate*" or AB "sink estate*"

S54 TI housing N3 project* or AB housing N3 project*

S53 TI housing N3 design* or AB housing N3 design*

S52 TI housing N3 improv* or AB housing N3 improv*

S51 TI "housing estate*" or AB "housing estate*" or TI "public housing" or AB "public housing"

S50 TI area based N2 intervention* or AB area based N2 intervention*

S49 TI area based N2 initiative* or AB area based N2 initiative*

S48 TI "shopping centre*" or AB "shopping centre*" or TI "shopping center*" or AB "shopping center*" or TI "shopping mall*" or AB "shopping mall*"

S47 TI "civic design*" or AB "civic design*" or TI "civic space*" or AB "civic space*" or TI "civic plan*" or AB "civic plan*" or TI "residential area*" or AB "residential area*" or TI "city centre*" or AB "city centre*" or TI "city center*" or AB "city center*"

S46 TI greenway* or AB greenway* or TI landscape N3 plan* or AB landscape N3 plan* or TI landscape N3 design* or AB landscape N3 design* or TI environment* N3 design* or AB environment* N3 design* or TI "physical environment" or AB "physical environment"

S45 TI (park or parks or carpark*) or AB (park or parks or carpark*) or TI campus* or AB campus* or TI "public transport" or AB "public transport" or TI railway or AB railway or TI ((bus or buses)) or AB ((bus or buses))

S44 TI "public space*" or AB "public space*" or TI neighborhood* or AB neighborhood* or TI neighbourhood* or AB neighbourhood* or TI street or AB streets or TI "built environment" or AB "built environment"

S43 TI "town space*" or AB "town space*" or TI "town design*" or AB "town design*" or TI "town plan*" or AB "town plan*" or TI "town ecology" or AB "town ecology" or TI "town geography" or AB "town geography"

S42 TI "city space*" or AB "city space*" or TI "city design*" or AB "city design*" or TI "city plan*" or AB "city plan*" or TI "city ecology" or AB "city ecology" or TI "city geography" or AB "city geography"

S41 TI "urban geography" or AB "urban geography" or TI "urban renewal" or AB "urban renewal" or TI "urban regenerat*" or AB "urban regenerat*"

S40 TI "urban space*" or AB "urban space*" or TI "urban design*" or AB "urban design*" or TI "urban plan*" or AB "urban plan*" or TI "urban ecology" or AB "urban ecology"

S39 S12 or S38

S38 S27 and S37

S37 S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36

S36 TI "self esteem" or AB "self esteem" or TI "self concept" or AB "self concept"

S35 TI "quality of life" or AB "quality of life" or TI "life satisfaction" or AB "life satisfaction"

S34 TI resilience or AB resilience or TI stress or AB stress

S33 TI happiness or AB happiness or TI coping or AB coping

S32 TI depression or AB depression or TI "social* isolat*" or AB "social* isolat*"

S31 TI "social cohesion" or AB "social cohesion" or TI anxiety or AB anxiety

S30 TI wellness or AB wellness or TI "social integrat*" or AB "social integrat*"

S29 TI wellbeing or AB wellbeing or TI "well being" or AB "well being"

S28 TI health or AB health

S27 S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26

S26 flyposting or fly posting or fly tipping or flytipping

S25 AB litter*

S24 TI litter*

S23 TX incivility or TX incivilities or TX hooligan* or TX verbal abuse or TX mugging or TX rowdiness

S22 TX nuisance neighbor* or TX nuisance neighbour* or TX noise pollution

S21 TX graffiti or TX vandal* or TX noise nuisance

S20 TI delinquent behavior* or AB delinquent behavior* or TI delinquent behaviour* or AB delinquent behaviour*

S19 TI disorderly behavior* or AB disorderly behavior* or TI disorderly behaviour* or AB disorderly behaviour*

S18 TI public disorder or AB public disorder or TI social disorder or AB social disorder

S17 TI antisocial behavior* or AB antisocial behavior* or TI anti social behaviour* or AB anti social behaviour*

S16 sexual assault

S15 rape

S14 murder or homicide

S13 MH crime

S12 S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11

S11 S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11

S10 TI insecurit* N3 crime* or AB insecurit* N3 crime*

S9 TX "perceived safety" or TX perception N3 safety

S8 TI anxious N3 crime* or AB anxious N3 crime*

S7 TI anxiety N3 crime* or AB anxiety N3 crime*

S6 TI worried N3 crime* or AB worried N3 crime*

S5 TI worries N3 crime* or AB worries N3 crime*

S4 TI worry* N3 crime* or AB worry* N3 crime*

S3 TX "crime fear"

S2 TI fear N3 crime* or AB fear N3 crime*

S1 SU fear of crime

Dissertation Abstracts

Via Dialog Classic
Search date: 19 January 2011
Records identified: 721

S1 fear? (3W) crime?/TI,AB,DE

S2 worry? (3W) crime?/TI,AB,DE

S3 worries (3W) crime?/TI,AB,DE

S4 worried (3W) crime?/TI,AB,DE

S5 anxiety (3W) crime?/TI,AB,DE

S6 anxious (3W) crime?/TI,AB,DE

S7 perceived(W)safety/TI,AB,DE

S8 perception? (3W) safety/TI,AB,DE

S9 insecurit? (3W) crime?/TI,AB,DE

S10 feeling(W) safe/TI,AB,DE

S11 feeling(W)unsafe/TI,AB,DE

S12 S1:S11

S13 crime/TI,AB,DE

S14 sexual(W)offenses/TI,AB,DE

S15 (rape or murder or homicide)/TI,AB,DE

S16 ((sexual(W)assualt?) OR (sexual(W)violence))/TI,AB,DE

S17 (anti(W)social(W)behaviour?)/TI,AB,DE

S18 (anti(W)social(W)behavior?)/TI,AB,DE

S19 (antisocial(W)behaviour?)/TI,AB,DE

S20 (antisocial(W)behavior?)/TI,AB,DE

S21 public(W)disorder/TI,AB,DE

S22 social(W)disorder/TI,AB,DE

S23 (disorderly (2W) behaviour?)/TI,AB,DE

S24 (disorderly (2W) behavior?)/TI,AB,DE

S25 graffiti/TI,AB,DE

S26 vandal?/TI,AB,DE

S27 delinquency/TI,AB,DE

S28 delinquent(W)behaviour?/TI,AB,DE

S29 delinquent(W)behavior?/TI,AB,DE

S30 ((noise(W)pollution) OR (noise(W)nuisance))/TI,AB,DE

S31 nuisance(W)neighbor?/TI,AB,DE

S32 nuisance(W)neighbour?/TI,AB,DE

S33 incivility OR incivilities/TI,AB,DE

S34 hooligan?/TI,AB,DE

S35 mugging/TI,AB,DE

S36 verbal(W)abuse/TI,AB,DE

S37 rowdiness/TI,AB,DE

S38 litter OR littering/TI,AB,DE

S39 ((flyposting) OR (fly(W)posting) OR (flytipping) OR (fly(W)tipping))/TI,AB,DE

S40 S13:S39

S41 health/TI,AB,DE

S42 mental(W)health/TI,AB,DE

S43 (wellbeing OR well(W)being OR wellness)/TI,AB,DE

S44 (anxiety OR depression)/TI,AB,DE

S45 ((social?(W)integrat?) OR (social?(W)cohes?) OR (social?(W)isolat?))/TI,AB,DE

S46 (happiness or coping or resilience)/TI,AB,DE

S47 stress/TI,AB,DE

S48 (quality(2W)life)/TI,AB,DE

S49 ((life(W)satisfaction) OR (self(W)esteem) OR (self(W)concept))/TI,AB,DE

S50 S41:S49

S51 S40 AND S50

S52 urban(W)areas/TI,AB,DE

S53 urban(W)renewal/TI,AB,DE

S54 ((urban(W)space?) OR (urban(W)design?) OR (urban(W)plan?) OR (urban(W)ecology) OR (urban(W)geography) OR (urban(W)regenerat?))/TI,AB,DE

S55 ((city(W)space?) OR (city(W)design?) OR (city(W)plan?) OR (city(W)ecology) OR (city(W)geography) OR (city(W)regenerat?))/TI,AB,DE

S56 ((town(W)space?) OR (town(W)design?) OR (town(W)plan?) OR (town(W)ecology) OR (town(W)geography) OR (town(W)regenerat?))/TI,AB,DE

S57 ((civic(W)space?) OR (civic(W)design?) OR (civic(W)plan?) OR (civic(W)ecology) OR (civic(W)geography) OR (civic(W)regenerat?))/TI,AB,DE

S58 public(W)space?/TI,AB,DE

S59 neighborhood? or neigbourhood?/TI,AB,DE

S60 street or streets/TI,AB,DE

S61 built(W)environment/TI,AB,DE

S62 building(W)design?/TI,AB,DE

S63 (housing OR (social(W)housing) OR (housing(W)estate?))/TI,AB,DE

S64 ((problem(W)estate?) OR (sink(W)estate?))/TI,AB,DE

S65 ((council(W)housing) OR (social(W)housing) OR (public(W)housing))/TI,AB,DE

S66 housing (3W) improv?/TI,AB,DE

S67 housing (3W)initiative?/TI,AB,DE

S68 housing (2W)design?/TI,AB,DE

S69 housing (2W) project?/TI,AB,DE

S70 (renovat?(3W)(home OR homes OR house OR houses OR housing))/TI,AB,DE

S71 (repair? (3W) (home OR homes OR house OR houses OR housing))/TI,AB,DE

S72 parks/TI,AB,DE

S73 park OR parks OR playground? OR carpark?/TI,AB,DE

S74 campus OR campuses/TI,AB,DE

S75 greenways/TI,AB,DE

S76 ((landscape(W)plan?) OR (landscape(W)design?))/TI,AB,DE

S77 physical(W)environment/TI,AB,DE

S78 residential(W)area?/TI,AB,DE

S79 ((city(W)centre) OR (city(W)centres) OR (city(W)center) OR (city(W)centers))/TI,AB,DE

S80 ((shopping(W)centre) OR (shopping(W)centres) OR (shopping(W)center) OR (shopping(W)centers) OR (shopping(W)mall) OR (shopping(W)malls))/TI,AB,DE

S81 ((area(W)based(W)initiative?) OR (area(W)based(W)intervention?))/TI,AB,DE

S82 transport?/TI,AB,DE

S83 public(W)transport/TI,AB,DE

S84 (railway? or bus or buses)/TI,AB,DE

S85 S52:S84

S86 streetlight?/TI,AB,DE

S87 street(W)light?/TI,AB,DE

S88 alley(W)gat?/TI,AB,DE

S89 alleygat?/TI,AB,DE

S90 ((neighborhood(W)watch) OR (neighbourhood(W)watch))/TI,AB,DE

S91 ((cctv) OR (closed(W)circuit(W)television) OR (video(W)surveilance))/TI,AB,DE

S92 security(W)camera?/TI,AB,DE

S93 broken(W)window?/TI,AB,DE

S94 hot(W)spot(W)polic?/TI,AB,DE

S95 gated(W)communit?/TI,AB,DE

S96 defensible(W)space?/TI,AB,DE

S97 designing(W)out(W)crime/TI,AB,DE

S98 CPTED/TI,AB,DE

S99 target(W)hardening/TI,AB,DE

S100 S86:S99

S101 S12 OR S51

S102 S85 OR S100

S103 S101 AND S102

EconLIT

Via OvidSP
Search date: 10 November 2011
Records identified: 268

1. (fear$ adj3 crime$).ti,ab. (44)
2. (worry$ adj3 crime$).ti,ab. (1)
3. (worries adj3 crime$).ti,ab. (0)
4. (worried adj3 crime$).ti,ab. (0)
5. (anxiety adj3 crime$).ti,ab. (1)
6. (anxious adj3 crime$).ti,ab. (0)
7. perceived safety.mp. (10)
8. (perception$ adj3 safety).ti,ab. (39)
9. (insecurit$ adj3 crime$).ti,ab. (7)
10. (feeling adj (safe or unsafe)).ti,ab. (2)
11. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 (99)
12. crime.ti,ab. (2646)
13. (rape or murder or homicide).ti,ab. (333)
14. (sexual adj (assault or violence)).ti,ab. (40)

15. antisocial behavior$.ti,ab. (15)
16. antisocial behaviour$.ti,ab. (4)
17. anti social behavior$.ti,ab. (4)
18. anti social behaviour$.ti,ab. (14)
19. public disorder.ti,ab. (3)
20. social disorder.ti,ab. (11)
21. (disorderly adj2 behaviour$).ti,ab. (0)
22. (disorderly adj2 behavior$).ti,ab. (2)
23. graffiti.ti,ab. (6)
24. vandal$.ti,ab. (24)
25. delinquent behaviour$.ti,ab. (4)
26. delinquent behavior$.ti,ab. (9)
27. (noise adj (pollution or nuisance)).ti,ab. (53)
28. nuisance neighbor$.ti,ab. (0)
29. nuisance neighbour$.ti,ab. (0)
30. (incivility or incivilities).ti,ab. (10)
31. hooligan$.ti,ab. (11)
32. mugging.ti,ab. (0)
33. verbal abuse.ti,ab. (2)
34. rowdiness.ti,ab. (0)
35. (litter or littering).ti,ab. (48)
36. (flyposting or fly posting or flytipping or fly tipping).ti,ab. (0)
37. 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 (3084)
38. (urban adj (space$ or design$ or plan$ or ecology or geography or renewal or regenerat$)).ti,ab. (886)
39. (city adj (space$ or design$ or plan$ or ecology or geography)).ti,ab. (102)
40. (town adj (space$ or design$ or plan$ or ecology or geography)).ti,ab. (52)
41. (public space or public spaces).ti,ab. (151)
42. (neighborhood$ or neigbourhood$).ti,ab. (2542)
43. (street or streets).ti,ab. (1119)
44. built environment.ti,ab. (168)
45. housing estate$.ti,ab. (45)
46. (problem estate$ or sink estate$).ti,ab. (2)
47. public housing.ti,ab. (397)
48. ((council or social) adj housing).ti,ab. (269)
49. (housing adj3 (improv$ or initiative$)).ti,ab. (142)
50. (housing adj2 design$).ti,ab. (34)
51. (housing adj2 project$).ti,ab. (88)
52. ((renovat$ or repair$) adj3 (home or homes or house or houses or housing)).ti,ab. (28)
53. (park or parks or playground$ or carpark$).ti,ab. (1292)
54. (campus or campuses).ti,ab. (231)
55. greenways.ti,ab. (4)
56. (landscape adj (plan$ or design$)).ti,ab. (22)
57. physical environment.ti,ab. (98)
58. (civic adj (design$ or space$ or plan$)).ti,ab. (6)
59. residential area$.ti,ab. (132)
60. (city adj (centre or centres or center or centers)).ti,ab. (169)
61. (shopping adj (centre or centres or center or centers or mall or malls)).ti,ab. (156)
62. (area based adj2 (initiative$ or intervention$)).ti,ab. (26)
63. public transport.ti,ab. (482)
64. (railway$ or bus or buses).ti,ab. (1747)
65. 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 (9530)

66. streetlight$.ti,ab. (1)
67. street light$.ti,ab. (11)
68. alley gat$.ti,ab. (0)
69. alleygat$.ti,ab. (0)
70. (neighborhood watch or neighbourhood watch).ti,ab. (4)
71. (cctv or closed circuit television or video surveillance).ti,ab. (5)
72. security camera$.ti,ab. (0)
73. broken window$.ti,ab. (9)
74. hot spot polic$.ti,ab. (0)
75. gated communit$.ti,ab. (45)
76. defensible space$.ti,ab. (5)
77. designing out crime.ti,ab. (0)
78. CPTED.ti,ab. (0)
79. target hardening.ti,ab. (2)
80. 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 (82)
81. 11 or 37 (3129)
82. 65 or 80 (9582)
83. 81 and 82 (268)

EMBASE

Via OvidSP
Search date: 10 November 2011
Records identified: 2105

1. (fear$ adj3 crime$).ti,ab. (145)
2. (worry$ adj3 crime$).ti,ab. (3)
3. (worries adj3 crime$).ti,ab. (0)
4. (worried adj3 crime$).ti,ab. (0)
5. (anxiety adj3 crime$).ti,ab. (12)
6. (anxious adj3 crime$).ti,ab. (0)
7. perceived safety.ti,ab. (180)
8. (perception$ adj3 safety).ti,ab. (504)
9. (insecurit$ adj3 crime$).ti,ab. (3)
10. (feeling adj (safe or unsafe)).ti,ab. (110)
11. fear/ or emotional stress/ (32,394)
12. crime/ (14496)
13. 11 and 12 (227)
14. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 13 (1051)
15. crime/ (14,496)
16. criminal behavior/ (5082)
17. rape/ or sexual crime/ or homicide/ (22,256)
18. (rape or murder or homicide).ti,ab. (10,721)
19. (sexual adj (assault or violence)).ti,ab. (3367)
20. antisocial behavior/ (4561)
21. antisocial behavior$.ti,ab. (1895)
22. antisocial behaviour$.ti,ab. (567)
23. anti social behavior$.ti,ab. (68)
24. anti social behaviour$.ti,ab. (82)
25. civil disorder/ (818)
26. public disorder.ti,ab. (12)
27. social disorder.ti,ab. (67)

28. (disorderly adj2 behaviour$).ti,ab. (3)
29. (disorderly adj2 behavior$).ti,ab. (9)
30. graffiti.ti,ab. (72)
31. vandal$.ti,ab. (183)
32. juvenile delinquency/ (6469)
33. delinquent behaviour$.ti,ab. (178)
34. delinquent behavior$.ti,ab. (658)
35. (noise adj (pollution or nuisance)).ti,ab. (366)
36. nuisance neighbor$.ti,ab. (0)
37. nuisance neighbour$.ti,ab. (0)
38. (incivility or incivilities).ti,ab. (72)
39. hooligan$.ti,ab. (31)
40. mugging.ti,ab. (17)
41. verbal hostility/ (447)
42. verbal abuse.ti,ab. (399)
43. rowdiness.ti,ab. (2)
44. street litter$.ti,ab. (3)
45. (flyposting or fly posting or flytipping or fly tipping).ti,ab. (1)
46. 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31
     or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 (55,892)
47. environmental factor/ (45,721)
48. environmental stress/ (1653)
49. environmental planning/ (4075)
50. built environment.ti,ab. (548)
51. (environment$ adj2 design$).ti,ab. (1062)
52. physical environment.ti,ab. (1738)
53. (urban adj2 (space$ or design$ or plan$ or ecology or geography or renewal or regenerat$)).ti,ab.
     (1097)
54. urban area/ (23,586)
55. city planning/ (1262)
56. (city adj2 (space$ or design$ or plan$ or ecology or geography)).ti,ab. (407)
57. (town adj2 (space$ or design$ or ecology or plan$ or geography)).ti,ab. (152)
58. (public space or public spaces).ti,ab. (211)
59. (neighborhood$ or neigbourhood$).ti,ab. (9019)
60. (street or streets).ti,ab. (8678)
61. housing estate$.ti,ab. (158)
62. (problem estate$ or sink estate$).ti,ab. (2)
63. public housing.ti,ab. (405)
64. ((council or social) adj housing).ti,ab. (174)
65. (housing adj3 (improv$ or initiative$)).ti,ab. (322)
66. (housing adj2 design$).ti,ab. (104)
67. (housing adj2 project$).ti,ab. (162)
68. ((renovat$ or repair$) adj3 (home or homes or house or houses or housing)).ti,ab. (172)
69. (park or parks or carpark$).ti,ab. (9742)
70. (campus or campuses).ti,ab. (4331)
71. greenways.ti,ab. (12)
72. (landscape adj (plan$ or design$)).ti,ab. (82)
73. (civic adj (design$ or space$ or plan$)).ti,ab. (1)
74. residential area$.ti,ab. (1785)
75. residential area/ (802)
76. (city adj (centre or centres or center or centers)).ti,ab. (734)
77. (shopping adj (centre or centres or center or centers or mall or malls)).ti,ab. (338)
78. (area based adj2 (initiative$ or intervention$)).ti,ab. (22)

79. "traffic and transport"/ (4513)
80. public transport.ti,ab. (378)
81. (railway$ or bus or buses).ti,ab. (3949)
82. 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 (119,260)
83. streetlight$.ti,ab. (18)
84. street light$.ti,ab. (42)
85. alley gat$.ti,ab. (1)
86. alleygat$.ti,ab. (0)
87. (neighborhood watch or neighbourhood watch).ti,ab. (4)
88. (cctv or closed circuit television or video surveillance).ti,ab. (575)
89. security camera$.ti,ab. (7)
90. broken window$.ti,ab. (29)
91. hot spot polic$.ti,ab. (1)
92. gated communit$.ti,ab. (3)
93. defensible space$.ti,ab. (6)
94. designing out crime.ti,ab. (0)
95. CPTED.ti,ab. (4)
96. target hardening.ti,ab. (3)
97. 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 (691)
98. 14 or 46 (56,628)
99. 82 or 97 (119,863)
100. 98 and 99 (2105)

Education Resources Information Center

Via Dialog
Search date: 17 November 2010
Records identified: 176

"((((FEAR NEAR CRIME) .TI,AB.) OR (CRIME.DE. AND FEAR.DE.) OR ((WORRY$ NEAR CRIME$) .TI,AB.) OR ((WORRI$ NEAR CRIME$) .TI,AB.) OR ((ANXIETY NEAR CRIME$) .TI,AB.) OR ((ANXIOUS NEAR CRIME$) .TI,AB.) OR ((PERCEIVED ADJ SAFETY) .TI,AB.) OR ((PERCEPTION$ NEAR SAFETY) .TI,AB.) OR ((INSECURIT$ NEAR CRIME$) .TI,AB.) OR ((FEELING ADJ SAFE) .TI,AB.) OR ((FEELING ADJ UNSAFE) .TI, AB.)) OR (((CRIME.DE.) OR (HOMICIDE.W..DE.) OR (MURDER.TI,AB.) OR (RAPE.W..DE.) OR ((SEXUAL ADJ OFFENSE$) .TI,AB.) OR ((SEXUAL ADJ ASSAULT$) .TI,AB.) OR ((SEXUAL ADJ VIOLENCE) .TI,AB.) OR (ANTISOCIAL-BEHAVIOR.DE.) OR ((ANTISOCIAL ADJ BEHAVIOR) .TI,AB.) OR ((ANTISOCIAL ADJ BEHAVIOUR) .TI,AB.) OR ((ANTI ADJ SOCIAL ADJ BEHAVIOR) .TI,AB.) OR ((ANTI ADJ SOCIAL ADJ BEHAVIOUR) .TI,AB.) OR ((PUBLIC ADJ DISORDER) .TI,AB.) OR ((SOCIAL ADJ DISORDER) .TI,AB.) OR ((DISORDERLY ADJ BEHAVIOR$) .TI,AB.) OR ((DISORDERLY ADJ BEHAVIOuR$) .TI,AB.) OR (VANDALISM. W..DE.) OR (GRAFFITI.TI,AB.) OR (DELINQUENCY.W..DE.) OR ((DELINQUENT ADJ BEHAVIOUR$) .TI,AB.) OR ((DELINQUENT ADJ BEHAVIOR$) .TI,AB.) OR ((NOISE ADJ NUISANCE) .TI,AB.) OR ((NOISE ADJ POLLUT$) .TI,AB.) OR ((NUISANCE ADJ NEIGHBOR$) .TI,AB.) OR ((NUISANCE ADJ NEIGHBOUR$) .TI,AB.) OR ((INCIVILITY OR INCIVILITIES) .TI,AB.) OR (HOOLIGAN$.TI,AB.) OR (MUGGING.TI,AB.) OR ((VERBAL ADJ ABUSE) .TI,AB.) OR (ROWDINESS.TI,AB.) OR ((LITTER OR LITTERING) .TI,AB.) OR ((FLYPOST$ OR FLY ADJ POST$ OR FLYTIP$ OR FLY ADJ TIP$) .TI,AB.)) AND ((MENTAL-HEALTH.DE.) OR (HEALTH.TI,AB.) OR ((WELLBEING OR WELL ADJ BEING OR WELLNESS) .TI,AB.) OR ((ANXIETY OR DEPRESSION) .TI,AB.) OR (DEPRESSION-PSYCHOLOGY.DE.) OR ((SOCIAL ADJ INTEGRAT$ OR SOCIAL ADJ COHES$ OR SOCIAL ADJ ISOLAT$) .TI,AB.) OR ((HAPPINESS OR COPING OR RESILIENCE) .TI,AB.) OR (COPING.W..DE.) OR (QUALITY-OF-LIFE.DE.) OR ((LIFE ADJ SATISFACTION OR SELF ADJ ESTEEM OR SELF ADJ CONCEPT) .TI, AB.)))) AND (((((STREETLIGHT$ OR STREET ADJ LIGHT$ OR ALLEYGAT$ OR ALLEY ADJ GAT$) .TI,AB.) OR

((NEIGHBOURHOOD$ ADJ WATCH$ OR NEIGHBORHOOD$ ADJ WATCH$) .TI,AB.) OR ((CCTV OR CLOSED ADJ CIRCUIT ADJ TELEVISION OR VIDEO ADJ SURVEILLANCE OR SECURITY ADJ CAMERA$) .TI, AB.) OR ((BROKEN ADJ WINDOW$ OR HOT ADJ SPOT ADJ POLIC$ OR GATED ADJ COMMUNIT$ OR DEFENSIBLE ADJ SPACE$) .TI,AB.) OR ((CPTED OR TARGET ADJ HARDENING) .TI,AB.)) OR (((URBAN ADJ SPACE$ OR URBAN ADJ DESIGN$ OR URBAN ADJ PLAN$ OR URBAN ADJ ECOLOGY OR URBAN ADJ GEOGRAPHY) .TI,AB.) OR ((CITY ADJ SPACE$ OR CITY ADJ DESIGN$ OR CITY ADJ PLAN$ OR CITY ADJ ECOLOGY OR CITY ADJ GEOGRAPHY) .TI,AB.) OR ((TOWN ADJ SPACE$ OR TOWN ADJ DESIGN$ OR TOWN ADJ PLAN$ OR TOWN ADJ ECOLOGY OR TOWN ADJ GEOGRAPHY) .TI,AB.) OR ((PUBLIC ADJ SPACE$) .TI,AB.) OR (NEIGHBORHOODS.DE.) OR ((BUILT ADJ ENVIRONMENT) .TI,AB.) OR ((BUILDING ADJ DESIGN) .TI,AB.) OR ((SOCIAL ADJ HOUSING OR COUNCIL ADJ HOUSING OR PUBLIC ADJ HOUSING) .TI,AB.) OR ((HOUSING ADJ ESTATE$ OR PROBLEM ADJ ESTATE$ OR SINK ADJ ESTATE$) .TI,AB.) OR ((HOUSING ADJ DESIGN$ OR HOUSING ADJ INITIATIVE$ OR HOUSING ADJ PROJECT$ OR HOUSING ADJ IMPROV$) .TI,AB.) OR ((PARK OR PARKS OR CARPARK$) .TI,AB.) OR (PLAYGROUNDS.W..DE.) OR (CAMPUSES.W..DE.) OR (GREENWAY$.TI,AB.) OR ((LANDSCAPE ADJ PLAN$ OR LANDSCAPE ADJ DESIGN$ OR PHYSICAL ADJ ENVIRONMENT) .TI,AB.) OR ((CIVIC ADJ DESIGN$ OR CIVIC ADJ SPACE$ OR CIVIC ADJ PLAN$) .TI,AB.) OR ((RESIDENTIAL ADJ AREA$) .TI,AB.) OR ((CITY ADJ CENTRE$ OR CITY ADJ CENTER$ OR SHOPPING ADJ CENTER$ OR SHOPPING ADJ CENTRE$ OR SHOPPING ADJ MALL$) .TI,AB.) OR ((RENOVAT$ NEAR (HOME OR HOMES OR HOUSE OR HOUSES OR HOUSING)) .TI,AB.) OR ((REPAIR $ NEAR (HOME OR HOMES OR HOUSE OR HOUSES OR HOUSING)) .TI,AB.) OR (Transportation.W..DE.) OR ((PUBLIC ADJ TRANSPORT OR RAILWAY$ OR BUS OR BUSES) .TI,AB.)))"

Health Management Information Consortium

Via OvidSP
Search date: 17 November 2010
Records identified: 71

1. (fear$ adj3 crime$).ti,ab. (24)
2. (worry$ adj3 crime$).ti,ab. (0)
3. (worries adj3 crime$).ti,ab. (0)
4. (worried adj3 crime$).ti,ab. (0)
5. (anxiety adj3 crime$).ti,ab. (1)
6. (anxious adj3 crime$).ti,ab. (0)
7. perceived safety.mp. (7)
8. (perception$ adj3 safety).ti,ab. (30)
9. (insecurit$ adj3 crime$).ti,ab. (2)
10. (feeling adj (safe or unsafe)).ti,ab. (12)
11. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 (71)
12. crime.ti,ab. (697)
13. (rape or murder or homicide).ti,ab. (275)
14. (sexual adj (assault or violence)).ti,ab. (69)
15. antisocial behavior$.ti,ab. (2)
16. antisocial behaviour$.ti,ab. (56)
17. anti social behavior$.ti,ab. (0)
18. anti social behaviour$.ti,ab. (38)
19. public disorder.ti,ab. (4)
20. social disorder.ti,ab. (3)
21. (disorderly adj2 behaviour$).ti,ab. (1)
22. (disorderly adj2 behavior$).ti,ab. (0)
23. graffiti.ti,ab. (6)
24. vandal$.ti,ab. (32)
25. delinquent behaviour$.ti,ab. (14)

26. delinquent behavior$.ti,ab. (0)
27. (noise adj (pollution or nuisance)).ti,ab. (19)
28. nuisance neighbor$.ti,ab. (0)
29. nuisance neighbour$.ti,ab. (0)
30. (incivility or incivilities).ti,ab. (4)
31. hooligan$.ti,ab. (5)
32. mugging.ti,ab. (2)
33. verbal abuse.ti,ab. (52)
34. rowdiness.ti,ab. (0)
35. (litter or littering).ti,ab. (17)
36. (flyposting or fly posting or flytipping or fly tipping).ti,ab. (0)
37. 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 (1216)
38. (urban adj (space$ or design$ or plan$ or ecology or geography or renewal or regenerat$)).ti,ab. (96)
39. (city adj (space$ or design$ or plan$ or ecology or geography)).ti,ab. (7)
40. (town adj (space$ or design$ or plan$ or ecology or geography)).ti,ab. (31)
41. (public space or public spaces).ti,ab. (27)
42. (neighborhood$ or neigbourhood$).ti,ab. (41)
43. (street or streets).ti,ab. (655)
44. built environment.ti,ab. (100)
45. housing estate$.ti,ab. (60)
46. (problem estate$ or sink estate$).ti,ab. (1)
47. public housing.ti,ab. (20)
48. ((council or social) adj housing).ti,ab. (113)
49. (housing adj3 (improv$ or initiative$)).ti,ab. (137)
50. (housing adj2 design$).ti,ab. (48)
51. (housing adj2 project$).ti,ab. (66)
52. ((renovat$ or repair$) adj3 (home or homes or house or houses or housing)).ti,ab. (36)
53. (park or parks or playground$ or carpark$).ti,ab. (413)
54. (campus or campuses).ti,ab. (94)
55. greenways.ti,ab. (0)
56. (landscape adj (plan$ or design$)).ti,ab. (11)
57. physical environment.ti,ab. (170)
58. (civic adj (design$ or space$ or plan$)).ti,ab. (3)
59. residential area$.ti,ab. (42)
60. (city adj (centre or centres or center or centers)).ti,ab. (37)
61. (shopping adj (centre or centres or center or centers or mall or malls)).ti,ab. (20)
62. (area based adj2 (initiative$ or intervention$)).ti,ab. (32)
63. public transport.ti,ab. (92)
64. (railway$ or bus or buses).ti,ab. (146)
65. 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 (2350)
66. streetlight$.ti,ab. (0)
67. street light$.ti,ab. (6)
68. alley gat$.ti,ab. (0)
69. alleygat$.ti,ab. (0)
70. (neighborhood watch or neighbourhood watch).ti,ab. (5)
71. (cctv or closed circuit television or video surveillance).ti,ab. (33)
72. security camera$.ti,ab. (1)
73. broken window$.ti,ab. (1)
74. hot spot polic$.ti,ab. (0)
75. gated communit$.ti,ab. (0)
76. defensible space$.ti,ab. (0)

77. designing out crime.ti,ab. (0)
78. CPTED.ti,ab. (0)
79. target hardening.ti,ab. (1)
80. 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 (45)
81. 11 or 37 (1259)
82. 65 or 80 (2387)
83. 81 and 82 (71)

Inside Conferences

Via Dialog Classic
Search date: 8 December 2010
Records identified: 18

S1 fear? (3W) crime?/TI,DE

S2 worry? (3W) crime?/TI,DE

S3 worries (3W) crime?/TI,DE

S4 worried (3W) crime?/TI,DE

S5 anxiety (3W) crime?/TI,DE

S6 anxious (3W) crime?/TI,DE

S7 perceived(W)safety/TI,DE

S8 perception? (3W) safety/TI,DE

S9 insecurit? (3W) crime?/TI,DE

S10 feeling(W)safe/TI,DE

S11 feeling(W)unsafe/TI,DE

S12 S1:S11

S13 crime/TI,DE

S14 sexual(W)offenses/TI,DE

S15 (rape or murder or homicide)/TI,DE

S16 ((sexual(W)assualt?) OR (sexual(W)violence))/TI,DE

S17 (anti(W)social(W)behaviour?)/TI,DE

S18 (antisocial(W)behaviour?)/TI,DE

S19 (anti(W)social(W)behavior?)/TI,DE

S20 (antisocial(W)behavior?)/TI,DE

S21 public(W)disorder/TI,DE

S22 social(W)disorder/TI,DE

S23 (disorderly (2W) behaviour?)/TI,DE

S24 (disorderly (2W) behavior?)/TI,DE

S25 graffiti/TI,DE

S26 vandal?/TI,DE

S27 delinquency/TI,DE

S28 delinquent(W)behaviour?/TI,DE

S29 delinquent(W)behavior?/TI,DE

S30 ((noise(W)pollution) OR (noise(W)nuisance))/TI,DE

S31 nuisance(W)neighbor?/TI,DE

S32 nuisance(W)neighbour?/TI,DE

S33 incivility OR incivilities/TI,DE

S34 hooligan?/TI,DE

S35 mugging/TI,DE

S36 verbal(W)abuse/TI,DE

S37 rowdiness/TI,DE

S38 litter OR littering/TI,DE

S39 ((flyposting) OR (fly(W)posting) OR (flytipping) OR (fly(W)tipping))/TI,DE

S40 S13:S39

S41 health/TI,DE

S42 mental(W)health/TI,DE

S43 (wellbeing OR well(W)being OR wellness)/TI,DE

S44 (anxiety OR depression)/TI,DE

S45 ((social?(W)integrat?) OR (social?(W)cohes?) OR (social?(W)isolat?))/TI,DE

S46 (happiness or coping or resilience)/TI,DE

S47 stress/TI,DE

S48 (quality(2W)life)/TI,DE

S49 ((life(W)satisfaction) OR (self(W)esteem) OR (self(W)concept))/TI,DE

S50 S41:S49

S51 S40 AND S50

S52 urban(W)areas/TI,DE

S53 urban(W)renewal/TI,DE

S54 ((urban(W)space?) OR (urban(W)design?) OR (urban(W)plan?) OR (urban(W)ecology) OR (urban(W) geography) OR (urban(W)regenerat?))/TI,DE

S55 ((city(W)space?) OR (city(W)design?) OR (city(W)plan?) OR (city(W)ecology) OR (city(W)geography) OR (city(W)regenerat?))/TI,DE

S56 ((town(W)space?) OR (town(W)design?) OR (town(W)plan?) OR (town(W)ecology) OR (town(W) geography) OR (town(W)regenerat?))/TI,DE

S57 ((civic(W)space?) OR (civic(W)design?) OR (civic(W)plan?) OR (civic(W)ecology) OR (civic(W)geography) OR (civic(W)regenerat?))/TI,DE

S58 public(W)space?/TI,DE

S59 neighborhood? or neigbourhood?/TI,DE

S60 street or streets/TI,DE

S61 built(W)environment/TI,DE

S62 building(W)design?/TI,DE

S63 (housing OR (social(W)housing) OR (housing(W)estate?))/TI,DE

S64 ((problem(W)estate?) OR (sink(W)estate?))/TI,DE

S65 ((council(W)housing) OR (social(W)housing) OR (public(W)housing))/TI,DE

S66 housing (3W) improv?/TI,DE

S67 housing (3W)initiative?/TI,DE

S68 housing (2W)design?/TI,DE

S69 housing (2W) project?/TI,DE

S70 (renovat?(3W) (home OR homes OR house OR houses OR housing))/TI,DE

S71 (repair? (3W) (home OR homes OR house OR houses OR housing))/TI,DE

S72 parks/TI,DE

S73 park OR parks OR playground? OR carpark?/TI,DE

S74 campus OR campuses/TI,DE

S75 greenways/TI,DE

S76 ((landscape(W)plan?) OR (landscape(W)design?))/TI,DE

S77 physical(W)environment/TI,DE

S78 residential(W)area?/TI,DE

S79 ((city(W)centre?) OR (city(W)center?))/TI,DE

S80 ((shopping(W)centre?) OR (shopping(W)center?) OR (shopping(W)mall?))/TI,DE

S81 ((area(W)based(W)initiative?) OR (area(W)based(W)intervention?))/TI,DE

S82 transport?/TI,DE

S83 public(W)transport/TI,DE

S84 (railway? or bus or buses)/TI,DE

S85 S52:S84

S86 streetlight?/TI,DE

S87 street(W)light?/TI,DE

S88 alley(W)gat?/TI,DE

S89 alleygat?/TI,DE

S90 ((neighborhood(W)watch) OR (neighbourhood(W)watch))/TI,DE

S91 ((cctv) OR (closed(W)circuit(W)television) OR (video(W)surveillance))/TI,DE

S92 security(W)camera?/TI,DE

S93 broken(W)window?/TI,DE

S94 hot(W)spot(W)polic?/TI,DE

S95 gated(W)communit?/TI,DE

S96 defensible(W)space?/TI,DE

S97 designing(W)out(W)crime/TI,DE

S98 CPTED/TI,DE

S99 target(W)hardening/TI,DE

S100 S86:S99

S101 S12 OR S51

S102 S85 OR S100

S103 S101 AND S102

MEDLINE

Via OvidSP
Search date: 10 November 2010
Records identified: 1194

1. (fear$ adj3 crime$).ti,ab. (104)
2. (worry$ adj3 crime$).ti,ab. (0)
3. (worries adj3 crime$).ti,ab. (0)
4. (worried adj3 crime$).ti,ab. (0)
5. (anxiety adj3 crime$).ti,ab. (11)
6. (anxious adj3 crime$).ti,ab. (0)
7. perceived safety.ti,ab. (153)
8. (perception$ adj3 safety).ti,ab. (411)
9. (insecurit$ adj3 crime$).ti,ab. (3)
10. (feeling adj (safe or unsafe)).ti,ab. (98)
11. fear/ or stress, psychological/ (86,736)
12. crime/ (11,244)
13. 11 and 12 (237)
14. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 13 (903)
15. crime/ (11,244)
16. rape/ or sex offenses/ or homicide/ (18,596)
17. (rape or murder or homicide).ti,ab. (9456)
18. (sexual adj (assault or violence)).ti,ab. (2786)
19. antisocial behavior$.ti,ab. (1682)
20. antisocial behaviour$.ti,ab. (439)
21. anti social behavior$.ti,ab. (46)
22. anti social behaviour$.ti,ab. (61)
23. public disorder.ti,ab. (9)
24. social disorder.ti,ab. (60)
25. (disorderly adj2 behaviour$).ti,ab. (3)
26. (disorderly adj2 behavior$).ti,ab. (4)
27. graffiti.ti,ab. (67)
28. vandal$.ti,ab. (150)
29. delinquent behaviour$.ti,ab. (119)
30. delinquent behavior$.ti,ab. (532)
31. (noise adj (pollution or nuisance)).ti,ab. (197)
32. nuisance neighbor$.ti,ab. (0)
33. nuisance neighbour$.ti,ab. (0)
34. (incivility or incivilities).ti,ab. (62)
35. hooligan$.ti,ab. (25)
36. mugging.ti,ab. (14)

37. verbal abuse.ti,ab. (355)
38. rowdiness.ti,ab. (1)
39. street litter$.ti,ab. (2)
40. (flyposting or fly posting or flytipping or fly tipping).ti,ab. (1)
41. 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 (36,776)
42. urban space$.ti,ab. (44)
43. urban design$.ti,ab. (66)
44. urban plan$.ti,ab. (287)
45. urban ecology.ti,ab. (33)
46. urban geography.ti,ab. (7)
47. urban renewal.ti,ab. (43)
48. urban regeneration.ti,ab. (23)
49. city space$.ti,ab. (2)
50. city design$.ti,ab. (65)
51. city plan$.ti,ab. (97)
52. city ecology.ti,ab. (0)
53. city geography.ti,ab. (0)
54. town space$.ti,ab. (0)
55. town design$.ti,ab. (8)
56. town plan$.ti,ab. (89)
57. town ecology.ti,ab. (0)
58. town geography.ti,ab. (0)
59. (public space or public spaces).ti,ab. (175)
60. (neighborhood$ or neigbourhood$).ti,ab. (8661)
61. (street or streets).ti,ab. (7075)
62. built environment.ti,ab. (462)
63. housing estate$.ti,ab. (142)
64. (problem estate$ or sink estate$).ti,ab. (1)
65. public housing.ti,ab. or public housing/ (1019)
66. ((council or social) adj housing).ti,ab. (158)
67. (housing adj3 (improv$ or initiative$)).ti,ab. (326)
68. (housing adj2 design$).ti,ab. (100)
69. housing project$.ti,ab. (149)
70. ((renovat$ or repair$) adj3 (home or homes or house or houses or housing)).ti,ab. (152)
71. (park or parks or carpark$).ti,ab. (8090)
72. (campus or campuses).ti,ab. (3640)
73. "Transportation"/ (4978)
74. public transport$.ti,ab. (532)
75. (bus or buses).ti,ab. (1795)
76. Environment Design/ (2472)
77. Urban Renewal/ (637)
78. greenways.ti,ab. (11)
79. (landscape adj (plan$ or design$)).ti,ab. (59)
80. physical environment.ti,ab. (1510)
81. (civic adj (design$ or space$ or plan$)).ti,ab. (1)
82. residential area$.ti,ab. (1424)
83. residence characteristics/ (13,987)
84. (city adj (centre or centres or center or centers)).ti,ab. (454)
85. (shopping adj (centre or centres or center or centers or mall or malls)).ti,ab. (271)
86. (area based adj2 (initiative$ or intervention$)).ti,ab. (18)

87. 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 (54,820)
88. streetlight$.ti,ab. (18)
89. street light$.ti,ab. (36)
90. alley gat$.ti,ab. (1)
91. alleygat$.ti,ab. (0)
92. (neighborhood watch or neighbourhood watch).ti,ab. (4)
93. (cctv or closed circuit television or video surveillance).ti,ab. (546)
94. security camera$.ti,ab. (6)
95. broken window$.ti,ab. (19)
96. hot spot polic$.ti,ab. (1)
97. gated communit$.ti,ab. (1)
98. defensible space$.ti,ab. (3)
99. designing out crime.ti,ab. (0)
100. CPTED.ti,ab. (3)
101. target hardening.ti,ab. (1)
102. 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 (637)
103. 14 or 41 (37,387)
104. 88 or 103 (55,387)
105. 104 and 105 (1194)

National Criminal Justice Reference Service

Via CSA Illumina
Search date: 7 December 2010
Records identified: 2211

Search Query #7 ((DE=crime fear or DE=(personal safety) or TI=(fear* within 3 crime*) or AB=(fear* within 3 crime*) or TI=(worry* within 3 crime*) or AB=(worry* within 3 crime*) or TI=(worri* within 3 crime*) or AB=(worri* within 3 crime*) or TI=(anxiety within 3 crime*) or AB=(anxiety within 3 crime*) or TI=(anxious within 3 crime*) or AB=(anxious within 3 crime*) or (perceived safety) or TI=(perception* within 3 safety) or AB=(perception* within 3 safety) or TI=(insecurit* withinj3 crime*) or AB=(insecurit* within 3 crime*) or TI=((feeling within 3 safe*) or (feeling within 3 unsafe*)) or AB=((feeling within 3 safe*) or (feeling within 3 unsafe*))) OR ((KW=crime or TI=((sexual offenses) or (sexual assault) or (sexual violence)) or AB=((sexual offenses) or (sexual assault) or (sexual violence)) or TI=(murder or rape or homicide) or AB=(murder or rape or homicide) or TI=((anti social behaviour) or (antisocial behaviour)) or AB=((anti social behaviour) or (antisocial behaviour)) or TI=((anti social behavior) or (antisocial behavior)) or AB=((anti social behavior) or (antisocial behavior)) or DE=(antisocial behaviour) or TI=((public disorder) or (social disorder) or rowdiness) or AB=((public disorder) or (social disorder) or rowdiness) or TI=((disorderly within 2 behaviour*) or (disorderly within 2 behaviour*) or hooligan*) or AB=((disorderly within 2 behavior*) or (disorderly within 2 behavior*) or hooligan*) or TI=(graffiti or vandalism or delinquency) or AB=(graffiti or vandalism or delinquency) or TI=((delinquent behaviour*) or (delinquent behaviour*) or mugging) or AB=((delinquent behavior*) or (delinquent behavior*) or mugging) or ((noise pollut*) or (noise nuisance) or litter*) or ((nuisance within 2 neighbor*) or (nuisance within 2 neighbour*) or (verbal abuse)) or (incivility or incivilities or (verbal abuse)) or (flypost* or flytip*) or ((fly post*) or (fly tip*)) or DE=civility or DE=litter or DE=graffiti) AND (DE=health or DE=(mental health) or DE=(quality of life) or TI=health or AB=health or TI=((well being) or wellbeing or wellness) or AB=((well being) or wellbeing or wellness) or TI=(anxiety or depression or stress) or AB=(anxiety or depression or stress) or TI=((social within 2 integrat*) or (social within 2 cohes*) or (social within 2 isolat*)) or AB=((social within 2 integrat*) or (social within 2 cohes*) or (social within 2 isolat*)) or TI=(happiness or coping or resilience) and AB=(happiness or coping or resilience) or TI=(quality of life) or AB=(quality of life) or TI=((life satisfaction) or (self esteem) or (self

concept)) or AB=((life satisfaction) or (self esteem) or (self concept))))) AND (((((urban space*) or (urban design*) or (urban plan*)) or ((urban ecology) or (urban geography) or (urban renew*)) or ((urban regenerat*) or (city space) or (city design*)) or ((city plan*) or (city ecology) or (city geography)) or ((town plan*) or (town space) or (town design*)) or ((town ecology) or (town geography) or (public space*)) or (neighborhood* or neighbourhood* or (built environment)) or TI=(street or streets) or AB=(street or streets) or ((building design*) or (social housing) or (housing estate*)) or ((problem estate*) or (sink estate*) or (public housing)) or ((council housing) or (housing improve*) or (housing initiative*)) or ((housing design*) or (housing project*))) OR (((renovat* within 2 home*) or (renovat* within 2 house*) or (renovat* within 2 housing)) or ((repair* within 2 home*) or (repair* within 2 house*) or (repair* within 2 housing)) or TI=(park or parks or playground*) or TI=(carpark* or campus or campuses) or (greenway* or (landscape plan*) or (landscape design*)) or ((physical environment) or (civic design*) or (civic plan*)) or ((civic space*) or (residential area*) or (city centre*)) or ((city center*) or (shopping center*) or (shopping centre*)) or ((shopping mall*) or (area based initiative*) or (area based intervention*)) or ((public transport*) or railway* or trains) or buses or AB=(park or parks or playground*) or AB=(carpark* or campus or campuses) or DE=neighbourhoods or DE=built environment or DE=deprived areas or DE=social housing or DE=environmental aspects or DE=urban areas or DE=housing estates or DE=inner cities)) OR ((streetlight* or (street light*) or alleygat*) or ((alley gat*) or (neighbourhood* watch*) or (neighborhood* watch*)) or (cctv or (closed circuit television) or (video surveillance)) or ((security camera*) or (broken window*) or (hot spot polic*)) or ((gated communit*) or (defensible space) or (designing out crime)) or (CPTED or (target hardening))))

PsycINFO

Via OvidSP
Search date: 10 November 2010
Records identified: 2363

1. (fear$ adj3 crime$).ti,ab. (708)
2. (worry$ adj3 crime$).ti,ab. (11)
3. (worries adj3 crime$).ti,ab. (4)
4. (worried adj3 crime$).ti,ab. (3)
5. (anxiety adj3 crime$).ti,ab. (27)
6. (anxious adj3 crime$).ti,ab. (1)
7. perceived safety.ti,ab. (123)
8. (perception$ adj3 safety).ti,ab. (401)
9. (insecurit$ adj3 crime$).ti,ab. (13)
10. (feeling adj (safe or unsafe)).ti,ab. (120)
11. fear/ or anxiety/ (45,494)
12. crime/ (9857)
13. 11 and 12 (530)
14. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 13 (1403)
15. crime/ (9857)
16. criminal behavior/ (4272)
17. rape/ or violent crime/ or homicide/ (8748)
18. (rape or murder or homicide).ti,ab. (11,617)
19. (sexual adj (assault or violence)).ti,ab. (3842)
20. antisocial behavior/ (6387)
21. antisocial behavior$.ti,ab. (4471)
22. antisocial behaviour$.ti,ab. (492)
23. anti social behavior$.ti,ab. (241)
24. anti social behaviour$.ti,ab. (111)
25. public disorder.ti,ab. (41)

26. social disorder.ti,ab. (134)
27. (disorderly adj2 behaviour$).ti,ab. (7)
28. (disorderly adj2 behavior$).ti,ab. (16)
29. graffiti.ti,ab. (158)
30. vandal$.ti,ab. (391)
31. juvenile delinquency/ (12,359)
32. delinquent behaviour$.ti,ab. (154)
33. delinquent behavior$.ti,ab. (1926)
34. (noise adj (pollution or nuisance)).ti,ab. (49)
35. nuisance neighbor$.ti,ab. (0)
36. nuisance neighbour$.ti,ab. (0)
37. (incivility or incivilities).ti,ab. (188)
38. hooligan$.ti,ab. (66)
39. mugging.ti,ab. (40)
40. verbal abuse/ (221)
41. verbal abuse.ti,ab. (438)
42. rowdiness.ti,ab. (3)
43. street litter$.ti,ab. (0)
44. (flyposting or fly posting or flytipping or fly tipping).ti,ab. (1)
45. 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 (48,001)
46. environmental stress/ (1027)
47. environmental planning/ (1128)
48. built environment.ti,ab. (420)
49. (environment$ adj2 design$).ti,ab. (1113)
50. physical environment.ti,ab. (1935)
51. (urban adj2 (space$ or design$ or plan$ or ecology or geography or renewal or regenerat$)).ti,ab. (707)
52. urban planning/ (368)
53. (city adj2 (space$ or design$ or plan$ or ecology or geography)).ti,ab. (157)
54. (town adj2 (space$ or design$ or ecology or plan$ or geography)).ti,ab. (46)
55. (civic adj (design$ or space$ or plan$)).ti,ab. (7)
56. (landscape adj (plan$ or design$)).ti,ab. (21)
57. architecture/ (1177)
58. (public space or public spaces).ti,ab. (471)
59. neighborhoods/ (3173)
60. (neighborhood$ or neigbourhood$).ti,ab. (8834)
61. (street or streets).ti,ab. (5640)
62. housing/ (2689)
63. housing estate$.ti,ab. (61)
64. (problem estate$ or sink estate$).ti,ab. (2)
65. public housing.ti,ab. (505)
66. ((council or social) adj housing).ti,ab. (155)
67. (housing adj3 (improv$ or initiative$)).ti,ab. (130)
68. (housing adj2 design$).ti,ab. (76)
69. (housing adj2 project$).ti,ab. (234)
70. ((renovat$ or repair$) adj3 (home or homes or house or houses or housing)).ti,ab. (45)
71. (park or parks or carpark$).ti,ab. (2864)
72. (campus or campuses).ti,ab. (6980)
73. greenways.ti,ab. (3)
74. residential area$.ti,ab. (302)
75. (city adj (centre or centres or center or centers)).ti,ab. (135)
76. (shopping adj (centre or centres or center or centers or mall or malls)).ti,ab. (380)

77. (area based adj2 (initiative$ or intervention$)).ti,ab. (19)
78. transportation/ (742)
79. public transportation/ (238)
80. public transport.ti,ab. (131)
81. (railway$ or bus or buses).ti,ab. (1450)
82. 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 (35,999)
83. streetlight$.ti,ab. (16)
84. street light$.ti,ab. (42)
85. alley gat$.ti,ab. (3)
86. alleygat$.ti,ab. (0)
87. (neighborhood watch or neighbourhood watch).ti,ab. (19)
88. closed circuit television/ (130)
89. (cctv or closed circuit television or video surveillance).ti,ab. (253)
90. security camera$.ti,ab. (10)
91. broken window$.ti,ab. (46)
92. hot spot polic$.ti,ab. (3)
93. gated communit$.ti,ab. (11)
94. defensible space$.ti,ab. (34)
95. designing out crime.ti,ab. (0)
96. CPTED.ti,ab. (15)
97. target hardening.ti,ab. (16)
98. 83 or 84 or 85 or 86 or 87 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 (461)
99. 14 or 45 (48,688)
100. 82 or 98 (36,297)
101. 99 and 100 (2363)

Science Citation Index

Via Web of Knowledge
Search date: 6 November 2010
Records identified: 1376

#30 #29 AND #15

#29 #28 OR #25

#28 #27 OR #26

#27 TS=("broken window*" OR "hot spot policing" OR "gated communit*" OR "defensible space" OR "designing out crime" OR CPTED OR "target hardening")

#26 TS=("street light*" OR streetlight* OR alleygat* OR "alley gat*" OR "neighborhood watch*" OR "neighbourhood watch*" OR cctv OR "closed circuit television" OR "video surveillance" OR "security camera*")

#25 #24 OR #23 OR #22 OR #21 OR #20 OR #19 OR #18 OR #17 OR #16

#24 TS=("area based initiative*" or "area based intervention*")

#23 TS=("city centre*" OR "city center*" OR "shopping centre*" OR "shopping center*" OR "shopping mall*" OR "public transport" OR transport OR bus OR buses OR railway*)

#22 TS=("landscape plan*" OR "landscape design*" OR "physical environment" OR "civic design*" OR "civic space*" or "civic plan*" OR "residential area*")

#21 TS=("home* repair*" OR "home* renovat*" OR "house* repair*" OR "house renovat*" OR park OR parks OR playground* or carpark* OR campus OR campuses OR greenway*)

#20 TS=(housing OR "social housing" OR "public housing" OR "council housing" OR "housing estate*" OR "problem estate*" or "sink estate" OR "housing improv*" OR "housing initiative*" OR "housing design*" OR "housing project*")

#19 TS=("public space*" OR neighborhood* OR neighbourhood* OR "built environment" OR "building design" OR street*)

#18 TS=("town area*" OR "town space*" OR "town design*" OR "town plan*" OR "town ecology" OR "town geography" OR "town renewal" OR "town regenerat*")

#17 TS=("city area*" OR "city space*" OR "city design*" OR "city plan*" OR "city ecology" OR "city geography" OR "city renewal" OR "city regenerat*")

#16 TS=("urban area*" OR "urban space*" OR "urban design*" OR "urban plan*" OR "urban ecology" OR "urban geography" OR "urban renewal" OR "urban regenerat*")

#15 #14 OR #3

#14 #13 AND #9

#13 #12 OR #11 OR #10

#12 TS=(stress OR "quality of life" OR "life satisfaction" or "self esteem" OR "self concept")

#11 TS=("social integrat*" OR "social cohes*" OR "social isolat*" OR happiness OR coping OR resilience)

#10 TS=(health OR "mental health" OR wellbeing OR "well being" OR wellness OR depression OR anxiety)

#9 #8 OR #7 OR #6 OR #5 OR #4

#8 TS=(incivility OR incivilities OR mugging OR "verbal abuse" OR rowdiness OR flyposting OR "fly posting" OR flytipping OR "fly tipping" OR litter*)

#7 TS=(vandal* OR graffiti OR "noise nuisance" OR "noise pollution" OR "nuisance neighbour*" OR "nuisance neighbor*")

#6 TS=("public disorder" OR "social disorder" OR "delinquent behavior*" OR "delinquent behaviour*" OR delinquency)

#5 TS=("anti social behaviour" OR "anti social behavior" OR "antisocial behaviour" OR "antisocial behavior" OR "disorderly behaviour" OR "disorderly behavior")

#4 TS=(crime OR "sexual offense*" OR "sexual assault*" OR "sexual violence" OR murder OR rape OR homicide)

#3 #2 OR #1

#2 TS=((perceived safety) OR TS=(perception* SAME safety) OR TS=(insecurit* SAME crime*) OR TS=(feeling SAME safe) OR TS=(feeling SAME unsafe))

#1 TS=((fear* OR worry* OR worried OR worries OR anxiety OR anxious) SAME crime)

Social Policy & Practice

Via OvidSP
Search date: 10 November 2010
Records identified: 1050

1. (fear$ adj3 crime$).ti,ab. (344)
2. (worry$ adj3 crime$).ti,ab. (6)
3. (worries adj3 crime$).ti,ab. (2)
4. (worried adj3 crime$).ti,ab. (1)
5. (anxiety adj3 crime$).ti,ab. (10)
6. (anxious adj3 crime$).ti,ab. (3)
7. perceived safety.mp. (12)
8. (perception$ adj3 safety).ti,ab. (62)
9. (insecurit$ adj3 crime$).ti,ab. (5)
10. (feeling adj (safe or unsafe)).ti,ab. (39)
11. emotions.de. (2887)
12. crime.de. (6621)
13. 11 and 12 (27)
14. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 13 (481)
15. crime.de. (6621)
16. (sexual offenses or murder).de. (841)
17. (rape or murder or homicide).ti,ab. (984)
18. (sexual adj (assualt or violence)).ti,ab. (201)
19. anti social behaviour.de. (2625)
20. antisocial behavior$.ti,ab. (63)
21. antisocial behaviour$.ti,ab. (775)
22. anti social behavior$.ti,ab. (7)
23. anti social behaviour$.ti,ab. (1507)
24. public disorder.ti,ab. (10)
25. social disorder.ti,ab. (14)
26. (disorderly adj2 behaviour$).ti,ab. (11)
27. (disorderly adj2 behavior$).ti,ab. (0)
28. graffiti.ti,ab. (114)
29. vandal$.ti,ab. (212)
30. vandalism.de. (295)
31. delinquency.de. (806)
32. delinquent behaviour$.ti,ab. (106)
33. delinquent behavior$.ti,ab. (23)
34. (noise adj (pollution or nuisance)).ti,ab. (119)
35. nuisance neighbor$.ti,ab. (0)
36. nuisance neighbour$.ti,ab. (16)

37. (incivility or incivilities).ti,ab. (21)
38. hooligan$.ti,ab. (16)
39. mugging.ti,ab. (6)
40. verbal abuse.ti,ab. (103)
41. rowdiness.ti,ab. (2)
42. (litter or littering).ti,ab. (135)
43. (flyposting or fly posting or flytipping or fly tipping).ti,ab. (42)
44. 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 (11387)
45. urban areas.de. (5653)
46. urban renewal.de. (2437)
47. (urban adj (space$ or design$ or plan$ or ecology or geography or renewal or regenerat$)).ti,ab. (1621)
48. (city adj (space$ or design$ or plan$ or ecology or geography)).ti,ab. (64)
49. (town adj (space$ or design$ or plan$ or ecology or geography)).ti,ab. (131)
50. (public space or public spaces).ti,ab,de. (835)
51. (neighborhood$ or neigbourhood$).ti,ab. (287)
52. (street or streets).ti,ab. (5810)
53. built environment.ti,ab,de. (852)
54. building design.de. (846)
55. (housing or social housing or housing estates).de. (28,846)
56. housing estate$.ti,ab. (1113)
57. (problem estate$ or sink estate$).ti,ab. (54)
58. public housing.ti,ab. (399)
59. ((council or social) adj housing).ti,ab. (3904)
60. (housing adj3 (improv$ or initiative$)).ti,ab. (1357)
61. (housing adj2 design$).ti,ab. (504)
62. (housing adj2 project$).ti,ab. (555)
63. ((renovat$ or repair$) adj3 (home or homes or house or houses or housing)).ti,ab. (494)
64. parks.de. (481)
65. (park or parks or playground$ or carpark$).ti,ab. (2479)
66. (campus or campuses).ti,ab. (232)
67. greenways.ti,ab. (6)
68. (landscape adj (plan$ or design$)).ti,ab. (46)
69. physical environment.ti,ab. (420)
70. (civic adj (design$ or space$ or plan$)).ti,ab. (6)
71. residential area$.ti,ab. (183)
72. (city adj (centre or centres or center or centers)).ti,ab. (460)
73. (shopping adj (centre or centres or center or centers or mall or malls)).ti,ab. (201)
74. (area based adj2 (initiative$ or intervention$)).ti,ab. (162)
75. (transport or public transport).de. (4990)
76. public transport.ti,ab. (930)
77. (railway$ or bus or buses).ti,ab. (849)
78. 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 (47,284)
79. streetlight$.ti,ab. (3)
80. street light$.ti,ab. (44)
81. alley gat$.ti,ab. (10)
82. alleygat$.ti,ab. (3)
83. (neighborhood watch or neighbourhood watch).ti,ab. (46)
84. (cctv or closed circuit television or video surveillance).ti,ab. (170)
85. security camera$.ti,ab. (1)

86. broken window$.ti,ab. (14)
87. hot spot polic$.ti,ab. (0)
88. gated communit$.ti,ab. (32)
89. defensible space$.ti,ab. (18)
90. designing out crime.ti,ab. (24)
91. CPTED.ti,ab. (5)
92. target hardening.ti,ab. (10)
93. 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 (353)
94. health.ti,ab,de. (71463)
95. mental health.ti,ab,de. (23,602)
96. (wellbeing or well being or wellness).ti,ab,de. (9027)
97. (anxiety or depression).ti,ab,de. (9895)
98. (social adj (integrat$ or cohes$ or isolat$)).ti,ab,de. (1358)
99. (happiness or coping or resilience).ti,ab,de. (5459)
100. stress.ti,ab,de. (7692)
101. quality of life.ti,ab,de. (7816)
102. (life satisfaction or self esteem or self concept).ti,ab,de. (4762)
103. 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 (96,609)
104. 44 and 103 (2892)
105. 14 or 104 (3277)
106. 78 or 93 (47,418)
107. 105 and 106 (1050)

Sociological Abstracts

Via CSA Illumina
Search date: 18 November 2010
Records identified: 954

Query: ((TI=(fear* within 3 crime*) or AB=(fear* within 3 crime*) or TI=(worry* within 3 crime*) or AB=(worry* within 3 crime*) or TI=(worri* within 3 crime*) or AB=(worri* within 3 crime*) or TI=(anxiety within 3 crime*) or AB=(anxiety within 3 crime*) or TI=(anxious within 3 crime*) or AB=(anxious within 3 crime*) or (perceived safety) or TI=(perception* within 3 safety) or AB=(perception* within 3 safety) or TI=(insecurit* within 3 crime*) or AB=(insecurit* within 3 crime*) or TI=((feeling within 3 safe*) or (feeling within 3 unsafe*)) or AB=((feeling within 3 safe*) or (feeling within 3 unsafe*))) OR ((KW=crime or TI=((sexual offenses) or (sexual assault) or (sexual violence)) or AB=((sexual offenses) or (sexual assault) or (sexual violence)) or TI=(murder or rape or homicide) or AB=(murder or rape or homicide) or TI=((anti social behaviour) or (antisocial behaviour)) or AB=((anti social behaviour) or (antisocial behaviour)) or TI=((anti social behavior) or (antisocial behavior)) or AB=((anti social behavior) or (antisocial behavior)) or TI=((public disorder) or (social disorder) or rowdiness) or AB=((public disorder) or (social disorder) or rowdiness) or TI=((disorderly within 2 behaviour*) or (disorderly within 2 behaviour*) or hooligan*) or AB=((disorderly within 2 behavior*) or (disorderly within 2 behavior*) or hooligan*) or TI=(graffiti or vandalism or delinquency) or AB=(graffiti or vandalism or delinquency) or TI=((delinquent behaviour*) or (delinquent behaviour*) or mugging) or AB=((delinquent behavior*) or (delinquent behavior*) or mugging) or ((noise pollut*) or (noise nuisance) or litter*) or ((nuisance within 2 neighbor*) or (nuisance within 2 neighbour*) or (verbal abuse)) or (incivility or incivilities or (verbal abuse)) or (flypost* or flytip*) or ((fly post*) or (fly tip*))) AND (KW=health or KW=(mental health) or TI=health or AB=health or TI=((well being) or wellbeing or wellness) or AB=((well being) or wellbeing or wellness) or TI=(anxiety or depression or stress) or AB=(anxiety or depression or stress) or TI=((social within 2 integrat*) or (social within 2 cohes*) or (social within 2 isolat*)) or AB=((social within 2 integrat*) or (social within 2 cohes*) or (social within 2 isolat*)) or TI=(happiness or coping or resilience) and AB=(happiness or coping or resilience) or TI=(quality of life) or AB=(quality of life) or TI=((life satisfaction) or (self esteem) or (self concept)) or AB=((life satisfaction) or (self esteem) or (self

concept))))) AND (((((urban space*) or (urban design*) or (urban plan*)) or ((urban ecology) or (urban geography) or (urban renew*)) or ((urban regenerat*) or (city space) or (city design*)) or ((city plan*) or (city ecology) or (city geography)) or ((town plan*) or (town space) or (town design*)) or ((town ecology) or (town geography) or (public space*)) or (neighborhood* or neighbourhood* or (built environment)) or TI= (street or streets) or AB=(street or streets) or ((building design*) or (social housing) or (housing estate*)) or ((problem estate*) or (sink estate*) or (public housing)) or ((council housing) or (housing improve*) or (housing initiative*)) or ((housing design*) or (housing project*))) OR (((renovat* within 2 home*) or (renovat* within 2 house*) or (renovat* within 2 housing)) or ((repair* within 2 home*) or (repair* within 2 house*) or (repair* within 2 housing)) or TI=(park or parks or playground*) or TI=(carpark* or campus or campuses) or (greenway* or (landscape plan*) or (landscape design*)) or ((physical environment) or (civic design*) or (civic plan*)) or ((civic space*) or (residential area*) or (city centre*)) or ((city center*) or (shopping center*) or (shopping centre*)) or ((shopping mall*) or (area based initiative*) or (area based intervention*)) or ((public transport*) or railway* or trains) or buses or AB=(park or parks or playground*) or AB=(carpark* or campus or campuses))) OR ((streetlight* or (street light*) or alleygat*)or ((alley gat*) or (neighbourhood* watch*) or (neighborhood* watch*)) or (cctv or (closed circuit television) or (video surveillance)) or ((security camera*) or (broken window*) or (hot spot polic*)) or ((gated communit*) or (defensible space) or (designing out crime)) or (CPTED or (target hardening))))

Social Science Citation Index

#30 #29 AND #15

#29 #28 OR #25

#28 #27 OR #26

#27 TS=("broken window*" OR "hot spot policing" OR "gated communit*" OR "defensible space" OR "designing out crime" OR CPTED OR "target hardening")

#26 TS=("street light*" OR streetlight* OR alleygat* OR "alley gat*" OR "neighborhood watch*" OR "neighbourhood watch*" OR cctv OR "closed circuit television" OR "video surveillance" OR "security camera*")

#25 #24 OR #23 OR #22 OR #21 OR #20 OR #19 OR #18 OR #17 OR #16

#24 TS=("area based initiative*" or "area based intervention*")

#23 TS=("city centre*" OR "city center*" OR "shopping centre*" OR "shopping center*" OR "shopping mall*" OR "public transport" OR transport OR bus OR buses OR railway*)

#22 TS=("landscape plan*" OR "landscape design*" OR "physical environment" OR "civic design*" OR "civic space*" or "civic plan*" OR "residential area*")

#21 TS=("home* repair*" OR "home* renovat*" OR "house* repair*" OR "house renovat*" OR park OR parks OR playground* or carpark* OR campus OR campuses OR greenway*)

#20 TS=(housing OR "social housing" OR "public housing" OR "council housing" OR "housing estate*" OR "problem estate*" or "sink estate" OR "housing improv*" OR "housing initiative*" OR "housing design*" OR "housing project*")

#19 TS=("public space*" OR neighborhood* OR neighbourhood* OR "built environment" OR "building design" OR street*)

#18 TS=("town area*" OR "town space*" OR "town design*" OR "town plan*" OR "town ecology" OR "town geography" OR "town renewal" OR "town regenerat*")

#17 TS=("city area*" OR "city space*" OR "city design*" OR "city plan*" OR "city ecology" OR "city geography" OR "city renewal" OR "city regenerat*")

#16 TS=("urban area*" OR "urban space*" OR "urban design*" OR "urban plan*" OR "urban ecology" OR "urban geography" OR "urban renewal" OR "urban regenerat*")

#15 #14 OR #3

#14 #13 AND #9

#13 #12 OR #11 OR #10

#12 TS=(stress OR "quality of life" OR "life satisfaction" or "self esteem" OR "self concept")

#11 TS=("social integrat*" OR "social cohes*" OR "social isolat*" OR happiness OR coping OR resilience)

#10 TS=(health OR "mental health" OR wellbeing OR "well being" OR wellness OR depression OR anxiety)

#9 #8 OR #7 OR #6 OR #5 OR #4

#8 TS=(incivility OR incivilities OR mugging OR "verbal abuse" OR rowdiness OR flyposting OR "fly posting" OR flytipping OR "fly tipping" OR litter*)

#7 TS=(vandal* OR graffiti OR "noise nuisance" OR "noise pollution" OR "nuisance neighbour*" OR "nuisance neighbor*")

#6 TS=("public disorder" OR "social disorder" OR "delinquent behavior*" OR "delinquent behaviour*" OR delinquency)

#5 TS=("anti social behaviour" OR "anti social behavior" OR "antisocial behaviour" OR "antisocial behavior" OR "disorderly behaviour" OR "disorderly behavior")

#4 TS=(crime OR "sexual offense*" OR "sexual assault*" OR "sexual violence" OR murder OR rape OR homicide)

#3 #2 OR #1

#2 TS=((perceived safety) OR TS=(perception* SAME safety) OR TS=(insecurit* SAME crime*) OR TS=(feeling SAME safe) OR TS=(feeling SAME unsafe))

#1 TS=((fear* OR worry* OR worried OR worries OR anxiety OR anxious) SAME crime)

Urban Studies Abstracts

Via EBSCO*host*
Search date: 1 December 2010
Records identified: 185

S76 S39 and S75

S75 S63 or S74

S74 S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73

S73 TI CPTED or AB CPTED

S72 TI designing N3 crime or AB designing N3 crime

S71 TI "target hardening" or AB "target hardening"

S70 TI "defensible space" or AB "defensible space"

S69 TI "hot spot*" or AB "hot spot*" or TI hotspot* or AB hotspot*

S68 TI "broken window*" or AB "broken window*" or TI "gated communit*" or AB "gated communit*"

S67 TI "security camera*" or AB "security camera*"

S66 TI cctv or AB cctv or TI "closed circuit television" or AB "closed circuit television" or TI "video surveillance" or AB "video surveillance"

S65 TI "neighborhood watch" or AB "neighborhood watch" or TI "neighbourhood watch" or AB "neighbourhood watch"

S64 TI streetlight* or AB streetlight* or TI "street light*" or AB "street light*" or TI alleygat* or AB alleygat* or TI "alley gat*" or AB "alley gat*"

S63 S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62

S62 TI repair* N3 hous* or AB repair* N3 hous*

S61 TI repair* N3 home* or AB repair* N3 home*

S60 TI renovat* N3 home* or AB renovat* N3 home*

S59 TI renovat* N3 hous* or AB renovat* N3 hous*

S58 TI housing N3 improv* or AB housing N3 improv*

S57 TI housing N3 initiative* or AB housing N3 initiative*

S56 TI "council housing" or AB "council housing" or TI "social housing" or AB "social housing"

S55 TI "problem estate*" or AB "problem estate*" or TI "sink estate*" or AB "sink estate*"

S54 TI housing N3 project* or AB housing N3 project*

S53 TI housing N3 design* or AB housing N3 design*

S52 TI housing N3 improv* or AB housing N3 improv*

S51 TI "housing estate*" or AB "housing estate*" or TI "public housing" or AB "public housing"

S50 TI area based N2 initiative* or AB area based N2 initiative*

S49 TI area based N2 initiative* or AB area based N2 initiative*

S48 TI "shopping centre*" or AB "shopping centre*" or TI "shopping center*" or AB "shopping center*" or TI "shopping mall*" or AB "shopping mall*"

S47 TI "civic design*" or AB "civic design*" or TI "civic space*" or AB "civic space*" or TI "civic plan*" or AB "civic plan*" or TI "residential area*" or AB "residential area*" or TI "city centre*" or AB "city centre*" or TI "city center*" or AB "city center*"

S46 TI greenway* or AB greenway* or TI landscape N3 plan* or AB landscape N3 plan* or TI landscape N3 design* or AB landscape N3 design* or TI environment* N3 design* or AB environment* N3 design* or TI "physical environment" or AB "physical environment"

S45 TI (park or parks or carpark*) or AB (park or parks or carpark*) or TI campus* or AB campus* or TI "public transport" or AB "public transport" or TI railway or AB railway or TI ((bus or buses)) or AB ((bus or buses))

S44 TI "public space*" or AB "public space*" or TI neighborhood* or AB neighborhood* or TI neighbourhood* or AB neighbourhood* or TI street or AB streets or TI "built environment" or AB "built environment"

S43 TI "town space*" or AB "town space*" or TI "town design*" or AB "town design*" or TI "town plan*" or AB "town plan*" or TI "town ecology" or AB "town ecology" or TI "town geography" or AB "town geography"

S42 TI "city space*" or AB "city space*" or TI "city design*" or AB "city design*" or TI "city plan*" or AB "city plan*" or TI "city ecology" or AB "city ecology" or TI "city geography" or AB "city geography"

S41 TI "urban geography" or AB "urban geography" or TI "urban renewal" or AB "urban renewal" or TI "urban regenerat*" or AB "urban regenerat*"

S40 TI "urban space*" or AB "urban space*" or TI "urban design*" or AB "urban design*" or TI "urban plan*" or AB "urban plan*" or TI "urban ecology" or AB "urban ecology"

S39 S12 or S38

S38 S27 and S37

S37 S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36

S36 TI "self esteem" or AB "self esteem" or TI "self concept" or AB "self concept"

S35 TI "quality of life" or AB "quality of life" or TI "life satisfaction" or AB "life satisfaction"

S34 TI resilience or AB resilience or TI stress or AB stress

S33 TI happiness or AB happiness or TI coping or AB coping

S32 TI depression or AB depression or TI "social* isolat*" or AB "social* isolat*"

S31 TI "social cohesion" or AB "social cohesion" or TI anxiety or AB anxiety

S30 TI wellness or AB wellness or TI "social integrat*" or AB "social integrat*"

S29 TI wellbeing or AB wellbeing or TI "well being" or AB "well being"

S28 TI health or AB health

S27 S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26

S26 flyposting or fly posting or fly tipping or flytipping

S25 AB litter*

S24 TI litter*

S23 TX incivility or TX incivilitiies or TX hooligan* or TX verbal abuse or TX mugging or TX rowdiness

S22 TX nuisance neighbor* or TX nuisance neighbour* or TX noise pollution

S21 TX graffiti or TX vandal* or TX noise nuisance Search modes -

S20 TI delinquent behavior* or AB delinquent behavior* or TI delinquent behaviour* or AB delinquent behaviour*

S19 TI disorderly behavior* or AB disorderly behavior* or TI disorderly behaviour* or AB disorderly behaviour*

S18 TI public disorder or AB public disorder or TI social disorder or AB social disorder

S17 TI antisocial behavior* or AB antisocial behavior* or TI anti social behaviour* or AB anti social behaviour*

S16 sexual assault

S15 rape

S14 murder or homicide

S13 MH crime

S12 S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11

S11 TI worried N3 crime* or AB worried N3 crime*

S10 TI "feeling safe" or AB "feeling unsafe"

S9 TI insecurit* N3 crime* or AB insecurit* N3 crime*

S8 TX "perceived safety" or TX perception N3 safety

S7 TI anxious N3 crime* or AB anxious N3 crime*

S6 TI anxiety N3 crime* or AB anxiety N3 crime*

S5 TI worries N3 crime* or AB worries N3 crime*

S4 TI worry* N3 crime* or AB worry* N3 crime*

S3 TX "crime fear"

S2 TI fear N3 crime* or AB fear N3 crime*

S1 MH CRIME and FEAR

Appendix 3 Websites searched

Searches were carried out in June 2011.

Australia

Australian Institute of Criminology: www.aic.gov.au/en.aspx

Criminology Research Council: www.criminologyresearchcouncil.gov.au/

University of Western Australia Crime Research Centre: www.law.uwa.edu.au/research/crc

National Community Crime Prevention Programme: www.crimeprevention.gov.au

Canada

CrimDoc (Criminology Library Grey Literature), University of Toronto: http://link.library.utoronto.ca/criminology/crimdoc/index.cfm

Public Safety Canada Crime Prevention: www.publicsafety.gc.ca/prg/cp/index-eng.aspx

New Zealand

Ministry of Justice publications: www.justice.govt.nz/publications

Ministry of Justice crime prevention: www.justice.govt.nz/policy/crime-prevention

University of Wellington Crime and Justice Research Centre: www.victoria.ac.nz/cjrc

UK

Centre for Crime and Justice Studies: www.crimeandjustice.org.uk/

Centre for Research in Social Policy: www.crsp.ac.uk/

Department of Health: www.dh.gov.uk/en/index.htm

Design Against Crime Research Centre: www.designagainstcrime.com

Home Office: http://homeoffice.gov.uk/science-research/research-statistics/

Joseph Rowntree Foundation: www.jrf.org.uk/

Ministry of Justice: www.justice.gov.uk/publications/research.htm

National Centre for Social Research: www.natcen.ac.uk/

Scottish Centre for Crime and Justice Research: www.sccjr.ac.uk/

Scottish Government Crime and Justice Research: www.scotland.gov.uk/Topics/Research/by-topic/crime-and-justice

UCL Jill Dando Institute of Security and Crime Science: www.jdi.ucl.ac.uk/

USA

National Institute of Justice: www.ojp.usdoj.gov/nij/

Community Oriented Policing Service Resource Information Library: http://cops.usdoj.gov/RIC/ResourceSearch.aspx

International

United Nations Office on Drugs and Crime: www.unodc.org/unodc/index.html

United Nations Interregional Crime and Justice Research Institute: www.unicri.it/

African Institute for the Prevention of Crime and the Treatment of Offenders (UNAFRI): www.unafri.org/

Bibliography of Nordic Criminology: http://bibliography.nsfk.org/asp/system/empty.asp?P=23&VID=default&SID=587678280010702&S=1&C=23089

European Designing Out Crime Network: www.e-doca.eu/files/index_uk.html

European Institute for Crime Prevention and Control, affiliated with the United Nations (HEUNI): www.heuni.fi

International Centre for the Prevention of Crime: www.crime-prevention-intl.org/

International Victimology Institute Tilburg: www.tilburguniversity.edu/research/institutes-and-research-groups/intervict

Social Science Research Network: http://papers.ssrn.com/sol3/DisplayAbstractSearch.cfm

Mailing list

JISC: www.jiscmail.ac.uk/cgi-bin/webadmin?A0=FEAR-OF-CRIME-RESEARCH

Appendix 4 Quality assessment for the systematic review of effectiveness

Methods

The quality assessment tool used for the effectiveness review was a modified version of the Hamilton tool.[244] The modifications used draw on Thomsoni et al.'s[219] review of housing interventions.

The tool contains six questions relating to (1) selection bias, (2) study design, (3) confounders, (4) blinding, (5) data collection and (6) withdrawals and dropouts.

Each question can receive an A (high), a B (medium) or a C (low) quality rating, as in the following table. The overall rating for the study is then calculated on the following basis: A = A for Q2 and A/B on at least two of Q1, Q3 and Q6; B = A for Q2 and A/B on one of Q1, Q3 or Q6; or B for Q2 and A/B on at least two of Q1, Q3 and Q6; C = A for Q2 and C for all of Q1, Q3 and Q6; or B for Q2 and A/B on less than two of Q1, Q3 and Q6; or C for Q2.

The guidelines for the specific questions are as follows:

Selection bias

Selected study sample very likely to represent population from target area AND 80–100% response at baseline	A
Selected study sample very likely to represent population from target area AND 60–79% response at baseline; OR selected study sample somewhat likely to represent population from target area AND 80–100% response at baseline	B
< 60% baseline response; OR somewhat likely to represent population AND < 80% response; OR not likely to represent population OR representativeness not reported/unclear; OR response rate at baseline not reported/unclear	C

Study design

Control group and pre and post longitudinal data OR random allocation	A
No control group and pre and post longitudinal data; OR control group and pre and post cross-sectional data AND no indication of major change in population	B
No control group and pre and post cross-sectional data; OR control group and pre and post cross-sectional data AND possibility of major change in population	C

Note: 'Longitudinal' = same individuals pre and post; 'cross-sectional' = different individuals. When studies use mixed designs (e.g. presenting both cross-sectional and longitudinal data), give the highest grade applicable to the analyses actually reported. When studies collect longitudinal data and report attrition rates, grade as longitudinal even if only cross-sectional analyses are reported.

Confounders

Control group matched on key variables [at least two of crime rate (area level), SES or relevant proxies (area or individual level), gender, age, ethnicity (individual level)] AND supporting data presented; OR outcomes adjusted for key variables (at least two of gender, age, ethnicity, SES) using appropriate methods	A
Stated that control group matched or 'similar' but supporting data not presented	B
No matching or adjustment reported AND likely to be substantial differences between groups; OR no information on differences between intervention and control group; OR no control group	C

Note: RCTs will be graded 'B' if no information on between-group differences is presented.

Blinding

Both outcome assessors AND participants blind to allocation	A
Either outcome assessors OR participants blind to allocation	B
Blinding not reported; OR no control group	C

Data collection

Piloting or pretesting of tool; OR checks on validity of data (e.g. verification of a percentage of responses); OR tool shown to be reliable in relevant population	A
Data collection tool based on previous research but no piloting or checking and reliability not demonstrated	B
Data collection unclear; OR tools not piloted, checked or based on previous research	C

Withdrawals and dropouts

Attrition < 20%	A
Attrition 21–40%	B
Attrition > 40%; OR attrition not reported; OR cross-sectional data only	C

Note: Attrition is measured as the percentage of the baseline sample lost at final follow-up.

Results

The results of the quality assessment are shown in *Table 5*.

TABLE 5 Results of the quality assessment for the effectiveness studies (*n* = 47)

Study	Design	Selection bias	Study design	Confounders	Blinding	Data Colection	Withdrawals	Overall
Category 1: home security interventions								
Allatt[246,247]	CBA(S)	A	A	B	C	C	B	A
Brownsell[248]	CBA(S)	C	A	B	C	C	B	A
Halpern[216]	UBA(S)	C	B	C	C	C	C	C
Matthews a[249]	UBA(D)	C	C	C	C	A	C	C
Matthews b[250]	UBA(D)	C	C	C	C	A	C	C
Category 2: street lighting								
Atkins[251]	CBA(S)	C	A	A	C	A	B	A
Bainbridge[252]	UBA(S)	B	B	C	C	B	B	B
Barr[253]	UBA(S)	C	B	C	C	B	C	C
Burden[254]	UBA(D)	C	C	C	C	C	C	C
Davidson[255]	UBA(S)	C	B	C	C	B	B	C
Herbert[256,257]	UBA(S)	C	B	C	C	B	A	C
Knight[258]	UBA(S)	C	B	C	C	B	C	C
Painter a[259,260]	UBA(D)	C	C	C	C	A	C	C
Painter b[260,261]	UBA(D)	C	C	C	C	B	C	C
Painter c[260,262]	UBA(S)	A	B	C	C	B	B	B
Painter d[263]	CBA(S)	B	A	A	B	A	A	A
Painter e[264]	CBA(S)	A	A	A	B	B	A	A
Painter f[265]	CBA(S)	B	A	A	B	C	B	A
Payne[266]	UBA(S)	C	C	C	C	B	C	C
Vamplew[267]	UBA(D)	B	C	C	C	C	C	C
Vrij[268]	UBA(D)	C	C	C	C	C	C	C
Category 3: CCTV								
Brown[269]	UBA(D)	C	C	C	C	C	C	C
Ditton[270]	CBA(D+)	A	B	C	C	C	C	C
Gill[271,272]	CBA(D−)	B	C	B	C	C	C	C
Musheno[273]	CBA(D+)	C	B	B	C	B	C	C
Squires a[274]	UBA(D)	C	C	C	C	B	C	C
Squires b[275]	UBA(D)	C	C	C	C	C	C	C

TABLE 5 Results of the quality assessment for the effectiveness studies (*n* = 47) (*continued*)

Study	Design	Selection bias	Study design	Confounders	Blinding	Data Colection	Withdrawals	Overall
Category 4: multicomponent crime prevention interventions								
Arthur Young[276,277]	CBA(S)	C	A	B	C	A	B	A
Baker[278]	CBA(D−)	B	C	C	B	B	C	C
Donnelly[279,280]	UBA(D)	C	C	C	C	C	C	C
Felson[281]	UBA(D)	B	C	C	C	C	C	C
Fowler[282–285]	CBA(D+)	B	B	C	C	A	C	C
Kaplan a[286]	CBA(D−)	C	C	C	C	C	C	C
Kaplan b[287–289]	UBA(D)	C	C	C	C	C	C	C
Mazerolle[290,291]	RCT	C	A	A	B	A	C	B
Webb[292]	CBA(D+)	C	B	C	C	C	C	C
Category 5: housing improvement								
Barnes[293]	CBA(S)	C	A	C	C	A	C	C
Blackman[294,295]	UBA(S)	B	B	C	C	B	C	C
Critchley[296]	CBA(S)	C	A	B	C	B	B	A
Foster[297]	CBA(D−)	B	C	A	C	B	C	C
Glasgow Centre for Population Health[298,299]	CBA(D+)	C	B	A	C	A	C	C
Nair[300]	UBA(S)	B	B	C	C	C	C	C
Petticrew[301,302]	CBA(S)	C	A	A	C	A	B	A
Category 6: regeneration and area-based initiatives								
Beatty[226,303,304]	CBA(S)	B	A	B	C	A	C	A
Rhodes[305]	UBA(S)	B	B	C	C	C	C	C
Category 7: improvements to public areas (non-crime focused)								
Cohen[306]	CBA(D+)	C	B	A	C	C	C	C
Palmer[307]	UBA(D)	C	C	C	C	B	C	C

CBA(D+), controlled before-and-after study with different participants pre and post and with evidence of no change in population; CBA(D−), controlled before-and-after study with different participants pre and post and with evidence of change in population (or change unclear); CBA(S), controlled before-and-after study with same participants pre and post; UBA(D), uncontrolled (single-group) before-and-after study with different participants pre and post; UBA(S), uncontrolled (single-group) before-and-after study with same participants pre and post.

Appendix 5 Quality assessment for the systematic review of qualitative evidence

Methods

The quality assessment tool used for the qualitative studies was drawn directly from Appendix D of Hawker *et al.*[245] This tool contains nine questions, each of which can be answered 'good', 'fair', 'poor' or 'very poor'. Having applied the tool to the studies, we converted it into a numerical score by assigning the answers from 1 point (very poor) to 4 points (good). This produced a score for each study of a minimum of 9 points and a maximum of 36 points. To create the overall quality grades we used the following definitions: high quality (A), 30–36 points; medium quality (B), 24–29 points; low quality (C), 9–24 points. The nine questions in the tool are as follows:

1. *Abstract and title*. Did they provide a clear description of the study?
   Good: structured abstract with full information and clear title. Fair: abstract with most of the information. Poor: inadequate abstract. Very poor: no abstract.
2. *Introduction and aims*. Was there a good background section and clear statement of the aims of the research?
   Good: full but concise background to discussion/study containing up-to-date literature review and highlighting gaps in knowledge; clear statement of aim AND objectives including research questions. Fair: some background and literature review; research questions outlined. Poor: some background but no aim/objectives/questions OR aims/objectives but inadequate background. Very poor: no mention of aims/objectives; no background or literature review.
3. *Method and data*. Is the method appropriate and clearly explained?
   Good: method is appropriate and described clearly (e.g. questionnaires included); clear details of the data collection and recording. Fair: method appropriate, description could be better; data described. Poor: questionable whether method is appropriate; method described inadequately; little description of data. Very poor: no mention of method AND/OR method inappropriate AND/OR no details of data.
4. *Sampling*. Was the sampling strategy appropriate to address the aims?
   Good: details (age/gender/race/context) of who was studied and how they were recruited and why this group was targeted; the sample size was justified for the study; response rates shown and explained. Fair: sample size justified; most information given but some missing. Poor: sampling mentioned but few descriptive details. Very poor: no details of sample.
5. *Data analysis*. Was the description of the data analysis sufficiently rigorous?
   Good: clear description of how analysis was carried out; description of how themes derived/respondent validation or triangulation. Fair: descriptive discussion of analysis. Poor: minimal details about analysis. Very poor: no discussion of analysis.
6. *Ethics and bias*. Have ethical issues been addressed and has necessary ethical approval been gained? Has the relationship between researchers and participants been adequately considered?
   Good: ethics: when necessary, issues of confidentiality, sensitivity and consent were addressed; bias: researcher was reflexive and/or aware of own bias. Fair: lip service was paid to above (i.e. these issues were acknowledged). Poor: brief mention of issues. Very poor: no mention of issues.
7. *Results*. Is there a clear statement of the findings?
   Good: findings explicit, easy to understand and in logical progression; tables, if present, are explained in text; results relate directly to aims; sufficient data are presented to support findings. Fair: findings mentioned but more explanation could be given; data presented relate directly to results. Poor: findings presented haphazardly, not explained and do not progress logically from results. Very poor: findings not mentioned or do not relate to aims.

8. *Transferability or generalisability*. Are the findings of this study transferable (generalisable) to a wider population?
   Good: context and setting of the study are described sufficiently to allow comparison with other contexts and settings, plus high score in Q4 (sampling). Fair: some context and setting described but more needed to replicate or compare the study with others, plus fair score or higher in Q4.
   Poor: minimal description of context/setting. Very poor: no description of context/setting.
9. *Implications and usefulness*. How important are these findings to policy and practice?
   Good: contributes something new and/or different in terms of understanding/insight or perspective; suggests ideas for further research; suggests implications for policy and/or practice. Fair: two of the above. Poor: only one of the above. Very poor: none of the above.

Results

The results of the quality assessment are shown in *Table 6*.

TABLE 6 Results of the quality assessment for the qualitative studies (*n* = 39)

Study	Abstract/title	Introduction/aims	Data collection	Sampling	Analysis	Ethics/bias	Results	Generability	Implications	Total	Grade
Airey[311,312]	4	4	4	3	3	3	4	3	3	31	A
Alexander[313,314]	3	3	2	2	1	2	3	2	2	20	C
Bannister[315]	2	3	2	2	1	1	3	2	2	18	C
Burgess[316–318]	2	3	4	3	3	2	3	3	3	26	B
Cozens[319]	3	3	4	2	1	1	2	2	3	21	C
Crime Concern a[320]	3	3	3	1	1	1	3	1	3	19	C
Crime Concern b[321]	3	2	2	1	1	1	3	1	3	17	C
Davis[322]	4	3	3	2	1	1	3	3	3	23	C
Day[323]	4	4	4	4	4	3	4	4	4	35	A
Dixey[324]	4	3	3	3	4	1	4	3	3	28	B
Farrall[49,325–327]	3	4	3	3	4	1	4	3	4	29	B
Goodey[328,329]	4	3	2	2	1	1	3	2	3	21	C
Hollway[330,331]	3	3	3	2	3	2	3	2	2	23	C
Hopkins[332]	2	2	2	2	1	1	2	2	2	16	C
Innes[333]	3	3	2	1	1	1	3	1	4	19	C
Jones[334]	4	3	3	3	1	3	4	3	3	27	B
Koskela[88,335,336]	3	4	3	3	2	1	4	3	4	27	B
Little[337]	4	4	2	2	1	3	3	2	3	24	B
Mitchell[338]	3	3	3	2	3	2	3	2	2	23	C
Moran[339–341]	3	3	2	2	1	1	3	2	3	20	C
Nayak[342]	3	3	2	2	2	3	3	2	2	22	C
Nelson[343]	2	3	3	2	1	1	3	2	3	20	C
Pain a[344,345]	2	4	3	2	1	1	3	2	3	21	C

TABLE 6 Results of the quality assessment for the qualitative studies (*n* = 39) (*continued*)

Study	Abstract/ title	Introduction/ aims	Data collection	Sampling	Analysis	Ethics/ bias	Results	Generability	Implications	Total	Grade
Pain b[346]	4	4	3	2	2	1	3	2	4	25	B
Pain c[347,348]	2	4	3	2	2	1	3	2	3	22	C
Pain d[349]	4	3	4	3	2	1	4	3	3	27	B
Parry[350]	4	3	4	2	3	2	4	2	4	28	B
Seabrook[351]	3	3	3	2	1	2	3	2	3	22	C
Squires[275]	2	2	2	2	1	1	3	2	2	17	C
Taylor[352]	3	3	3	2	1	2	3	2	3	22	C
Trayers[353]	4	3	4	3	4	3	4	3	3	31	A
Turner[354]	4	3	3	3	4	3	4	3	3	30	A
Valentine a[355–358]	4	4	4	3	3	3	4	3	4	32	A
Valentine b[359]	4	4	3	3	1	1	3	3	2	24	C
Walklate[73,360,361]	2	4	3	2	2	3	4	4	4	28	C
Waters a[362]	4	4	4	3	3	3	3	3	3	30	A
Waters b[363,364]	4	4	4	2	3	3	4	2	4	30	A
Watson[365]	3	2	2	2	1	1	3	2	2	18	C
Whitley[233,366]	4	4	4	4	3	4	4	3	4	34	A

Appendix 6 Systematic review of effectiveness: summary of effectiveness findings

Introduction

This appendix provides a graphical overview of the effectiveness findings. The method used draws on Thomson *et al.*[219] Findings have been synthesised by study according to the three outcome types distinguished in the review (fear of crime, health outcomes and social outcomes). The studies are separated by intervention category. Subgroup findings are not represented in the table except when findings were reported only by subgroup and not for the sample as a whole.

Summary of effectiveness findings

Study	Design[a]	QA	Significance[b]	Sample size at baseline (I/C)[c]	Follow-up (approx.)[d]	Fear of crime[e,f]	Health[e,f]	Social[e,f]
Category 1: home security interventions								
Allatt[246,247]	CBA(S)	A	1	338/322	1 year	◀3		
Brownsell[248]	CBA(S)	A	2	24/28	5 years	◀3	◀10	
Halpern[216]	UBA(S)	C	2/0	55	3 years*	◀3	◀3	◀4
Matthews a[249]	UBA(D)	C	0	636	1 year*	◆16		
Matthews b[250]	UBA(D)	C	0	907	1 year*	◆15		
Category 2: street lighting								
Atkins[251]	CBA(S)	A	2	248/131	2 months	◆19		
Bainbridge[252]	UBA(S)	B	0	≈468	1 year	◀23		
Barr[253]	UBA(S)	C	0	229	2 months	◆26		
Burden[254]	UBA(D)	C	0	NR	NR	◀12		
Davidson[255]	UBA(S)	C	1	251	6 weeks	◀19		
Herbert[256,257]	UBA(S)	C	0	154	2 months	◀18		
Knight[258]	UBA(S)	C	1	125	3 weeks	◀1		
Painter a[259,260]	UBA(D)	C	0	207	6 weeks	◀3		
Painter b[260,261]	UBA(D)	C	0	143	6 weeks	◀5		
Painter c[260,262]	UBA(S)	B	0	263	13 months	◀23		
Painter d[263]	CBA(S)	A	1	431/443	1 year	◆5		
Painter e[264]	CBA(S)	B	1	317/88	11 months	◆11		
Painter f[265]	CBA(S)	B	2	140/167	1 year	◀1		
Payne[266]	UBA(S)	C	0	≈228	<1 year	◆6		
Vamplew[267]	UBA(S)	C	0	820	<1 month	◆18		
Vrij[268]	UBA(S)	C	1	160	1 week	◀2		

Study	Design[a]	QA	Significance[b]	Sample size at baseline (I/C)[c]	Follow-up (approx.)[d]	Fear of crime[e,f]	Health[e,f]	Social[e,f]
Category 3: CCTV								
Brown[269]	UBA(D)	C	0	699	1 year	◄1		
Ditton[270]	CBA(D+)	C	0	1018	15 months	◆3		
Gill[271,272]	[CBA(D−)]	C	2	4427/2099	1 year	◆4		
Musheno[273]	CBA(D+)	C	0	32/29	3 months	◆4		
Squires a[274]	UBA(D)	C	0	750	8 months	◆2		
Squires b[275]	UBA(D)	C	0	243	1 year	►2		
Category 4: multicomponent crime prevention interventions								
Arthur Young[276,277]	UBA(S)	A	0	920/150	2 years*	◄5		◄10
Baker[278]	[CBA(D−)]	C	1	124/337	6 months	◄3		
Donnelly[279,280]	UBA(D)	C	1	191	5 years	◄1		
Felson[281]	UBA(D)	C	0	3581	3 years	◄5		
Fowler[282–285]	CBA(D+)	C	2/1	93/798	3 years	◄2		◄4
Kaplan a[286]	CBA(D−)	C	0	2772 (I/C NR)	6 months	◆5		►2
Kaplan b[287–289]	UBA(D)	C	1/0	311	3 years*	◆8		◆2
Mazerolle[290,291]	RCT	B	2	≈199/≈199	3 months	►1		►1
Webb[292]	CBA(D+)	C	0	≈560/≈560	Unclear	◄2		
Category 5: housing improvement (fear of crime outcomes only)								
Barnes[293]	[CBA(S)]	C	1	199/85	6 months	◄2		
Blackman[294,295]	UBA(S)	C	1	415	5 years*	◄2		
Critchley[296]	CBA(S)	A	0	200/207	1 year	◆2		
Foster[297]	CBA(D−)	C	2	820/862	3 years*	◆2		

Study	Design[a]	QA	Significance[b]	Sample size at baseline (I/C)[c]	Follow-up (approx.)[d]	Fear of crime[e,f]	Health[e,f]	Social[e,f]
Glasgow Centre for Population Health[298,299]	[CBA(D+)]	C	1	6008 total	2 years*	▼1		
Nair[300]	UBA(S)	C	0	69	3 months	◆16		
Petticrew[301,302]	[CBA(S)]	A	—	334/389	2 years	◀1		
Category 6: regeneration and area-based initiatives (fear of crime outcomes only)								
Beatty[226,303,304]	CBA(S)	B	2	19,633/≈4000	6 years*	▶6		
Rhodes[305]	UBA(S)	C	1	3459	5 years*	◀1		
Category 7: improvements to public areas (fear of crime outcomes only)								
Cohen[306]	CBA(D+)	C	2	1535 total	3–14 months	◀1		
Palmer[307]	UBA(D)	C	1	290	Unclear	◀5		

C, control; CBA(D+), controlled before-and-after study with different participants pre and post and with evidence of no change in population; CBA(D−), controlled before-and-after study with different participants pre and post and with evidence of change in population (or change unclear); CBA(S), controlled before-and-after study with same participants pre and post; I, intervention; NR, not reported; QA, quality assessment; UBA(D), uncontrolled (single-group) before-and-after study with different participants pre and post; UBA(S), uncontrolled (single-group) before-and-after study with same participants pre and post.

a Square brackets indicate that, although the study included a control group, the significance tests reported are for the intervention group only.

b This column refers to whether significance tests were conducted in any of the primary study reports: 2 = time × treatment interaction, or difference in change scores, or intervention vs. control group at post test and random allocation; 1 = within-group change in intervention group, or intervention vs. control group at post test and non-random allocation; 0 = no significance tests reported for outcome(s) extracted here.

c For studies using comparative designs, the sample sizes in this column are given separately for intervention and comparison groups (in the format intervention/comparison). For studies using non-comparative (one-group) designs, the sample size is for the single group as a whole.

d 'Follow-up' shows the latest time point with usable data, measured from completion of the intervention (except when indicated with an asterisk, in which case follow-up is measured from the start of the intervention).

e For the effect direction, upward arrow = positive impact, downward arrow = negative impact and sideways arrow = mixed effects/conflicting findings. For the sample size (individuals) at baseline in the intervention group, large arrow > 300; medium arrow 50–300; and small arrow < 50. Statistical significance: black arrow $p < 0.05$; grey arrow $p > 0.05$.

f Synthesis of multiple outcomes within the same outcome category: subscript numerals indicate the number of distinct outcomes measured in each outcome category (findings on the same outcome for different subgroups are counted as one; 'index' measures aggregating several distinct outcomes are counted as one if reported as such by primary study authors). When multiple outcomes all report an effect in the same direction and with the same level of statistical significance, the table reports the effect direction and indicates the overall level of statistical significance. For studies reporting 4-point worry/fear scales (e.g. 'very', 'fairly', 'a little', 'not at all'), change is measured for the percentage reporting either 'very' or 'fairly'. When the direction of effect varies across multiple outcomes, the table reports the direction of effect and statistical significance when 70% of outcomes report a similar direction and similar statistical significance. If < 70% of outcomes report a consistent direction of effect, the table reports no clear effect/conflicting findings (◆) (size to reflect sample size). When statistical significance varies, if the direction of effect is similar *and* > 60% of outcomes are statistically significant, the table reports as statistically significant (black arrow). If the direction of effect is similar *and* < 60% of outcomes are statistically significant, the table reports as not statistically significant (grey arrow).

Appendix 7 Systematic review of effectiveness: findings on population subgroups and inequalities

Targeting of interventions and subgroup analyses

Table 7 shows which interventions were targeted at high-crime and/or low SES areas or which studies were focused primarily on particular populations (e.g. young people in school). (Low SES is defined broadly and includes, for example, any public or local authority housing scheme. Generally, the concept of targeting is not entirely precise and relies on sometimes incomplete information in the primary study reports.) It also shows which studies carried out subgroup analyses of outcomes within the scope of the review for key demographic factors. (The criteria here are the same as for the reporting of outcomes in general in the inclusion criteria, namely that data must be clearly reported at both pre and post test. In other words, only change data for subgroups are included; subgroup analyses at one time point only, which are reported in several studies, are not included here. Outcomes within scope are defined as for the synthesis of outcome findings, namely fear of crime, health outcomes and social outcomes for crime-focused interventions, and fear of crime only for non-crime-focused interventions.)

As *Table 7* shows, the majority (*n* = 30) of interventions were targeted at areas with high-crime rates and/ or a low SES population. Relatively few studies (*n* = 15) conducted subgroup analyses on relevant outcomes, with gender the variable that was most commonly investigated (*n* = 14). No studies conducted subgroup analyses on any measure of SES (occupational class, income, education, etc.).

Findings on population subgroups

The findings on subgroups are briefly described in the following sections, with associated harvest plots. (The method for the harvest plots is slightly adapted from Ogilvie *et al.*[371] Each bar represents a study, with shorter bars representing lower-quality studies and longer bars representing higher-quality studies; the placing of the bar represents the median difference in effect size between the relevant groups.) The harvest plots show only those studies that present fully differentiated data (represented by a tick in the relevant column of *Table 7*); as noted in the previous section, relatively few studies presented such data. Studies that focused on particular populations but did not discuss differential effects between subgroups, and studies that presented incomplete information about subgroup effectiveness, are briefly mentioned in the text but are not included in the harvest plots. In few cases were subgroup analyses tested for significance, and all but one (Allatt) concern only within-group findings, so these results should be treated with caution.

Age

Findings on age are mixed. Of the three studies that present full subgroup data, which are shown in the first harvest plot in *Figure 4*, two show little difference between older people [aged > 60 years (Beatty) or > 65 years (Herbert)] and the rest of the population, whereas one shows a very substantially greater effect in older people than in the whole population (Allatt). However, in the comparison between younger people [aged < 25 years (Beatty) or < 35 years (Herbert)] and the whole population (the second harvest plot), one study shows greater effectiveness in young people (Beatty) and one shows less effectiveness in young people (Herbert).

Of the studies that present partial data on age subgroups, which are not included in the harvest plots, three show no clear difference (Arthur Young, Atkins, Bainbridge) and one finds adverse effects (increased fear) for older people but not for other age groups (Kaplan b).

TABLE 7 Targeting of interventions and subgroup analyses in the intervention studies ($n = 47$)

Study	Targeted intervention/study			Subgroup analyses of change data				
	High crime	Low SES	Other	Age	Gender	Ethnicity/ nationality	SES	Other
Category 1: home security interventions								
Allatt[246,247]	✓	✓		✓	✓			✓
Brownsell[248]			Older people					
Halpern[216]	✓	✓	Women					
Matthews a[249]	✓							
Matthews b[250]	✓							
Category 2: street lighting								
Atkins[251]				~	~			
Bainbridge[252]				~	~			
Barr[253]		✓			✓			
Burden[254]								
Davidson[255]					✓			
Herbert[256,257]		✓		✓	✓			
Knight[258]								
Painter a[259,260]					✓			
Painter b[260,261]		✓			✓			
Painter c[260,262]			Older people					
Painter d[263]		✓						
Painter e[264]		✓						
Painter f[265]		✓	Young people					
Payne[266]								
Vamplew[267]	✓	✓			✓			
Vrij[268]								
Category 3: CCTV								
Brown[269]								
Ditton[270]								
Gill[271,272]	✓	✓			~			
Musheno[273]		✓						
Squires a[274]					✓			
Squires b[275]	✓	✓						

TABLE 7 Targeting of interventions and subgroup analyses in the intervention studies (*n* = 47) (*continued*)

Study	Targeted intervention/study			Subgroup analyses of change data				
	High crime	Low SES	Other	Age	Gender	Ethnicity/ nationality	SES	Other
Category 4: multicomponent crime prevention interventions								
Arthur Young[276,277]	✓	✓		~	~			~
Baker[278]	✓							
Donnelly[279,280]	✓	✓						
Felson[281]	✓							
Fowler[282–285]								✓
Kaplan a[286]			Young people					
Kaplan b[287–289]	✓	✓		~				
Mazerolle[290,291]								
Webb[292]								
Category 5: housing improvement								
Barnes[293]		✓						
Blackman[294,295]		✓						
Critchley[296]		✓						
Foster[297]	✓	✓						
Glasgow Centre for Population Health[298,299]		✓						
Nair[300]		✓						
Petticrew[301,302]		✓						
Category 6: regeneration and area-based initiatives								
Beatty[226,303,304]		✓		✓	✓	✓		
Rhodes[305]		✓						
Category 7: improvements to public areas (non-crime focused)								
Cohen[306]		✓						
Palmer[307]	✓				✓			

✓, full data are reported for at least one outcome; ~, partially or qualitatively reported analyses only.

Of those studies targeted at particular age groups, both the two aimed at older people (Brownsell, Painter c) and the one aimed at children and young people (Painter f) find substantial positive effects for fear outcomes.

Gender
The findings for gender, represented in the harvest plot in *Figure 5*, tend to show a slightly greater effect of interventions in women than in men, although the differences in many cases are relatively small. It should also be noted that the only study to directly measure an interaction between intervention exposure and gender, and test it for significance (Palmer), finds consistently greater effectiveness for men than for women, and this difference reached significance for one of four outcomes.

Of studies that present partial data on gender, which are not included in *Figure 5* (Arthur Young, Atkins, Bainbridge, Gill), none shows a substantial difference in effect between men and women. The study by
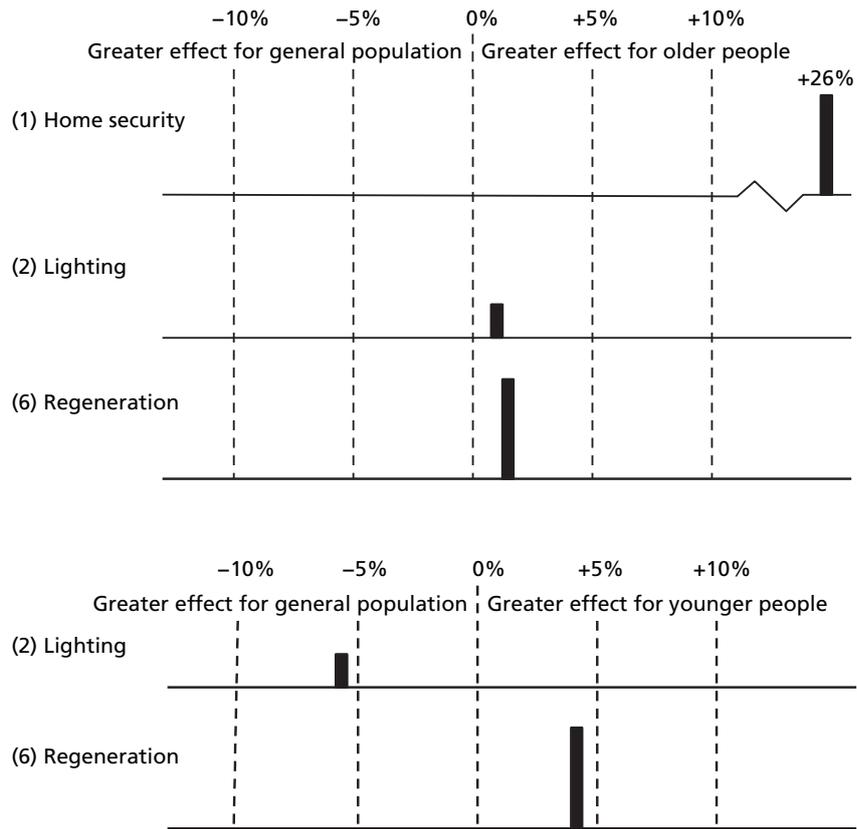
FIGURE 4 Harvest plots for age.
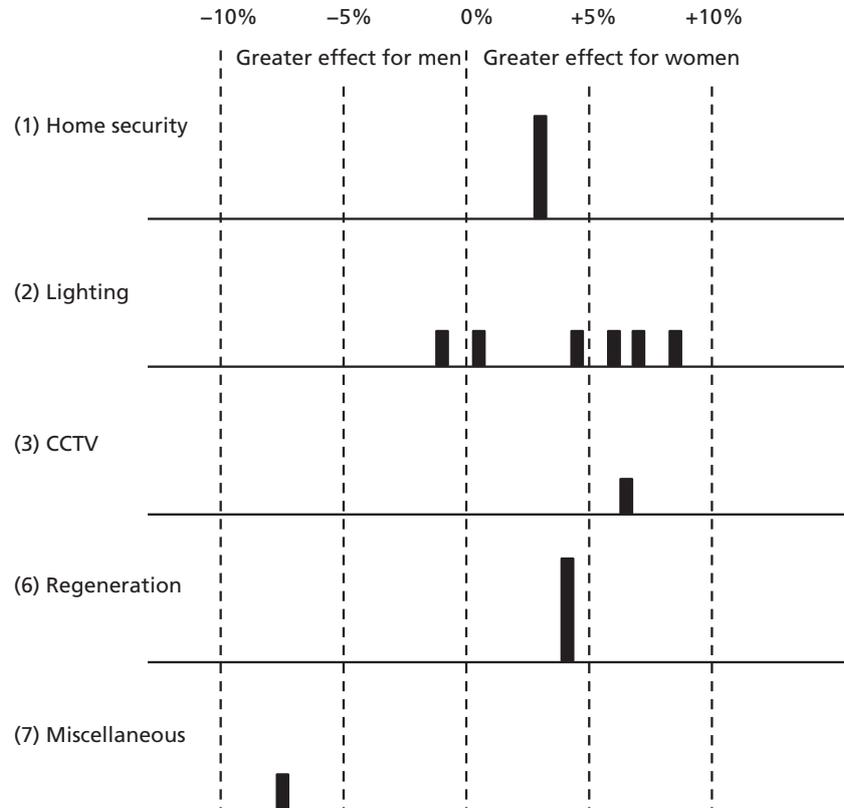
FIGURE 5 Harvest plot for gender.

Halpern finds substantial positive effects on both fear of crime outcomes and mental health status outcomes for a sample of women.

Ethnicity

Only one study compared outcomes by ethnicity. Beatty *et al.* find slightly greater improvements in fear and perceived safety outcomes in non-white than in white participants (*Figure 6*).
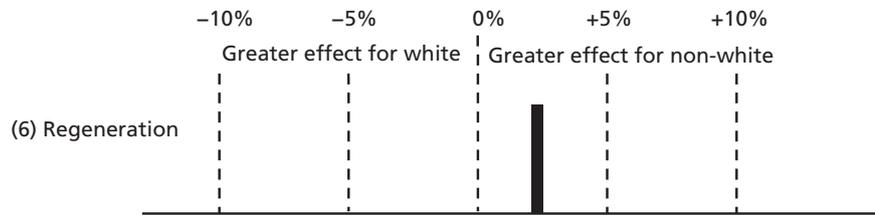
FIGURE 6 Harvest plot for ethnicity.

Appendix 8 Systematic review of effectiveness: findings on fear of crime outcome measures

As discussed in the theory review, a major concern with much fear of crime research has been the use of multiple outcome measures, many of which are inadequately validated or ambiguous, and which often do not strongly correlate with one another. *Table 8* sets out the types of outcomes used. (Only outcomes for which usable data are reported are included here; however, index measures that are reported only as aggregates are represented by their components.) These outcome measures include:

- affective measures of fear (e.g. 'How afraid/concerned/worried are you . . .?') about crime in general
- affective measures of fear (e.g. How afraid/concerned/worried are you . . .?) about specific types of crime
- cognitive measures of perceived risk, safety or likelihood of victimisation about crime in general
- cognitive measures of perceived risk, safety or likelihood of victimisation about specific types of crime
- the effects of fear (e.g. 'How much is your quality of life affected by fear of crime?')
- avoidance behaviours (e.g. avoiding certain areas), either explicitly because of fear of crime or more generally
- feelings of safety (e.g. 'How safe do you feel?') or unsafety
- perceptions of the fear or risk experienced by others (e.g. 'How much is fear of crime a problem in this area?', 'How risky is it for women to go out alone after dark?').

As *Table 8* shows, the effectiveness studies bear out researchers' concerns about the heterogeneity of outcome measures used to investigate fear of crime. The most commonly used types of measure are feelings of safety ($n = 31$) and worry about specific crimes ($n = 19$), but no single type of measure is universally used. Moreover, it should be noted that there is considerable heterogeneity even within the eight subcategories identified in *Table 8*. For example, this analysis does not disaggregate fear or feelings of safety with respect to different times of day (day/night) or different places, which are measured in several studies; time-specific (frequency) compared with non-time-specific measures; nor the various vocabularies used for affective measures ('fear', 'worry' 'concern', etc.). As discussed in the theory review (see *Chapter 3*), all of these apparently subtle distinctions may have substantial impacts on research findings.

One set of outcomes of particular interest is avoidance behaviours, as they are a potentially important mediator between fear and well-being outcomes. One interesting result is that, in some cases, interventions may show a substantially greater effect on avoidance behaviours than on affective fear or cognitive risk outcomes. For example, Burden and Murphy (Burden) find a median within-group reduction in avoidance behaviours for women of −20%, but only a −3% improvement in worry outcomes across the sample; similarly, Davidson and Goodey (Davidson) find a median within-group reduction in avoidance behaviours of −26%, which reached statistical significance in 11 of 12 analyses, but only a −1% improvement in worry outcomes. These findings are suggestive because, if interventions can make a substantial impact on behaviours without necessarily improving fear, this raises the possibility that evaluations focusing on the latter alone may sometimes have underestimated the potential well-being impacts of interventions. However, these findings are not universally replicated. For example, Nair *et al.* (Nair) find adverse outcomes for avoidance behaviours (a median within-group increase of +9%) but positive trends for worry and feelings of unsafety (−9% reduction). Even more clearly, although beyond the scope of the analyses presented here, Cohen *et al.* (Cohen), who evaluated an intervention specifically targeted at a behavioural outcome (outdoor physical activity) and measured perceived safety mainly as a mediator, found significant improvements in the latter but not the former. There thus appears to be no consistent relation between affective or cognitive fear and behavioural outcomes.

TABLE 8 Fear of crime outcome measures reported in the intervention studies ($n = 47$)

Study	Fear/worry/concern, general	Fear/worry/concern about specific crimes	Perceived safety/risk, general	Perceived safety/risk of specific crimes	Effects of fear (e.g. on quality of life)	Avoidance behaviours	Feelings of (un)safety	Perceptions of others' fear/risk
Category 1: home security interventions								
Allatt[246,247]	✓	✓			✓			
Brownsell[248]	✓	✓					✓	
Halpern[216]		✓						
Matthews a[249]		✓				✓		
Matthews b[250]		✓						
Category 2: street lighting								
Atkins[251]		✓		✓			✓	
Bainbridge[252]	✓	✓					✓	✓
Barr[253]		✓				✓	✓	✓
Burden[254]		✓				✓	✓	
Davidson[255]		✓				✓	✓	✓
Herbert[256,257]		✓				✓	✓	✓
Knight[258]							✓	
Painter a[259,260]		✓						
Painter b[260,261]		✓						
Painter c[260,262]		✓				✓	✓	✓
Painter d[263]			✓			✓	✓	✓
Painter e[264]	✓	✓	✓			✓	✓	✓
Painter f[265]		✓	✓			✓	✓	✓
Payne[266]		✓			✓			
Vamplew[267]	✓					✓	✓	✓
Vrij[268]			✓				✓	

Study	Fear/worry/concern, general	Fear/worry/concern about specific crimes	Perceived safety/risk, general	Perceived safety/risk of specific crimes	Effects of fear (e.g. on quality of life)	Avoidance behaviours	Feelings of (un)safety	Perceptions of others' fear/risk
Category 3: CCTV								
Brown[269]							✓	
Ditton[270]	✓					✓	✓	
Gill[271,272]	✓					✓	✓	
Musheno[273]						✓	✓	
Squires a[274]							✓	
Squires b[275]							✓	
Category 4: multicomponent crime prevention interventions								
Arthur Young[276,277]	✓							
Baker[278]			✓				✓	
Donnelly[279,280]			✓					
Felson[281]								
Fowler[282–285]		✓		✓				
Kaplan a[286]		✓		✓				
Kaplan b[287–289]		✓		✓		✓	✓	✓
Mazerolle[290,291]						✓	✓	
Webb[292]			✓					
Category 5: housing improvement								
Barnes[293]					✓		✓	
Blackman[294,295]			✓				✓	
Critchley[296]							✓	
Foster[297]		✓					✓	

TABLE 8 Fear of crime outcome measures reported in the intervention studies (*n* = 47) (*continued*)

Study	Fear/worry/concern, general	Fear/worry/concern about specific crimes	Perceived safety/risk, general	Perceived safety/risk of specific crimes	Effects of fear (e.g. on quality of life)	Avoidance behaviours	Feelings of (un)safety	Perceptions of others' fear/risk
Glasgow Centre for Population Health[298,299]							✓	
Nair[300]		✓				✓	✓	✓
Petticrew[301,302]			✓				✓	
Category 6: regeneration and area-based initiatives								
Beatty[226,303,304]		✓					✓	
Rhodes[305]			✓					
Category 7: improvements to public areas (non-crime focused)								
Cohen[306]			✓					
Palmer[307]				✓			✓	

✓, full data are reported for at least one outcome.

The heterogeneity of measures indicates that caution should be exercised in interpreting the findings of the review on fear of crime, as this category includes a wide variety of different outcomes. Of particular concern are those studies that measure only cognitive outcomes (i.e. perceived safety or risk; $n = 7$), including both of the studies in category 7, as these may have a limited impact on affective outcomes or well-being more broadly (see *Chapter 3*, *Fear of crime and health and well-being*, and *Chapter 7*, *Fear and rationality*). It is noticeable that several of the studies with the most positive findings for effectiveness (Cohen, Felson, Palmer, Webb) actually measure perceived safety outcomes only, which suggests that many of the apparent reductions in fear observed in the aggregated analysis are unlikely to lead to improved well-being.

Appendix 9 Evidence tables: effectiveness

Allatt[246,247]

Study	*Area characteristics*	*Outcomes within scope of review*	*Limitations identified by author*
Allatt[246,247]	Local authority estates with 'low reputation amongst the general public, reflected in the absence of, or short, waiting lists for tenancies' (p. 101).[247] Generally high-crime and low-SES areas (42% of households in intervention area had at least one member in full-time employment, 47% in control area)	*Fear of crime*	Only 82% of dwellings in the target area received the intervention by the deadline and 94% by the start of study follow-up, and the intervention was not complete even in all of these. Only 1 year of follow-up, and crime rates appear to have risen after this. Community policing and an estate management scheme were introduced in the intervention area during the study period, hence contaminating the study
Study design Longitudinal controlled study		'How safe do you think it is to be on the streets in this area after dark?' (data not clearly reported)	
Quality rating A		'Have you ever been worried in the last year of becoming a victim of any type of crime?'	
Location, country Newcastle, UK	*Sampling methods and eligible population* Sites sampled for similarity to each other (no other rationale reported). For individuals: 'A 50% random sample of dwellings (396 target, 379 control), stratified by street, was drawn from local authority housing lists and a respondent randomly selected from household members over 16 years of age' (p. 172)[246]	Fear of burglary (exact question NR) Fear sufficient to adversely affect living patterns (exact question NR)	*Limitations identified by reviewer* Generally robust design. Some unclarity about the precise outcome measures used. Significance tests are one-group only
	Recruitment methods and response rate Presumably door to door; response rate 85% at baseline	*Other outcomes* 'Just thinking about this area, would you say that there is much crime round here?' Burglary and attempted burglary (self-report and police figures)	*Funding of study* Home Office Research Unit
	Sample demographics Not clearly reported	*Findings (for outcomes within scope)* 'Have you ever been worried in the last year of becoming a victim of any type of crime?' (%): I: pre 59, post 50 (p < 0.05 for one-group change); C: pre 56, post 61 (NS for one-group change)	
	Content of intervention Improvement of residential security on deprived housing estates. '[T]he security of all dwellings [was] improved by fitting locks and window bolts on all ground floor points of entry' (p. 170)[246]	Fear of burglary (%): I: pre 53, post 40 (p < 0.05 for one-group change); C: pre 48, post 54 (NS for one-group change)	
	Interventions/services received by comparison group NR		

Sample size
Baseline $n = 660$ (I 338, C 322), post $n = 404$ (I 205, C 199)

Data collection
'Interviews took place in two stages, between 25 February and 16 June 1980, and 16 March and 10 July 1981' (p. 172).[246] No other details on data collection reported

Baseline comparisons
Both estates were mainly council owned and similar in terms of design and household structure, and had a poor reputation. The intervention site had higher rates of crime and tenancy turnover. In the intervention site 42% of households had any member in full-time employment whereas on the control estate this figure was 47%. Full figures not given and there is no comparison of individual samples

Analysis method
Chi-square; subgroup analyses by gender and age. (Note that for main outcome data, significance tests are on one-group changes rather than group × time)

Power calculation
NR

Length of follow-up
1 year after completion of intervention

Attrition rate
38.8% (256/660)

Fear sufficient to adversely affect living patterns (%): I: pre 40, post 31 ($p < 0.05$ for one-group change); C pre 29%, C: post 35 (NS for one-group change)

Subgroup analyses?
By experience of burglary: no significant difference in fear

By gender: for fear of burglary outcome (%): males: I: pre 52, post 37, C: pre 48, post 50 (significance NR); females: I: pre 54, post 42, C: pre 49, post 57 (significance NR)

By age: in intervention site, effect largest in middle-aged and older people (>45 years); in control site changes by age were more complex.

People living alone (%): I: pre 48, post 48, C: pre 37, post 70 (significance NR)

Lone adults with children of school age and under (%): I: pre 62, post 31, C: pre 61, post 54 (significance NR)

C, control; I, intervention; NR, not reported; NS, not significant.

Arthur Young[276,277]

Study
Arthur Young[276,277]

Study design
Longitudinal controlled study

Quality rating
A

Location and country
Chicago, IL, USA

Area characteristics
Public housing complex in diverse area; population generally low income with a high proportion of residents on public assistance; generally poor reputation

Sampling methods and eligible population
Sampling of sites unclear; controls were 'matched' but NR on what variables (other than building size). For sampling of individuals, sampling stratified by (1) participation in Architectural Security Program vs. not, (2) building size, (3) two groups sampled: leaseholders and youth. Sampling within strata was supposed to be random (with stratified randomisation), although there were also convenience top-up samples; authors claim that sample remained representative. For comparison neighbourhood sample, random on the basis of blocks

Recruitment methods and response rate
Unclear, presumably door to door. Response rates NR (although authors imply that a substantial number of those sampled were not actually interviewed)

Sample demographics
NR

Content of intervention
(1) Architectural security program: 'enclosed lobbies, locked doors, presence of security personnel (called Senior Public Safety Aides) in the lobbies, intercom systems, and other electronic security and surveillance devices' (p. 2[276]); (2) courtyard security fencing programme; (3) 'prevention and treatment program' including Youth Service Bureau, Youth Shelter Home, community safety education,

Outcomes within scope of review
Fear of crime:

'Thinking about your personal safety when you are outside after dark in this development, would you say you are very concerned, a little concerned, or not at all concerned?' (findings NR)

'How concerned are you about the personal safety of others in your family who live here, when they are outside after dark in this development?' (findings NR)

'Again, thinking about your personal safety after dark around here, compared to the way it was six months ago, would you say it was getting better, getting worse, or about the same?' (findings NR)

'What about compared to a year ago?' (findings NR)

Level of fear in eight specific locations

Other outcomes
Various police and self-report crime outcomes

Attitudes to place

'Is crime the biggest problem round here?'

Findings (for outcomes within scope)
Fear in various locations between baseline and second follow-up (scores based on 1 = not scared, 2 = somewhat scared, 3 = quite scared). Here, I = Cabrini-Green as a whole and C = Stateway Gardens (the no-intervention site), i.e. these figures are intended to provide an evaluation of the programme as a whole

Limitations identified by author
NR

Limitations identified by reviewer
Comparability of groups very unclear (and differences in outcome measures give reason to think they were different). 'Baseline' measures are not truly pre intervention. Analyses are not clearly reported to assess the effect of the intervention (i.e. significance tests on group × time) and are rarely tested for significance at all. Several of the measures reported in the survey pro forma have no corresponding findings reported

Funding of study
Commissioned and presumably funded by City of Chicago Department of Planning

women's defense and crime prevention classes, Youthful Offender Program, school-based counselling; (4) Management Outpost Program (resident safety aids stationed in buildings to provide point of contact for residents to communicate safety issues); (5) administrative assistance and development

Interventions/services received by comparison group
NR

Sample size
Baseline n = 770 [I (Cabrini Green) 569, C (Stateway Gardens) 201], post2 (summer 1977) n = 823 (I 583, C 240)

Data collection methods
Extensive training for interviewers. Survey instruments reproduced in report. Surveys were piloted with a subsample. Interviews carried out in Management Outposts at 45-minute intervals

Baseline comparisons
Sites were matched on building size; other attributes NR. Individual samples NR

Analysis method
In principle, analysis of variance with samples weighted by represented population. However, these analyses are generally NR for fear outcomes. There is also a cost-effectiveness analysis, but this is based only on the crime data

Power calculation
Yes

Length of follow-up
≈2 years after start of intervention. Intervention implemented between July 1975 and October 1977

Apartment: I: pre 2.16, post 1.69; C: pre 2.42, post 1.91

Hallway: I: pre 2.31, post 2.06; C: pre 2.47, post 2.34

Lobby: I: pre 1.88, post 1.64; C: pre 2.25, post 2.10

Elevator: I: pre 2.36, post 2.09; C: pre 2.63, post 2.48

Grounds: I: pre 1.98, post 1.73; C: pre 1.90, post 1.79

(Significance NR. Also note that authors did not expect intervention to impact on 'apartment' scores, as the intervention only involved changes to the public areas of the estate)

Same measures are reported on p. 75[276] (here, post1 is the first follow-up, post2 the second). (Similarly, Table 41, after p. 156.[276]) Here, I = buildings in Cabrini-Green that received the Architectural Security Program, C = those buildings in Cabrini-Green that did not receive the Architectural Security Program but which did receive other components of the High Impact Program (i.e. this represents effectiveness of the former specifically)

Apartment: I: pre 2.09, post1 1.65, post2 1.60; C: pre 2.15, post1 1.79, post2 1.76

Hallway: I: pre 2.18, post1 1.84, post2 1.95, C: pre 2.41, post1 2.24, post2 2.08

Lobby: I: pre 1.62, post1 1.29, post2 1.28, C: pre 2.02, post1 1.97, post2 1.88

Data collection
Baseline: summer 1976; first follow-up: fall 1976; second follow-up: summer 1977

[NB considerable intervention had taken place by the time of the 'baseline' data collection (and authors interpret the latter in these terms), so there are no true baseline data]

Attrition rate
For first follow-up, approx 30%. Authors tested for selective attrition and found 'only 7 of 115 comparisons between the groups yielded significant differences' (p. B-11[276]). For the second follow-up, researchers decided to draw a new sample and analyse it as independent of the baseline sample (partly because of the high attrition rate)

Elevator: I: pre 2.26, post1 1.76, post2 1.85, C: pre 2.36, post1 2.11, post2 2.28

Grounds: I: pre 1.89, post1 1.79, post2 1.75, C: pre 1.95, post1 1.89, post2 1.82

Inside the building (mean score for four locations, range 4–12): I: pre 8.17, post1 6.51, post2 6.70, C: pre 9.00, post1 8.17, post2 8.00

Do you feel safer with the old building lobby compared to the new building lobby? (intervention group only)

Pre 82% yes, first follow-up 93.2%, second follow-up 86.6% (see also reasons why, Table 25, p. 71[276])

Subgroup analyses?
By age, gender, housing tenure, crime experience and high-rise vs. medium-rise buildings. Detailed data not extracted here as they are presented only site by site and authors' discussion treats findings as cross-sectional

C, control; I, intervention; NR, not reported.

Atkins[251]

Study Atkins[251]	*Area characteristics* Mix of local authority and owner-occupied housing. Area crime rates NR	*Outcomes within scope of review* Fear of crime:	*Limitations identified by author* NR
Study design Longitudinal controlled study	*Sampling methods and eligible population* For site: 'Several prerequisites determined the survey location: spatial separation from other re-lit areas; availability of a comparable control area; and absence of other crime prevention initiatives during the planned survey period. This led to the eventual selection of a re-lighting area in Earlsfield between Magdalen Road and Burntwood Lane' (p. 13). For individual respondents: individuals selected randomly from electoral register; recruited by introductory letter (which did not mention subject of study)	Feelings of safety at home/in local area in daylight/after dark Worry about and perceived risk of burglary; rape; damage to home; car theft; theft from car; vandalism to car	*Limitations identified by reviewer* Unclear reporting of attitudinal variables. Short follow-up *Funding of study* NR; report published by the Home Office
Quality rating A		*Other outcomes* Evenings out after dark in previous week	
Location, country Wandsworth (London), UK		Did those journeys involve walking in local area? Were you alone when walking?	
	Recruitment methods and response rate Residents visited at home. Response rate 37%	When out on your own in this area are there places you avoid? (unclear if relates to crime)	
		Reported crime	
	Sample demographics Intervention: 62% female, 49% >45 years, 67% SES ABC1. Control: 62% female, 60% >45 years, 76% SES ABC1. Authors note that women and older people were oversampled with regard to census figures; SES is approximately representative	Self-report crime victimisation Self-report experience of harassment Perceived extent of physical incivilities	
	Content of intervention Comprehensive relighting programme that lasted eight years and was projected to cost over £10M and involve the installation of over 20,000 new lights. Informed by safety considerations	*Findings (for outcomes within scope)* Findings for worry and perceived safety are presented only as regression equations with treatment as one variable along with age, sex and SES, so non-significant changes are not discernible	
	Interventions/services received by comparison group Authors mention three other initiatives taking place at the same time: (1) various changes to the Parks Police service, (2) a policing intervention to reduce street crime and (3) an increase in the number of Neighbourhood Watch schemes	Perceived safety (1 = very unsafe, 9 = very safe): in area by daylight: NS; in area after dark: significant improvement for women only, NS for sample as a whole; at home by daylight: NS; at home after dark: NS (note that only 'in area after dark' was hypothesised to improve)	

Sample size
Baseline n = 379 (I 248, C 131), post n = 295 (I 191, C 104)

Data collection methods
Questionnaires were piloted outside the survey area. Limited description of actual data collection process, although full pro formas are provided

Baseline comparisons
Yes. Intervention sample somewhat younger and of a lower SES than control area

Analysis method
Multivariate regression

Power calculation
NR

Length of follow-up
2 months after completion of intervention

Attrition rate
22%

Worry about (1 = very worried, 4 = not at all worried): home being burgled: NS; being attacked in the street: NS; being raped: significant improvement for older women only, NS for sample (of women) as a whole; home being damaged: NS; car being stolen: NS; things being stolen from car: significant deterioration for women only; car being damaged by vandals: significant deterioration for older people only

Perceived likelihood of (1 = certain to, 6 = certain not to): home being burgled: NS; being attacked in the street: NS; being raped: NS; home being damaged: NS; car being stolen: significant deterioration for women only; things being stolen from car: NS; car being damaged by vandals: NS

Subgroup analyses?
By gender and age, but not comprehensively reported; see above

C, control; I, intervention; NR, not reported; NS, not significant.

Bainbridge[252]

Study
Bainbridge[252]

Study design
Longitudinal uncontrolled study [the study has both a longitudinal and a cross-sectional component (75 : 25 ratio), although they are not distinguished in the analyses]

Quality rating
B

Location, country
Birmingham, UK

Area characteristics
Mixed SES, ethnicity and land use (see below)

Sampling methods and eligible population
Site sampled for diversity of housing type and resident ethnicity as well as mix of residential and commercial and roads with more and less night-time activity. Four phases of data collection were carried out: a household survey across the area (sampling random 10% with frame constructed especially for the study; sampling of individuals random); an additional sample from three streets identified as high-, medium- and low-crime areas (sampling random 25%, sampling of individuals random); a survey of commercial premises (sampling comprehensive); and a survey of pedestrians (sampling based on asking next person passing)

Recruitment methods and response rate
Main household survey, presumably door to door; response rate 73% (262/359) at baseline

Targeted household survey, presumably door to door; response rate NR

Commercial premises survey, presumably door to door; response rate 74% (50/68) at baseline

Pedestrian survey, on-street; response rate NR

Sample demographics
Main household survey (baseline): 50.8% male, 49.2% female; 18.1% 16–25 years, 47.9% 26–45 years, 18.5% 46–60 years, 15.4% >60 years; 55.4% white, 7.0% black, 37.2% Asian, 0.4% Chinese

Outcomes within scope of review
Fear of crime:

For main household survey: 'being afraid to go out after dark' is a problem; feelings of safety in the home and while out walking; worry about home being broken into and something stolen, street robbery, being attacked in street, being insulted/pestered in street, home being damaged by vandals, car being stolen or damaged, being hit/threatened with violence by someone you know, being sexually assaulted/raped (women)

(A number of other relevant measures are reported for post test only. There are also selectively reported subgroup analyses, but it is not clear which time point these refer to and they are not extracted here)

For targeted household survey: no relevant measures

For commercial premises survey: 'being afraid to go out after dark' is a problem; worry about crime (in general)

For pedestrian survey: worry about being attacked day/night, being pestered/insulted by strangers day/night, being sexually assaulted day/night (women), being raped day/night (women)

Perceived safety/risk:

For commercial premises survey: perceived risks for women ('How likely is it that something will happen to women?')

Limitations identified by author
Possible influence of external variables, e.g. weather. Potential displacement of crime not measured. Presence of researchers may have influenced outcomes

Limitations identified by reviewer
Non-comparative design. No significance tests. Large number of outcome measures

Funding of study
NR

Other outcomes
Perceived problems in area

Views of council, police, etc.

Self-report crime victimisation, experience of antisocial behaviour

Attitudes to crime

Desire to move (commercial premises)

Pedestrian behaviour

Findings (for outcomes within scope)
For main household survey:

'Being afraid to go out after dark' is a problem (% 'a big problem' or 'a bit of a problem'): pre 75, post 68

Feeling unsafe in the home (% 'yes' or 'sometimes'): pre 40.5, post 30.7

Feeling unsafe while out walking (% 'yes' or 'sometimes'): pre 47.1, post 46.7

Worry about (% 'a lot' or 'quite a bit') home being broken into and something stolen: pre 68.7, post 53.6; street robbery: pre 35.6, post 24.6; being attacked in street: pre 36.4, post 25.0; being insulted/pestered in street: pre 34.4, post 22.9; home being damaged by vandals: pre 44.8, post 31.3; car being stolen or damaged: pre 51.5, post 45.9; being hit/threatened with violence by someone you know: pre 9.9, post 5.5; being sexually assaulted/raped (women): pre 47.4, post 30.0

For commercial premises survey:

'Being afraid to go out after dark' is a problem: pre 47, post 44

Targeted household survey: NR

Commercial premises survey (baseline): 70.0% male, 30.0% female; 49.0% white, 4.1% black, 46.9% Asian; 22.0% 16–25 years, 46.0% 26–45 years, 24.0% 46–60 years, 8.0% >60 years

Pedestrian survey (post-test): 99 male, 59 female; 81 white, 18 black, 56 Asian, 2 other; 37.2% 16–25 years, 42.3% 26–45 years, 12.8% 46–60 years, 7.7% >60 years

Content of intervention
Improvement of lighting: five streets to category 3/1 and the rest to category 3/2. 'The standard of lighting prior to the improvements, with one or two exceptions, was relatively poor, achieving less than category 3/3' (p. 9)

Interventions/services received by comparison group
N/A

Sample size
Main household survey baseline approx. *n* = 262, plus *n* = 60 top-up at post test

Targeted household survey NR

Commercial premises survey *n* = 50

Pedestrian survey baseline *n* = 156, post *n* = 158

Data collection methods
Household and commercial surveys: letters distributed to inform residents of survey (but without specifying object of study). Interviewees were trained. Questionnaires covered demographics, views on quality of life, experience of crime, fear of crime, views on lighting and crime reduction. Interviews lasted 45 minutes on average. Pedestrian survey covered similar content but was briefer (about 15 minutes)

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
≈1 year after completion of intervention

Attrition rate
For the household survey (of the 75% who were resampled at post test): 33.2% (87/262). Commercial premises: appears to be 46.0% (23/50)

How likely is it that something will happen to women? (% 'very' or 'fairly likely'): pre 22, post 44

Worry about crime (in general): % 'yes': pre 64, post 67; % 'a lot' or 'a fair amount': pre 44, post 59

Women face particular risks when working alone (%); pre 42, post 63

Women are more at risk than men when working alone (%): pre 52, post 52

For pedestrian survey:

Worry about being attacked, night (%): pre 51.9, post 56.1; being attacked, day (%): pre 14.3, post 12.7; being pestered/insulted by strangers, night (%): pre 42.3, post 52.6; being pestered/insulted by strangers, day (%): pre 14.2, post 20.3; being sexually assaulted, night (women) (%): pre 82.0, post 76.4; being sexually assaulted, day (women) (%): pre 36.0, post 24.6; being raped, night (women) (%): pre 82.0, post 46.4; being raped, day (women) (%): pre 36.0, post 22.8

Subgroup analyses?
By gender and age, but only post-test data are reported (pre-test subgroup data are in another report that could not be located for this review: Bainbridge DI, Painter K. *The Impact of Public Lighting on Crime, Fear of Crime and Quality of Life.* Unpublished report for Birmingham City, 1991). Authors report a reduction in the number of men feeling unsafe in the home and the number of women feeling unsafe overall. 'The youngest age range still contains the highest proportion of persons saying that they felt unsafe but the 26–45 years age range now contains the lowest proportions of persons feeling unsafe while out walking and more in the 46–60 age group now feel unsafe' (p. 39)

N/A, not applicable; NR, not reported.

Baker[278]

Study
Baker[278]

Study design
Cross-sectional controlled study with some evidence of change in population (see p. 53 for pre/post differences.

I = people in close proximity to intervention site; C = people who live in same borough but not nearby)

Quality rating
C

Location, country
Pennsylvania, USA

Area characteristics

'The borough in which the data were collected has a higher proportion of elderly people, 23%, than the national average of 12%' (p. 52); otherwise little information

Sampling methods and eligible population
Sampling of site unclear, although based on the site being a crime 'hot spot'. Eligible population was people living in the immediate vicinity of the intervention site (I) and residents in the rest of the borough (C). Researchers attempted to sample all of the first group and a 10% random sample of the second with telephone book as sampling frame

Recruitment methods and response rate
Appears to be door to door. Response rate: I~ 90%, C 59.9%

Sample demographics
I: 59% 'elderly' (definition unclear), 65% female, 52% highest education is high school degree, 28% some college education

C: 47% 'elderly', 57% female, 54% highest education is high school degree, 27% some college education

Content of intervention
A multicomponent intervention in a specific park, based on a community-oriented/hot spots policing model. Included installing CCTV, repairing fences, improving lighting, locked park in the evening, limiting access, posted signs with park rules, removing vegetation and general cleaning, removal of public payphone (used to contact drug dealers), proactive patrolling including liaison with young people and parents, Neighborhood Watch programme including community meetings

Outcomes within scope of review
Fear of crime:

Feel safe in the park day/night

Feel safe due to crime prevention efforts

Other outcomes
Crime

Perceived crime

Perceptions of police

Findings (for outcomes within scope)
Feel safe in the park during the day (%): I pre: 'yes' 63.1, 'no opinion' 24.2, 'no' 14.5; I post: 'yes' 92.9, 'no opinion' 1.6, 'no' 5.6; C pre: 'yes' 78.3, 'no opinion' 14.5, 'no' 7.1; C post: 'yes' 84.4, 'no opinion' 5.7, 'no' 9.9

Feel safe in the park during the night (%): I pre: 'yes' 19.4, 'no opinion' 23.4, 'no' 57.3; I post: 'yes' 53.2, 'no opinion' 7.9, 'no' 38.9; C pre: 'yes' 33.2, 'no opinion' 33.2, 'no' 33.5%; C post: 'yes' 58.9%, 'no opinion' 8.7%, 'no' 32.4

Feel safe due to crime prevention efforts (%): I pre: 'yes' 57.3, 'no opinion' 36.3, 'no' 6.5; I post: 'yes' 84.1, 'no opinion' 11.9, 'no' 4.0; C pre: 'yes' 56.1, 'no opinion' 32.0, 'no' 11.9; C post: 'yes' 88.6, 'no opinion' 4.5, 'no' 6.9

Within-group measures show significant improvement on all variables for both groups. At post test, intervention significantly higher than control on first question, no difference on second, significantly lower on third.
Time × treatment interaction NR

Limitations identified by author
Contamination between intervention and control because of latter's use of the park; relatively small sample size; multicomponent intervention means that components cannot be disaggregated with regard to effectiveness; non-equivalence of groups

Limitations identified by reviewer
Contamination was probably a larger issue than the authors admit: given that 'intervention' respondents were considerably older than 'control' respondents, it is likely they used the park less (this was not measured directly, but awareness of the intervention appears to be high in the control group). It is hence questionable whether this can be treated as a trial design at all. Authors do not report treatment × time interaction test

Funding of study
US Department of Justice

Subgroup analyses?
NR

Interventions/services received by comparison group
Not specifically reported [the comparison group probably did benefit from the intervention if they used the park; also, the broader community-oriented policing component may well have included people in the comparison group as well as the intervention group (this is unclear in the report)]

Sample size
Baseline *n* = 461 (I 124, C 337), post *n* = 458 (I 125, C 333)

Data collection methods
Surveys administered by trained volunteers; respondents not informed about aims of study

Baseline comparisons
For age, gender and education. Intervention sample generally older and more female (reflecting differences in area populations); education similar

Analysis method
Chi-square; Somers' *D*

Power calculation
NR

Length of follow-up
6 months after completion of intervention

Attrition rate
N/A (different individuals at pre and post test; in fact many were probably in both samples, but analysis is unpaired)

C, control; I, intervention; N/A, not applicable; NR, not reported.

Barnes[293]

Study
Barnes[293]

Study design
Longitudinal controlled study

Quality rating
C

Location, country
West London, UK

Area characteristics
Little information reported: Housing Association housing

Sampling methods and eligible population
Very little information on sampling. Study sought to sample people who would be receiving refurbishment or rehousing and people who would not (referred to as 'baseline' in the report and 'control' in this data extraction)

Recruitment methods and response rate
NR

Sample demographics
Intervention: 51.7% 25–44 years, 28.3% 45–64 years; control: 37.8% 25–44 years, 36.6% 45–64 years. Intervention: 34.5% male; control 'about half' male. Overall: approx. 55% white British, 10% Irish, 23% black/Asian. Around 20% reported to have a disability, although true figure may be substantially higher

Content of intervention
Refurbishment of home or reallocation to another home for various reasons. Little information reported beyond this

Interventions/services received by comparison group
NR

Sample size
Baseline n = 284 (I 199, C 85), post n = 50 (I 19, C 31) at fourth follow-up

Outcomes within scope of review
Fear of crime:

'How safe do you feel when you are inside your property?' (The question does not explicitly mention crime, but authors state that answers to open questions suggested that this was measuring fear of crime)

'How safe do you feel in the area outside your property?'

'To what extent do you feel crime or the fear of crime affects your health or the health of your family?'

(Concern about personal safety was also asked about but is reported only for the sample as a whole)

Mental health:

Optimism for the future

Physical health:

'Do you feel that your house or flat has an influence on your health or your family's health?'

'Do you feel that the area in which you live has an influence on your personal health or on the health of your family?'

Self-reported general health now; compared with 1 year ago

Limitations identified by author
NR

Limitations identified by reviewer
The significance tests reported, and the associated interpretations of the findings, are extremely ad hoc and in many cases inappropriate. There is also considerable unclarity about the methods more broadly

Funding of study
Commissioned, and presumably funded, by Shepherd's Bush Housing Association

Data collection methods
Questionnaire used items from previously validated tools including SF-36 and EQ-5D. Piloted before main study. Questionnaire included items on housing, environment, fear of crime and self-reported health. Administered face-to-face (by preference) or by post, by trained local people

Baseline comparisons
NR

Analysis method
Unclear. 'The principal analysis of data was a comparison of responses over time within and between the two groups of tenants in the main survey. This analysis was checked independently by an epidemiologist who also applied a range of statistical significance tests to the data' (p. 24)

Power calculation
NR

Length of follow-up
≈18 months after completion of intervention. Recruitment was rolling and data are analysed depending on individual time point. Follow-ups took place at approx. 6-monthly intervals; some were followed up six times (≈3 years) but data after fourth follow-up were not used because of attrition

Attrition rate
25.4% (72/284) at first follow-up; 82.4% (234/284) at fourth follow-up (last data point used in analyses)

Current health problems

The extent to which health problems have affected daily activities

'During the past four weeks, to what extent has your physical health or emotional problems interfered with your normal daily activities or your social activities with family, friends, neighbours or groups?'

EQ-5D

Use of health services

Social well-being:

'How friendly do you feel your neighbours are?'

'Do you feel that you and your family belong to the community here?'

'To what extent do you feel your neighbours and the local community influences your health or the health of your family?'

Other outcomes
Satisfaction with housing; with area

Findings (for outcomes within scope)
Outcomes are presented graphically only and so quantitative data cannot be extracted precisely. Note also that the reporting of significance tests is extremely selective. 'Post' here = third follow-up (18 months)

'How safe do you feel when you are inside your property?' (% 'very safe' or 'quite safe'): I: pre 72, post 81 (significant for one-group change); C: pre 80, pre 82

'How safe do you feel in the area outside your property?' (% 'very safe' or 'quite safe'): I: pre 72, post 78, C: pre 68, post 69 (significance NR)

'To what extent do you feel crime or the fear of crime affects your health or the health of your family?' (% 'a lot' or 'to some extent'): I: pre 66, post 61; C: pre 47, post 58 [significant difference I vs. C (I worse) at first follow-up, but change in significance unclear]

Self-reported general health (% 'excellent' or 'very good'): I: pre 28, post 41; C: pre 32, post 25 (significance NR)

Self-reported health improvement, EQ-5D, use of health services: detailed outcome data not extracted here

Optimism about the future (% 'much better' or 'a little better'): I: pre 80, post 65; C: pre 36, post 35 (significance NR)

'How friendly do you feel your neighbours are?' (% 'very' or 'quite'): I: pre 81, post 80; C: pre 90, post 88 (significance NR)

'Do you feel that you and your family belong to the community here?' (% 'very much'/'to some extent'): I: pre 66, post 67; C: pre 67, post 59 (significance NR)

'To what extent do you feel your neighbours and the local community influences your health or the health of your family?' (%): I: pre 57, post 64; C: pre 55, post 63 (significance NR)

Subgroup analyses?
NR

C, control; EQ-5D, European Quality of Life 5-Dimensions; I, intervention; NR, not reported.

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Barr[253]

Study
Barr[253]

Study design
Longitudinal controlled study

Quality rating
C

Location, country
North-east Manchester, UK

Area characteristics
Estate in North Manchester, 'widely perceived as a "problem" area' (p. 3); generally disadvantaged population

Sampling methods and eligible population
Site sampled on advice of Manchester City Council as being a 'problem area' with serious social and economic problems

For household survey, researchers 'aimed to interview members of half of the households on the estate' (p. 7); unclear how this half was sampled (or how individuals were sampled within households). Also note that 'security men on the estate . . . vetted all sampling points before an approach in order to avoid wasted visits or danger to interviewers' (p. 7); it is unclear how much impact this may have had

For pedestrian survey, 'interviews [were] conducted at 5–15 minute intervals (depending on a willing respondent passing the survey point)' (p. 6); again, exact sampling procedure is unclear

Recruitment methods and response rate
Household survey: presumably door to door; 43% response rate

Pedestrian survey: NR

Sample demographics
Household survey (baseline): 54% female; 98% white, 1% black, 1% Asian; 16% 16–25 years, 38% 26–45 years, 25% 46–60 years, 22% > 60 years

Pedestrian survey (baseline): 47% female; 68% 16–25 years, 25% 26–45 years, 2% 46–60 years, 5% > 60 years

Outcomes within scope of review
Fear of crime:

Feeling unsafe in the home

Worry about home being broken into; being robbed in the street; being attacked in the street; being insulted/pestered in the street; having home damaged; having car stolen/damaged; being hit or threatened with violence by someone you know; being raped/sexually assaulted (women only)

Precautionary behaviours: avoid going out; avoid walking near people; stay away from some streets; go out with someone else; avoid using buses; take taxi/car; take similar precautions during the day; how well are avoided streets lit?; are the same streets avoided during the day?

(Pedestrian survey) 'Do you feel unsafe when walking through here because of the possibility of crime against you?'

'Do you worry about (day/night) being attacked; being pestered; being sexually assaulted (women); being raped (women)?'

'Do you ever avoid going out after dark though you would like to; go out after dark with someone rather than by yourself; stay away from certain areas within a 15-minute walk after dark? Do you take the same precautions during the day?'

'Are women/the elderly at risk out after dark?'

'Will something happen if women/older people go out at night?'

Limitations identified by author
Questionnaire surveys have inherent limitations. Small sample size

Limitations identified by reviewer
Non-comparative design. Some unclarity in reporting of outcome measures. No significance tests

Funding of study
Urbis Lighting Ltd

Social well-being:

(Knowledge of neighbours is measured in household survey but is treated as a baseline descriptor rather than an outcome)

Other outcomes
Self-report victimisation

What groups (behaviours) are seen as a threat

Pedestrian counts

Perceptions/attitudes to lighting

Recorded crime

Findings (for outcomes within scope)
For household survey, all findings are given for pre test, for the sample who were reinterviewed at post test (post-re) and for the booster sample (post-new)

Worry about home being broken into (%): 'a lot': pre 41, post-re 37, post-new 44; 'quite a bit': pre 23, post-re 17, post-new 21; 'not much': pre 22, post-re 18, post-new 10; 'not at all': pre 14, post-re 27, post-new 23

Worry about being robbed in the street (%): 'a lot': pre 19, post-re 14, post-new 9; 'quite a bit': pre 19, post-re 19, post-new 20; 'not much': pre 34, post-re 32, post-new 28; 'not at all': pre 28, post-re 34, post-new 43

Worry about being attacked in the street (%): 'a lot': pre 20, post-re 15, post-new 13; 'quite a bit': pre 19, post-re 21, post-new 11; 'not much': pre 34, post-re 23, post-new 28; 'not at all': pre 28, post-re 41, post-new 48

Content of intervention
Relighting to BS 5489:1989 part 3 standard (average and minimum illuminance levels of 10 and 5 lux respectively). High-pressure sodium bulbs at a height of 8 m were predominantly used (full details given in Technical Appendix)

Interventions/services received by comparison group
N/A

Sample size
Household surveys: baseline *n* = 168, post *n* = 138 (*n* = 91 from same households plus *n* = 47 new booster sample)

Pedestrian surveys: baseline *n* = 61, post *n* = 52

Data collection methods
Household survey: teams of two interviewers; interviews presumably conducted in residents' homes

Pedestrian survey: teams of two interviewers, outdoors at night, 10-/15-minute interviews

Baseline comparisons
N/A

Analysis method
Descriptive. Authors state that they did not test for significance as sample was too small

Power calculation
Yes (although it is reported to justify not conducting significance tests, rather than to justify the sample size)

Length of follow-up
≈2 months after completion of intervention

Attrition rate

Household survey: 47.2% (77/163), although there was also a booster post-test sample. Some consideration of attrition bias in report

Pedestrian survey: N/A

Worry about being insulted/pestered in the street (%): 'a lot': pre 7, post-re 10, post-new 11; 'quite a bit': pre 13, post-re 16, post-new 15; 'not much': pre 39, post-re 21, post-new 17; 'not at all': pre 41, post-re 53, post-new 56

Worry about having your home damaged (%): 'a lot': pre 23, post-re 29, post-new 30; 'quite a bit': pre 22, post-re 22, post-new 28; 'not much': pre 25, post-re 19, post-new 11; 'not at all': pre 29, post-re 29, post-new 30

Worry about having your car stolen/damaged (%): 'a lot': pre 29, post-re 36, post-new 37; 'quite a bit': pre 14, post-re 6, post-new 15; 'not much': pre 10, post-re 6, post-new 7; 'not at all': pre 48, post-re 57, post-new 41

Worry about being hit or threatened with violence by someone you know (%): 'a lot': pre 10, post-re 10, post-new 4; 'quite a bit': pre 4, post-re 12, post-new 11; 'not much': pre 14, post-re 13, post-new 15; 'not at all': pre 72, post-re 65, post-new 70

Worry about being raped or sexually assaulted (women) (%): 'a lot': pre 18, post-re 14, post-new 10; 'quite a bit': pre 14, post-re 14, post-new 20; 'not much': pre 22, post-re 12, post-new 30; 'not at all': pre 46, post-re 61, post-new 40

'Are women at risk going out after dark?' (%): 'yes': pre 75, post-re 81, post-new 85; 'no': pre 14, post-re 12, post-new 11; 'don't know': pre 11, post-re 7, post-new 4

'Will something happen if women go out at night?' (%): 'very likely': pre 19, post-re 52, post-new 38; 'quite likely': pre 42, post-re 29, post-new 38; 'not very likely': pre 22, post-re 19, post-new 13; 'don't know': pre 17, post-re 0, post-new 11

'Are the elderly at risk going out after dark?' (%): 'yes': pre 83, post-re 82, post-new 72; 'no': pre 10, post-re 11, post-new 19; 'don't know': pre 7, post-re 7, post-new 6

'Will something happen if the elderly go out at night?' (%): 'very likely': pre 41, post-re 64, post-new 46; 'quite likely': pre 38, post-re 24, post-new 40; 'not very likely': pre 20, post-re 12, post-new 14

'Do you avoid going out?' (%): 'always': pre 18, post-re 2, post-new 11; 'often': pre 15, post-re 8, post-new 6; 'sometimes': pre 16, post-re 11, post-new 24; 'never': pre 55, post-re 74, post-new 54; 'don't know': pre 6, post-re 5, post-new 4

'Do you avoid walking near people?' (%): 'always': pre 27, post-re 16, post-new 13; 'often': pre 16, post-re 15, post-new 16; 'sometimes': pre 12, post-re 16, post-new 22; 'never': pre 37, post-re 51, post-new 44; 'don't know': pre 9, post-re 2, post-new 4

'Do you stay away from some streets?' (%): 'always': pre 25, post-re 25, post-new 22; 'often': pre 14, post-re 9, post-new 17; 'sometimes': pre 14, post-re 14, post-new 18; 'never': pre 8, post-re 50, post-new 4

'Do you go out with someone else?' (%): 'always': pre 30, post-re 29, post-new 18; 'often': pre 15, post-re 9, post-new 20; 'sometimes': pre 13, post-re 14, post-new 13; 'never': pre 37, post-re 44, post-new 40; 'don't know': pre 6, post-re 5, post-new 9

'Do you avoid using buses?' (%): 'always': pre 13, post-re 7, post-new 4; 'often': pre 7, post-re 3, post-new 9; 'sometimes': pre 9, post-re 18, post-new 0; 'never': pre 51, post-re 64, post-new 53; 'don't know': pre 19, post-re 18, post-new 33

'Do you take a taxi/car?' (%): 'always': pre 32, post-re 20, post-new 16; 'often': pre 24, post-re 15, post-new 20; 'sometimes': pre 17, post-re 16, post-new 9; 'never': pre 20, post-re 42, post-new 47; 'don't know': pre 7, post-re 7, post-new 9

'Similar precautions taken during the day?' (%): 'yes': pre 30, post-re 31, post-new 23; 'no': pre 70, post-re 69, post-new 77

'How well are avoided streets lit?' (%): 'well lit': pre 11, post-re 8, post-new 4; 'badly lit': pre 58, post-re 51, post-new 50; 'both': pre 16, post-re 26, post-new 27; 'don't know': pre 15, post-re 14, post-new 18

'Are the same streets avoided in the day?' (%): 'day only': pre 1, post-re 6, post-new 0; 'night only': pre 71, post-re 60, post-new 86; 'both': pre 28, post-re 34, post-new 14

Pedestrian survey:

'Do you feel unsafe when walking through here because of the possibility of crime against you?' (%): 'yes': 44 pre, 51 post; 'no': 56 pre, 47 post; 'don't know': 0 pre, 2 post

'Do you worry about the possibility of the following things happening during the day or night when walking through here?' (%): attack, night: pre women 64, men 34, post women 74, men 38; attack, day: pre women 32, men 3, post women 13, men 5; pester, night: pre women 43, men 13, post women 65, men 24; pester, day: pre women 21, men 7, post women 19, men 10

(Figures are also given for sexual assault and rape; however, these are illegible because of the state of the document)

'As a precaution, do you ever …' (%): avoid going out after dark although you would like to: pre 26, post 23; go out after dark with someone rather than by yourself: pre 43, post 46; stay away from certain areas within a 15-minute walk after dark: pre 48, post 48

'Do you take the same precautions during the day?' (%): 'no': pre 81, post 71

Subgroup analyses?
Gender only, for worry and behaviour variables (these are presented separately and appear to aggregate 'a lot' and 'quite a bit' to give an overall %)

Worry about home being broken into: males: pre 59, post-re 48, post-new 64; females: pre 70, post-re 60, post-new 68

Worry about being robbed in the street: males: pre 27, post-re 19, post-new 22; females: pre 47, post-re 45, post-new 37

Worry about being attacked in the street: males: pre 28, post-re 20, post-new 11; females: pre 50, post-re 49, post-new 42

Worry about being insulted/pestered: males: pre 16, post-re 17, post-new 22; females: pre 24, post-re 25, post-new 31

Worry about having home damaged: males: pre 41, post-re 49, post-new 56; females: pre 50, post-re 53, post-new 63

Worry about having car stolen: males: pre 48, post-re 35, post-new 47; females: pre 37, post-re 53, post-new 60

Worry about being hit/threatened with violence: males: pre 7, post-re 21, post-new 11; females: pre 19, post-re 24, post-new 21

Avoid going out: males: pre 20, post-re 13, post-new 11; females: pre 41, post-re 8, post-new 26

Avoid walking: males: pre 33, post-re 20, post-new 19; females: pre 52, post-re 40, post-new 45

Stay away from some streets: males: pre 30, post-re 25, post-new 18; females: pre 48, post-re 42, post-new 45

Go out with someone else: males: pre 30, post-re 24, post-new 25; females: pre 58, post-re 51, post-new 55

Avoid using buses: males: pre 13, post-re 7, post-new 4; females: pre 28, post-re 12, post-new 28

Take taxi/car: males: pre 38, post-re 20, post-new 22; females: pre 71, post-re 47, post-new 55

N/A, not applicable; NR, not reported.

Beatty [226,303,304]

Study Beatty[226,303,304] *Study design* Longitudinal controlled study (in principle; however, analyses are either one-group longitudinal or controlled cross-sectional) *Quality rating* A *Location and country* Various sites in England	*Area characteristics* NDC was targeted at the most deprived neighbourhoods *Sampling methods and eligible population* Sampling of intervention sites comprehensive among NDC partnership areas. Sampling of comparator sites based on matching Index of Multiple Deprivation scores within same local authority districts as intervention sites, with areas bordering intervention sites excluded. Sampling of households random with postcode data as sampling frame. Adult respondents randomly selected within households *Recruitment methods and response rate* All sampled households received advance letter with information about the study. NDC partnerships also publicised the survey in their areas. Recruitment was door to door with each sampled address receiving at least six visits. Respondents were entered into a draw with cash prizes. Overall response rate 69% for 2008 wave[372] *Sample demographics* For intervention group at baseline: 49% male; 19% 16–24 years, 48% 25–49 years, 14% 50–59/64, 18% ≥ 60/65 [sic]; 75% white, 2% mixed, 11% Asian, 10% black, 2% Chinese/other	*Outcomes within scope of review* Fear of crime: Feel unsafe after dark Worried about vandalism to home or car Worried about being insulted or pestered in public Worried about being burgled Worried about being physically attacked by someone known Worried about being attacked because of skin colour/ethnic origin/religion Worried about being sexually assaulted Worried about being physically attacked by strangers Worried about being mugged Worried about somebody distracting/posing as an official and stealing from home Physical health: Health relative to 1 year ago	*Limitations identified by author* NR *Limitations identified by reviewer* The study methodology is generally robust. The main limitation for this review is that the intervention included a very wide range of initiatives and there is a limited amount of data available that disaggregates outcomes by type of initiative *Funding of study* Department for Communities and Local Government

Smoke cigarettes

Feel own health not good

Long-standing limiting illness

Do no exercise for ≥ 20 minutes

Never eat five portions of fruit or vegetables in a day

Mental health:

Felt calm and peaceful during past 4 weeks

Been a very nervous person during past 4 weeks

Felt down in the dumps during past 4 weeks

Been a happy person during past 4 weeks

Felt downhearted and low during past 4 weeks

Social well-being:

People in area are friendly

Know most/many of the people in the area

Neighbours look out for each other

Involved in local organisation

Feel part of the community

Other outcomes

Content of intervention
NDC – broad regeneration programme including a wide range of specific initiatives. Most expenditure was focused on housing (32%) and community (18%) initiatives, with smaller amounts spent on education (17%), worklessness (12%), health (11%) and crime (10%). One report[304] has some breakdowns of findings according to type of project

Interventions/services received by comparison group
Comparator areas are likely to have received support from other area-based initiatives; detailed information NR

Sample size
Baseline (2002) *n* = 21,588 (I 19,574, C 2014), post (2008) *n* = 18,938 (I 15,838, C 3100)

Data collection methods
Survey piloted in areas not part of the evaluation initially and revised on the basis of the pilots. The questionnaire covers a broad range of areas. Questionnaires were based on previous national surveys as far as possible

Interviews were carried out by trained data collectors and a sample of 10% followed up subsequently by telephone. Some interviews were carried out in languages other than English

Baseline comparisons
Comparator sites selected for similar area-level SES to intervention sites, but detailed comparisons do not seem to be reported

Analysis method
Various different analyses are reported in the different reports. Analysis method for the change scores extracted here is unclear

Power calculation
NR directly; power is discussed informally

Length of follow-up
Up to 6 years from start of programme; many components probably ongoing at time of last follow-up

Attrition rate
For the longitudinal subsample, attrition was 72% between 2002 and 2006 (I 14,075/19,574, C 1556/2014). However, data extracted here are primarily from the cross-sectional sample

Various perceptions/experiences of crime

Various outcomes relating to employment, education/skills, perceptions of services

Findings (for outcomes within scope)
Scores are change scores in % between 2002 and 2008 waves, based on cross-sectional data

Significance refers to difference in change scores between I and C:

Felt calm and peaceful most/all of the time during past 4 weeks: I +6, C 0 ($p < 0.05$); feel a bit/very unsafe after dark: I −12, C −9 (NS); health somewhat/much worse than 1 year ago: I −2, C +1 ($p < 0.05$); people in area very/fairly friendly: I +3, C +1 ($p < 0.05$); smoke cigarettes: I −5, C −3 (NS); been a very nervous person most/all of the time during past 4 weeks: I −2, C −1 (NS); know most/many of the people in the area: I +3, C +1 ($p < 0.05$); very/fairly worried about vandalism to home or car: I −19, C −18 (NS); feel own health not good: I −4, C −3 (NS); felt down in the dumps most/all of the time during past 4 weeks: I −3, C −2 (NS); been a happy person most/all of the time during past 4 weeks: I +2, C +2 (NS); neighbours look out for each other: I +2, C +2 (NS); involved in local organisation: I +2, C +2 (NS); felt downhearted and low most/all of the time during past 4 weeks: I −1, C 0 (NS); very/fairly worried about being insulted or pestered in public: I −13, C −13 (NS); long-standing limiting illness: I −2, C −2 (NS); do no exercise for ≥ 20 minutes: I +2, C 0 (NS); feel part of the community a great deal/a fair amount: I +10, C +11 (NS); very/fairly worried about being burgled: I −21, C −22 (NS); very/fairly worried about being

physically attacked by someone known: I –7, C –9 (NS); never eat five portions of fruit or vegetables in a day: I –4, C –7 ($p < 0.05$); very/fairly worried about being attacked because of skin colour/ethnic origin/religion: I –7, C –11 ($p < 0.05$); very/fairly worried about being sexually assaulted: I –12, C –15 ($p < 0.05$); very/fairly worried about being physically attacked by strangers: I –14, C –18 ($p < 0.05$); very/fairly worried about being mugged: I –17, C –21 ($p < 0.05$); very/fairly worried about somebody distracting/posing as an official and stealing from home: I –14, C –20 ($p < 0.05$)

Within-group % change scores for the longitudinal component of the sample alone from 2002 to 2006. 'Fear of crime' here is an index measure from the various 'Worry about . . .' variables:

Feel unsafe after dark: –9.0 ($p < 0.001$); fear of crime: –14.8 ($p < 0.001$)

Subgroup analyses?
Only for within-group data

Feel unsafe after dark: men –8.8 ($p < 0.05$), women –9.2 ($p < 0.05$); age 16–24 years –17.7 ($p < 0.05$), 25–49 years –7.8 ($p < 0.05$), 50–59 years –7.0 ($p < 0.05$), ≥ 60 years –10.2 ($p < 0.05$); white –8.8 ($p < 0.05$), Asian –11.6 ($p < 0.05$), black –7.5 ($p < 0.05$)

Fear of crime: men –10.1 ($p < 0.05$), women –17.9 ($p < 0.05$); age 16–24 years –19.4 ($p < 0.05$), 25–49 years –15.3 ($p < 0.05$), 50–59 years –15.1 ($p < 0.05$), ≥ 60 years –13.3 ($p < 0.05$); white –13.6 ($p < 0.05$), Asian –21.8 ($p < 0.05$), black –15.4 ($p < 0.05$)

C, control; I, intervention; NDC, New Deals for Communities; NR, not reported; NS not significant.

Blackman[294,295]

Study Blackman[294,295]	*Area characteristics* High-crime area, disadvantaged population (> 80% in receipt of means-tested benefits) and with poor housing stock (a survey classified 44% of it as unfit for human habitation)	*Outcomes within scope of review* Fear of crime: Feel unsafe walking at night Area is safe/dangerous	*Limitations identified by author* Non-comparative design *Limitations identified by reviewer* No further limitations
Study design Longitudinal uncontrolled study (both cross-sectional and longitudinal components)	*Sampling methods and eligible population* Sampling of site was opportunistic ['The Housing Department commissioned a household survey of the area … Two of the authors … recognised an opportunity' (p. 94)[294]]. Sampling of households comprehensive	Mental health: Psychological distress (defined for adults as an inability to concentrate, problems sleeping, depression, hopelessness, loss of appetite or feeling that it is too much effort to do anything)	*Funding of study* Newcastle City Council
Quality rating C		Physical health: General health status Respiratory conditions	
Location and country Newcastle, UK	*Recruitment methods and response rate* Recruited face-to-face by trained interviewers who aimed to obtain an interview with 'the person mainly responsible for the household' (p. 95),[246] who was also asked about other family members. Response rate 70% at baseline and 62% at follow-up	Use of health services Health behaviours: Exercise	
	Sample demographics At baseline (household members): 51.6% female; 24.8% 0–15 years, 62.2% 16–64 years, 12.8% > 64 years	Smoking *Other outcomes* Various perceptions of area, of housing	
	Content of intervention 'The housing renewal programme cost £5.5 million and included environmental improvements, external fabric repairs, refurbishment and some demolition of void dwellings, renovation grants for individual dwellings and security and road safety improvements' (p. 95)[246]	Self-report burglary	

Interventions/services received by comparison group
N/A

Sample size
Baseline $n = 415$, post $n = 230$ (refers to number of households, i.e. interviews actually conducted; if counting all individuals for whom data gathered, baseline $n = 998$, post $n = 525$)

Data collection methods
Structured interview based on previous study. Questions covered health, housing problems and perceptions of the area. Interviews conducted in residents' homes by trained interviewers from the local authority's Research Section

Baseline comparisons
N/A

Analysis method
Chi-square for cross-sectional data, McNemar's test for longitudinal data. Bivariate analyses of all determinant variables with health outcomes. Multivariate analysis using logistic regression

Power calculation
NR

Length of follow-up
≈5 years after start of intervention (shortly after completion)

Findings (for outcomes within scope)
All analyses reported separately for cross-sectional (cross) and longitudinal (long) sample

Feel unsafe walking at night (%): cross: pre 57.1, post 50.5 ($p < 0.05$); long: pre 59.4, post 52.1 (NS)

Area very/quite safe (%): cross: pre 20.5, post 59.3 ($p < 0.05$); long: pre 25.5, post 50.5 ($p < 0.001$)

Area not very safe/quite dangerous (%): cross: pre 79.5, post 40.7 (NS); long: pre 74.5, post 49.5 (NS)

Adults' health status:

General health status good (%): cross: pre 50.6, post 56.5 (NS); long: pre 52.7, post 51.2 ($p < 0.01$)

General health status fair (%): cross: pre 28.6, post 24.1 (NS); long: pre 37.6, post 26.8 (NS)

General health status not good (%): cross: pre 20.7, post 19.4 (NS); long: pre 9.7, post 22.0 (NS)

Acute respiratory conditions (%): cross: pre 12.8, post 13.5 (NS); long: pre 13.3, post 17.5 (NS)

Attrition rate
For longitudinal subsample, 76% (317/415) of households or 79% (789/998) of individuals for whom data collected

Chronic respiratory conditions (%): cross: pre 28.8, post 35.3 (NS); long: pre 31.9, post 44.0 ($p < 0.05$)

One or more mental health problem(s) (%): cross: pre 52.0, post 37.0 ($p < 0.001$); long: pre 52.4, post 41.0 ($p < 0.05$)

Trouble with nerves (%): cross: pre 24.3, post 15.5 ($p < 0.01$); long: pre 18.8, post 9.9 ($p < 0.05$)

GP visit in past 2 weeks (%): cross: pre 19.7, post 17.1 (NS); long: pre 21.1, post 20.6 (NS)

Hospital outpatient in last 3 months (%): cross: pre 14.9, post 12.1 (NS); long: pre 10.9, post 13.9 (NS)

Hospital inpatient in last 3 months (%): cross: pre 10.0, post 7.9 (NS); long: pre 10.9, post 7.3 (NS)

Prescribed medication for ≥ 1 month (%): cross: pre 36.6, post 42.8 (NS); long: pre 36.4, post 47.0 ($p < 0.05$)

Smoker (%): cross: pre 76.8, post 43.0 ($p < 0.001$); long: pre 71.6, post 27.9 ($p < 0.001$)

Children's health status:

General health status good (%): cross: pre 59.8, post 78.7 ($p < 0.001$); long: pre 73.8, post 79.1 (NS)

General health status fair (%): cross: pre 30.0, post 15.7 (NS); long: pre 23.8, post 20.9 (NS)

General health status not good (%): cross: pre 10.8, post 5.5 (NS); long: pre 2.3, post 0 (NS)

Acute respiratory conditions (%): cross: pre 16.0, post 23.7 (NS); long: pre 25.6, post 20.9 (NS)

Chronic respiratory conditions (%): cross: pre 29.7,post 23.7 (NS); long: pre 23.3, post 25.6 (NS)

One or more mental health problem(s) (%): cross: pre 22.5, post 9.2 ($p < 0.001$); long: pre 20.9, post 2.3 ($p < 0.05$)

GP visit in past 2 weeks (%): cross: pre 13.6, post 8.4 (NS); long: pre 15.9, post 0 ($p < 0.01$)

Hospital outpatient in last 3 months (%): cross: pre 9.6, post 5.5 (NS); long: pre 2.3, post 2.3 (NS)

Hospital inpatient in last 3 months (%): cross: pre 6.0, post 6.2 (NS); long: pre 11.4, post 6.8 (NS)

Prescribed medication for ≥ 1 month (%): cross: pre 18.6, post 13.0 (NS); long: pre 16.3, post 16.3 (NS)

Subgroup analyses?
There as an interaction analysis for respiratory problems and mental health outcomes but this is largely cross-sectional and not designed to illuminate differential effectiveness of the intervention

GP, general practitioner; N/A, not applicable; NR, not reported; NS, not significant.

Brown[269]

Study
Brown[269]

Study design
Cross-sectional uncontrolled study

Quality rating
C

Location and country
Birmingham, UK (study covers multiple sites, but relevant outcomes reported only for Birmingham)

Area characteristics
City centre site. 'The area covered by the cameras consists mainly of shopping streets and partially open market areas. There is also some coverage of the financial district, where the Bank of England is located, and the entertainment district which is located some way from the city centre core' (p. 28)

Sampling methods and eligible population
NR

Recruitment methods and response rate
NR (assume on-street). Response rate NR

Sample demographics
NR

Content of intervention
Twelve CCTV cameras installed in 'previously identified problem locations' (p. 27) around the city centre

Interventions/services received by comparison group
N/A

Sample size
Baseline *n* = 699, post *n* = 706

Outcomes within scope of review
Fear of crime:

Feelings of safety

Other outcomes
Recorded crime

Self-report crime

Findings (for outcomes within scope)
Feelings of safety (%): 'very safe' pre 5, post 4; 'safe' pre 22, post 25; 'a bit unsafe' pre 30, post 26; 'very unsafe' pre 43, post 45

Subgroup analyses?
Only by the variable 'awareness of CCTV'

Limitations identified by author
NR

Limitations identified by reviewer
Non-comparative design. Very little information on methods or sample. No significance tests. Crime rather than fear is the focus of the study

Funding of study
Study conducted, and presumably funded, by the Home Office Police Research Group

Data collection methods
Surveys conducted in Birmingham city centre by staff from Michael and Associates. Interviews focused on experiences of crime and fear of crime in the city centre

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
≈1 year after completion of intervention

Attrition rate
N/A

N/A, not applicable; NR, not reported.

Brownsell[248]

Study Brownsell[248]	**Area characteristics** NR (wider area characteristics not really relevant; for site characteristics see below) **Sampling methods and eligible population** Sampling of intervention site 'was dictated by local service pressures' (p. 8). Sampling of control site for similarity in service provision and resident age. Eligible population was older people living in sheltered housing. Sample chosen to be (informally) 'typical' of this population **Recruitment methods and response rate** Residents and carers were invited to a discussion meeting where they could get information about the devices (for intervention group); 31/35 consented to participate in the intervention group, 38/68 consented to participate in the control group (total response rate 67%)	**Outcomes within scope of review** Fear of crime: 'Fear of crime' (exact measure unclear) Feelings of safety day/night Mental health: SF-36 mental health subdomains Physical health: SF-36 physical health subdomains **Other outcomes** Fear of falling Time spent out of the home	**Limitations identified by author** NR **Limitations identified by reviewer** Incomplete reporting of outcome data. Limited information on comparability of groups **Funding of study** Doncaster Neighbourhood Renewal Fund
Study design Longitudinal controlled study		
Quality rating A	**Sample demographics** I: mean age 73 years, 54% female; C: mean age 77 years, 61% female	**Findings (for outcomes within scope)** Feelings of safety during the day: intervention 1% increase, control 1% decrease (p = 0.027); feelings of safety at night: intervention 3% increase, control 5% decrease (p = 0.008); fear of crime: intervention 10% decrease, control 6% increase (p = 0.56); full data are NR for these outcomes
Location and country Location NR, UK	**Content of intervention** Telecare package in sheltered housing for older people. There were four packages, one focusing on security, one on falls, one on specialist services for patients with epilepsy or other conditions and one on 'lifestyle reassurance'	

Interventions/services received by comparison group
NR

Sample size
Baseline n = 69 (I 31, C 38), post n = 52 (I 24, C 28)

Data collection methods
'For both the intervention and control groups, the SF-36 and FES [Falls Efficacy Scale] were self-administered and the internally developed questionnaires conducted by interview' (p. 9)

Baseline comparisons
Sites chosen for similarity but detailed comparisons NR

Analysis method
Repeated measures analysis of variance

Power calculation
NR

Length of follow-up
1 year after completion of intervention

Attrition rate
24.6% (17/69)

For SF-36 domains (higher scores are better; post1 = 6 months, post2 = 12 months):

Physical functioning: I: pre 51, post1 48, post2 49; C: pre 51, post1 51, post2 47 (NS)

Role limitation: physical: I: pre 50, post1 57, post2 57; C: pre 50, post1 51, post2 46 (NS)

Role limitation: emotional: I: pre 66, post1 72, post2 68; C: pre 66, post1 67, post2 62 (NS)

Social functioning: I: pre 73, post1 77, post2 75; C: pre 73, post1 64, post2 67 ($p < 0.05$)

Mental health: I: pre 74, post1 74, post2 76; C: pre 74, post1 75, post2 74 (NS)

Energy/vitality: I: pre 56, post1 55, post2 54; C: pre 56, post1 49, post2 52 (NS)

Pain: I: pre 64, post1 69, post2 69; C: pre 64, post1 68, post2 66 (NS)

Health perception: I: pre 55, post1 53, post2 52; C: pre 55, post1 54, post2 55 (NS)

Change in health: I: pre 47, post1 43, post2 43; C: pre 47, post1 48, post2 45 (NS)

Subgroup analyses?
NR

C, control; I, intervention; NR, not reported; NS, not significant.

Burden[254]

Study Burden[254]	*Area characteristics* 'a 1960s-built estate some 5 miles north-east of the City. The majority of dwellings are low level housing though there are also four tower blocks' (p. 1)	*Outcomes within scope of review* Fear of crime:
Study design Cross-sectional uncontrolled study	*Sampling methods and eligible population* NR	Worry about home broken into and something stolen; being robbed in the street; being attacked in the street; being insulted/pestered in the street; home damaged by vandals; having your car stolen or damaged; being sexually assaulted/raped (women)
Quality rating C	*Recruitment methods and response rate* NR	Stay in when you would like to go out (women)
Location and country Swarcliffe Estate, Leeds, UK	*Sample demographics* Individual demographics NR; information on housing type only	Avoid walking near certain types of people (women)
	Content of intervention Street lighting improvements; details NR	Stay away from certain streets (women)
	Interventions/services received by comparison group N/A	Go out accompanied, not alone (women)
	Sample size NR	Take car/taxi rather than walk (women)
	Data collection methods In respondents' homes; no other information reported	Avoid using buses (women)
		(Note: some other relevant outcomes were measured, but are reported for pre test only)

Limitations identified by author
NR

Limitations identified by reviewer
Non-comparative design. Highly incomplete reporting of methods and findings. Conclusions do not seem to relate to findings. (Note: the only available report is a brief summary; a full report apparently exists but could not be sourced for this review)

Funding of study
NR

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
NR

Attrition rate
N/A

Other outcomes
Attitudes to crime prevention

Findings (for outcomes within scope)
Worry about (%) (significance NR): home broken into and something stolen: pre 62, post 56; being robbed in the street: pre 29, post 32; being attacked in the street: pre 36, post 35; being insulted/pestered in the street: pre 29, post 31; home damaged by vandals: pre 57, post 54; having your car stolen or damaged: pre 54, post 37; being sexually assaulted/raped (women): pre 35, post 29

Stay in when you would like to go out (women) (%): pre 34, post 7

Avoid walking near certain types of people (women) (%): pre 47, post 27

Stay away from certain streets (women) (%): pre 46, post 24

Go out accompanied, not alone (women) (%): pre 69, post 49

Take car/taxi rather than walk (women) (%): pre 53, post 42

Avoid using buses (women) (%): pre 15, post 7

Subgroup analyses?
NR

N/A, not applicable; NR, not reported.

Cohen[306]

Study
Cohen[306]

Study design
Cross-sectional controlled study with no evidence of change in population (see table 1 for pre–post comparison)

Quality rating
C

Location and country
Southern California, USA

Area characteristics
Urban low-income communities, most predominantly Latino and/or black ethnicity and with high rates of poverty (between 9.8% and 54.9% of households)

Sampling methods and eligible population
Sampling of sites based on parks scheduled to receive improvements in targeted area; sampling of control sites for similarity. Users of parks and local households sampled; unclear exactly how. Sampling of individuals within households random

Recruitment methods and response rate
Door to door (and face-to-face for park users) by 'trained bilingual promotoras'. 'Interviewers returned to a sampled household up to five times to locate residents before selecting an alternate address' (p. 476). Response rates NR

Sample demographics
Median age 38 years; 38% male; 82% Latino, 14% black

Content of intervention
Various improvements to gymnasium and playground areas in parks, informed by committee of local residents

Interventions/services received by comparison group
NR

Sample size
Baseline *n* = 1535, post *n* = 1332 (I/C NR)

Outcomes within scope of review
Fear of crime:

Perceived safety (exact measure unclear)

Physical health:

Health (exact measure unclear)

Health behaviours:

Park use (self-report)

Leisure time physical activity three or more times per week

Other outcomes
Park use (observed)

First-time park visits

Findings (for outcomes within scope)
Ratios of odds ratios: neighbourhood park use 1.01 (NS); other park use 0.96 (NS); perceived safety 1.35 (*p* < 0.001); health 0.99 (NS); regular exercise 1.01 (NS)

Subgroup analyses?
NR

Limitations identified by author
Long follow-up may mean results were confounded by other changes.
Observations over 1 week only at each time point

Limitations identified by reviewer
Unclarity in outcome measures

Funding of study
National Institute of Environmental Health Sciences (US)

Data collection methods
Trained field staff conducted interviews in either English or Spanish. Interviews focused on use of park and physical activity

Baseline comparisons
Sites were chosen to be similar on various characteristics: size, facilities, ethnicity, SES and age of local population. Analysis was adjusted for differences in characteristics of samples

Analysis method
Logistic regression with propensity score weighting (to control for differences in demographics between groups)

Power calculation
NR

Length of follow-up
Post test between 3 and 14 months after improvements undertaken

Attrition rate
N/A

C, control; I, intervention; N/A, not applicable; NR, not reported; NS, not significant.

Critchley[296]

Study Critchley[296]	*Area characteristics* Tower blocks; generally low-SES population	*Outcomes within scope of review* Fear of crime:	*Limitations identified by author* NR
Study design Longitudinal controlled study	*Sampling methods and eligible population* Unclear. Intervention and control groups are referred to as 'movers' and 'stayers', respectively, in the report; it is unclear whether everyone in the intervention estates moved or whether people scheduled to move were purposively sampled. No detail on sampling for 1993 Market and Opinion Research International (MORI) survey	'How safe do you feel (a) in your home alone at night or (b) walking alone in this area after dark?' Mental health:	*Limitations identified by reviewer* Some confusion around what intervention is being evaluated with respect to fear of crime outcomes. Incomplete reporting of methods (sampling, data collection). No significance tests. Comparability of groups unclear. Authors' interpretation of findings is sometimes questionable and ad hoc (e.g. ignoring fear of crime reductions in control group)
Quality rating A		SF-36 Physical health:	*Funding of study* Liverpool Housing Action Trust, the Housing Corporation and the former National Health Services Executive of the North West Region of England
Location and country Liverpool, UK	*Recruitment methods and response rate* Unclear, presumably door to door. Response rate 57.8%	SF-36 Use of health services	
	Sample demographics 215 females, 184 males; 75 <49 years, 165 50–69 years, 159 >70 years; occupations primarily manual (men), clerical, retail, caring (women); 58% retired, 15% unable to work through illness; income 53% <£100/week	Social well-being: Perception of neighbourhood as one in which people help each other	
	Content of intervention The main study looks at a comprehensive housing redevelopment scheme involving moving residents out of tower blocks to new-build low-rise accommodation (this presumably involved changes to public areas as well as housing, but this is not described). The design of the new homes incorporated Secured by Design principles including locks, alarms and fencing	*Other outcomes* Energy efficiency, temperature, thermal comfort *Findings (for outcomes within scope)* Feelings of safety at home (1993 figures are MORI survey, 1997 unclear but appears to be intervention group) (%): 1993: 55 very safe, 34 fairly safe, 6 a bit unsafe, 3 very unsafe; 1997: 70 very safe, 24 fairly safe, 4 a bit unsafe, 2 very unsafe	
	However, for fear of crime outcomes, an entirely separate intervention is also considered: between 1993 and 1997, security measures were installed (strengthened doors, entry phones, CCTV, lighting) and caretakers were given additional responsibilities for security	Feelings of safety at home (I–C comparison 1997–1999/2000) (%): I pre 70 very safe, 24 fairly safe, 4 a bit unsafe, 2 very unsafe; I post 73 very safe, 21 fairly safe, 5 a bit unsafe, 1 very unsafe; C pre 75 very safe, 19 fairly safe, 5 a bit unsafe, 1 very unsafe; C post 89 very safe, 8 fairly safe, 1 a bit unsafe, 1 very unsafe	

Interventions/services received by comparison group
NR

Sample size
Baseline (1997) *n* = 407 (I 200, C 207), post (1999/2000) *n* = 268 (I 140, C 128)

Data collection methods
No detail reported on process of data collection. Measures based on SF-36 for health and British Crime Survey for fear of crime

Baseline comparisons
Yes; areas broadly similar with respect to age, gender, occupation, employment status

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
For main study, outcomes measured in 1999–2000, ≈1 year after intervention or 2–3 years from baseline. However, for fear of crime outcomes the baseline is a 1993 survey and the follow-up is 1997; intervention took place over this period, but exact follow-up time is unclear

Attrition rate
34.2% (139/407)

Feelings of safety out (in the neighbourhood) alone at night (I–C comparison 1997–1999/2000) (%):
I pre 17 very safe, 27 fairly safe, 23 a bit unsafe, 33 very unsafe; I post 15 very safe, 40 fairly safe, 28 a bit unsafe, 17 very unsafe; C pre 7 very safe, 30 fairly safe, 23 a bit unsafe, 40 very unsafe; C post 14 very safe, 26 fairly safe, 29 a bit unsafe, 31 very unsafe

Social cohesion (I–C comparison 1997–1999/2000) (%): I pre 14 'help each other', 29 'mixture', 57 'go own way'; I post 40 'help each other', 26 'mixture', 34 'go own way'; C pre 25 'help each other', 18 'mixture', 57 'go own way'; C post 20 'help each other', 44 'mixture', 36 'go own way'

Health outcomes: no significant differences at post test between I and C on any SF-36 domain

Subgroup analyses?
Only for (some of) the health outcomes, by gender

Davidson[255]

Study
Davidson[255]

Study design
Longitudinal uncontrolled study

Quality rating
C

Location and country
Hull, UK

Area characteristics
'The Dukeries is a compact area of predominantly terraced housing situated about a mile northwest of Hull city centre . . . the Dukeries [is] a "starter area" for owner-occupancy. Young couples buy into the area, live there for a few years before moving on as their families grow or their prospects improve' (p. 14) Crime rates 'about average' (p. 2)

Sampling methods and eligible population
Site sampled for feasibility of intervention and comparability to other research projects being conducted by the British Parliamentary Lighting Group

Households selected at random from a list of all addresses in the study area. Individuals selected at random from within households

Recruitment methods and response rate
Door to door, with repeated attempts by interviewers to recruit from sampled addresses. Response rates inconsistently reported: text on p. 11 says 67% at baseline, 86% at follow-up, but Table 3.1 has 251/450 = 55.7% at baseline

Sample demographics
At baseline: 55% female; 33% 16–25 years, 44% 26–45 years, 11% 46–60 years, 12% >60 years; 98% white, 1% Afro-Caribbean, 1% Asian

Content of intervention
Relighting to BS 5489 part 3, category 2; replacement of low-pressure (yellow) sodium lighting with high-pressure (white) sodium lighting. Technical details reported in Appendix A

Interventions/services received by comparison group
N/A

Sample size
Baseline *n* = 251, post *n* = 180

Outcomes within scope of review
Fear of crime:

'How much do you worry about the possibility of your home being broken into and something stolen; being robbed in the street; being attacked in the street; being insulted/pestered in the street; having your home damaged by vandals; having your car stolen or damaged; being hit or threatened with violence by somebody you know; being sexually assaulted/raped' (women only)

'Do you think that people feeling afraid to go out after dark is more common or less common in the Dukeries than this time last year?'

'Do you ever feel unsafe when walking in the streets around your home because of the possibility of crime against you?'

'Simply as a precaution against crime, how often do you, after dark, avoid going out though you would like to; avoid walking near certain types of people; stay away from certain streets or areas; go out with someone else rather than by yourself; avoid using buses; take a car or a taxi rather than walk'

'Do you think there are risks for women/the elderly/ ethnic groups' [sic] who go out on their own in the Dukeries after dark?'

'How likely is it that something will happen to them?'

Other outcomes
'Do you think that the following problems (various crime types) are more common or less common in the Dukeries than they were this time last year? – effectively, perceived crime rate (or trends in the crime rate): perceptions of local council, of area; self-reported victimisation; recorded crime; pedestrian counts and self-reported pedestrian behaviour; perceptions of lighting'

Limitations identified by author
Short follow-up

Limitations identified by reviewer
Non-comparative design. A large number of outcomes measured and tested for significance. Some unclarity in reporting of outcome measures

Funding of study
Urbis Lighting Ltd

Data collection methods
Limited information on the actual process of data collection. Questionnaire asked about views of environment, fear of crime and experiences of crime

Baseline comparisons
N/A

Analysis method
Basic equation: $Z = (PI - P2)/SQR((P1(1 - P1)/N1) + (P2(I - P2)/N2))$

Power calculation
Yes

Length of follow-up
At least 6 weeks after completion of intervention ($\approx$3 months after start)

Attrition rate
28.3% (71/251) on the interpretation that other members of the same household do not count; 14.3% (36/251) if they do

Findings (for outcomes within scope)
Do you think that the following problems are more common or less common in the Dukeries than they were this time last year?:

People feeling afraid to go out after dark (%): pre 39, post 13 ($p < 0.05$)

How much do you worry about the possibility of (% 'quite a bit' or 'a lot'):

Your home being broken into and something stolen: men: pre 39, post 38 (NS); women: pre 50 post 51 (NS)

Being robbed in the street: men: pre 14, post 6 (NS); women: pre 24, post 19 (NS)

Being attacked in the street: men: pre 15, post 7 (NS); women: pre 31, post 32 (NS)

Being insulted/pestered in the street: men: pre 11, post 6 (NS); women: pre 17, post 22 (NS)

Having your home damaged by vandals: men: pre 19, post 20 (NS); women: pre 29, post 37 (NS)

Having your car stolen or damaged: men: pre 36, post 30 (NS); women: pre 37, post 35 (NS)

Being hit or threatened with violence by somebody you know: men: pre 4, post 4 (NS), women: pre 2, post 4 (NS)

Being sexually assaulted/raped: women: pre 32, post 29 (NS)

Do you ever feel unsafe when walking in the streets around your home because of the possibility of crime against you? (% 'yes'): men: pre 19, post 8 ($p < 0.05$); women: pre 49, post 38 (NS)

Do you think there are risks for women who go out on their own in the Dukeries after dark? (% 'yes'): pre 86, post 68 ($p < 0.05$)

How likely is it that something will happen to them? (%): pre: 'very likely' 22, 'not very likely' 59, 'don't know' 19; post: 'likely' 22, 'not very likely' 59, 'don't know' 19 (NS)

Do you think there are risks for the elderly who go out on their own in the Dukeries after dark? (% yes') (answer format appears inconsistent with that used for women): 'very likely': pre 24, after 21 (NS); 'not very likely': pre 39, post 59 ($p < 0.05$); 'no risks': pre 21, post 12 ($p < 0.05$); 'don't know': pre 16, post 8 (NS)

Simply as a precaution against crime, how often do you, after dark (%):

Avoid going out though you would like to: men: pre 10, post 5 (NS); women: pre 38, post 7 ($p < 0.05$)
Avoid walking near certain types of people: men: pre 45, post 24 ($p < 0.05$); women: pre 73, post 25 ($p < 0.05$)

Stay away from certain streets or areas: men: pre 43, post 11 ($p < 0.05$); women: pre 69, post 28 ($p < 0.05$)

Go out with someone else rather than by yourself: men: pre 23, post 7 ($p < 0.05$); women: pre 75, post 34 ($p < 0.05$)

Avoid using buses: men: pre 11, post 1 ($p < 0.05$); women: pre 26, post 16 ($p < 0.05$)

Take a car or a taxi rather than walk: men: pre 31, post 11 ($p < 0.05$); women: pre 74, post 39 ($p < 0.05$)

Subgroup analyses?
By gender (see findings above). The question 'Do you think there are any risks for ethnic groups after dark?' is analysed by ethnicity, but was measured only at post test

N/A, not applicable; NS, not significant.

Ditton[270]

Study
Ditton[270]

Study design
Cross-sectional controlled study with no evidence of change in population (see table 1 for pre-post comparison)

Quality rating
C

Location and country
Glasgow, UK

Area characteristics
Limited information (see under sampling below)

Sampling methods and eligible population
Intervention site sampled because CCTV had been installed. Control sites sampled from 'busy areas' out of the city centre and not covered by CCTV, with sufficient pedestrian flow and similar overall urban structure

Sampling of individuals: adults ≥ 16 years, on a 'first past the interviewer' basis. If choosing within a group, interviewers sampled the person with the next birthday

Recruitment methods and response rate
Approached by interviewers on-street. Response rate: 'The refusal rate was low (less than 5%), and approximately similar in all three sweeps, and in all three locations' (p. 695)

Sample demographics
53% male; 71% 16–34 years, 23% 35–59 years, 6% ≥ 60 years

Content of intervention
32 CCTV cameras installed in Glasgow city centre (November 1994)

Interventions/services received by comparison group
N/A

Sample size
Baseline *n* = 1018; total *n* = 3074 across all three waves

Outcomes within scope of review
Fear of crime:

Feelings of safety when walking alone here (i.e. in location where interview conducted)

Whether avoid certain areas (when alone)

Whether ever worry that you might be a victim of crime here (or frequency of worry)

Would you walk alone here?

Other outcomes
Self-report crime victimisation

Attitudes to CCTV

Findings (for outcomes within scope)
Reporting of outcomes very incomplete; data are extracted here only when there is some suggestion of a comparison either between groups or between time points

Feelings of safety: I 24%, C 11% overall, reported not to have changed after the introduction of CCTV

Times when would avoid city centre: I 58%, C at baseline 40%; after intervention, I 65% at final follow up, C 37%

Worry about crime at least occasionally: 50% at all time points (apparently same in all groups, although this is unclear)

Limitations identified by author
Attitudes to CCTV might have been influenced by previous questions on fear of crime

Limitations identified by reviewer
Reporting of outcomes is very partial, to the point where most of the data are not usable. Some unclarity around what the outcome measures were. No significance tests

Funding of study
Scottish Office, Central Research Unit

Subgroup analyses?
Apparently by age and gender, but not clearly reported longitudinally

Data collection methods
On-street interview by pairs of interviewers. Questions focused on avoidance behaviours, fear of crime, experience of crime, attitudes and perceptions of CCTV

Baseline comparisons
Yes: age, gender, place of residence and time of interview. Intervention participant more likely than control participant to live in the suburbs and to be female

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
15 months (first follow-up at 3 months) after completion of intervention

Attrition rate
N/A

C, control; I, intervention; N/A, not applicable; NR, not reported.

Donnelly[279,280]

Study
Donnelly[279,280]

Study design
Cross-sectional uncontrolled study

Quality rating
C

Location and country
Dayton, OH, USA

Area characteristics
Inner-city neighbourhood in Dayton, OH. Generally disadvantaged population; 52% white, 46% African American. High rates of drug use, robberies and burglaries

Sampling methods and eligible population
Sampling of site NR

Sampling of households random over whole population: 'Randomly selected telephone numbers in the neighborhood were drawn each year using the Criss-Cross Directory. This method excludes from the sample households with no phones and those with unlisted numbers' (pp. 72–3)[279]

Sampling of individuals within households NR (appears to be adults only)

Recruitment methods and response rate
By telephone; response rate NR

Sample demographics
At baseline: 65% female; 28% 18–34 years, 44% 35–59 years, 28% ≥ 60 years; 37% ≤ 12 years' education, 27% 13–15 years, 35% ≥ 16 years; 74% white, 24% black, 2% other ethnicity

Content of intervention
Defensible space plan (with road closures), assistance for first-time home buyers, social and recreational programmes, enforcement of housing code, community-based policing and reorganisation of neighbourhood association

Outcomes within scope of review
Fear of crime:

Area rated very safe to very unsafe

Social well-being:
Knowledge of neighbours by name

Types of interaction with neighbours

Stranger recognition

Organisation involvement

Other outcomes
Commitment to neighborhood

Various crime/antisocial behaviour 'is a serious problem'

Responses to suspicious activity

Recorded crime

Findings (for outcomes within scope)
Perceived safety (1 = very unsafe to 4 = safe): pre 2.74, post1 2.81, post2 2.92 (NS)

Knowledge of neighbors by name (%): all: pre 8, post1 9, post2 10 (NS); most: pre 18, post1 24, post2 19 (NS); half: pre 23, post1 20, post2 21 (NS); less than half: pre 36, post1 41, post2 43 (NS); none: pre 16, post1 7 (*p* < 0.01), post2 8

Limitations identified by author
Difficult to isolate effect of street closing plan from broader anti-crime initiative

Limitations identified by reviewer
Non-comparative design. As noted by authors, built environment change is only one component of a broader intervention (although a substantial one)

Funding of study
City of Dayton and the University of Dayton Summer Fellowship Program

Interventions/services received by comparison group
N/A

Sample size
Baseline $n = 191$, total $n = 554$ (first follow-up $n = 183$, second follow-up approximately 180)

Data collection methods
Telephone interviews conducted by trained students. Questions focused on perceptions of neighbourhood conditions and crime

Baseline comparisons
N/A

Analysis method
One-way analysis of variance

Power calculation
NR

Length of follow-up
≈5 years from completion or 6 years from baseline (first follow-up immediately after completion, ≈1 year from baseline)

Attrition rate
N/A

Types of interaction (%): casual visiting: pre 62, post1 66, post2 65 (NS); visiting by invitation: pre 54, post1 58, post2 56 (NS); outside conversation: pre 91, post1 91, post2 92 (NS); taking care of home if out of town: pre 78, post1 75, post2 75 (NS); help with tasks around the house: pre 46, post1 37, post2 38 (NS)

Stranger recognition (%): very easy: pre 21, post1 41, post2 38 (NS); somewhat easy: pre 23, post1 26, post2 29 (NS); somewhat difficult: pre 27, post1 14, post2 22 (NS); very difficult: pre 30, post1 19 ($p < 0.01$), post2 11 ($p < 0.01$)

Organisation involvement (%): neighbourhood association: pre 34, post1 33, post2 30 (NS); church group: pre 39, post1 53 ($p < 0.01$), post2 53; school group: pre 19, post1 20, post2 22 (NS)

Subgroup analyses?
NR

N/A, not applicable; NR, not reported; NS, not significant.

Felson[281]

Study
Felson[281]

Study design
Cross-sectional
uncontrolled study

Quality rating
C

Location and country
New York, NY, USA

Area characteristics
Large bus station serving mainly commuter traffic near Times Square in Manhattan, an area with high rates of crime, particularly sex work and street crime, and homelessness

Sampling methods and eligible population
Sampling of site NR

Eligible population was people on buses departing the station. 'The sampling method was to select 150 buses from those departing on weekdays between the hours of 7:00 a.m. and 8:00 p.m. (Note that the sample is not designed for long haul, weekend, or off-hour passengers.) The sample covers about 87% of the bus commuter population passing through the station' (p. 91). NR how buses were sampled. Passengers on buses were then presumably sampled comprehensively

Recruitment methods and response rate
Face-to-face on buses by Port Authority representatives. Response rates between 72% and 76% (p. 91)

Sample demographics
At final wave: 56% male; 9% <25 years, 61% 25–44 years, 27% 45–64 years, 3% ≥65 years

Outcomes within scope of review
Fear of crime:

Perceived safety in various areas and overall

Other outcomes
Various perceptions of the environment in the station

Complaints to police

Recorded crime

Findings (for outcomes within scope)
Perceived safety (% rating as 'poor' or 'very poor'): safety walking through the terminal: 1991 38, 1992 23, 1993 17, 1994 12; safety in the restrooms: 1991 60, 1992 50, 1993 40, 1994 39; safety on bus platform you used today: 1991 N/A, 1992 13, 1993 13, 1994 7; safety in street around terminal: 1991 66, 1992 62, 1993 53, 1994 47; safety in subway near terminal: 1991 61, 1992 52, 1993 44, 1994 37

'Considering the Port Authority Bus Terminal as a whole, how would you rate it with respect to your personal security?' (%): 'secure'/'very secure': 1991 17, 1992 21, 1993 27, 1994 36; 'somewhat secure': 1991 35, 1992 39, 1993 43, 1994 42; 'somewhat insecure': 1991 23, 1992 22, 1993 20, 1994 14; 'insecure'/'very insecure': 1991 25, 1992 18, 1993 10, 1994 8

Limitations identified by author
NR

Limitations identified by reviewer
Non-comparative design. No significance tests. Some unclarity in the interpretation of outcomes with respect to time

Funding of study
National Institute of Justice (US)

Subgroup analyses?
NR

Content of intervention
Extensive physical redesign of bus station using CPTED principles, including redesign of entrances/exits to improve crowd flow; blocking off dark corners, areas under escalators, etc. (primarily to stop homeless people sleeping in them); renovation of 'restrooms'; replaced permanent seating with flip seats; improved cleanliness and lighting; new information kiosks and public address system; upgrading retail outlets. There were also improved social services made available for homeless people and training for police officers in dealing with them

Interventions/services received by comparison group
N/A

Sample size
Baseline $n = 3581$; each time point between $n = 3500$ and $n = 3900$

Data collection methods
Self-complete questionnaire

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
≈3 years after completion (most of the intervention components were implemented during 1991; data are reported for 1991, 1992, 1993, 1994)

Attrition rate
N/A

N/A, not applicable; NR, not reported.

Foster[297]

Study
Foster[297]

Study design
Cross-sectional controlled study with some evidence of change in population (for London site see table 8, p. 45 for pre–post comparison; unclear for Hull site)

Quality rating
C

Location and country
Hull and Tower Hamlets, London, UK

Area characteristics
Local authority housing estates; both low SES, high crime (particularly Hull site) (see pp. 20–3 for detailed comparisons of four sites)

Sampling methods and eligible population
Sampling of intervention sites unclear. Sampling of comparison sites for similarity (and Hull displacement site for contiguity). Sampling of households unclear, although based on some form of list. Individuals random within households

Recruitment methods and response rate
Presumably door to door. Response rate 68.7% (4374/6366)

Sample demographics
20–25% >60 years; 25–35% employed; 0–30% Asian, 0–10% Afro-Caribbean; 14–40% households with children; 43–53% social class E

Content of intervention
The Priority Estates Project model is designed 'to reverse the deterioration of estates through measures based on the principles of estate-based housing management and tenant involvement' (p. 1), i.e. decentralised management of estates with extensive involvement of residents in tasks including management and renovation. Concretely, the improvements included environmental improvements based on defensible space principles; general maintenance; anti-condensation works; landscaping and improvement of communal areas; and entry systems

Interventions/services received by comparison group
The London control site benefited from 'good locally-based housing managers – themselves implementing many of the ingredients of the PEP model – increased physical security, and greater residential surveillance' (p. ix; see also pp. 64–7). Limited information on the Hull control or displacement sites

Outcomes within scope of review
Fear of crime:

Feelings of safety

% 'very worried' about burglary, vandalism, attack/robbery, rape/sexual assault

Social well-being:

Friendly with neighbours

Neighbours watch out for home

Can identify strangers

Other outcomes
Crime victimisation (self-report)

Various perceptions of area, of crime

Feel responsible for area immediately outside home (reported as 'territoriality')

Findings (for outcomes within scope)
For London, authors state that 'there was no significant difference in rates of change between the estates in residents' feelings of safety whilst walking alone on the estate after dark or worries about becoming the victim of specific types of crime' (p. 63) (data not presented for this – numerical fear of crime data are reported only for baseline)

For London:

Ease of identifying strangers (%): I: pre 49, post 61 (significant pre–post); C: pre 36, post 43 (significant pre–post)

Limitations identified by author
Study did not investigate underlying processes supporting criminality nor means of addressing these

Limitations identified by reviewer
Reporting of analyses is very inconsistent and the analyses and interpretation seem frequently ad hoc

Funding of study
Home Office Research and Planning Unit

Sample size
Baseline *n* = 1682. Hull: I pre 578, I post 575, C pre 480, C post 499; London: I pre 242, I post 268, C pre 382, C post 393 ('displacement' sample not extracted here as few data are presented)

Data collection methods
'In both surveys, interviews conducted with ethnic minority group members were carried out by an interviewer with the same ethnic background . . . In addition, for these groups, interviewers were also matched to the gender of the respondent' (p. 94). Questionnaire summarised on pp. 95–6

Baseline comparisons
Yes. Generally closely matched, although fewer ethnic minorities in London intervention group than control sample; differences not incorporated in analysis

Analysis method
'multivariate maximum likelihood methods derived from the generalised linear model' (p. 96)

Power calculation
NR

Length of follow-up
≈3 years after start of intervention (intervention was still ongoing at this point)

Attrition rate
Unclear (post-test sample included some of the same individuals sampled at pre test, but also some others; these do not appear to be separated or described in the analysis)

Neighbours keep watch over home when out (%): I: pre 64, post 63 (NS); C: pre 55, post 63 (significant pre–post)

For Hull: reduction in worry about specific crime victimisation within intervention group ($t = -5.112$, $p < 0.01$); increase in number of other households where participants had friends within intervention group ($t = +2.262$, $p < 0.01$); increase in ease of identification of strangers within intervention group ($t = +3.612$, $p < 0.05$) (again, full supporting data not presented)

Subgroup analyses?
For London, by ethnicity:

Ease of identifying strangers (%): Asians: I pre 22, I post 47, C pre 17, C post 38; whites: I pre 49, I post 66, C pre 44, C post 48

Neighbours keep watch over home when out (%): Asians: I pre 15, I post 63, C pre 36, C post 62; whites: I pre 69, I post 67, C pre 65, C post 65

NR for Hull site

C, control; I, intervention; NR, not reported; NS, not significant.

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Fowler[282–285]

Study
Fowler[282–285]

Study design
Cross-sectional controlled study with no evidence of change in population (see table 3.2, p. 24, for pre–post comparison)

Quality rating
C

Location and country
Hartford, CT, USA

Area characteristics
Residential area; mostly rented properties (<10% owner-occupied); approx. 50% black, 20% Hispanic, 30% white; 20% family income >US$15K per annum (approx. average compared with city as a whole). Crime rates similar to city as a whole

Sampling methods and eligible population
Sampling of site as representative of other areas (informally), because of link to Hartford Institute of Criminal and Social Justice and because of availability of funding

Sampling of households used an area probability approach based on Area Register. The aim was to obtain a representative sample of the city population with oversampling of the target area. One adult was randomly selected from each household

Recruitment methods and response rate
Some of the short-form interviews conducted and recruited by telephone. Most were recruited in person by interviewer going door to door. Households had to have at least one adult living there for ≥6 months to be eligible. Response rate 65%–78%

Outcomes within scope of review
Fear of crime:

Worry about burglary/robbery (combined with perceived likelihood in follow-up report)

Perceived likelihood of burglary/robbery (combined with worry for follow-up report)

Social well-being:

Watch neighbour's house

Easy to recognise stranger

Have intervened in suspicious situation

Neighborhood as a resource index

Other outcomes
Vehicle and pedestrian traffic

Attitudes to changes

Police officers' attitudes to their job and perceptions of their own performance

Arrests (burglary, robbery)

Limitations identified by author
NR

Limitations identified by reviewer
Reporting of significance is selective in the initial report and effectiveness findings are mixed up with findings about mediators and correlations rather indiscriminately in the follow-up report (and analysis is inappropriate). The issue of comparability between intervention and control areas is not adequately addressed. Authors' own conclusions appear more optimistic than the data warrant

Funding of study
National Institute of Law Enforcement and Criminal Justice (US Department of Justice)

Sample demographics
At 3-year follow-up: I 40% some college education, 49% black, 18% Hispanic, 25% income ≥ $15K per annum. C 31% some college education, 34% black, 20% Hispanic, 29% income ≥ $15K per annum

Content of intervention
Road closures, neighbourhood policing, creation of neighbourhood organisations, landscaping to make area appear more attractive

Interventions/services received by comparison group
There were a number of city-wide programmes in place: a supported work programme, a drug treatment programme and a programme for juvenile offenders

Sample size
Baseline n = 891 (I 93, C 798); over all sites and waves n = 3101

Data collection methods
Telephone and face-to-face interviews by professional survey researchers and field researchers who received approx. 1 week of training

Residents' perceptions of police

Crime reporting rates

Perception that crime/incivilities 'are a problem'

Perceptions of neighbourhood

Findings (for outcomes within scope)
Fear of burglary index (composite measure of worry + perceived likelihood: 1-year results are given in the initial evaluation[283] for the two outcomes separately but are not extracted here): I: 2.29 pre, 2.30 at 1 year, 2.32 at 3 years; C: 2.30 pre, 2.38 at 1 year, 2.45 at 3 years (NS at 1 year, significant reduction with respect to expected value at 3 years)

Fear of robbery index (as above): I: 2.48 pre, 2.48 at 1 year, 2.50 at 3 years; C: 2.21 pre, 2.28 at 1 year, 2.35 at 3 years (NS at 1 year, significant reduction with respect to expected value at 3 years)

Arrangement with neighbor to watch each other's house (%): I: 16 pre, 16 at 1 year, 29 at 3 years (significant change pre to 1 year); C: 32 pre, 30 at 1 year, 30 at 3 years

Baseline comparisons
Yes. Intervention group had significantly fewer households with children, more single-headed households, fewer owner-occupiers, fewer white participants and more black participants than the control group

Analysis method
For some variables, *t*-test between observed values in intervention area and 'expected' value, calculated as baseline value in intervention group multiplied by percentage change observed in comparison group. Hence, the significance test is on the difference between (I post) and ((I pre) × (C pre) ÷ (C post)). For others, data are treated as one group and *t*-tests are between the same group over time

Power calculation
Some discussion of sample size and expected error

Length of follow-up
≈3 years after completion. 1977 evaluation was ≈1 year after the completion of the intervention and there are further data from 1979

Attrition rate
N/A

Easy to recognise a stranger (%): I: 25 pre, 32 at 1 year, 35 at 3 years (significant change 1 year to 3 years); C: 49 pre, 54 at 1 year, 54 at 3 years

Have intervened in suspicious situation (%): I: 21 pre, 20 at 1 year, 30 at 3 years (significant change pre to 3 years and 1 year to 3 years); C: 16 pre, 17 at 1 year, 24 at 3 years (significant change pre to 3 years and 1 year to 3 years)

Neighborhood as a resource index: I: 2.85 pre, 2.88 at 1 year, 3.18 at 3 year (significant change pre to 3 years and 1 year to 3 years); C: 3.28 pre, 3.34 at 1 year, 3.30 at 3 years

Subgroup analyses?
For relevant outcomes, only by length of residence, for intervention group only. A few outcomes are analysed by ethnicity and education, but not those of interest to this review

C, control; I, intervention; N/A, not applicable; NR, not reported; NS, not significant.

Glasgow Centre for Population Health[298,299]

Study
Glasgow Centre for Population Health[298,299]

Study design
Cross-sectional controlled study with no evidence of change in population (although different intervention types are not compared directly)

Quality rating
C

Location and country
Glasgow, UK

Area characteristics
A range of areas. Most (50–90%) social housing; generally deprived areas with high levels of unemployment and overcrowding; large immigrant populations in some areas

Sampling methods and eligible population
Sampling of sites chosen to represent different kinds of regeneration

Sampling of households at random from postal address file corresponding to study areas

Sampling of individuals within households NR

Recruitment methods and response rate
Letters sent to residents introducing study. Participants recruited door to door with interviewers visiting several times at different times of day

Response rate 50.3% at wave 1, 47.5% at wave 2

Sample demographics
At wave 2: ethnicity/citizenship: white British citizen 80.6%, non-white British citizen 4.1%, British citizen of unknown ethnicity 0.4%, refugee 5.7%, asylum seeker 6.8%, non-British of unknown citizenship status 2.4%; employment status: 35.5% working, 27.3% economically active and not working, 37.1% economically inactive

Content of intervention
Five types of urban regeneration were investigated: (1) TRAs: undergoing extensive demolition and rebuilding, (2) LRAs: more limited restructuring; (3) WSAs used for rehousing residents from other areas, but which also received some new investment themselves; (4) HIAs: investment in improving housing stock (internally and externally); and (5) PEs: 'incremental' improvements to housing

Outcomes within scope of review
Fear of crime:

'How safe do you feel walking alone in your neighbourhood after dark?'

Mental health:

Long-term psychological/emotional problems

SF-12 mental health subscale

Warwick–Edinburgh Mental Well-being Scale

Visits to GP for mental health reasons

Physical health:

Self-reported general health

Health problems in last 4 weeks [(a) sleeplessness, (b) palpitations/breathlessness, (c) sinus trouble/catarrh, (d) persistent cough, (e) feeling faint/dizzy, (f) pain in chest, (g) difficulty walking, (h) migraines/headaches, and (i) other pain]

Longer-term health problems [(a) allergies/skin conditions, (b) asthma/bronchitis/breathing problems, (c) heart/blood/circulatory problems, (d) stomach/kidney/digestion problems, (e) migraine/frequent headaches, (f) psychological/emotional, (g) other long-term health problems)]

Health behaviours (all self-reported):

Physical activity (vigorous/any physical activity for 10 minutes in last week)

Main meal from a fast-food outlet at least once in last week

Limitations identified by author
Cross-sectional (unlinked) samples limit power of analysis

Limitations identified by reviewer
Limited detail on what changes were occurring in what areas during the study period. Many outcomes reported only graphically

There were also specific security improvements (replacement doors and windows to Secured By Design standards), although it is unclear how these were distributed across the five regeneration types. There were also a range of other programmes in place in many areas, including employability and youth diversion programmes

Interventions/services received by comparison group
Comparison is between the five different regeneration area types

Sample size
Baseline n = 6008; post n = 4657

Data collection methods
Face-to-face interviewers using computer-assisted interviewing equipment. At least 20% of respondents had data quality assured by contacting them by telephone

Baseline comparisons
Yes, for age, gender, ethnicity, housing tenure and employment. Analysis is weighted by demographics

Analysis method
'Appropriate' statistical analyses, with data weighted by age, gender and population of subarea. Statistical significance set at $p < 0.05$, with further consideration of 'substantive' significance. All analyses are one-group; the groups are not directly compared

Power calculation
NR

Length of follow-up
Unclear; 2 years between survey waves but unclear how this relates precisely to implementation of intervention

Attrition rate
N/A

Five or more portions of fruit/vegetables in last 24 hours

Smoking

Alcohol consumption

Social well-being:

'I feel I belong to this neighbourhood'

'I feel part of the community'

'To what extent do you agree that that this neighbourhood is a place where people from different backgrounds get on well together?'

'It is likely that someone would intervene if a group of youths were harassing someone in the local area'

'Someone who lost a purse or wallet around here would be likely to have it returned without anything missing'

Neighbourliness: visit neighbours' homes; exchange things with neighbours; stop and talk in the neighbourhood; neighbours look out for each other; know many or most people in the neighbourhood

How often face-to-face contact with relatives, neighbours, friends

One or more people outside their home they could ask 'to go to the shops for you if you are unwell'; 'to give you advice and support in a crisis'; 'to lend you money to see you through the next few days'

Other outcomes
Various satisfaction with/perceptions of housing

Psychosocial benefits of home

Satisfaction with/perceptions of local environment and amenities and neighbourhood change

Crime/antisocial behaviour 'is a problem'

'Living in this neighbourhood helps make me feel that I'm doing well in my life'

Perceived reputation of area

Perceptions of engagement in regeneration process

Perceived community empowerment

Findings (for outcomes within scope)
(Note: many findings are presented only graphically and the figures extracted here are hence approximate. 'Pre' = wave 1, 'post' = wave 2)

Feelings of safety after dark (% 'very' or 'fairly' safe): TRAs: pre 52, post 25 ($p < 0.001$); LRAs: pre 67, post 38 ($p < 0.001$); WSAs: pre 76, post 59 ($p < 0.001$); HIAs: pre 68, post 54 ($p < 0.001$); PEs: pre 70, post 51 ($p < 0.001$)

'Living in this neighbourhood helps make me feel that I'm doing well in my life' (% 'strongly agree' or 'agree'): TRAs: pre 31, post 33 (NS); LRAs: pre 34, post 43 ($p < 0.001$); WSAs: pre 49, post 72 ($p < 0.001$); HIAs: pre 59, post 73 ($p < 0.001$); PEs: pre 45, post 61 ($p < 0.001$)

'I feel I belong to this neighbourhood' (% 'a great deal' or 'a fair amount'): TRAs: pre 70.5, post 57.2 ($p < 0.001$); LRAs: pre 60.9, post 61.9 (NS); WSAs: pre 90.6, post 89.4 (NS); HIAs: pre 87.8, post 89.9 ($p < 0.001$); PEs: pre 86.3, post 85.0 ($p = 0.001$)

(Other 'sense of community' and 'neighbourliness' variables measured only at wave 2, so hard to interpret in terms of effectiveness)

'It is likely that someone would intervene if a group of youths were harassing someone in the local area' ('informal social control'; % 'agree' or 'strongly agree'): TRAs: pre 45, post 26 ($p < 0.001$); LRAs: pre 55, post 28 ($p < 0.001$); WSAs: pre 61, post 61 (NS); HIAs: pre 63, post 54 ($p < 0.001$); PEs: pre 63, post 50 ($p < 0.001$)

'Someone who lost a purse or wallet around here would be likely to have it returned without anything missing' ('perceived honesty'; % 'agree' or 'strongly agree' vs. 'disagree' or 'strongly disagree'):

TRAs: agree: pre 29, post 16; disagree: pre 38, post 70 ($p < 0.001$)

LRAs: agree: pre 32, post 14; disagree: pre 33, post 77 ($p < 0.001$)

WSAs: agree: pre 43, post 45; disagree: pre 33, post 38 ($p = 0.008$)

HIAs: agree: pre 31, post 40; disagree: pre 48, post 38 ($p < 0.001$)

PEs: agree: pre 28, post 29; disagree: pre 54, post 58 ($p < 0.001$)

Social contacts (%) (all are $p < 0.001$ for within-group time trends):

Relatives:

TRAs: pre: 'most days' 14.3, 'once or more per week' 9.2, 'never' 18.8; post: 'most days' 16.2, 'once or more per week' 24.3, 'never' 25.2

LRAs: pre: 'most days' 22.2, 'once or more per week' 25.7, 'never' 22.3; post: 'most days' 32.7, 'once or more per week' 18.9, 'never' 24.3

WSAs: pre: 'most days' 35.3, 'once or more per week' 26.5, 'never' 33.1; post: 'most days' 42.4, 'once or more per week' 50.5, 'never' 53.5

HIAs: pre: 'most days' 50.6, 'once or more per week' 46.9, 'never' 45.7; post: 'most days' 45.4, 'once or more per week' 48.5, 'never' 55.1

PEs: pre: 'most days' 54.3, 'once or more per week' 48.0, 'never' 49.4; post: 'most days' 47.1, 'once or more per week' 55.3, 'never' 57.1

Friends:

TRAs: pre: 'most days' 11.6, 'once or more per week' 7.1, 'never' 1.7; post: 'most days' 3.7, 'once or more per week' 2.6, 'never' 4.2

LRAs: pre: 'most days' 4.1, 'once or more per week' 1.2, 'never' 1.6; post: 'most days' 0.6, 'once or more per week' 5.2, 'never' 5.5

WSAs: pre: 'most days' 2.1, 'once or more per week' 3.2, 'never' 0.9; post: 'most days' 23.1, 'once or more per week' 19.2, 'never' 35.7

HIAs: pre: 'most days' 32.6, 'once or more per week' 37.8, 'never' 34.9; post: 'most days' 26.4, 'once or more per week' 31.1, 'never' 30.1

PEs: pre: 'most days' 39.4, 'once or more per week' 33.1, 'never' 23.8; post: 'most days' 43.6, 'once or more per week' 41.2, 'never' 49.2

Neighbours:

TRAs: pre: 'most days' 31.9, 'once or more per week' 29.9, 'never' 30.7; post: 'most days' 37.4, 'once or more per week' 35.0, 'never' 40.2

LRAs: pre: 'most days' 37.0, 'once or more per week' 34.9, 'never' 44.3; post: 'most days' 35.6, 'once or more per week' 38.6, 'never' 32.6

WSAs: pre: 'most days' 27.2, 'once or more per week' 38.2, 'never' 33.6; post: 'most days' 20.2, 'once or more per week' 18.3, 'never' 5.6

HIAs: pre: 'most days' 8.4, 'once or more per week' 9.0, 'never' 8.9; post: 'most days' 10.7, 'once or more per week' 9.1, 'never' 7.4

PEs: pre: 'most days' 7.6, 'once or more per week' 12.7, 'never' 15.1; post: 'most days' 6.0, 'once or more per week' 4.0, 'never' 5.8

'Is there someone outside the home you can ask to go to the shops for you if you are unwell?' ('practical support'; %): TRAs: pre 76, post 68 ($p < 0.001$); LRAs: pre 72, post 63 ($p < 0.001$); WSAs: pre 84, post 83 ($p < 0.001$); HIAs: pre 80, post 81 ($p < 0.001$); PEs: pre 88, post 73 ($p < 0.001$)

'Is there someone outside the home you can ask to give you advice and support in a crisis?' ('emotional support'; %): TRAs: pre 69, post 60 ($p < 0.001$); LRAs: pre 65, post 61 ($p < 0.001$); WSAs: pre 81, post 83 ($p < 0.001$); HIAs: pre 78, post 76 ($p < 0.001$); PEs: pre 85, post 67 ($p < 0.001$)

'Is there someone outside the home you can ask to lend you money to see you through the next few days?' ('financial support'; %): TRAs: pre 65, post 56 ($p < 0.001$); LRAs: pre 60, post 48 ($p < 0.001$); WSAs: pre 71, post 69 ($p < 0.001$); HIAs: pre 74, post 67 ($p < 0.001$); PEs: pre 78, post 49 ($p < 0.001$)

% with no long-term health problems: males: pre 62.9, post 70.2; females: pre 58.7, post 65.6 (significance NR)

Mean number of long-term health problems (among those reporting one or more): males: pre 1.43, post 1.63; females: pre 1.49, post 1.65 (significance NR)

% with no recent health problems: males: pre 69.7, post 69.0; females: pre 63.6, post 63.2 (significance NR)

Mean number of recent health problems (among those reporting one or more): males: pre 1.91, post 2.06; females: pre 1.97, post 1.99

(Also details of specific physical health problems but these are not extracted here)

Long-term psychological problems (% change between pre and post): TRAs: males +5 ($p = 0.001$), females +6 ($p = 0.001$); LRAs: males +10 ($p < 0.001$), females +14 ($p < 0.001$); WSAs: males +3 ($p = 0.026$), females NS; HIAs: males +3 ($p = 0.014$), females NS; PEs: males NS, females +4 ($p = 0.024$)

Physical activity: pre and post questions not comparable

One or more fast-food main meals in last week (%): pre 47, post 43 (significance NR)

Fruit and vegetables: pre and post questions not comparable

Smoking prevalence (%): pre 44, post 40 (significance NR)

Alcohol: pre and post questions not comparable

SF-12 role emotional (score out of 100): TRAs: pre 79, post 85 ($p < 0.001$); LRAs: pre 77, post 82 ($p < 0.001$); WSAs: pre 82, post 80 (NS); HIAs: pre 82, post 81 (NS); PEs: pre 85, post 83 (NS)

SF-12 mental health (score out of 100): TRAs: pre 67, post 70 ($p < 0.001$); LRAs: pre 67, post 71 ($p < 0.001$); WSAs: pre 72, post 67 ($p < 0.001$); HIAs: pre 70, post 70 (NS); PEs: pre 70, post 70 (NS)

SF-12 vitality (score out of 100): TRAs: pre 61, post 49 ($p < 0.001$); LRAs: pre 62, post 49 ($p < 0.001$); WSAs: pre 63, post 44 ($p < 0.001$); HIAs: pre 53, post 50 ($p < 0.001$); PEs: pre 57, post 54 ($p < 0.001$)

SF-12 social functioning (score out of 100): TRAs: pre 77, post 79 (NS); LRAs: pre 74, post 80 ($p < 0.001$); WSAs: pre 82, post 70 ($p < 0.001$); HIAs: pre 79, post 72 ($p < 0.001$); PEs: pre 81, post 77 ($p < 0.001$)

Warwick–Edinburgh Mental Well-being Scale: not used at pre test

Subgroup analyses?
By gender and age for some health outcomes; by nationality and household type (older/adult/family) for some social outcomes; none for feelings of safety

GP, general practitioner; HIA, housing improvement areas; LRA, local regeneration area; N/A, not applicable; NR, not reported; NS, not significant; PE, peripheral estates; SF-12, Short Form questionnaire-12 items; TRA, transformational regeneration area; WSA, wider surrounding areas.

Gill[271,272]

Study
Gill[271,272]

Study design
Cross-sectional controlled study with some evidence of change in population (pre–post comparison NR)

Quality rating
C

Location and country
Various locations, England

Area characteristics
A range of sites, most in residential areas, most urban and near town or city centres. Most in deprived areas, generally mostly social housing. Crime rates mixed: serious crime problem in some areas, others more minor crimes and antisocial behaviour

Sampling methods and eligible population
Sites sampled (by Home Office) from over 300 projects funded by the Crime Reduction Programme (*n* = 17). Sampled for diversity, with emphasis on residential sites that had not received much evaluation; for feasibility of evaluation; and for either receiving high levels of funding or being in particularly high-crime areas

Sampling of control sites for similarity in size, layout, crime rates

Sampling of individuals was every *n*th person for on-street surveys; random sampling (NR from what frame) of households with Kish grid for individuals within household for household surveys

Recruitment methods and response rate
For town centre sites, on the street (response rate NR). For residential surveys, door to door (response rate 59–75%)

Sample demographics
60–63% female, 17–20% non-white, 38–44% aged 25–44 years

Outcomes within scope of review
Fear of crime:

'In general, how safe do you feel in (area)?'

'In general, how safe do you feel alone in your home during the day/after dark?'

'In daylight, are there certain places in (area) you avoid?'

'In general, how much, if at all, do you worry that you or other people in your household will be victims of crime?'

(see Technical Annex, p. 35)[373]

Other outcomes
Reported crime

Self-report crime victimisation

Attitudes to CCTV

Findings (for outcomes within scope)
By site (from main report; note: numerical data are reported only for the intervention group, but significance tests refer to differences in change scores between intervention and control groups; RES > 1 means intervention group performed better than control group):

Limitations identified by author
NR

Limitations identified by reviewer
Limited information on control sites. Analyses are not very clear. Some of the authors' conclusions do not seem to be strongly supported by the data

Funding of study
Home Office

Content of intervention
Nine different CCTV systems, of which four in town/city centres, five in residential areas. Number of cameras per system between 11 and 148. Eight systems with fixed cameras, one with 'redeployable' (mobile) cameras. (Note: 14 different systems are included in the overall study; the description here covers only the nine systems (11 areas) for which fear of crime data are reported)

Interventions/services received by comparison group
NR

Sample size
Baseline *n* = 6526 (I 4427, C 2099); post *n* = 6578 (I 4339, C 2239)

Data collection methods
For on-street survey, data collection sites identified sites with sufficient flow of pedestrians to obtain reasonable opportunities for interviews. Interviewers worked in pairs and in shifts to cover different times of the day. Questions covered behaviour and fear of crime

Residents surveyed using standard instrument, which was piloted

Baseline comparisons
Authors state that control sites were selected for similarity but no data are presented

Analysis method
t-test, chi-square

Power calculation
NR directly, although significance tests are presented only when the sample size is 'sufficiently large' (see Technical Annex, p. 14)[373]

Worried about crime (%):

City outskirts: pre 35, post 20 (no control site)

South city: day: pre 9, post 4; night: pre 24, post 17 (no control site)

North city: day: pre 8 post 4; night: pre 18, post 13 (no control site)

Shire town: day: pre 8, post 5 (no RES reported because small *n*); night: pre 33, post 21 (RES 0.80, NS)

Northern estate: pre 26, post 23 (RES 0.98, NS)

Westcap estate: pre 35, post 28 (RES 1.70, *p* < 0.05)

Dual estate area A: pre 20, post 10 (no RES reported because small *n*)

Dual estate area B: pre 35, post 26 (RES 1.60, *p* < 0.05)

Southcap estate: pre 33, post 31 (RES 1.04, NS)

Deploy estate area E: pre 33, post 30 (RES 1.05, NS)

Deploy estate area F: pre 28, post 27 (RES 0.95, NS)

[i.e. overall: +ve difference (intervention better than control) in four sites, of which two were significant, −ve difference in three sites, of which none was significant]

Feelings of safety (% 'very safe'/'fairly safe'):

City outskirts: pre 58, post 74 (no control site)

Length of follow-up
≈1 year after completion in principle, although less in some cases (see Technical Annex, p. 12)[373]

Attrition rate
N/A

North city: pre 81, post 87 (no control site)

South city: pre 79, post 82 (no control site)

Shire town: day: pre 90, post 96 (RES 1.00, NS); night: pre 52, post 57 (RES 1.02, NS)

Northern estate: pre 70, post 78 (RES 1.00, NS)

Westcap estate: pre 74, post 76 (RES 0.79, NS)

Eastcap estate: pre 78, post 84 (RES 0.92, NS)

Dual estate area A: pre 75, post 89 (RES 0.84, NS)

Dual estate area B: pre 73, post 79 (RES 0.84, NS)

Southcap estate: pre 62, post 65 (RES 0.88, NS)

Deploy estate area E: pre 71, post 71 (RES 1.07, NS)

Deploy estate area F: pre 74, post 72 (RES 1.08, NS)

(i.e. Overall: +ve difference in two sites, −ve difference in five, no change in two; not significant for any)

In the main report, avoidance behaviour is measured, but two different questions seem to have been used at pre and post. In the pre-implementation survey respondents were asked whether they would go into areas that they currently avoided if CCTV was installed and in the post- implementation survey they were asked whether they had gone into areas they previously avoided now that CCTV had been installed

[A different analysis aggregating the sites is presented in Gill et al.[272] This analysis reports worry: –5% I (p = 0.006), 0% C (NS); feelings of safety: +5% I (p = 0.31), –4% C (p = 0.03). However, significance tests are not clearly reported for time × treatment interaction. Gill et al.[272] also present analyses of avoidance behaviour, which strongly imply that the same question ('do you avoid some areas?') was asked at pre and post, but this is difficult to reconcile with the main report (see above). Results given for this are daytime: I pre 19%, I post 14% ('significant', but p-value not stated), C pre 11%, C post NS ('no change'); night-time: I pre 51%, I post 47% (NS?), C 'a slight nonsignificant increase']

Subgroup analyses?
Age, gender, ethnicity, victimisation experience and housing tenure are explored in Gill et al.,[272] but most of the analyses reported are cross-sectional and not of relevance to the differential effect. They do state that, for feelings of safety, a significant increase was seen for both genders in the intervention group and a significant decrease was seen for both in the control groups

C, control; I, intervention; N/A, not applicable; NR, not reported; NS, not significant; RES, relative effect size.

Halpern[216]

Study
Halpern[216]

Study design
Longitudinal uncontrolled study (both cross-sectional and longitudinal data were collected, although outcomes are analysed as cross-sectional)

Quality rating
C

Location and country
Location NR ('one of Britain's New Towns'), UK

Area characteristics
Local authority estate, described as a 'problem estate' and was eligible for targeted 'Estate Action Programme' funding and had a reputation as a high-crime area. Housing mostly two- and three-bedroom houses in Radburn layout

Sampling methods and eligible population
Site sampled because it was scheduled for substantial improvements

Sampling of households unclear (possibly comprehensive if 'Residents in these areas were sent a letter' implies 'all residents')

Sampling of individuals within households: oldest female sampled (on the basis that women spent more time in the home and local environment) or oldest male when there were no women

Recruitment methods and response rate
Residents informed about the study by letter. Response rate 60–70%. Non-respondents estimated to be working-age couples without school-aged children

Sample demographics
All female. Average age 40.5 years; average length of residence at present address 8.2 years; average number of children < 14 years 1.4; 37% in work; average household income £97–134 per week

Outcomes within scope of review
Fear of crime:

'Concern' about burglary; car theft or damage; vandalism; attack

'On balance, how safe would you describe this area to be?' [Note that there were questions about traffic safety as well as crime – unclear how respondents (or study authors) were interpreting this general question]

Mental health:

Hospital Anxiety and Depression Scale

Rosenberg self-esteem questionnaire

Social well-being:

'Concerning your neighbours, i.e. those on Eastlake, in the last six months how many have stopped by?'

'Would you be able to recognise your neighbours who live on this block by sight?'

Involvement in Residents' Association

Social support scale [from the question: 'How helpful and supportive would your neighbours be if

Limitations identified by author
Cannot disaggregate effects of components of intervention

Limitations identified by reviewer
Non-comparative design. No significance tests for many outcomes. Incomplete reporting of outcome measures and findings

Funding of study
NR

Content of intervention
Comprehensive renovation programme with substantial emphasis on security (around £10–15K per house). Programme was led by local authority in partnership with the police and involved extensive consultation with residents

Components included: road narrowing and speed ramps; new PVC porches and front doors and higher-security double-glazed windows; new kitchens and bathrooms in around half of the houses and new central heating where required; new larger garages and parking areas; new higher and stronger back gates and fences; new lighting; landscaping; alleyways between houses blocked off

There are three time points in the study: wave 1 is pre intervention, wave 2 is at the beginning when consultation and planning had taken place but little physical work had been carried out and wave 3 is post intervention

Interventions/services received by comparison group
N/A

Sample size
Baseline n = 55, post n = 62

Data collection methods
Face-to-face interview using standard instruments for mental health and questions about living arrangements and perceptions of the estate, relations with neighbours, etc.

you were ill and needed helping out with shopping etc.?' and in other situations: being ill; being bored; needing help with the children at short notice (if the respondent had children); needing someone to talk to; coming home to find they had been burgled and their home a mess; wanting to borrow some household items (e.g. some tools or foodstuff); and needing to borrow some cash. An overall social support scale was calculated by summating residents' ratings of helpfulness from six of the seven situations – the item concerning help for children was excluded from the composite scale as this item did not apply to about one-third of respondents]

'So on balance, on a scale of 1 to 7 how friendly an area would you describe this as?'

Other outcomes
Attitudes to refurbishment

Concerns about noise, traffic safety

General perceptions of area

Findings (for outcomes within scope)
[Pre = stage 1, post1 = stage 2 (= Green Close at wave 1, other areas at wave 2), post2 = stage 3 (= Green Close at wave 2, other areas at wave 3), although it might be more perspicuous to refer to wave 2 as 'pre2', given that little of the intervention had taken place at that point]

Concern about burglary NR

Baseline comparisons
N/A

Analysis method
Mixed: fear of crime and social outcomes generally descriptive only; mental health outcomes are tested for significance (controlling for age, length of residence, number of children under 14 years, employment status and income), but analysis methods are not described in detail

Power calculation
NR

Length of follow-up
≈10 months after completion of intervention (≈3 years after start)

Attrition rate
51% (28/55) considering the longitudinal subsample, although analyses were cross-sectional

Concern about car theft or damage (% 'very concerned'): pre 30, post1 32, post2 12 (significance NR) (Also a comparative finding here: for Green Close, 37% at wave 1, 12% 'afterwards'; other areas 'around 30%' at both time points)

Concern about vandalism NR

Concern about attack [sic] (presumably assault) (% 'very concerned'): pre 48, post1 50, post2 35 (significance NR)

'On balance, how safe would you describe this area to be?' (% 'safe' or 'very safe'): pre 41, post1 34, post2 81 (significance NR)

% who received no visits from neighbours in last 6 months: pre 31, post1 21, post2 15 (significance NR)

'Would you be able to recognise your neighbours who live on this block by sight?' (% 'most' or 'all'): pre 55, post1 59, post2 74 (significance NR)

% heard of Residents' Association: pre 72, post1 81, post2 96 (significance NR)

% who attended any Residents' Association meetings: pre 3, post1 14, post2 19 (significance NR)

Social support scale (1 = neighbours 'very unhelpful', 7 = neighbours 'very helpful', averaged across six situations): pre 4.7, post1 5.1, post2 5.6 ($p < 0.05$)

'So on balance on a scale of 1 to 7 how friendly an area would you describe this as?' (% 'very friendly'): pre 7, post1 18, post2 26 ($p < 0.05$)

Hospital Anxiety and Depression Scale overall: pre 13.6, post1 11.5, post2 9.3 ($p < 0.05$)

Hospital Anxiety and Depression Scale (anxiety subscale): pre 8.2, post1 6.7, post2 5.8 ($p < 0.05$)

Hospital Anxiety and Depression Scale (depression subscale): pre 5.5, post1 4.9, post 3.6 ($p < 0.05$)

Rosenberg Self-Esteem Scale (inferred from diagram): pre 53, post1 57, post2 58 (significance NR)

Subgroup analyses?
Not as such. Correlations are measured between mental health outcomes and age, length of residence, number of children and income; there is also some analysis of likely mediators. However, these do not show differential intervention effects

N/A, not applicable; NR, not reported.

Herbert[256,257]

Study
Herbert[256,257]

Study design
Longitudinal uncontrolled study

Quality rating
C

Location and country
Cardiff, UK

Area characteristics
Local authority estate; high number of older people; generally deprived with high unemployment. Crime not especially high by local standards: 'it is not generally regarded as a "problem estate"' (pp. 9–12)[256]

Sampling methods and eligible population
Sampling of site for high crime rate and inclusion within programme of lighting renewal

Sampling of households unclear (comprehensive within sampled area?)

Sampling of individuals within households: random

Recruitment methods and response rate
Door to door. Response rate 58.8%

Sample demographics
At baseline: 62% female; 29% 17–29 years, 24% 36–59 years, 47% ≥ 60 years

Content of intervention
Relighting of five streets to BS 5489 part 3 (full details given in *Technical Appendix*[256])

Interventions/services received by comparison group
N/A

Sample size
Baseline n = 154, post n = 125

Data collection methods
Surveys conducted by Beaufort Research Ltd. Questionnaires were based on the work of Painter. Focus on crime experience, environmental perceptions and crime prevention strategies. 'Respondents were not told the purpose of the survey, and questions were worded so that the main focus of the survey (lighting and crime) did not appear obvious' (p. 14)[256]

Outcomes within scope of review
Fear of crime:

Is 'people being afraid to go out after dark' a problem? (exact wording unclear)

'Do you worry about home being broken into; being robbed in street; being attacked in street; insulted/ pestered in street; home being vandalised; car being stolen/damaged; violence/threats from known person; assault/rape (women only)'

'Do you feel unsafe in own home/on street'

Precautionary measures against crime

'Are there risks for women/the old after dark?'

Other outcomes
Self-reported victimisation

Recorded crime

Attitudes to local area

Crime/antisocial behaviour 'is a problem'

Attitudes to lighting

Pedestrian counts

Findings (for outcomes within scope)
Is 'people being afraid to go out after dark' a problem?: % 'yes': pre 64, post 69; % 'a big problem': pre 34, post 14

However, Table 10[256] has the change as −49%, so it is impossible to know what the correct figures are. Also, 'For example, prior to lighting, 42% females (18% males) were afraid to go out after dark, but after

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Limitations identified by author
Short follow-up

Limitations identified by reviewer
Non-comparative study. Some unclarity in reporting of outcomes. No significance testing (and authors' interpretations are often quite strong in spite of this)

Funding of study
South Glamorgan County Council and Urbis Lighting Ltd

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
2 months after completion of intervention

Attrition rate
18.8% (29/154)

lighting installation, this had fallen by nearly half (43%) to 18% (by 61% to 9% for men)' (p. 23).[256] (In context, it seems to be this measure that is referred to here, but these figures are inconsistent both internally and with the findings extracted above. Generally in this report, change scores are relative – i.e. percentages of percentages – and not absolute; however, these figures are inconsistent even on that basis)

Worry about (% 'a lot' or 'quite a bit' extracted here; full breakdowns are given in the report): home being broken into: pre 50, post 45; being robbed in street: pre 30, post 29; being attacked in street: pre 34, post 25; being insulted/pestered in street: pre 26, post 18; home being vandalised: pre 47, post 53; car being stolen/damaged: pre 37, post 34; violence/threats from known person: pre 15, post 8; assault (presumably sexual assault)/rape (women): pre 33, post 19

Feelings of safety in home: only asked at baseline

Feelings of safety (or perceived safety?) on the street (%):

Unsafe streets around home: men: pre 18, post 16; women: pre 38, post 34

Risks for women after dark: men: pre 75 post 58; women: pre 71, post 64

Risks for old after dark: men: pre 73, post 61; women: pre 74, post 73

Adoption of precautionary measures (% 'always' or 'often'; full breakdown given in report; note that because of poor optical character recognition in report there is some guesswork here): avoid being out after dark: pre 26 (estimated), post 18; walk near people: pre 24, post 24; stay off some streets: pre 35 (estimated), post 21; go with someone: pre 44 (estimated), post 37; avoid buses: pre 10, post 8; take taxis: pre 31, post 37 (estimated)

Subgroup analyses?
By gender and age for worry (% 'a lot'):

Home being broken into: men: pre 12, post 16, women: pre 32, post 23; age 17–35 years: pre 11, post 24; age 36–64 years: pre 27, post 22; age 65+ years: pre 31, post 17

Being robbed in street: men: pre 8, post 11, women: pre 14, post 11; age 17–35 years: pre 9, post 11; age 36–64 years: pre 11, post 10; age 65+ years: pre 15, post 11

Being attacked in street: men: pre 10, post 11, women: pre 17, post 8; age 17–35 years: pre 7, post 8; age 36–64 years: pre 18, post 12; age 65+ years: pre 16, post 7

Being insulted/pestered in street: men: pre 5, post 4, women: pre 9, post 8; age 17–35 years: pre 2, post 8; age 36–64 years: pre 9, post 7; age 65+ years: pre 9, post 6

Home vandalised: men: pre 12, post 12, women: pre 26, post 18; age 17–35 years: pre 16, post 16; age 36–64 years: pre 24, post 20; age 65+ years: pre 20, post 11

Car stolen/damaged: men: pre 17, post 16, women: pre 20, post 14; age 17–35 years: pre 16, post 24; age 36–64 years: pre 31, post 17; age 65+ years: pre 9, post 6

Violence/threats from known person: men pre 2, post 4, women pre 6, post 3; age 17–35 years pre 5, post 8; age 36–64 years pre 7, post 3; age 65+ years pre 2, post 0

Assault/rape (women only): age 17–35 years: pre 7, post 11; age 36–64 years: pre 24, post 8; age 65+ years: pre 6, post 6

By gender for feelings of safety (see under findings)

NR for precautionary behaviours

N/A, not applicable; NR, not reported.

Kaplan a[286]

Study
Kaplan a[286]

Study design
Cross-sectional controlled study with some evidence of change in population (pre–post comparison NR)

Quality rating
C

Location and country
Broward County, FL, USA

Area characteristics
School sites cover a broad range in terms of SES, attainment and other demographic characteristics. Little information on broader areas

Sampling methods and eligible population
Sampling of site (county) based on a range of crime-, programme- and environment-related considerations. Note that part of the selection criteria for the site were to do with the perceived implementability of the intervention, e.g. this county was judged to be particularly favourable because of stakeholder attitudes. Sampling of experimental school sites within county based on 'representativeness, crime severity, and potential cooperation' (p. 2:9). The control sites then consisted of the 16 non-experimental schools in the same county; data from these are aggregated in the report

Sampling of individuals for survey
NR

Recruitment methods and response rate
NR; presumably in class time. Response rate 65.3% (8363/12,800)

Sample demographics
NR for individuals. Ethnicity and educational attainment reported at school level

Content of intervention
Extensive renovation work in schools on CPTED principles: renovation and landscaping of exterior courtyards; bike parking areas; reconstruction of corridors; locking open of restroom doors (one site only); fencing of parking lots (in some sites); school policing precinct (one site only); burglar alarms; 'border definition'

Outcomes within scope of review
Fear of crime:

'Overall, how often are you afraid that any of the following things might happen to you at school: someone might hurt, bother, or physically attack you; someone might steal money from you?'

Perceived safety from assault in various locations

Social well-being:

Perceived likelihood of identifying an interloper

'In general, which kind of school would you say this is mostly – one where most students help each other or one where most students go their own way?'

'Would you say that you really feel a part of the school – or do you think of it as just another place to spend time?'

Other outcomes
Various observational data about students' use of space

Perceived likelihood of an interloper committing a theft or an assault without being detected

Students' ratings of teachers' surveillance

Student crime reporting behaviour

Responses to staged 'incidents'

'How much do you think students at your school are concerned with preventing crimes from happening to other students?'

Limitations identified by author
Shorter than ideal follow-up (1 year was desired). Intervention was relatively limited and there were some changes to the original intervention plan. Crime data may be unreliable. No matched control group

Limitations identified by reviewer
No significance testing for many outcomes. Inconsistent reporting of data from control group. Some unclarity around outcome measures and possibly incomplete reporting of outcomes. Methods unclear (e.g. sampling of individual students). Authors' discussion of findings is ad hoc. Sites were sampled for supportiveness of implementation and may not be representative

Funding of study
Law Enforcement Assistance Administration (US Department of Justice)

Interventions/services received by comparison group
NR

Sample size
Baseline n = 2778; between 1200 and 1500 at each of four subsequent waves (total n = 8363)

Data collection methods
Self-completed questionnaire (reproduced in Appendix D)

Baseline comparisons
NR

Analysis method
Unclear: analysis of variance in some cases, but it is not always clear whether it is within-group pre–post comparisons or intervention–control comparisons that are being analysed. Descriptive only for many outcomes

Power calculation
NR

Length of follow-up
≈6 months after completion (3 months in some cases), but variable between sites: most work completed around Oct–Nov 1977, with last follow-up in spring term 1978 (both 'winter 1977–78' and 'spring 1978' are considered as post tests for the purposes of data analysis)

Attrition rate
N/A

'Overall, how would you rate the job the teachers and other adults are doing in protecting students from crime at your school?'

Self-reported crime victimisation

Recorded crime

Findings (for outcomes within scope)
[The data on fear of assault by place in tables 7:8–9 appear to be from pre test (so p. 7:15) and so are not relevant with regard to intervention effectiveness]

Likelihood of perceiving an interloper in hallways/restrooms: measured only in one site (McArthur) and full data are NR; it is stated that there was a significant increase relative to control sites

'How likely is it that a person could steal something in the restroom without being seen?' – no significant differences

'How likely is it that a person could physically attack another person in the restroom without being seen?' – no significant differences

'In general, which kind of school would you say this is mostly – one where most students help each other or one where most students go their own way?': % 'most students help each other': intervention school Boyd Anderson High School (BA): pre1 (winter 1976–7) 60.7, pre2 (spring 1977) 53.5, post1 (winter 1977–8) 49.2, post2 (spring 1978) 53.1; intervention school McArthur High School (MA): pre1 59.7, pre2 49.3, post1 57.1, post2 51.0; intervention school South Plantation High School (SP): pre1 44.9, pre2 44.6, post1 54.9, post2 43.1; intervention school Deerfield Beach High School (DB): pre1 60.0, pre2 61.6, post1 51.5, post2 58.8; control schools: pre1 58.4, pre2 53.4, post1 58.0, post2 55.3 (significance NR)

'Would you say that you really feel a part of the school – or do you think of it as just another place to spend time?': % 'feel a part of the school': intervention school BA: pre1 67.2, pre2 64.4, post1 74.2, post2 59.7; intervention school MA: pre1 73.4, pre2 60.8, post1 75.6, post2 66.7; intervention school SP: pre1 40.0, pre2 53.7, post1 59.5, post2 46.6; intervention school DB: pre1 71.4, pre2 80.2, post1 67.7, post2 65.3; control schools: pre1 67.7, pre2 65.5, post1 65.8, post2 66.1 (significance NR)

Perceived safety in restrooms (exact question unclear): no significant pre–post change in any intervention site

Perceived safety from assault in hallways (exact question unclear, appears to be only from MA site but this is unclear): 'very safe': pre 5.7, post 14.3; 'safe': pre 40.7, post 41.5; 'somewhat safe': pre 43.2, post 38.4; 'not very safe pre 10.4, post 5.8 (significance NR)

Perceived safety from theft in hallways: no significant change pre–post (in MA site?)

Judgement of personal safety from assault in hallways: no significant change pre–post (in MA site?)

Judgement of personal safety from theft in hallways: no significant change pre–post (in MA site?)

For the following two questions, authors state that there were no significant changes pre–post (comparison with control site NR)

'Overall, how often are you afraid that someone might hurt, bother, or physically attack you?'

Intervention school BA: 'never': pre1 (spring 1976) 47.0, pre2 (spring 1977) 27.6, post1 (winter 1977–8) 41.2; 'almost never': pre1 28.4, pre2 32.4, post1 25.0; 'sometimes': pre1 22.9, pre2 31.0, post1 27.9; 'most of the time': pre1 1.8, pre2 7.0, post1 5.9

Intervention school MA: 'never': pre1 41.4, pre2 29.3, post1 37.8; 'almost never': pre1 32.1, pre2 45.3, post1 30.6; 'sometimes': pre1 24.7, pre2 24.0, post1 27.6; 'most of the time': pre1 1.9, pre2 1.3, post1 4.1

Intervention school SP: 'never': pre1 51.0, pre2 40.3, post1 50.7; 'almost never': pre1 32.2, pre2 43.3, post1 22.4; 'sometimes': pre1 16.2, pre2 11.9, post1 20.9; 'most of the time': pre1 0.6, pre2 4.5, post1 6.0

Intervention school DB: 'never': pre1 51.1, pre2 36.0, post1 33.1; 'almost never': pre1 27.6, pre2 37.1, post1 38.4; 'sometimes': pre1 12.5, pre2 23.6, post1 25.2; 'most of the time': pre1 0.8, pre2 3.4, post1 3.3

Control schools: 'never': pre1 46.5, pre2 38.4, post1 42.2; 'almost never': pre1 32.0, pre2 35.7, post1 34.9; 'sometimes': pre1 19.6, pre2 23.1, post1 20.0; 'most of the time': pre1 1.9, pre2 2.8, post1 2.9

'Overall, how often are you afraid that someone might steal something from you?'

Intervention school BA: 'never': pre1 35.4, pre2 14.3, post1 24.3; 'almost never': pre1 22.2, pre2 31.4, post1 22.9; 'sometimes': pre1 33.8, pre2 37.1, post1 41.4; 'most of the time': pre1 8.6, pre2 17.1, post1 11.4

Intervention school MA: 'never': pre1 32.3, pre2 17.1, post1 22.4; 'almost never': pre1 20.3, pre2 30.3, post1 26.5; 'sometimes': pre1 38.1, pre2 39.5, post1 36.7; 'most of the time': pre1 9.3, pre2 13.2, post1 14.3

Intervention school SP: 'never': pre1 32.3, pre2 16.4, post1 25.4; 'almost never': pre1 26.6, pre2 35.8, post1 23.9; 'sometimes': pre1 34.8, pre2 46.3, post1 38.8; 'most of the time': pre1 6.5, pre2 1.3, post1 11.9

Intervention school DB: 'never': pre1 36.2, pre2 20.0, post1 23.8; 'almost never': pre1 23.9, pre2 28.9, post1 34.4; 'sometimes': pre1 33.2, pre2 34.4, post1 35.1; 'most of the time': pre1 6.7, pre2 16.7, post1 6.6

Control schools: 'never': pre1 30.4, pre2 21.4, post1 24.9; 'almost never': pre1 28.1, pre2 29.4, post1 26.2; 'sometimes': pre1 32.9, pre2 37.9, post1 38.7; 'most of the time': pre1 8.6, pre2 11.3, post1 10.1

Subgroup analyses?
NR

N/A, not applicable; NR, not reported.

Kaplan b[287–289]

Study
Kaplan b[287–289]

Study design
Cross-sectional uncontrolled study (for crime outcomes, citywide data are used as the comparator, but for outcomes of interest to this review there was no control group)

Quality rating
C

Location and country
Portland, OR, USA

Area characteristics
Commercial strip in north-eastern Portland, OR, with many vacant lots and generally a poor reputation. Surrounding area about 50% black. High crime rates with respect to rest of city

Sampling methods and eligible population
Sampling of site based on various criteria to do with severity of crime, implementability of intervention, etc. Sampling of individuals was random (geographically stratified for resident sample)

Recruitment methods and response rate
NR; response rate NR

Sample demographics
No information reported for businessmen sample. Resident sample: 16% < 30 years, 15% 30–39 years, 12% 40–49 years, 17% 50–59 years, 39% ≥ 60 years; 52% female; 55% black, 45% white; mean household size 2.92 persons

Content of intervention
Security surveys of business and some residential promises, and advice on improving security; lighting improvement (high-intensity lights on main road and infill lighting in residential side streets); traffic calming, road improvements and landscaping; new bus shelters; a 'businessman's [sic] organisation'; 'clean-up day'; various other regeneration activities in the surrounding area

However, note that much of this (particularly the lighting and security surveys) had already taken place by the time of the 'baseline' survey. Also, there was some form of street redesign taking place at the time of the 3-year follow-up

Outcomes within scope of review
Fear of crime:

Businessmen's perception of residents' feelings of safety; of employees' feelings of safety; of whether fear of crime changes people's shopping habits

Avoidance of areas because of fear of crime

'How often are you concerned that any of the following things might happen to your business or to you? Are you concerned most of the time, some of the time, almost never, or never?'
Break-in/burglary in business; hold-up in business; beaten up on street; hold-up on street; vandalism/property destruction

Feelings of safety day/night

'When you leave your home, even for a few minutes, how often do make certain that all of the doors are locked?'

'In general, how worried are you that your house might be broken into?'

'In general, how worried are you about being assaulted or robbed on the street?'

'For each of the crimes I read to you, please tell me if you think your chances of being a victim in the Union Avenue area has increased, decreased or stayed about the same during the past six months'. Break-in/burglary in business; hold-up in business; beaten up on street; hold-up on street; vandalism/property destruction

Limitations identified by author
No evidence for fear of crime reduction. No comparison group. Intervention faced challenges in implementation

Limitations identified by reviewer
Very incomplete and selective reporting of data. Some unclarity around methods (sampling, analysis). Because several major intervention components were substantially complete by the time 'baseline' measurements were conducted, it is somewhat unclear what is actually being evaluated. Likewise, it is unclear what the follow-up is intended to demonstrate, as it appears to aggregate the time points (spring and autumn 1977) that are treated as pre and post in the original evaluation

Funding of study
Law Enforcement Assistance Administration (US Department of Justice)

Interventions/services received by comparison group
N/A

Sample size
Businessmen [sic] sample: $n = 134$ total in original study (spring $n=49$, summer $n=37$, fall $n=48$)+$n=78$ at 3-year follow-up

Resident sample: $n = 177$ in original study (spring $n=97$, fall $n=80$)+$n=101$ at 3-year follow-up

Data collection methods
Businessmen interviewed in person (lasted approx. 30 minutes)

Residents: interviewed by telephone

However, note that very little of the data collected are reported in these reports. For the resident survey, in particular, the main report has only post-test data (apparently); it is unclear why this is. Longitudinal data for residents are reported in a very brief and qualitative way in Lavrakas and Kushmuk[289] but none of the study reports presents usable data (pedestrian behaviour data are reported for both time points, and authors regard this as a proxy for fear of crime, but it is not a fear of crime outcome by our definition). The follow-up[288] has a very small amount of usable data from the resident survey

Baseline comparisons
N/A

Analysis method
Unclear; there is extensive description of the

Social well-being:

'In some neighborhoods, people do things together and help each other; in other neighborhoods, people mostly go their own ways. Would you say your neighborhood is one in which people mostly go their own ways, or one in which people help each other?'

'How many families in this neighborhood do you know well enough to ask a favor of if you needed something?'

Other outcomes
Recorded crime

Self-report crime victimisation

Business performance

Perceptions of intervention

Attitudes to police

Crime 'is a problem'

Perceptions of area

Pedestrian behaviour (treated by study authors, but not for the purposes of this review, as a proxy for fear of crime)

Findings (for outcomes within scope)
Findings are very incompletely reported. Kushmuk and Whittemore[288] report a number of outcomes comparing 1977 and 1979/80. However, it is unclear what the '1977' outcomes are (aggregates

analysis of the crime data but not of the survey data

Power calculation
NR

Length of follow-up
≈3 years from start of intervention for at least some outcomes. [Intervention was spread over a considerable period: early organisational efforts and some built environment components (bus shelters) late 1975; street lighting change and security surveys late 1976; other components through 1977. Data collection in May and Nov 1977[287] and in Nov 1979–June 1980.[288] Hence, a substantial amount of the intervention had actually already been implemented by the time of the 'baseline' measurement]

Attrition rate
N/A

of the two to three time points in the 1977 sample?) and what the study authors think these data say about the impacts of the intervention; it is also unclear which outcomes have been tested for significance and when the authors are merely observing trends

Businessmen concern about victimisation: significantly ($p < 0.03$) less in fall 1977 wave than in spring and (or?) summer. Unclear exactly how this relates to the stated outcome measures; presumably it is an aggregate score of the five different types of crime asked about

Concern about crime among businessmen (% 'most' or 'some of the time'; t1 = 1977, t2 = 1979): business burglary: t1 65, t2 65; business hold-up: t1 45, t2 49; assault: t1 24, t2 32; street robbery: t1 30, t2 33; vandalism: t1 69, t2 59 (significance NR)

Businessmen avoid areas because of fear of crime: 'no change' between spring and fall 1977 (figures NR); in 1979, 32% day, 73% night

Businessmen think customers feel safe: 1977 NR; 1979 86% day, night unclear (100%?)

Businessmen think employees feel safe: 1977 91% day, 50% night (no change between spring and fall); 1979 92% day, just under 50% night

Fear of crime: Lavrakas and Kushmuk[289] state that fear of crime outcomes did not change between 1977 and 1980, except that fear of crime (unclear which measure) increased among the elderly; no data are reported

Residents' fear of burglary: 1977 26% 'worried', 1980 21% 'worried' (NS)

Residents' fear of assault/robbery: 1977 19%, 1980 27% (NS)

Residents feel safe in intervention area at night: 1977 52%, 1980 63% ($p < 0.02$)

'There were no significant changes between 1977 and 1980 in the extent to which neighbors help each other or in terms of the number of families a person can depend on for help'

Subgroup analyses?
By age, although incompletely reported. Fear of crime for both burglary and assault/robbery increased significantly between 1977 and 1980 for the elderly (unclear how defined; ≥ 60 years?) but not for other age groups

N/A, not applicable; NR, not reported; NS, not significant.

Knight[258]

Study
Knight[258]

Study design
Longitudinal
uncontrolled study

Quality rating
C

*Location and
country*
St Helens, UK
(there were also
studies in Spain
and the
Netherlands, but
only post-test data
are provided from
these)

Area characteristics
NR

Sampling methods and eligible population
Individuals sampled from 'people living in the
vicinity but not in the actual streets in the
experimental area . . . Additional recruitment criteria
were that respondents could express themselves
clearly and that they walked or biked outside after
dark at least three times a week' (p. 317). Actual
sampling process unclear

Recruitment methods and response rate
NR

Sample demographics
53.0% male; 40.2% ≤40 years, 59.8% >40 years

Content of intervention
Change from SON lighting to two levels of CMH
lighting, which has a more white light

Interventions/services received by comparison group
N/A

Outcomes within scope of review
Fear of crime:

'And now I would like to know whether the lighting
here makes you feel safe or not. Does it make you
feel: (1) very safe, (5) very unsafe?'

Other outcomes
'How do you feel about this area here? After
sunset, do you feel: (1) very comfortable/at ease,
(5) very uncomfortable/uneasy?'

(Authors interpret this as fear of crime related,
but it is not a fear of crime outcome as defined by
this review)

'Now I would like you to tell me what you think of
the lighting in terms of its quality. By quality I mean
nice light, good colour. Do you feel that it is:
(1) very pleasant, (5) very unpleasant?'

'And how do you rate the brightness of the area.
For you personally, is it: (1) much too bright,
(5) much too dark or (3) just right?'
Facial recognition test

Limitations identified by author
NR

Limitations identified by reviewer
Robust study, but of marginal relevance to this
review

Funding of study
NR; author's affiliation is Phillips Lighting BV

Sample size

n = 125 for UK group (presumably post intervention, baseline *n* NR; data for other groups not extracted here)

Data collection methods

'The test involved individual face-to-face interviews during which a detailed questionnaire was filled in. In addition, objective measurements of facial recognition were conducted. Each test lasted ≈45 minutes. The first test of the evening started at least 30 minutes after sunset. In the UK . . . the last test of the evening was completed before 10:15 pm' (p. 318)

Baseline comparisons
N/A

Analysis method
t-test

Power calculation
NR

Length of follow-up
'at least 3 weeks'

Attrition rate
NR

Findings (for outcomes within scope)
'And now I would like to know whether the lighting here makes you feel safe or not. Does it make you feel: (1) very safe – (5) very unsafe?'

Change SON to CMH 2800K: pre 2.20, post 1.33 (*p* < 0.05); SON to CMH 4200K: pre 2.06, post 1.33 (*p* < 0.05); CMH 2800K to SON: pre 1.52, post 2.06 (*p* < 0.05); CMH 4200K to CMH 2800K: pre 1.65, post 1.68 (NS)

(Note: table 5 is not extracted here as it presents only post-test data)

Subgroup analyses?
NR

CMH, ceramic metal halide; N/A, not applicable; NR, not reported; NS, not significant; SON, sodium.

Matthews a[249]

Study Matthews a[249] *Study design* Cross-sectional uncontrolled study (a longitudinal aspect is reported, but *n* not clearly reported, nor are the data analysed as longitudinal) *Quality rating* C *Location and country* Leicester, UK	*Area characteristics* 'The Eyres Monsell estate is located on the south side of the city close to the city boundary. It comprises of approximately 3500 dwellings of which the vast majority are semi-detached houses built during the 1940s and 1950s' (p. 11). Higher crime rate than comparable areas, especially for theft/burglary *Sampling methods and eligible population* Sampling of sites: 'The two estates were selected on the basis that they did not qualify for support under the Urban Programme' (p. 1) Sampling of households: 'A sample of one in four houses was selected [unclear how, although the word 'random' is used previously (p. 7)]. This was supplemented on each estate by a booster sample–which included all the dwellings which according to police records had been the victims of burglary over the previous twelve month period' (p. 8) Sampling of individuals within households NR *Recruitment methods and response rate* Initially by 'drop' self-complete questionnaire. Reminder letters were sent and there was a prize draw incentive in the follow-up round of recruitment Response rate 52% at baseline, 50% at follow-up (baseline figure may be only the initial rate before reminders – but it is the only figure reported) *Sample demographics* At baseline: 53.1% female; 1.4% <21 years, 28.6% 21–39 years, 33.2% 40–64 years, 36.8% ≥ 65 years; 42.5% employed, 22.2% unemployed/sick, 34.3% retired, 1.0% other employment status; occupational status (of employed respondents) 14.7% managerial or professional, 73.8% manual (skilled or unskilled)	*Outcomes within scope of review* Fear of crime: Fear of several specific crimes (exact measure unclear; appears to be British Crime Survey type) Fear of specific places on the estate *Other outcomes* Self-reported victimisation Attitudes to crime Attitudes to estate and facilities *Findings (for outcomes within scope)* Fear of (%): Burglary (break-in): pre: 'not at all' 6.8, 'a little' 6.3, 'fairly' 39.9, 'very' 47.0; post: 'not at all' 6.2, 'a little' 6.4, 'fairly' 42.8, 'very' 44.6 Damage/vandalism: pre: 'not at all' 14.5, 'a little' 16.6, 'fairly' 35.5, 'very' 33.3; post: 'not at all' 12.4, 'a little' 13.7, 'fairly' 40.4, 'very' 33.7 Theft of car: pre: 'not at all' 28.2, 'a little' 7.9, 'fairly' 24.7, 'very' 39.1; post: 'not at all' 28.4, 'a little' 6.9, 'fairly' 24.4, 'very' 40.4 Theft from car: pre: 'not at all' 29.6, 'a little' 8.1, 'fairly' 23.8, 'very' 38.5; post: 'not at all' 29.5, 'a little' 8.3, 'fairly' 24.2, 'very' 38.0	*Limitations identified by author* Implementation of intervention faced challenges; no major environmental change *Limitations identified by reviewer* Non-comparative design. No significance tests. Limited information on the intervention generally, and there were substantial non-environmental components *Funding of study* Leicester Safer Cities Project

Content of intervention
Fitting locks ('target hardening'); Neighbourhood Watch; social programmes aimed at reducing youth offending; newsletters and resident meetings

Interventions/services received by comparison group
N/A

Sample size
Baseline *n* = 636; *n* at follow-up NR, but ≈600 based on reported response rate

Data collection methods
Brief self-completion questionnaire. Questions focused on crime experience, fear of crime, satisfaction with services and facilities and awareness of crime prevention measures

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
≈1 year from start, but not entirely clear. Intervention ran from Sept 1992 to Dec 1993, with some components (youth work) extending beyond this. Study time points were Nov 1992 and Nov 1993; NR exactly when the built environment component (security work) took place

Theft of bicycle: pre: 'not at all' 44.9, 'a little' 15.3, 'fairly' 19.1, 'very' 20.7; post: 'not at all' 50.4, 'a little' 13.4, 'fairly' 20.7, 'very' 15.5

Mugged/robbed: pre: 'not at all' 18.4, 'a little' 20.9, 'fairly' 30.7, 'very' 30.0; post: 'not at all' 18.5, 'a little' 18.5, 'fairly' 34.5, 'very' 28.4

Assaulted: pre: 'not at all' 20.2, 'a little' 20.4, 'fairly' 30.6, 'very' 28.8; post: 'not at all' 20.8, 'a little' 19.9, 'fairly' 32.4, 'very' 26.9

Insulted/annoyed: pre: 'not at all' 26.5, 'a little' 21.8, 'fairly' 28.1, 'very' 23.6; post: 'not at all' 24.5, 'a little' 24.3, 'fairly' 27.9, 'very' 23.3

Drug activities: pre: 'not at all' 41.1, 'a little' 17.7, 'fairly' 20.0, 'very' 21.1; post: 'not at all' 41.7, 'a little' 17.2, 'fairly' 23.2, 'very' 17.8

Groups of youths [sic]: pre: 'not at all' 8.8, 'a little' 13.2, 'fairly' 32.6, 'very' 45.4; post: 'not at all' 9.1, 'a little' 11.6, 'fairly' 34.0, 'very' 45.3

Sexual assault: pre: 'not at all' 42.0, 'a little' 20.6, 'fairly' 19.7, 'very' 17.6; post: 'not at all' 44.3, 'a little' 20.0, 'fairly' 19.8, 'very' 15.9

Attrition rate

N/A; 'approximately half' the sample were in both waves, but *n* NR, and there appears to have been no attempt to resample the same households as at baseline. Data are analysed as cross-sectional

Sexual harassment: pre: 'not at all' 43.9, 'a little' 23.1, 'fairly' 17.0, 'very' 16.0; post: 'not at all' 47.8, 'a little' 21.3, 'fairly' 18.0, 'very' 13.0

Racial assault: pre: 'not at all' 70.0, 'a little' 14.7, 'fairly' 6.3, 'very' 9.0; post: 'not at all' 68.9, 'a little' 15.2, 'fairly' 10.1, 'very' 5.8

Racial harassment: pre: 'not at all' 67.1, 'a little' 15.0, 'fairly' 8.3, 'very' 9.6; post: 'not at all' 68.8, 'a little' 15.6, 'fairly' 9.9, 'very' 5.8

For women only: avoid certain areas: pre 62.5, post 70; avoid going out alone: pre 71, post 73

Subgroup analyses?

NR; behavioural outcomes reported only for women

N/A, not applicable; NR, not reported.

Matthews b[250]

Study
Matthews b[250]

Study design
Cross-sectional uncontrolled study (a longitudinal aspect is reported, but *n* not clearly reported, nor are the data analysed as longitudinal)

Quality rating
C

Location and country
Leicester, UK

Area characteristics
Large estate (4100 houses) on outskirts of city. Higher crime rate than comparable areas, especially for theft/burglary (p. 2)

Sampling methods and eligible population
Sampling of sites: 'The two estates were selected on the basis that they did not qualify for support under the Urban Programme' (p. 1)

Sampling of households: 'A sample of one in four houses was selected [unclear how, although the word 'random' is used previously (p. 7)]. This was supplemented on each estate by a booster sample that included all of the dwellings which, according to police records, had been the victims of burglary over the previous 12-month period' (p. 8)

Sampling of individuals within households NR

Recruitment methods and response rate
Initially by 'drop' self-complete questionnaire. Reminder letters were sent and there was a prize draw incentive in the follow-up round of recruitment

Response rate 52% at baseline, 50% at follow-up (baseline figure may be the initial rate before reminders – but it is the only figure reported)

Sample demographics
At baseline: 51.3% female; 2.0% <21 years, 28.9% 21–39 years, 33.89% 40–64 years, 35.3% ≥65 years; 96.2% white, 2.7% Asian, 1.1% black; 40.7% employed, 21.0% unemployed, 36.1% retired, 2.2% other employment status; occupational status (of employed respondents) 6.9% managerial, 16.7% professional, 21.8% clerical, 29.9% skilled manual, 24.8% unskilled manual

Outcomes within scope of review
Fear of crime:

Fear of several specific crimes (exact measure unclear; appears to be British Crime Survey type)

Fear of specific places on the estate

Other outcomes
Self-reported victimisation

Attitudes to crime

Attitudes to estate and facilities

Findings (for outcomes within scope)
Fear of (%):

Burglary: pre: 'not at all' 12.8, 'a little' 9.6, 'fairly' 43.1, 'very' 34.4; post: 'not at all' 4.8, 'a little' 7.9, 'fairly' 47.5, 'very' 39.7

Damage/vandalism: pre: 'not at all' 16.8, 'a little' 17.1, 'fairly' 35.9, 'very' 30.2; post: 'not at all' 11.8, 'a little' 15.9, 'fairly' 41.1, 'very' 31.2

Graffiti: pre: 'not at all' 30.0, 'a little' 23.9, 'fairly' 26.4, 'very' 19.7; post: 'not at all' 26.2, 'a little' 29.1, 'fairly' 28.4, 'very' 16.3

Theft of car: pre: 'not at all' 27.4, 'a little' 9.5, 'fairly' 26.9, 'very' 36.2; post: 'not at all' 23.9, 'a little' 11.1, 'fairly' 28.9, 'very' 36.1

Limitations identified by author
Difficult to attribute effect to intervention; the study itself may have had an effect in showing that 'something was being done' and reducing offending

Limitations identified by reviewer
Non-comparative design. No significance tests. Limited information on the intervention generally and there were substantial non-environmental components

Funding of study
Leicester Safer Cities Project

Content of intervention
Fitting locks ('target hardening'); Neighbourhood Watch; social programmes aimed at reducing youth offending; newsletters and resident meetings

Interventions/services received by comparison group
N/A

Sample size
Baseline *n* = 907, post *n* = 839

Data collection methods
Brief self-completion questionnaire. Questions focused on crime experience, fear of crime, satisfaction with services and facilities and awareness of crime prevention measures

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Theft from car: pre: 'not at all' 27.7, 'a little' 8.6, 'fairly' 27.0, 'very' 36.7; post: 'not at all' 24.3, 'a little' 11.8, 'fairly' 28.1, 'very' 35.9

Theft of bicycle: pre: 'not at all' 52.2, 'a little' 10.9, 'fairly' 18.4, 'very' 18.5; post: 'not at all' 50.4, 'a little' 13.4, 'fairly' 20.7, 'very' 15.5

Mugged/robbed: pre: 'not at all' 21.6, 'a little' 16.9, 'fairly' 33.5, 'very' 28.1; post: 'not at all' 17.3, 'a little' 21.9, 'fairly' 36.2, 'very' 24.7

Assaulted: pre: 'not at all' 23.9, 'a little' 17.4, 'fairly' 33.8, 'very' 25.0; post: 'not at all' 19.9, 'a little' 24.0, 'fairly' 33.9, 'very' 22.1

Insulted/annoyed: pre: 'not at all' 28.5, 'a little' 20.7, 'fairly' 29.9, 'very' 20.9; post: 'not at all' 24.1, 'a little' 26.0, 'fairly' 29.6, 'very' 20.4

Drug activities: pre: 'not at all' 42.8, 'a little' 19.9, 'fairly' 19.1, 'very' 18.2; post: 'not at all' 44.0, 'a little' 19.7, 'fairly' 20.2, 'very' 16.1

Length of follow-up
≈1 year from start, but not entirely clear. Intervention ran from Sept 1992 to Dec 1993, with some components (youth work) extending beyond this. Study time points were Nov 1992 and Nov 1993; NR exactly when the built environment component (security work) took place

Attrition rate
N/A; 'approximately half' the sample were in both waves, but *n* NR, and there appears to have been no attempt to resample the same households as at baseline. Data are analysed as cross-sectional

Groups of youths [sic]: pre: 'not at all' 15.6, 'a little' 11.9, 'fairly' 32.4, 'very' 40.0; post: 'not at all' 12.8, 'a little' 13.3, 'fairly' 33.3, 'very' 40.6

Sexual assault: pre: 'not at all' 47.4, 'a little' 19.2, 'fairly' 19.8, 'very' 13.5; post: 'not at all' 45.4, 'a little' 21.5, 'fairly' 22.2, 'very' 10.9

Sexual harassment: pre: 'not at all' 50.3, 'a little' 20.5, 'fairly' 17.2, 'very' 11.9; post: 'not at all' 48.0, 'a little' 23.5, 'fairly' 19.5, 'very' 19.0

Racial assault: pre: 'not at all' 69.5, 'a little' 13.8, 'fairly' 10.0, 'very' 6.7; post: 'not at all' 66.0, 'a little' 20.0, 'fairly' 8.7, 'very' 5.2

Racial harassment: pre: 'not at all' 66.0, 'a little' 15.3, 'fairly' 11.3, 'very' 7.5; post: 'not at all' 65.0, 'a little' 20.8, 'fairly' 8.2, 'very' 6.0

Subgroup analyses?
NR

N/A, not applicable; NR, not reported.

Mazerolle[290,291]

Study Mazerolle[290,291]	*Area characteristics* Area covered the whole of Oakland, described as about 45% African American, 15% white, one-third Asian; median income ≈US$20K per annum; housing > 50% rented	*Outcomes within scope of review* Fear of crime: Composite scale from felt less safe after dark, felt less safe during the day, never/seldom park on the street, never/seldom walk in the neighbourhood, never/seldom visit a neighbourhood park, never/seldom talk to neighbours	*Limitations identified by author* NR *Limitations identified by reviewer* Fear of crime and social well-being are of interest to the study authors more as mediators than outcomes. Generally robust design but the analysis is inappropriate and does not clearly distinguish between observational investigation of correlations and evaluation of the effectiveness of the intervention. A large number of variables and associations are tested without correcting for this. 'Place managers' are likely to be unrepresentative of the broader population
Study design RCT (post-test data only)	*Sampling methods and eligible population* Sampling of site NR	Social well-being:	
Quality rating B	Eligible population was the area of 100 blocks	'Cohesiveness scale' = composite of believe neighbours on street help each other rather than go their own way, believe neighbours on street will call city to ask for help dealing with problems, believe neighbours will intervene and ask a youth spray painting graffiti to stop	*Funding of study* US Department of Justice
Location and country Oakland, CA, USA	Sampling of individuals for survey focused on residents who had complained about drug activity; owners of commercial properties; and school superintendents and other people working locally. Place managers sampled purposively	*Other outcomes* Calls for service for various crimes	
	Recruitment methods and response rate Blocks were referred to Beat Health Unit for drug or blight problems by police calls or community meetings. All blocks so referred from 15 October to 15 December 1995 were included, unless they had already been targeted by the patrol division or posed an immediate danger (e.g. for child abuse)	Observations of social behaviour 'Collective action' 'Individual action' Signs of disorder	
	Recruitment of individuals for survey face-to-face by interviewers; response rate NR	*Findings (for outcomes within scope)* Correlation coefficients reported with control = 0, intervention = 1: Fear of crime: 0.10 (NS)	
	Sample demographics For sites: 'Most of the study sites were rental properties (77 percent) and twelve of the experimental sites and eleven of the control sites were owner-occupied' (p. 12)[290]	Social cohesiveness: –0.07 (NS)	
	For surveyed individuals: 71.4% residents, 21% managers/owners of stores. Nearly half African American, 21% white. Median time living/working at current location approx. 6 years; 52% male, mean age 47 years	(i.e. More fear in I than C; less cohesiveness in I than C. Note that these were not the primary outcomes of interest for the study and are mainly measured as mediators)	

Subgroup analyses?
Not as such. Area-level demographics (gender and ethnicity) are included in the regression analyses but this could not be used to estimate differential effectiveness

Content of intervention
Police visit locations with specific problems, identify 'place managers' (homeowners, landlords, business owners). Other agencies (fire, utilities) are involved and look for code violations to enforce in the given locations. Police use civil prosecutions to fine or charge owners of buildings with drug problems and/or force them to sell or vacate the property

Interventions/services received by comparison group
Usual practice: beat officers were asked to pay specific attention to the places identified

Sample size
n = 398 individuals, *n* = 100 sites (I 50, C 50)

Data collection methods
Face-to-face interviews carried out by trained census workers with 20% of data verified by on-site supervisors. Interviewers blind to allocation of sites

Baseline comparisons
Not as such; some discussion of problems at both types of site

Analysis method
Ordinary least squares multivariate regression

Power calculation
NR

Length of follow-up
≈3 months after intervention (surveys carried out Feb–Mar 1996; intervention implemented Oct–Dec 1995)

Attrition rate
N/A (only post-test data)

C, control; I, intervention; N/A, not applicable; NR, not reported; NS, not significant.

Musheno[273]

Study
Musheno[273]

Study design
Cross-sectional controlled study with no evidence of change in population (pre–post comparison NR, but both were randomly sampled from same population)

Quality rating
C

Location and country
New York, NY, USA

Area characteristics
Limited information. Public housing project consisting of seven-storey buildings

Sampling methods and eligible population
Sampling of intervention sites unclear (although authors mention the 'haphazard method of selecting buildings to be given the electronic equipment', suggesting that this was tantamount to random allocation). Sampling of control sites for different factors: one building furthest away from intervention building; one with housing authority police headquarters; one with active tenant patrol

Sampling of individuals within sites was random

Recruitment methods and response rate
Door to door using undergraduate interviewers. Response rate 34.5%

Sample demographics
56% black, 24% Puerto Rican, 14% white; average gross family income US$5449

Content of intervention
CCTV in lobby and elevators of three residential buildings, with picture transmitted to residents' television sets; tenants were encouraged to keep televisions tuned to this channel whenever possible and report anything unusual to police

Interventions/services received by comparison group
One building had an active tenant patrol; otherwise NR

Outcomes within scope of review
Fear of crime:

Feel unsafe day/night

Thinking of moving out because of crime

Curtailing activities because of crime

Other outcomes
Crime victimisation (self-report)

Findings (for outcomes within scope)
Feel unsafe at night (%): I: pre 50.0, post 41.4; C: pre 46.2, post 66.7

Feel unsafe during the day (%): I: pre 28.1, post 28.6; C: pre 26.9, post 25.0

Thinking of moving out because of crime (%): I: pre 28.1, post 17.2; C: pre 26.9, post 38.1

Curtailing activities because of crime (%): I: pre 50.0, post 55.2; C: pre 57.7, post 47.6

Subgroup analyses?
NR

Limitations identified by author
NR

Limitations identified by reviewer
Small sample size. No significance testing of results

Funding of study
NR

Sample size
Baseline *n* = 58 (I 32, C 26), post *n* = 50 (I 29, C 21)

Data collection methods
Survey focuses on crime experience, fear of crime and constraints on activities because of crime. Based on previously used instruments. Half of tenants interviewed at pre test and half at post test. Interviews carried out by undergraduate students who received some training, supervised and validated by a graduate student. There were a large number of interviewers who each interviewed a small number of participants. Interviews carried out in English or Spanish

Baseline comparisons
No; authors suggest that the tenant population in different buildings was similar, but do not provide data

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
3 months from completion (some components were in place substantially earlier)

Attrition rate
N/A

C, control; I, intervention; N/A, not applicable; NR, not reported.

Nair[300]

Study
Nair[300]

Study design
Longitudinal uncontrolled study

Quality rating
C

Location and country
Glasgow, UK

Area characteristics
Limited information. Apparently mostly local authority housing

Sampling methods and eligible population
Sampling of site: 'the study was originally envisaged as a then conventional (now outdated) simple before and after study in an area where the local authority had decided – independently of any involvement with the researchers – to improve local street lighting' (p. 556)

Sampling of individuals: 'A random sample of one hundred addresses was taken from those streets bordering the Pond area, and interviewers used a table of random numbers to select a respondent from those living in each household successfully entered' (p. 557)

Recruitment methods and response rate
Door to door. Response rate 69% at baseline

Sample demographics
Age 16–88 years; 'three-quarters' female

Content of intervention
The initial focus of the study was lighting improvements (although no detail on the relighting is reported). However, there were a range of other built environment improvements taking place at the same time, including widening of paths and removal of vegetation, as well as extensive improvements to both flats and common areas of housing blocks (including, for example, secure entry systems)

Outcomes within scope of review
Fear of crime:

Worry about several specific crimes

Security precautions in the home

Feelings of safety in the home/outdoors after dark

Safety of others

Other outcomes
None

Findings (for outcomes within scope)
Worry about victimisation (% 'always' or 'sometimes'): assault: pre 15, post 9; sexual assault: pre 15, post 9; harassment: pre 18, post 12; break-in: pre 24, post 24; nuisance telephone call: pre 18, post 2

Precautions taken after dark (%): avoid going out at all: pre 36, post 33; avoid going out alone: pre 42, post 51; avoid certain areas: pre 70, post 79; carry a personal alarm: pre 9, post 6; take a means of defence: pre 3, post 12

Precautions in the home (%): door chains: pre 12, post 33; door locks: pre 24, post 82; window locks: pre 33, post 70; spyhole: pre 61, post 85; burglar alarm: pre 6, post 9; entry phone: pre 67, post 85; guard dog: pre 6, post 21

Limitations identified by author
NR

Limitations identified by reviewer
Non-comparative design. No significance testing. Outcome measures not clearly reported

Funding of study
Nuffield Foundation

Interventions/services received by comparison group
N/A

Sample size
Baseline *n* = 69, post *n* = 33

Data collection methods
Door-to-door interviews. 'Respondents were asked about a series of fourteen potential local problems, including street lighting quality, and asked to say (on both interview occasions) whether each had improved, stayed the same, or got worse over the previous three months' (p. 557). Note that it is unclear what many of the exact measures used were and, in particular, which were absolute measures and which referred to relative changes in the previous 3 months

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
3 months after relighting (unclear if all other improvements mentioned were completed at the same time)

Attrition rate
52%

Feelings of safety at home (%): 'very safe': pre 70, post 70; 'fairly safe': pre 19, post 12; 'bit unsafe': pre 0, post 9; 'very unsafe': pre 11, post 9

Feelings of safety outside after dark (%): 'very safe': pre 31, post 30; 'fairly safe': pre 19, post 21; 'bit unsafe': pre 13, post 18; 'very unsafe': pre 38, post 30

Perceived safety of others (measure unclear) (%): children: pre 31, post 31; women: pre 44, post 36; men: pre 72, post 75; elderly: pre 34, post 30

Subgroup analyses?
NR

N/A, not applicable; NR, not reported.

Painter a[259,260]

Study
Painter a[259,260]

Study design
Cross-sectional uncontrolled study

Quality rating
C

Location and country
Edmonton, north London, UK

Area characteristics
Limited information. Outer city location, not unusually high crime

Sampling methods and eligible population
Sampling of site from five chosen from a selection of well-used areas with poor lighting. Edmonton specifically chosen for pragmatic reasons (close to researcher base and local MP chair of Parliamentary Lighting Group); also representative of outer city locations generally

Sampling of individuals NR

Recruitment methods and response rate
On street; no other details reported. Response rate NR

Sample demographics
Across both time points: 41% 16–24 years, 40% 25–44 years, 11% 45–59 years, 8% ≥60 years; 71% white, 22% black/Afro-Caribbean, 5% Indian/Pakistani, 2% other non-white; 63% male, 37% female

Content of intervention
Relighting to BS 5489 part 3 category 1, using high-pressure sodium lamps

Outcomes within scope of review
Fear of crime:

'Do you worry about the possibility of the following things happening, at night, when walking through here?: physical attack; threats/pestering; sexual assault' (women only)

[Note: a number of further relevant measures were used (e.g. avoidance behaviours) but are reported for only pre or only post test; this outcome is the only one on which both pre and post data are clearly reported]

Other outcomes
Self-reported crime victimisation

Recorded crime

Pedestrian behaviour

(Several attitudinal variables are also measured but NR for both pre and post)

Findings (for outcomes within scope)
Worry about physical attack (%): men: pre 50, post 28; women: pre 87, post 57

Limitations identified by author
NR

Limitations identified by reviewer
Non-comparative design. No significance tests. Limited information on sampling. Incomplete reporting of outcomes. Short follow-up

Funding of study
Thorn Lighting Ltd

Interventions/services received by comparison group
N/A

Sample size
Baseline *n* = 207, post *n* = 153

Data collection methods
Questionnaire based on previously tested surveys; piloted in study area before main study. Questions focus on crime experience over previous 12 months and previous 6 weeks. Most questions are multiple choice; maps used to identify locations of crimes and areas avoided because of crime. Most interviews (80%) took place after dark. Data collection conducted by team of five interviewers

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
6 weeks after completion

Attrition rate
N/A

Worry about threats/pestering (%): men: pre 17, post 10; women: pre 15, post 4

Worry about sexual assault (%): women: pre 86, post 64

Subgroup analyses
By gender: see under findings

N/A, not applicable; NR, not reported.

Painter b[260,261]

Study Painter b[260,261]	*Area characteristics* Deprived, multiracial inner-city area	*Outcomes within scope of review* Fear of crime:
Study design Cross-sectional uncontrolled study	*Sampling methods and eligible population* Sampling of site for poor design and layout and for being a well-used but poorly lit area with social mix and a transient population, but not for being a high-crime area	Worry about being attacked at night; being pestered or insulted at night; being sexually assaulted at night (women); being raped at night (women)
	Sampling of individuals NR	(For above four outcomes, values for 'day' are given at pre test but not post test)
Quality rating C	*Recruitment methods and response rate* On-street. Response rate NR	(Several other relevant outcomes are reported, but for pre test only)
Location and country East London, UK	*Sample demographics* Across both time points: 50% 16–24 years, 32% 25–44 years, 15% 45–59 years, 2% ≥ 60; 61% white, 14% black, 25% Asian; 65% male, 35% female	*Other outcomes* Self-report crime victimisation
	Content of intervention Relighting to BS5489 part 3; average illuminance of 10 lux, minimum of 5 lux; high-pressure white sodium lamps were used, replacing low-pressure orange lights	Know victim of crime
		Perception of council services
	Interventions/services received by comparison group N/A	*Findings (for outcomes within scope)* Worry about (% 'yes'): being attacked, night: pre 59, post 32; being pestered or insulted, night: pre 26, post 26; being sexually assaulted, night (women): pre 77, post 60; being raped, night (women): pre 77, post 60

Limitations identified by author
Displacement of crime not investigated.
Short follow-up

Limitations identified by reviewer
Non-comparative design

Funding of study
Philips Lighting Ltd

Sample size
Baseline *n* = 143, post *n* = 143

Data collection methods
Questions focused on experiences of crime in previous 12 months and previous 6 weeks. Most interviews took place after dark. Team of five interviewers carried out data collection. One interviewer spoke several Asian languages (NR which or how many interviews were conducted in languages other than English)

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
6 weeks after completion

Attrition rate
N/A

'Do you ever feel unsafe when walking along this road because of the possibility of crime against you?' (% 'yes'): pre 57, post 42

Subgroup analyses?
By gender:

Worry about (% 'yes'):

Being attacked, night: men: pre 49, post 16; women: pre 79, post 58

Being pestered or insulted, night: men: pre 22, post 8; women: pre 55, post 55

'Do you ever feel unsafe when walking along this road because of the possibility of crime against you?' (% 'yes'): men: pre 51, post 49; women: pre 72, post 27

N/A, not applicable; NR, not reported.

Painter c[260,262]

Study Painter c[260,262]	*Area characteristics* Limited information. Urban site with high proportion of sheltered housing	*Outcomes within scope of review* Fear of crime:
Study design Longitudinal uncontrolled study	*Sampling methods and eligible population* Two separate samples (at both time points): one of pedestrians, one of local residents. Sampling of site on the basis that it was inadequately lit, a short, clearly demarcated route, an essential pedestrian through route and it contained sheltered accommodation	Feel unsafe in home (there do not appear to be post data on this)
Quality rating B		Worry about specific crimes
		Avoid going out after dark; avoid certain areas; avoid going out alone
Location and country Hammersmith and Fulham, west London, UK	*Sampling of households comprehensive within (small) selected site. One member of each household interviewed*	Risks for women/elderly after dark
	For pedestrians: pedestrians passing in selected area; interviewers waited 5 minutes and then interviewed next pedestrian, with preference for women over men	*Other outcomes* Self-report crime victimisation
		Perceived seriousness of crime and fear of crime (exact measure unclear)
		Observed pedestrian behaviour
	Recruitment methods and response rate Residents: door to door. Households were leafleted prior to this (but not told the purpose of the study). Baseline response rate 91.3% (63/69) if counting all interviews conducted; 79.7% (55/69) if counting those that provided usable data	*Findings (for outcomes within scope)* Residents survey:
		Worry about crime (post2 = 13 months) (%):
	Pedestrians: on street. Response rate NR	Burglary: pre: 'a lot' 21, 'quite a bit' 26, 'not much' 26, 'not at all' 18; post2: 'a lot' 0, 'quite a bit' 11%, Not much 48, 'not at all' 41
	Sample demographics Residents at baseline: 7% 25–44 years, 2% 45–59 years, 91% ≥ 60 years; 65% female; 95% white, 5% black. Most residents were older people living in sheltered housing	Street robbery: pre: 'a lot' 47, 'quite a bit' 19, 'not much' 21, 'not at all' 14; post2: 'a lot' 2, 'quite a bit' 21, 'not much' 30, 'not at all' 48
		Limitations identified by author Respondents' memories may have been unreliable. Resident survey concerns a specific population (elderly people in sheltered accommodation) – may not be generalisable to other populations
		Limitations identified by reviewer No comparison group. No significance testing. Unclear why such different measures are used in the two components of the study
		Funding of study Hammersmith and Fulham Council and Urbis Lighting Ltd

Pedestrians at baseline: 51% 15–25 years, 36% 26–44 years, 11% 45–59 years, 5% ≥ 60 years; 66% male; 77% white, 16% black, 7% Asian

Content of intervention
Replacement of street lights (see Technical Appendix, p.176, for full details) to BS 5489 part 4; minimum illuminance 6 lux, mean 17 lux

Interventions/services received by comparison group
N/A

Sample size
Residents: baseline n = 63 of which n = 55 provided usable data, post2 (13 months) n = 40

Pedestrians: baseline n = 200 (post n = 200, with total n = 285 distinct individuals included)

Data collection methods
Face-to-face interviews. Interview schedules covered experience of crime, fear of crime, location of crime, perceptions and views of crime. Designed in consultation with the Community Council Police Unit and for comparability with recent research. Household surveys designed to pay particular attention to older people's experiences

Baseline comparisons
N/A

Analysis method
Descriptive

Street attack: pre: 'a lot' 51, 'quite a bit' 23, 'not much' 16, 'not at all' 9; post2: 'a lot' 0, 'quite a bit' 23, 'not much' 31, 'not at all' 45

Home vandalised: pre: 37, 'quite a bit' 12, 'not much' 23, 'not at all' 28; post2: 'a lot' 0, 'quite a bit' 14, 'not much' 25, 'not at all' 61

Pestered/insulted in street: pre: 'a lot' 35, 'quite a bit' 12, 'not much' 28, 'not at all' 26; post2: 'a lot' 0, 'quite a bit' 5, 'not much' 16, 'not at all' 80

Perceived risks for elderly after dark (%): pre: 100; post2: 95

Perceived risks for women after dark (%): pre: 95; post2: 95

Likelihood of risk [sic] for elderly after dark (%): pre: 'very likely' 81, 'not very likely' 14, 'don't know' 5; post2 'very likely' 12, 'not very likely' 61, 'don't know' 18

Likelihood of risk [sic] for women after dark (%): pre: 'very likely' 77, 'not very likely' 12, 'don't know' 12; post2 'very likely' 18, 'not very likely' 57, 'don't know' 25

Avoid going out after dark (%): pre: 'always' 67, 'often' 9, 'sometimes' 12, 'never' 12; post2: 'always' 63, 'often' 5, 'sometimes' 9, 'never' 23

Avoid certain areas (%): pre: 'always' 53, 'often' 9, 'sometimes' 7, 'never' 30; post2: 'always' 11, 'often' 7, 'sometimes' 11, 'never' 71

Power calculation
NR

Length of follow-up
13 months after completion for household survey;
6 weeks for pedestrian survey

Attrition rate
Residents: 21.8% (12/55) at post1, 27.3% (15/55) at post2

Pedestrians: N/A, although there was a panel component

Avoid buses/tubes (%): pre: 'always' 51, 'often' 9, 'sometimes' 28, 'never' 12; post2: 'always' 5, 'often' 2, 'sometimes' 25, 'never' 67

Avoid certain people (%): pre: 'always' 56, 'often' 14, 'sometimes' 9, 'never' 21; post2: 'always' 7, 'often' 2, 'sometimes' 21, 'never' 71

Avoid going out alone (%): pre: always 67, often 10, sometimes 10, never 12; post2: always 36, often 7, sometimes 18, never 39

Pedestrian survey:

'Do you worry about the possibility of the following things happening during the day or night when walking through here?' (% 'yes'; post = 6 weeks): attack, night: pre 60, post 34; attack, day: pre 25, post 6; pester, night: pre 88, post 32; pester, day; pre 23, post 7; racial attack, night: pre 12, post 9; sexual assault, night (women): pre 78, post 50; sexual assault, day: pre 35, post 13; rape, night (women): pre 78, post 25; rape, day: pre 35, post 13

Subgroup analyses?
NR for relevant outcomes; a few analyses by gender are reported for pre test but not post test

N/A, not applicable; NR, not reported.

Painter d[263]

Study
Painter d[263]

Study design
Longitudinal controlled study (although analyses were cross-sectional, attrition is reported)

Quality rating
A

Location and country
Dudley, West Midlands, UK

Area characteristics
Local authority housing estate; mostly terraced or semi-detached low-rise housing

Sampling methods and eligible population
Site selected for relighting by local engineers because lighting was poor; control site sampled for similarity with regard to demographics and design

Sampling of households was random from electoral register (50% of total)

Sampling of (adult) individuals within households random

Recruitment methods and response rate
Door to door; unlimited callbacks made to locate sampled individual. Response rate at baseline 77%

Sample demographics
At baseline: 64.8% female; 97.6% white; 46.5% 18–44 years, 30.2% ≥ 60 years; 68.9% not employed

Content of intervention
Installation of 129 new high-pressure sodium white lights over 1500 m of road. Relighting to BS5489 category 3/2 standard (average illuminance 6 lux, minimum 2.5 lux). 'The amount of useful light more than doubled' (p. 215)

Interventions/services received by comparison group
'There were no changes to policing strategies or to Neighbourhood Watch or to the history of the survey areas in any way which might account for the differential changes in crime' (p. 225)

Outcomes within scope of review
Fear of crime:

Feel unsafe in own home

Won't go out alone after dark

Risks for women/men after dark

Estate is safe after dark

Other outcomes
Crime 'is a problem'

Perceived crime rates

Self-reported victimisation

Pedestrian counts

Satisfaction with estate; 'estate is friendly'

Findings (for outcomes within scope)
Estate safe after dark (%): I pre 45.2, C pre 45.2, I post 45.9, C post 35.1 ($p < 0.01$ for I–C comparison at post)

Won't go out alone after dark (%): I pre 43.2, C pre 46.6, I post 54.3, C post 60.4 (NS for I–C comparison at post)

Limitations identified by author
NR

Limitations identified by reviewer
No major limitations. No longitudinal significance tests for outcomes of interest to this review (only comparing intervention and control at single time points). No outcome relating to fear of crime outdoors

Funding of study
Urbis Lighting Ltd

Sample size
Baseline *n* = 879 (I 431, C 448), post *n* = 743 (I 372, C 371)

Data collection methods
Face-to-face interviews (approx. 45–90 minutes).
Team of seven interviewers who were blind to the purpose of the survey (interviewers matched to same respondents pre and post as far as possible); 20% of interviews quality assured by fieldwork supervisor

Baseline comparisons
Outcome variables, age, gender, length of residence, employment, social cohesion variables. Intervention participants slightly younger than control participants, otherwise few significant differences

Analysis method
Chi-square (difference in proportions for crime outcomes)

Power calculation
Yes

Length of follow-up
≈1 year after completion

Attrition rate
15.5% (136/879), but note that analyses were cross-sectional

Risks for women after dark (%):
I pre 69.6, C pre 68.3, I post 66.9, C post 76.0 (*p* < 0.01 for I–C comparison at post)

Risks for men after dark (%):
I pre 29.7, C pre 36.8, I post 28.0, C post 34.2 (NS for I–C comparison at post)

Feel unsafe in own home (%):
I pre 28.6, C pre 34.8, I post 24.5, C post 26.1 (NS for I–C comparison at post)

Subgroup analyses?
NR

C, control; I, intervention; NR, not reported; NS, not significant.

Painter e[264]

Study
Painter e[264]

Study design
Longitudinal controlled study (although analyses were cross-sectional, attrition is reported)

Quality rating
A

Location and country
Stoke-on-Trent, UK

Area characteristics
Residential area, primarily local authority housing; mostly low-rise houses

Sampling methods and eligible population
Sampling of intervention sites: 'The experimental area was chosen for relighting by the council on the basis of its perceived need' (p. 88)

Sampling of households comprehensive (for the intervention area) or quasi-random (every nth individual, for the control area) with the electoral register as the sampling frame

Sampling of individuals within households random

Recruitment methods and response rate
Door to door by interviewers. Response rate at pre test 84%

Sample demographics
55–63% female; 55–66% ≥ 45 years; 25–31% employed

Content of intervention
Installation of 110 high-pressure sodium white lights over 1000 m of road and spacing of lights reduced. Relighting to BS5489 part 3 (average illuminance 6 lux, minimum 2.5 lux). 'The amount of useful light increased fivefold' (p. 88)

Interventions/services received by comparison group
NR

Sample size
At baseline $n = 540$ (I 317, C 88, adjacent 135), post $n = 480$ (I 278, C 81, adjacent 121)

Outcomes within scope of review
Fear of crime:

'High fear of crime'

Feel unsafe in own home

Avoid going out after dark

Worry about burglary; street robbery; street assault; vandalism to home; car being stolen/damaged (precise questions are NR, but authors state that they were similar to the those in the British Crime Survey instrument)

Estate is unsafe to walk after dark

Risks for women alone after dark

Risks for elderly alone after dark

Other outcomes
Various perceptions of area

Self-report crime victimisation

[Note: 'talk to most/all neighbours' (which would count as a social well-being outcome) is reported at pre test but not post]

Findings (for outcomes within scope)
I = experimental, A = adjacent, C = control. All figures are %

Unsafe to walk in dark: I pre 66.2, A pre 68.9, C pre 60.2; I post 56.5, A post 61.2, C post 59.2

Limitations identified by author
NR

Limitations identified by reviewer
Slight unclarity regarding outcome measures

Funding of study
Urbis Lighting Ltd and the Midlands Electricity Board

Data collection methods
Questions covered experiences of crime (previous 12 months) and perceptions and behaviour. Based on British Crime Survey instruments. Interviews conducted face-to-face and lasted about 90 minutes. Interviews carried out by team of 19 interviewers from social research company; they were blind to allocation and matched with same respondents pre and post as far as possible; 20% of surveys were quality assured

Baseline comparisons
Yes, for demographic variables and outcome measures. Few significant differences

Analysis method
Mixed: cross-sectional tests of significance are presented for all variables, within-group pre–post for some, and treatment × time interaction for a couple

Power calculation
Yes

Length of follow-up
11 months after completion

Attrition rate
11.1% (although note that most analyses were cross-sectional)

Risks for women alone after dark: I pre 88.1, A pre 90.3, C pre 88.9; I post 86.5, A post 83.6, C post 81.3

Risks for elderly alone after dark: I pre 93.7, A pre 94.6, C pre 88.2; I post 92.1, A post 89.0, C post 87.0

Worry about burglary: I pre 75.7, A pre 80.0, C pre 68.2; I post 73.4, A post 74.4, C post 71.6

Worry about street robbery: I pre 30.5, A pre 37.0, C pre 36.4; I post 33.5, A post 33.9, C post 28.4

Worry about street assault: I pre 36.2, A pre 38.5, C pre 34.5; I post 35.3, A post 37.2, C post 32.1

Worry about vandalism to home: I pre 63.4, A pre 67.4, C post 59.1; I post 67.3, A post 66.1, C post 66.7

Worry about car being stolen/damaged: I pre 53.3, A pre 68.4, C pre 59.5; I post 47.5, A post 53.7, C post 45.7

Avoid going out after dark: I pre 33.1, A pre 38.6, C pre 34.1; I post 33.1, A post 35.9, C post 37.0

Feel unsafe in own home: I pre 52.7, A pre 53.3, C pre 46.6; I post 49.3, A post 43.0, C post 34.6

High fear of crime: I pre 54.3, A pre 58.5, C pre 48.9; I post 51.4, A post 47.1, C post 39.5

None of these findings were significant at $p < 0.05$

Subgroup analyses?
NR

C, control; I, intervention; NR, not reported.

Painter f[265]

Study Painter f[265]	*Area characteristics* Local authority housing estate; mostly terraced or semi-detached low-rise housing	*Outcomes within scope of review* Fear of crime:	*Limitations identified by author* NR

Study design
Longitudinal controlled study (although analyses were cross-sectional, attrition is reported)

Sampling methods and eligible population
Intervention site 'was selected for relighting by local authority engineers on the basis of need' (p. 269). Control area selected for comparability

Households sampled randomly using the electoral register as the sampling frame. Interviewers asked if a young person lived at the address or if any lived next door. Eligible population for this study was young people (12–17 years)

Scale based on nine items (feeling unsafe in streets after dark; risks for young people; perceived fear of young people; hearing or seeing anything on streets which makes you feel unsafe; worry about being attacked in street; worry about being pestered or threatened in street; avoid going out; avoid certain streets after dark; avoid certain people after dark)

Other outcomes
Self-report delinquency

Self-report victimisation

Various 'crime/antisocial behaviour is a problem' measures

Limitations identified by reviewer
No serious limitations. Index measure contains a range of distinct measures, which are not disaggregated in the report

Quality rating
A

Location and country
Dudley, West Midlands, UK

Recruitment methods and response rate
Door to door. Response rate was 77% for initial survey, but overall rate is not specifiable because of recruitment methods

Findings (for outcomes within scope)
Fear of Crime index: I: pre 3.56, post 2.95; C: pre 3.25, post 3.52 (p = 0.002)

Funding of study
Urbis Lighting Ltd

(Same intervention as Painter d, but different data)

Sample demographics
Young people; otherwise NR

Subgroup analyses?
NR

Content of intervention
'129 high-pressure sodium (white) lights were installed over 1,500 metres of roadway in the experimental area . . . The amount of useful light more than doubled. In general, however, only the main roads were re-lit, not the alleys between the houses' (p. 269)

Interventions/services received by comparison group
NR

Sample size
Baseline n = 307 (I 140, C 167), post n = 334 (I 170, C 164); total n = 424 (some were in both pre and post sample)

Data collection methods
'The interviewers were not told about the main focus of the project (on improved street lighting)' (p. 270). 'Each face-to-face interview was completed without parents present and took about 60–90 minutes' (p. 271) (Further detail on validity of delinquency measures is presented, but this is less relevant to this review)

Baseline comparisons
Yes, for gender, age, ethnicity, several perceptual variables. These were controlled for in the analysis

Analysis method
Poisson regression

Power calculation
NR

Length of follow-up
12 months after completion

Attrition rate
29.3% (90/307), although note that some different individuals were included at post test, and analyses are cross-sectional

C, control; I, intervention; NR, not reported.

Palmer[307]

Study
Palmer[307]

Study design
Cross-sectional uncontrolled study

Quality rating
C

Location and country
Durham, UK

Area characteristics
Bus station in city centre; regarded as poorly maintained and a crime 'hotspot'

Sampling methods and eligible population
Site recommended by local Crime and Disorder Reduction Partnership as being known for high crime and antisocial behaviour

Sampling of individuals NR

Recruitment methods and response rate
'Respondents were approached by members of the interview team in the bus station and the streets immediately next to it, using a standard statement to introduce themselves and to explain why they were asking questions' (p. 51). Response rate NR

Sample demographics
At baseline: 54.3% female; 4.3% < 16 years, 29.4% 16–24 years, 31.6% 25–44 years, 17.0% 45–64 years, 11.7% 65–74 years, 6.0% ≥ 75 years; 96.7% white, 2.2% black, 1.1% other

Content of intervention
Bus station repainted and graffiti removed by offenders serving Community Service Orders

Interventions/services received by comparison group
N/A

Outcomes within scope of review
Fear of crime:

Feelings of safety

Perceived likelihood of experiencing crime at the bus station

Other outcomes
Perceived likelihood of seeing crime at the bus station

Perceptions of intervention

Findings (for outcomes within scope)
'Question 3 asked if respondents felt safe in the vicinity of the bus station. Both before and after the project the average response was "Fairly safe", with a statistical test indicating no impact of the project on feelings of safety' (p. 52)

Likelihood of experiencing crime at the bus station (1 = very likely, 4 = very unlikely): verbal abuse: pre 2.26, post 2.67 ($p < 0.001$); physical assault: pre 3.05, post 3.34 ($p < 0.001$); sexual assault: pre 3.61, post 3.65 (NS); robbery: pre 2.91, post 3.11 ($p < 0.01$)

Subgroup analyses?
By gender:

Likelihood of experiencing crime at the bus station:

Limitations identified by author
Different respondents at pre and post. Fear may differ depending on patterns of usage of bus station (e.g. time of day) – this was not investigated

Limitations identified by reviewer
No comparison group. Feelings of safety outcome not fully reported

Funding of study
Funding for study was included in funding of intervention, which came from North East Crime Reduction Service, Arriva Buses and the Durham Probation Service

Sample size
Baseline *n* = 290, post *n* = 292

Data collection methods
Interviews carried out face-to-face in bus station or surrounding area

Baseline comparisons
N/A

Analysis method
Chi-square; analysis of variance for gender differences

Power calculation
NR

Length of follow-up
Unclear

Attrition rate
N/A

Verbal abuse: pre: males 2.20, females 2.33; post: males 2.64, females 2.73 (time × sex NS)

Physical assault: pre: males 2.94, females 3.18; post: males 3.38, females 3.34 (time × sex $p < 0.05$)

Sexual assault: pre: males 3.70, females 3.55; post: males 3.74, females 3.59 (time × sex NS)

Robbery: pre: males 2.98, females 2.90; post: males 3.19, females 3.06 (time × sex NS)

N/A, not applicable; NR, not reported; NS, not significant.

Payne[266]

Study Payne[266]	*Area characteristics* NR	*Outcomes within scope of review* Fear of crime:	*Limitations identified by author* NR
Study design Longitudinal uncontrolled study	*Sampling methods and eligible population* Sampling of site unclear. Sampling of households comprehensive within sampled area	'Most of us worry at some time or other about being the victim of a crime. Could you say how worried you are about the following …'	*Limitations identified by reviewer* Non-comparative study. Significance of findings NR. Self-selected sample with very low response rates
Quality rating C	*Recruitment methods and response rate* By post. Response rate 21.6% for follow-up survey (NR for baseline survey)	'How much is your own quality of life affected by crime and the fear of crime on a scale from 1 to 10, where 1 is no effect and 10 is a total effect on your	*Funding of study* Conducted, and presumably funded, by Warwickshire County Council
Location and country Rugby, UK	*Sample demographics* At follow-up (baseline NR): 53% female; 11% (approx.) 18–29 years, 34% 30–44 years, 27% 45–59 years, 28% ≥ 60 years	quality of life?' *Other outcomes* Security behaviours	
	Content of intervention Street lighting improvements; no detail reported	Perceptions of lighting Recorded crime	
	Interventions/services received by comparison group N/A	*Findings (for outcomes within scope)* Worry about (% 'very' or 'fairly worried'): having your home broken into and something stolen: pre	
	Sample size Baseline *n* NR, post *n* = 228 (*n* = 137 included in both baseline and post)	80, post 86; being mugged and robbed in your area: pre 58, post 66; having your car stolen from your street/driveway: pre 71, post 69; having items stolen from your car whilst parked in your street/driveway:	

Data collection methods
Self-complete questionnaire (reproduced on pp. 21–4 of report)

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
Unclear, < 12 months

Attrition rate
N/A

pre 72, post 68; being physically attacked by strangers in your area: pre 55 (approx.), post 61
Effect of fear of crime on quality of life (scale 1–10: low = 1–3, medium = 4–7, high = 8–10): pre: low 39, medium 43, high 18; post: low 32, medium 48, high 20

(Significance NR for any outcome measure)

Subgroup analyses
By age and gender but only for post test (and incompletely reported)

Petticrew[301,302]

Study Petticrew[301,302] *Study design* Longitudinal controlled study *Quality rating* A *Location and country* Several locations, Scotland	*Area characteristics* A range of areas reflecting social housing provision in Scotland generally *Sampling methods and eligible population* Sampling of intervention sites for diversity of city, town and rural areas (and for new social housing developments). Sampling of control sites for similarity to intervention. Sampling of individuals unclear but aim was to obtain a 'balanced' sample *Recruitment methods and response rate* Tenants initially recruited by landlord with information about the study supplied by research team Response rate 42% (723/1723) *Sample demographics* 70–77% female; mean age 43–50 years; 72–97% council/housing association tenants; 98% white; median income £175–179 per week *Content of intervention* Move to newly built homes, generally with better conditions and more space; in many cases this also involved a change of housing provider and a move to a different area *Interventions/services received by comparison group* NR *Sample size* Baseline *n* = 723 (I 334, C 389), post *n* = 547 (I 262, C 285)	*Outcomes within scope of review* Fear of crime: Composite measure of the following three (which include perceived safety as well as fear): 'I feel safe walking around my area after dark', 'I would be happy for my children to be out after dark' and 'This is a safe place to live' (Note: there is also an outcome 'My home feels safe' included under perceptions of the home, but this does not clearly relate to crime and so data are not extracted here) Mental health: Sense of personal control ('mastery') SF-36 mental health scale Use of mental health medications Loneliness Physical health: Self-reported general health SF-36 Long-standing illness Physical functioning Common symptoms Accidents	*Limitations identified by author* Relatively small sample; only 2-year follow-up; some differences between groups *Limitations identified by reviewer* No serious limitations, but a very large number of outcomes and crime/fear of crime is not the main focus *Funding of study* Scottish Government, Medical Research Council, Chief Scientist Office (Scottish Government Health Directorate) and University of Glasgow

Data collection methods
Survey was piloted. Interviews conducted by specially trained interviewers, face-to-face or by telephone for remote areas. Interviewers generally approached areas in groups to minimise non-response. Postal survey sent to all members of intervention group 1 year after they moved

Baseline comparisons
Yes. Control households were matched on authority type, household type and household tenure. Comparisons reported for these and a range of demographic variables; no major differences

Analysis method
Chi-square; loglinear/logit modelling; *t*-test/analysis of variance

Power calculation
NR

Length of follow-up
≈2 years after completion

Attrition rate
22% intervention, 27% control at 2 years

Health behaviours:

Smoking

Alcohol

Physical activity (although data not clearly reported for this outcome)

Eating fruit and vegetables

Social well-being:

Community participation (data on this not clearly reported)

Local social network

Social support

Neighbourliness

Community cohesion

Collective efficacy

Other outcomes
Various relating to housing problems, perceptions of housing, perceptions of area

Findings (for outcomes within scope)
Perceived safety index (scale 0–12): pre 5.6, post 6.7 (significant at $p < 0.001$ for one-group change)

Mental health:

Pearlin mastery score: I: pre 18.8, post 19.2; C: pre 18.8, post 18.8 (NS)

Psychosocial benefits of housing score (composite measure of, for example, privacy, control, freedom, scale 0–40): I: pre 22.7, post 29.7; C: pre 29.3, post 29.2 (significant at $p < 0.001$)

SF-36 mental health score: I: pre 40.8, post 43.2; C: pre 43.3, post 45.5 (NS)

Use of prescribed mental health medications (%): I: pre 19.6, post 21.5; C: pre 17.5, post 17.3 (NS)

Sometimes or often lonely (%): I: pre 24.4, post 23.0; C: pre 19.1, post 17.3 (NS)

Physical health:

Self-reported general health 'good' or better (%): I: pre 59.0, post 60.7; C: pre 56.8, post 53.9 (NS)

Longstanding illness (%): I: pre 55.9, post 56.5; C: pre 62.6, post 67.1 (NS)

Limitations in physical functioning (%): I: pre 43.8, post 42.1; C: pre 53.7, post 50.0 (NS)

Number of common symptoms: I: pre 5.0, post 4.6; C: pre 5.1, post 4.7 (NS)

Asthmatic symptoms (wheezing) (%): I: pre 40.1, post 44.3; C: pre 43.7, post 46.1 (NS)

Accidents (%): I: pre 17.7, post 14.1; C: pre 14.4, post 14.8 (NS)

Health behaviours:

Smoking (%): I: pre 58.7, post 55.7; C: pre 54.5, post 48.6 (NS)

Drinking (%): I: pre 77.0, post 76.3; C: pre 66.4, post 68.0 (NS)

Five or more portions of fruit or vegetables per day (%): I: pre 25.5, post 28.2; C: pre 28.2, post 27.1 (NS)

Social well-being:

Mean size of local social network (immediate family): I: pre 2.1, post 1.6; C: pre 2.1, post 1.6 (NS)

Mean size of local social network (close friends/other relatives): I: pre 5.4, post 3.7; C: pre 5.1, post 3.8 (NS)

Local social support: data not clearly presented but no significant change

I visit neighbours in their homes (%): I: pre 33.9, post 41.6; C: pre 37.0, post 35.6 (NS)

If I needed advice I could go to someone in my neighbourhood (%): I: pre 57.4, post 70.6; C: pre 72.2, post 70.1 (NS)

I borrow things and exchange favours with my neighbours (%): I: pre 38.0, post 44.7; C: pre 38.1, post 40.5 (NS)

Community cohesion scale (0–12): I: pre 11.4, post 12.2 (significant at $p = 0.001$ for one-group change)

Collective efficacy scale (0–16): I: pre 10.1, post 11.1 (significant at $p = 0.003$ for one-group change)

Subgroup analyses?
Some analyses by age, gender, length of residence, household type and several of the outcome variables (e.g. community cohesion) reported, although most are cross-sectional only. For perceived safety, only by dwelling change; change in dwelling privacy; change in neighbourhood infrastructure; change in neighbourhood crime and antisocial behaviour

C, control; I, intervention; NR, not reported; NS, not significant.

Rhodes[305]

Study	Area characteristics	Outcomes within scope of review	Limitations identified by author
Study Rhodes[305] *Study design* Longitudinal uncontrolled study [there is both a longitudinal component and a cross-sectional component; in addition, there are informal comparisons with national panel data (British Crime Survey for perceived safety data), but they are not clearly analysed] *Quality rating* C *Location and country* Various locations in England: Brent (London), Brighton and Hove, Bradford, Rochdale, Derbyshire, Sunderland and Nottingham	*Area characteristics* A wide range of deprived areas *Sampling methods and eligible population* Sampling of sites: 'The resident survey areas were chosen to reflect different types of area and the broad range of regeneration objectives covered under the SRB [Single Regeneration Budget] programme' (p. 300) Sampling of individuals random based on Postal Address File *Recruitment methods and response rate* Door to door by interviewers. Response rate 59% and adjusted response rate 64% *Sample demographics* NR *Content of intervention* Single Regeneration Budget – a broad area-based initiative seeking to impact on multiple outcomes. The primary focus was economic and employment-related outcomes, but schemes could also focus on housing, crime, environment and quality of life, including health and culture. Programmes included a range of physical regeneration initiatives; transport improvements; education and training; community development with a view to environmental improvement; and providing housing. Most expenditure was on the physical environment (40%) or housing (21%) *Interventions/services received by comparison group* NR	*Outcomes within scope of review* Fear of crime: Area very unsafe when walking alone after dark Physical health: Self-reported general health Social well-being: Feel closely involved with the community Taken part in voluntary/community activity in last year Agree if alone could rely on friends/relatives in area to help Agree could count on friends/relatives to keep an eye on home Agree could turn to friends/relatives locally for advice or support *Other outcomes* Various employment and economic outcomes Perceptions of/satisfaction with area *Findings (for outcomes within scope)* (Significance level throughout is unclear) Area very/fairly safe when walking alone in area after dark (%): I: pre 40, post 42; comparator figures not available (NS for one-group change)	*Limitations identified by author* NR *Limitations identified by reviewer* Presentation and analysis of outcome data is not very clear and the analysis is essentially non-comparative. The intervention includes a wide range of different initiatives and programmes that are not disaggregated in the analysis *Funding of study* Department for Transport, Local Government and the Regions

Sample size
Baseline *n* = 3459, post *n* = 3866

Data collection methods
'The surveys in 1996, 1999 and 2001 consisted of face-to-face interviews with households of, on average, about 45 minute duration' (p. 295)

Baseline comparisons
Only for outcome measures, no other variables

Analysis method
Unclear for effectiveness findings

Power calculation
Yes

Length of follow-up
Depends on site. Post-test data were collected in the final year of the scheme, which was ~5 years after the scheme commenced

Attrition rate
65% for panel sample, although most findings are analysed as cross-sectional

Area a bit unsafe/very unsafe/don't go out alone after dark (%): I: pre 42, post 38; comparator figures not available (authors cite 'very unsafe' only) (significant for one-group change)

Area very unsafe when walking alone after dark (%): I: pre 16; –3% fall at post test; –4% relative to national figures (significance NR)

Do not feel closely involved with the community (%): I: pre 70; –5% fall at post test; comparator figures not available (significance NR)

Whether taken part in voluntary/community activity in last year (%): I: pre 14, post 14; comparator figures not available (NS for one-group change)

Agree if alone could rely on friends/relatives in area to help (%): I: pre 84, post 84; C: pre 84, post 91 (NS)

Agree could count on friends/relatives to keep an eye on home (%): I: pre 85, post 87; C: pre 85, post 92 (NS)

Agree could turn to friends/relatives locally for advice or support (%): I: pre 79, post 82; C: pre 79, post 85 (significant change for one-group intervention group)

Self-reported general health good (%): I: pre 46, post 43; C: pre 55, post 59 (significant change for one-group intervention group)

Self-reported general health not good (%): I: pre 23, post 25; C: pre 12, post 14 (significant change for one-group intervention group)

Subgroup analyses?
NR

Squires a[274]

Study	Squires a[274]
Study design	Cross-sectional uncontrolled study
Quality rating	C
Location and country	Ilford, east London, UK

Area characteristics
Limited information. Town centre site

Sampling methods and eligible population
Sampling of site NR

Sampling of individuals through two strategies at pre test: distributing survey forms to employers to pass on to their staff; sampling on-street (police crime prevention caravan was also on-site). At post test, all sampled on-street

Recruitment methods and response rate
Through employers for employee survey; on-street for pedestrian survey. Response rates NR

Sample demographics
At baseline: 60% female; 10.1% <20 years, 28.5% 20–29 years, 23.4% 30–39 years, 13.3% 40–49 years, 11.6% 50–59 years, 7.4% 60–69 years, 5.4% ≥70 years; 14% Asian, 7.8% black (remainder presumably white)

Content of intervention
CCTV system in town centre (limited details reported)

Interventions/services received by comparison group
N/A

Outcomes within scope of review
Fear of crime:

'Do you feel safe in the town centre when alone?' day/night

Other outcomes
Recorded crime

Self-reported victimisation

Perceived crime rates

Attitudes to CCTV, crime, policing

Findings (for outcomes within scope)
Feelings of safety, day (%): pre: 'very safe' 42, 'fairly safe' 51, 'fairly unsafe' 4, 'very unsafe' 2; post: 'very safe' 52, 'fairly safe' 39, 'fairly unsafe' 6, 'very unsafe' 2

Feelings of safety, night (%) pre: 'very safe' 9, 'fairly safe' 27, 'fairly unsafe' 30, 'very unsafe' 25; post: 'very safe' 15, 'fairly safe' 28, 'fairly unsafe' 24, 'very unsafe' 22

Subgroup analyses?
By gender

Limitations identified by author
NR

Limitations identified by reviewer
Non-comparative design. No significance tests. Unclarity round sampling

Funding of study
NR

Sample size
Baseline *n* = 750, post *n* = 782

Data collection methods
'The survey was based upon a questionnaire, a copy of which can be found in appendix 4, at the end of this report. The questionnaire, a version of which had been trialled earlier in Brighton, was designed to be completed either by respondents alone or administered by interviewers' (p. 17)

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
8 months after completion

Attrition rate
N/A

Feelings of safety, day (%): men 'very safe': pre 59, post 62; women 'very safe': pre 31, post 43
Feelings of safety, night (%): men 'unsafe': pre 35, post 30; women 'unsafe': pre 65, post 56 (presumably this aggregates 'fairly' and 'very' unsafe)

(Some outcomes also broken down by age and ethnicity for post test only)

N/A, not applicable; NR, not reported.

Squires b[275]

Study		Outcomes within scope of review	Limitations identified by author
Study Squires b[275]	Area characteristics Deprived local authority estate with 'a significant reputation for crime and disorder problems' (p. 1)	Outcomes within scope of review Fear of crime: Feelings of safety if out and about day/night	Limitations identified by author NR Limitations identified by reviewer Non-comparative design. No significance tests. Some unclarity around methods, particularly sampling
Study design Cross-sectional uncontrolled study	Sampling methods and eligible population Sampling of site NR	Other outcomes Self-reported victimisation	Funding of study NR
Quality rating C	Sampling of households apparently comprehensive: all houses to which access could be gained were sampled	Crime reporting behaviour	
Location and country Brighton, UK	Sampling of individuals within households unclear	Attitudes to CCTV	
	Recruitment methods and response rate Recruited door to door with initial introduction letter mailed previously. Completed 243 interviews compared with a target of 300, but unclear how many households were actually approached (so actual response rate cannot be calculated)	Perceptions of estate Perceived crime rates Recorded crime	
	Actual response rate NR	Findings (for outcomes within scope) Feelings of safety (%):	
	Sample demographics At baseline: 57.2% female; 9.0% <20 years, 20.2% 20–29 years, 24.3% 30–39 years, 18.1% 40–49 years, 8.6% 50–59 years, 12.3% 60–69 years, 7.4% ≥70 years; 27.1% employed, 24.7% unemployed, 21.8% retired, 5.7% student, 18.9% full-time parent/carer; 99.6% white	Day: pre: 'very safe' 79, 'fairly safe' 14, 'fairly unsafe' 3.7, 'very unsafe' 2; post: 'very safe' 74, 'fairly safe' 16, 'fairly unsafe' 4, 'very unsafe' 4.6 Night: pre: 'very safe' 34, 'fairly safe' 28, 'fairly unsafe' 14, 'very unsafe' 23; post: 'very safe' 31, 'fairly safe' 19, 'fairly unsafe' 12, 'very unsafe' 35	

Subgroup analyses?
NR as such: age and gender breakdowns are given
for baseline findings but not follow-up

Content of intervention
Installation of 10 CCTV cameras on housing estate

Interventions/services received by comparison group
N/A

Sample size
Baseline *n* = 243, post *n* = 237

Data collection methods
Individual interviews conducted in participants'
homes

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
≈1 year after completion

Attrition rate
N/A

N/A, not applicable; NR, not reported.

Vamplew[267]

Study
Vamplew[267]

Study design
Cross-sectional uncontrolled study

Quality rating
C

Location and country
Middlesbrough and environs, UK

Area characteristics
Limited information, although all were 'eligible for Urban Aid funding' (section 1.6)

Sampling methods and eligible population
Sampling of site aimed for 'a poorly-lit area with a problem of night-time crime' (section 1.4)

Sampling of individuals: 'Random samples of some 8–10 percent of the adult population in each area were interviewed in both "before" and "after" surveys' (section 1.10). Sampling frame, method of random sampling and exact definition of eligible population NR

Recruitment methods and response rate
Recruitment methods NR. Response rates 'approximately 87 percent' in each wave (section 1.10)

Sample demographics
NR

Content of intervention
Relighting to BS5489 part 3 (average 10 lux) with new high-pressure sodium white lamps

Interventions/services received by comparison group
N/A

Sample size
Baseline *n* = 820, post *n* = 927

Outcomes within scope of review
Fear of crime:

'People can have fears about crime no matter where they live. Thinking just about (respondent's area), is there anything in particular that worries you?'

Feel unsafe when out alone at night

Doesn't go out alone at night as often as would wish (unclear if question actually referred to crime/fear of crime)

Other outcomes
Never goes out alone at night (not extracted here as appears not to relate to fear of crime)

Perceived seriousness of various crimes

(Several perceptions of lighting variables measured, but not pre and post)

Findings (for outcomes within scope)
'People can have fears about crime no matter where they live. Thinking just about (respondent's area), is there anything in particular that worries you?':

Findings reported inconsistently: section 2.16 states pre 49% yes, post 47% yes, but in table 2.6 these same figures are given as 'no fears', i.e. (presumably) no

Limitations identified by author
NR

Limitations identified by reviewer
Non-comparative design. Short follow-up. No significance tests. Outcome measures are idiosyncratic and not always clearly reported. Author's interpretation of findings is rather optimistic

Funding of study
Study conducted, and presumably funded, by Cleveland County Council

Data collection methods
Questionnaire covered experiences of crime, fear of crime, attitudes to lighting. Limited information on context of data collection

Process of data collection NR

Baseline comparisons
N/A

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
≈4 months after start of intervention, < 1 month after completion

Attrition rate
N/A

Specific fears (%): burglary/intruders: pre 20, post 27; physical attack: pre 10, post 5; vandalism, graffiti, etc.: pre 5, post 7; poorly lit areas, fear of attack: pre 5, post 6; gangs/youths on the streets: pre 5, post 5; glue sniffers: pre 4, post 2; car crime: pre 0, post 2; other: pre 10, post 10

Specific fears when alone at night (%): physical attack: pre 28, post 24; poor lighting/fear of dark: pre 7, post 4; gangs/youths on the streets: pre 6, post 6; glue sniffers: pre 6, post 6; sexual assault: pre 2, post 2; being pestered: pre 2, post 2; being followed: pre 2, post 1; burglary: pre 1, post 2; other: pre 6, post 5

Feel unsafe when alone at night (%): pre 45, post 39

Doesn't go out alone at night as often as would wish (%): pre 26, post 18

Subgroup analyses?
By gender

Feel unsafe when alone at night (%): men: pre 15, post 15; women: pre 67, post 57

Doesn't go out alone at night as often as would wish (%): men: pre 8, post 5; women: pre 39, post 29

N/A, not applicable; NR, not reported.

Vrij[268]

Study	Area characteristics	Outcomes within scope of review	Limitations identified by author
Vrij[268]	Limited information; high perceived risk for crime	Fear of crime:	NR
Study design	Sampling methods and eligible population	'To what extent do you feel safe here?'	Limitations identified by reviewer
Cross-sectional uncontrolled study (authors refer to pre test as 'control')	Site was selected on the basis of a previous study (also reported in this report), which found this to be the location with the highest perceived risk of crime. Individuals were approached by a police officer; unclear if there was any procedure for sampling individuals	'How likely do you think it is that you could be molested here?'	Non-comparative study. Possible sampling bias
		Other outcomes	Funding of study
		'How much time do you think it would take before someone came to your rescue if you were in trouble here?'	NR
Quality rating	Recruitment methods and response rate		
C	Recruitment on-street by uniformed police officer. Response rate NR	Findings (for outcomes within scope)	
		Perceived likelihood of victimisation (higher score = more likely): towards light: pre 4.08 ± 2.7, post 3.65 ± 2.2; away from light: pre 5.26 ± 2.5, post 3.20 ± 2.3; mean: pre 4.52, post 3.42 ($p < 0.01$)	
Location and country	Sample demographics		
Enkhuisen, the Netherlands	70% female; mean age 29 years		
	Content of intervention	Feelings of safety (higher score = less safe): towards light: pre 4.49 ± 2.4, post 3.18 ± 1.7; away from light: pre 5.56 ± 1.9, post 3.34 ± 2.0; mean: pre 4.89, post 3.26 ($p < 0.01$)	
	Brighter bulbs in street lights and installation of one extra lamp post. The minimum lighting (measured in lux) was increased by a factor of ≈5		
	Interventions/services received by comparison group	Interaction with towards/away from light NS for both outcomes	
	N/A		
	Sample size		
	Baseline $n = 78$, post $n = 82$		

Subgroup analyses?
NR

Data collection methods
Conducted by police officers on-street. Questions
focused on perceptions of safety and demographics

Baseline comparisons
N/A

Analysis method
'a multivariate analysis of variance was performed
according to a 2 × 2 factorial design, with factors (A)
the lighting of the location and (B) the approach
route' (p. 212)

Power calculation
NR

Length of follow-up
1 week between baseline and post test (but authors
are mainly interested in immediate changes in
perceptions)

Attrition rate
N/A

N/A, not applicable; NR, not reported.

Webb[292]

Study
Webb[292]

Study design
Cross-sectional controlled study with no evidence of change in population (pre–post comparison NR, but both were randomly sampled from the same population)

Quality rating
C

Location and country
London, UK

Area characteristics
Limited information reported

Sampling methods and eligible population
Sampling of intervention sites unclear; these appear to be all the pilot projects for this programme. Sampling of control sites unclear

Sampling of households random from areas near stations (unclear exactly how sampling was conducted)

Sampling of individuals (one per household) unclear

(Note that the methodology report[375] was unretrievable, so it is possible that there is a fuller description of the methods elsewhere)

Recruitment methods and response rate
Door to door. Response rate NR

Sample demographics
NR

Content of intervention
Three projects were undertaken. There is some unclarity about which should be seen as being evaluated with respect to fear data; researchers collected data in surrounding areas of two of the intervention and control sites and say that data for Oxford Circus (the other intervention site) and Tottenham Court Road (its control) were collected from passengers who often used these stations. But the measures used were not place specific, so it is unclear what this means

Outcomes within scope of review
Fear of crime:

Perceived safety (exact question unclear)

'Is the Underground becoming more or less safe from crime or violence or staying the same?'

Other outcomes
'London Underground are doing as much as possible to make the Underground safer'

Reported crime

Findings (for outcomes within scope)
'Is the Underground becoming more or less safe from crime or violence or staying the same?' (%): I pre: 5.2% 'more', 31.4% 'the same', 63.4% 'less'; C pre: 6.0% 'more', 34.1% 'the same', 59.9% 'less'; I post: 13.0% 'more', 38.6% 'the same', 48.3% 'less'; C post: 6.2% 'more', 40.1% 'the same', 53.7% 'less'

Mean score for personal safety [5-point scale from 'very safe' to 'very unsafe' (presumably = 1 and 5 respectively)]: I: pre 2.9, post 2.9; C: pre 2.7, post 3.0

Subgroup analyses?
NR

Limitations identified by author
Crime data not very fine-grained; short follow-up

Limitations identified by reviewer
No significance testing of findings. Some unclarity in methods (e.g. timing of data collection, precise measures used). Comparability of intervention and control sites not explored

Funding of study
Conducted, and presumably funded, by the Home Office

Note that the Leytonstone-Barkingside project was specifically designed to reduce fear, although outcome data aggregate all sites (or at least two of them)

Clapham North – Tooting Broadway: CCTV provision increased; Passenger Alarm Points; 'focal points' (manned kiosks); supervised waiting areas near focal points; mirrors at corners; lighting improvements; intensive policing with substantial increase in number of officers assigned to these stations

Oxford Circus: Passenger Alarm Points; glass walls for Station Operation Room; information points; increased police presence

Leytonstone-Barkingside: Passenger Alarm Points; new waiting areas within site of ticket desks; mirrors at corners

Interventions/services received by comparison group
Increases in police presence at some control sites ['The role of these stations as a control group was rather spoiled' (p. 8)]; various operational changes including increased staffing (pp. 8–9); 'Guardian Angels' (p. 10)

Sample size
Approx. baseline n = 1122, post n = 1350

'The number of people interviewed from each of the four "corridors" varied between 273–288 in the "before" survey and between 290–385 in the "after" survey' (p. 21)

Data collection methods
Interviews conducted at people's homes (households within 10 minutes' walk of given site)

Baseline comparisons
NR

Analysis method
Descriptive

Power calculation
NR

Length of follow-up
Unclear

Attrition rate
N/A

C, control; I, intervention; N/A, not applicable; NR, not reported.

Appendix 10 Evidence tables: qualitative studies

Airey[311,312]

Study
Airey[311,312]

Quality rating
A

Location
Edinburgh

Research question or focus
Generally, to understand how place affects health and well-being, particularly with reference to health inequalities. For Airey,[311] more specifically to understand how (perceived) neighbourhood incivilities impact on well-being and how individuals may seek to minimise this impact

Theoretical approach
Refers to the literature on health inequalities and health geography

Sampling methods and eligible population
Two sites selected on the basis of SES and health status: 'one relatively affluent neighbourhood, with a relatively well population, and one relatively deprived neighbourhood, with a relatively sick population' (p. 42).[312] (Most of the data relevant to this review come from the latter.) Eligible individuals were women aged 45–59 years. '[W]omen in this age group are a relatively under-researched social group, particularly in relation to health inequalities research' (p. 45).[312] Aimed to sample 12 residents in each neighbourhood meeting these criteria (no other criteria used); 'I felt that recruiting a total of twenty-four respondents would yield a manageable volume of data' (p. 46)[312]

Recruitment methods
Personal contacts; snowballing; advertising in local paper and flyers placed in community centres, doctors' surgeries, etc.; through personnel department of university; random sample from patient records at a GP practice. Potential respondents initially contacted by telephone

Sample demographics
Women aged 45–59 years ($n = 24$). Chronic health problems: $n = 10$; employed in health-related fields: $n = 16$; all white ethnicity

Data collection methods
Two in-depth individual interviews with each respondent, the first focused on life history and the second on current experiences. Interview guides reproduced in Appendices 4 and 5

Analysis methods
Constant comparative method. Interviews tape recorded and transcribed. Transcript read several times and then coded using HyperResearch software to conduct thematic analysis. Negative or deviant cases actively sought out to challenge emerging interpretations

Limitations identified by author
NR

Limitations identified by reviewer
No major limitations

Funding of study
Economic and Social Research Council

GP, general practitioner; NR, not reported.

Alexander[313,314]

Study
Alexander[313,314]

Quality rating
C

Location
Fenham, Newcastle upon Tyne

Research question or focus
To explore how fear impacts on the lives of young people

Theoretical approach
Draws on TH Marshall's theories of citizenship

Sampling methods and eligible population
Sampling of site presumably based on high levels of deprivation and marginalisation. Sampling of individuals unclear

Recruitment methods
NR

Sample demographics
Sample included three groups: a young men's group (aged 16–25 years) who played for the youth club's football team; a young women's group (aged 15–17 years) who were all, or had recently been, involved in the youth justice system; a mixed group (aged 16–20 years) with learning difficulties who met weekly in a supervised session at the youth club

Data collection methods
Focus groups using participatory techniques, particularly diagramming, using an open and creative approach

Analysis methods
NR

Limitations identified by author
NR

Limitations identified by reviewer
Very limited reporting of methods; unclear how themes were derived from data. Crime/fear of crime is not the main focus

Funding of study
NR

NR, not reported.

Bannister[315]

Study Bannister[315] *Quality rating* C *Location* Castlemilk estate, Glasgow	*Research question or focus* To investigate the association between the environment and the incidence of fear; how fear is realised by placing it in the wider concept of ontological security and how it is governed in part by the interweaving of aspects of neighbourhood and community (built and social environment); how people 'read' a particular urban area and how feelings of anxiety are realised *Theoretical approach* Draws on the fear of crime literature, concepts of 'ontological security' and social interactionist theories of community *Sampling methods and eligible population* NR *Recruitment methods* NR *Sample demographics* 'A mix of demographic groups ranging from under 15-year-olds to over 65-year-olds' (p. 78). Seven focus groups were conducted, apparently with different populations, although this is unclear. Most of the reported data appear to come from the group of mothers with young children *Data collection methods* Focus groups, some single sex and others mixed, including a mapping exercise; limited detail reported *Analysis methods* NR	*Limitations identified by author* NR *Limitations identified by reviewer* Very limited description of methods *Funding of study* NR

NR, not reported.

Burgess[316–318]

Study	*Research question or focus*	*Limitations identified by author*
Burgess[316–318]	To explore perceptions of woodland, and perceptions of risk and fear of crime relating to woodland, in various groups (especially women)	NR
Quality rating B		*Limitations identified by reviewer* No major limitations
	Theoretical approach Draws on fear of crime research tradition to some extent; data collection based on principles of group-analytic psychotherapy	*Funding of study* Community Forest Unit (Countryside Commission)
Location Two sites: (1) south Hertfordshire (some respondents for this site from London); (2) near Nottingham		
	Sampling methods and eligible population Theoretical sampling for diversity in experiences and backgrounds	
	Recruitment methods Participants were 'contacted through existing outreach networks' (p. 132)[317]	
	Sample demographics Nine groups of women, four of men. Women of white, Afro-Caribbean and Asian ethnicity included (ethnicity for men NS). A range of ages from teenagers to older people (precise figures NR)	
	Data collection methods '[P]articipant observation of small groups of people taken on a guided walk through woodland to be followed by a 90 minute focus group . . . I decided to conduct single-gender white, and Black focus groups' (p. 130).[317] Led by two women of different ethnicities (researcher and community liaison officer)	
	Focus group discussions with moderator, focusing on experiences of woodland and perceptions of risk and fear of crime. Lead researcher and community liaison officer present in all groups	
	Analysis methods Rough transcript produced and then corrected. After reading transcripts several times, a 'discursive map' of themes was produced to facilitate visual comparisons between groups. Write-up on the basis of the map and notes	

NR, not reported.

Cozens[319]

Study Cozens[319] **Quality rating** C **Location** South Wales	**Research question or focus** To explore perceptions of personal safety at railway stations with a view to informing interventions to improve safety **Theoretical approach** NR **Sampling methods and eligible population** For sampling of sites, stations on the network were classified into six groups using a range of variables and one station was selected as representative of each group. Individual participants were sampled 'from communities that were local to the six selected railway stations' and 'drawn from regular (daily) to light users (weekend) and ranged from 19 to 65 years of age with both males and females represented' (p. 127) **Recruitment methods** Unclear; participants 'were recruited from communities that were local to the six selected railway stations' (p. 127) but NR how. Recruitment by market research company **Sample demographics** Age 19–65 years; 21 males, 26 females; no other details **Data collection methods** Virtual reality 'walk-through' of selected sites, followed by structured questionnaire and then unstructured focus group moderated by trained facilitator (each containing 6–10 participants and lasting approx. 90 minutes), focusing on fears for personal safety. The groups were audio and video recorded **Analysis methods** Analysis of qualitative data NR (analysis of quantitative data is not considered here)	**Limitations identified by author** NR **Limitations identified by reviewer** Closed-question survey is the main focus, rather than qualitative data. Some unclarity in methods. Study aims only to identify problems or fear-causing features at specific points, rather than to engage with deeper determinants of fear **Funding of study** NR

NR, not reported.

Crime Concern a[320]

Study
Crime Concern a[320]

Quality rating
C

Location
NR for focus groups
(which provide almost
all of the qualitative
data; the case studies
and parent survey are
not considered in this
data extraction)

Research question or focus
To identify pedestrians' concerns for personal
security, assess the effectiveness of initiatives
to improve security and identify best practice
in providing a more secure pedestrian
environment

Theoretical approach
NR

Sampling methods and eligible population
NR

Recruitment methods
NR

Sample demographics
One-third aged ≤ 25 years, one-fifth older
people (exact age ranges NR); two-thirds
female; one-fifth minority ethnic

Data collection methods
Focus group on each of five routes. Full focus
group schedules are presented in *Appendix 2*;
no information on the broader context or
conduct of the focus groups

Analysis methods
NR

Limitations identified by author
NR

Limitations identified by reviewer
Incomplete reporting of methods. This is a
multicomponent study (including process
evaluations of interventions and some
quantitative survey findings) and the
qualitative dimension is only one part of it.
Some of the authors' interpretations can be
questioned

Funding of study
Report published, and research presumably
funded, by the Department for Transport

NR, not reported.

Crime Concern b[321]

Study Crime Concern b[321] *Quality rating* C *Location* Several locations throughout England and Wales	*Research question or focus* To investigate people's fear of crime when using public transport and evaluate initiatives to reduce fear of crime and improve personal security *Theoretical approach* NR *Sampling methods and eligible population* Eligible population was users of the relevant transport routes/stations. Sampling of sites presumably based on the initiatives funded by the Department for Transport, although details are limited. Sampling of individuals NR *Recruitment methods* NR *Sample demographics* No information on qualitative sample (other than that two of 14 focus groups were conducted with disabled participants); age, gender and disability status are appended to quotes *Data collection methods* Escorted journeys plus discussion groups (note that questionnaire data appear to be quantitative only and so methods for that component of the study are not extracted here). There were also some interviews with people involved in delivering interventions, although limited data are reported from these *Analysis methods* NR	*Limitations identified by author* NR *Limitations identified by reviewer* Very little information on methods. Because of the purpose of the study, data are rather specific and not connected to the broader contexts of fear of crime *Funding of study* Published, and presumably funded, by the Department for Transport

NR, not reported.

Davis[322]

Study	Research question or focus	Limitations identified by author
Davis[322]	To describe children's perceptions of risk, the strategies they use to deal with hostile environments and the constraints put on their behaviour, particularly regarding transport	Research with children 'involves exchanges between partners unequal in age and status'; children are less articulate than adults; difficulties in determining which techniques will best encourage children to respond fully in a particular context
Quality rating		
C		
Location	Theoretical approach	Limitations identified by reviewer
Birmingham	NR	Unclarity around methods. Fear of crime is not the main focus of the study, although there are substantial data on it
	Sampling methods and eligible population	
	Sampling of sites unclear (all were disadvantaged to some extent)	Funding of study
		NR
	Sampling of year groups (aged 9–11 and 13–14 years): 'These age groups were selected to enable us to explore children's perceptions of their local environments at two critical stages: as they moved into top juniors and began to focus on leaving primary school, and as they moved beyond the early stages of secondary education' (p. 365)	
	Sampling of individuals: for the questionnaire, all students in selected year groups (year 9 and year 5 or 6 depending on site); for focus groups, sampled on basis of questionnaire responses ['distinctive types of respondent and response' (p. 365)] and teacher advice to avoid members who were antagonistic to each other	
	Recruitment methods	
	Within schools; otherwise unclear	
	Sample demographics	
	NR (apart from aged 9–11 and 13–14 years)	
	Data collection methods	
	Initial semistructured questionnaire (NR in detail here), followed by focus groups (mixed sex for younger children, single sex for older children). Focus groups are described as promoting a 'naturalistic dialogue' in general terms, but data collection is not described in detail	
	Analysis methods	
	NR	

NR, not reported.

Day[323]

Study Day[323]	**Research question or focus**	**Limitations identified by author** NR
	1. How and in what ways do the older people participating in the study feel their local physical environment affects their health and well-being?	**Limitations identified by reviewer** No major limitations. Crime and fear of crime is not the main focus and relevant findings are not analysed in depth, although they are available in the report
Quality rating A		
Location Glasgow and environs	2. What could be done to improve well-being through the local environment and in what ways would these improvements provide benefits?	**Funding of study** Scottish Centre for Research on Social Justice (Department of Urban Studies, University of Glasgow)
	3. What are the differences between different localities with respect to these issues and why do these differences occur?	
	4. What are the links between these concerns and wider neighbourhood deprivation/relative affluence?	
	5. How far do the needs and experiences expressed appear to be specific to older people as a group?	
	6. Do participants feel that they have or could have input into decision-making procedures regarding the local environment?	

Theoretical approach
NR

Sampling methods and eligible population
Sites sampled for diversity with respect to urban environment and deprivation levels and for high proportions of older people. For individuals, any older people were eligible (age limit not precisely stated). Individuals were sampled to include both men and women and both couples and people living alone

Recruitment methods
Author recruited participants through senior citizens community groups and other groups with a high proportion of retired people. Individual contacts were also used. More than one entry point used in each area so that participants were not all part of the same social network. Participants also suggested others who might participate. Participants given £10 incentive or equivalent donation to charity

Sample demographics
Age range 62–90 years (majority > 70 years). All but two lived independently; all retired; all but one able to go outdoors to some extent

Data collection methods
In-depth individual and group interviews and unstructured observation. Individual interviews lasted about an hour and were informal, with loose structure covering perceptions of the neighbourhood and everyday activities

Analysis methods
Interviews taped and transcribed. Thematic analysis conducted using Atlas.ti software (Atlas.ti Scientific Software Development GmbH, Berlin, Germany). Initial coding frame derived from research questions, then developed throughout the iterative coding process. Field notes from observations also used to add material to themes and to develop new themes

NR, not reported.

Dixey[324]

Study Dixey[324]	*Research question or focus* To explore parents' views of and concerns about child safety and their practices in ensuring their children's safety	*Limitations identified by author* NR
Quality rating B		*Limitations identified by reviewer* No major limitations
Location Leeds	*Theoretical approach* Brief discussion of Foucault's concept of the 'critical gaze', but theoretical approach NR as such	*Funding of study* LINK Transport Infrastructure and Operations Programme

Sampling methods and eligible population
Convenience sample: 'mothers . . . were selected using the simple procedure of knocking on doors in different parts of the estate, at varying times of the day . . . this could be described as a form of "convenience sampling" ' (pp. 47–8)

Recruitment methods
'mothers . . . were selected using the simple procedure of knocking on doors in different parts of the estate, at varying times of the day. If there was a mother with a primary school-aged child in that home, an interview was requested, at that time or at a later date if this was not convenient. There were no refusals' (pp. 47–8)

Sample demographics
Sample consisted of 32 mothers ranging in age from 21 to 49 years (17 aged 21–29 years, 11 aged 30–39 years, four aged 40–49 years). These households contained 79 children, of whom 52 were aged 5–11 years (17 boys and 35 girls); 11 of the women had no partner, 19 did not have paid employment and 13 worked part-time

Data collection methods
'The women were interviewed in their own homes by a trained, professional interviewer, using a semistructured interview schedule developed by the author. The interviews (lasting about 1 hour) were taped and transcribed' (p. 48)

Analysis methods
Interviews lasted around 1 hour and were taped and transcribed. Data were analysed using a process based on the work of Turner, with initial 'tentative' (p. 48) definitions of categories, followed by further development up to saturation and constant comparative analysis to make connections to theory. Draft analysis was shared with all participants

NR, not reported.

Farrall[49,325–327]

Study	Research question or focus	Limitations identified by author
Farrall[49,325–327]	To explore people's perceptions and emotional reactions to crime, their environment and their local community	Challenges in integrating qualitative and quantitative data
Quality rating		*Limitations identified by reviewer*
B	*Theoretical approach*	No major limitations; some minor unclarity around methods
	Builds on previous fear of crime research (although taking a critical, historically informed view); the sociology of risk (to some extent); and the psychology of 'everyday emotions'	
Location		*Funding of study*
London, Glasgow		Economic and Social Research Council

Quality rating
B

Location
London, Glasgow

Research question or focus
To explore people's perceptions and emotional reactions to crime, their environment and their local community

Theoretical approach
Builds on previous fear of crime research (although taking a critical, historically informed view); the sociology of risk (to some extent); and the psychology of 'everyday emotions'

Sampling methods and eligible population
Sampling of sites: Glasgow: sites selected for diversity in area (inner city/outlying) and SES; London: two contrasting sites selected (one wealthy and mostly white, one disadvantaged and ethnically diverse)

Sampling of individuals: Glasgow: quasi-randomly (every fifth house in selected area). Sampling of individuals from households is unclear and response rate is NR. Four groups then constructed along the dimensions high/low fear and high/low risk, with an equal gender split and a range of ages in each. London: Convenience sample through contacts in local authority and police, plus snowball sampling. Response rate 24/49

Recruitment methods
Glasgow: presumably door to door, no details reported. London: through the council, the police, snowballing; apparently actual recruitment was either by letter or by phone call from a police officer

Sample demographics
For Glasgow, equal gender split and range of ages; for London, 18/24 participants were female. No other information

Data collection methods
Interviews took place in participants' homes and were recorded. Unclear if interviews were structured

Analysis methods
Transcripts initially read and annotated when specific themes were of interest. Second stage involved more thorough reading and expansion of themes; each theme was given a descriptive label. Third stage involved linking the themes together and producing an overall theoretical conceptualisation

Limitations identified by author
Challenges in integrating qualitative and quantitative data

Limitations identified by reviewer
No major limitations; some minor unclarity around methods

Funding of study
Economic and Social Research Council

NR, not reported.

Goodey[328,329]

Study
Goodey[328,329]

Quality rating
C

Location
Northern
England, precise
location NR

Research question or focus
To explore gender differences in fear of public place
crime among young people

Theoretical approach
Draws on two bodies of theory: the fear-of-crime
research tradition and theories of the social
construction of gender identity, particularly the idea
of 'hegemonic masculinity' in Goodey[328]

Sampling methods and eligible population
Sampling of site: 'the school and the estate were
not selected on the basis of a reputation or a crime
rate, but were chosen because the school was
accessible and the local population presented a
sample base from which to examine the variable
"gender", free from class or ethnic variance
[because the school population was relatively
homogenous in these respects]' (p. 407)[329]

Sampling of individuals NR

Recruitment methods
In school; otherwise NR

Sample demographics
NR for study sample; the school is described as
having 'a homogeneous population of white,
working class 11 to 16-year-olds' (p. 406)[328]

Data collection methods
Focus groups and a questionnaire survey; a small
amount of qualitative data are presented from the
latter, but most comes from the former. 'Single sex
groups of six were taken from different school years
to take part in semi-structured discussion, over a
period of weeks, reflecting questionnaire subjects
and issues independently raised by discussants'
(p. 276).[329] A drama workshop was also conducted
but there are limited details on this

Analysis methods
NR

Limitations identified by author
Focus of research was primarily on girls,
so the research may be limited in its
findings regarding boys. Homogeneity of
study sample may limit generalisability;
class and 'race' need to be examined as
well as gender

Limitations identified by reviewer
Incomplete reporting of methods.
Synthesis is theory led with relatively
limited reporting of primary data

Funding of study
NR

NR, not reported.

Hollway[330,331]

Study	Research question or focus	Limitations identified by author
Hollway[330,331]	To explore individuals' experiences of fear of crime, with particular reference to the 'risk–fear paradox'	Detail of findings depends on the choice of a particular methodological strategy
Quality rating		
C	*Theoretical approach*	*Limitations identified by reviewer*
	The main paper draws mainly on the sociology of risk and the fear of crime literature. Linked papers utilise psychoanalytic and postmodernist theories	Sampling and recruitment unclear
Location		*Funding of study*
NR		Economic and Social Research Council
	Sampling methods and eligible population	
	NR	
	Recruitment methods	
	NR	
	Sample demographics	
	18 females, 19 males; 12 'young', 12 'middle-aged', 13 'old'	
	Data collection methods	
	In-depth biographical interviews (modelled on psychoanalysis and the 'biographical-interpretive' method). Two interviews were conducted with each participant, 1 week apart. Limited data on concrete situation of data collection	
	Analysis methods	
	After reading transcripts and summarising them using categories derived from research questions, a 'pen portrait' was produced, with both descriptive and interpretive dimensions	

NR, not reported.

Hopkins[332]

Study Hopkins[332]	*Research question or focus* To explore the 'politics and practice of fear' among young Scottish Muslim men	*Limitations identified by author* NR
Quality rating C	*Theoretical approach* NR	*Limitations identified by reviewer* Incomplete reporting of methods. Research questions are somewhat vague. Short article and limited data are presented
Location Glasgow	*Sampling methods and eligible population* Young Muslim men. Initial contacts through schools and universities, mosques, community organisations and youth groups, followed by snowballing	*Funding of study* NR
	Recruitment methods NR	
	Sample demographics All men aged 16–25 years identifying as Muslim; no other information	
	Data collection methods '[E]leven focus groups and twenty-two interviews . . . All of the focus groups and interviews involved discussions that focused on Scotland, the local community, being a young man as well as being Muslim' (p. 103, note 1). No other details	
	Analysis methods NR	

NR, not reported.

Innes[333]

Study Innes[333] *Quality rating* C *Location* Blackpool, Oldham, Kensington and Chelsea (London), Bexley (London)	*Research question or focus* 'This report investigates how crime, physical disorder and antisocial behaviour – together with the responses to these problems – shape the ways that places change over time' (title page) *Theoretical approach* None as such; draws on urban sociology and the 'incivilities' literature *Sampling methods and eligible population* Sampling of sites: 'These four sites have been selected because they are all different in terms of their socio-economic composition and because their crime and disorder profiles differ also. Moreover, they exhibit locally specific variables that highlight important factors about the development of places' (p. 9) Sampling of individuals NR *Recruitment methods* NR *Sample demographics* NR *Data collection methods* 'semi-structured qualitative interviews' (p. 13); no other information *Analysis methods* NR	*Limitations identified by author* NR *Limitations identified by reviewer* Virtually no description of methods. Study is broad in scope and only some of the data are relevant for this review *Funding of study* Published, and presumably funded, by Joseph Rowntree Foundation

NR, not reported.

Jones[334]

Study Jones[334]	*Research question or focus* To investigate how teenage girls manage and perceive risk, particularly in relation to parental constraints on behaviour, and the differences between Asian and non-Asian girls	*Limitations identified by author* NR
Quality rating C		*Limitations identified by reviewer* Incomplete reporting of methods
Location NR ('a major UK city')	*Theoretical approach* NR	*Funding of study* NR
	Sampling methods and eligible population School sampled for the diversity of its student body; year groups within school (years 7 and 9) sampled 'on the basis that these were important periods of transition to greater freedoms' (p. 315). Classes sampled by stream within years, for diversity	
	Sampling of individuals unclear: $n = 48$ participated in focus groups from a total of $n = 214$ participants in survey, but NR how these were chosen	
	Recruitment methods Within school during class time, but otherwise unclear	
	Sample demographics All 11- to 14-year-old girls; approx. half Asian	
	Data collection methods Initial questionnaire (not qualitative data). Focus groups recorded and transcribed (two Asian, two non-Asian and the rest mixed). Representative comments were drawn from questionnaire responses and used as prompts for discussion, with participants being asked to respond. Transcriptions analysed using broad categories with a focus on differences by age and cultural affiliation	
	Analysis methods NR	

NR, not reported.

Koskela[88,335,336]

Study	Research question or focus	Limitations identified by author
Koskela[88,335,336]	'[W]e examine the nature of the relationship between women's fear and built environments in more depth, and consider some of the conceptual, practical and political issues involved in "designing out fear" ' (p. 271)[335]	NR for Edinburgh data
Quality rating B		*Limitations identified by reviewer* Some limitations in reporting of methods
Location Edinburgh (and Helsinki; these data not extracted)	*Theoretical approach* Draws primarily on the fear of crime tradition, but also feminist geography and literature on planning	*Funding of study* Economic and Social Research Council and Edinburgh District Council Women's Committee
	Sampling methods and eligible population Three sites selected for socioeconomic diversity. Women were randomly sampled from the electoral register for initial questionnaire phase. Interviewees were the first who responded indicating a willingness to participate further and with whom contact could be made	
	Recruitment methods Recruitment for first (quantitative) phase by post (response rate 72%). Participants in the first phase were asked to participate further; the first 45 with whom contact was made formed the qualitative sample (response rate for this stage NR)	
	Sample demographics All women. No other information reported (there is some information on the questionnaire sample, but not the qualitative sample)	
	Data collection methods Limited information: 'In most cases, interviews were carried out in respondents' own homes and lasted between one and three hours' (p. 232)[88]	
	Analysis methods Based on grounded theory: '[The interviews] were tape recorded, transcribed, coded and analysed (see Strauss and Corbin (1990) principles' (p. 271)[335]	

NR, not reported.

Little[337]

Study Little[337]	*Research question or focus* Women's experiences of crime and fear in rural spaces and views of safety with reference to the countryside	*Limitations identified by author* NR
Quality rating B	*Theoretical approach* Draws on research on gender and fear of crime, as well as rural sociology	*Limitations identified by reviewer* Considerable unclarity on methods
Location Devon (and New Zealand; these data not extracted)	*Sampling methods and eligible population* All women. No further information	*Funding of study* NR
	Recruitment methods NR	
	Sample demographics Women in rural areas; otherwise NR	
	Data collection methods In-depth interviews. Questionnaire was discussed with relevant community organisations before the study, but unclear if this affected the qualitative component	
	Analysis methods NR	

NR, not reported.

Mitchell[338]

Study Mitchell[338] *Quality rating* C *Location* North-east England (location pseudonymous)	*Research question or focus* How young mothers manage risk in relation to safe spaces and leisure experiences for their children by examining the concepts of motherhood, childhood and the risk society in an era of ontological insecurity *Theoretical approach* Draws on Beck's concept of 'risk society' and sociological theories of motherhood *Sampling methods and eligible population* NR *Recruitment methods* Unclear, apparently through gatekeepers: 'a potential population was identified with the aid of relevant professionals (health visitors, teachers) and then chosen on a self-selecting rather than random basis' (p. 186) *Sample demographics* 14 young mothers aged 15–24 years. Each mother had between one and three children (age 6 weeks–6 years). All white ethnicity (Asian participants were recruited but their data are analysed separately) *Data collection methods* Individual interviews. 'Participants were interviewed using a flexible topic guide in either local community buildings or at the women's own home. Interviews lasted between 60 and 90 minutes' (p. 187) *Analysis methods* 'The interviews . . . were all tape-recorded. After transcription, the researchers read and re-read the interviews in order to identify key concepts and themes, drawing upon grounded theory principles (Glaser and Strauss, 1967)' (p. 187)	*Limitations identified by author* Sample not statistically representative; children's views not explored in conjunction with mothers' because of their young age *Limitations identified by reviewer* Some unclarity around sampling *Funding of study* Single Regeneration Budget (Department of the Environment)

NR, not reported.

Moran[339–341]

Study Moran[339–341] *Quality rating* C *Location* Manchester, Lancaster	*Research question or focus* To investigate lesbians' and gay men's fear of violence and the importance of this in the construction of location *Theoretical approach* A highly complex and original theoretical framework that builds particularly on philosophies of law (Kantorowicz, Nietzsche, Derrida, etc.) but also refers to a wide range of other theoretical themes *Sampling methods and eligible population* Sampling of sites for contrast between one site (Manchester) with large, visible 'gay space' and one without (Lancaster). Sampling of individuals for focus groups unclear except that eligible population was lesbians, gay men and straight women. The survey component sampled from lesbian- and gay-friendly venues but the qualitative component appears to use a separate sample. Sampling of individuals for stakeholder interviews for commercial and community links *Recruitment methods* NR *Sample demographics* Lesbians, gay men and straight women; otherwise NR *Data collection methods* '58 structured interviews (21 in Lancaster, 37 in Manchester) were undertaken with key informants . . . Questions dealt with three main themes: the historical and contemporary development and use of space, safety issues and policy and safety initiatives. Six focus groups were held with each group of lesbians, gay men and straight women in each location' (p. 194).[340] No further information on content or context of focus groups *Analysis methods* NR	*Limitations identified by author* Possible sampling bias in survey. Crime initiatives and crime reporting during the study period may have influenced findings. Findings from commercial, 'public' spaces may not be generalisable to other locations *Limitations identified by reviewer* Incomplete reporting of methods *Funding of study* Economic and Social Research Council

NR, not reported.

Nayak[342]

Study	Research question or focus	Limitations identified by author
Nayak[342]	To explore children's views and experiences of crime and fear of crime in their local areas	NR

Study
Nayak[342]

Quality rating
C

Location
North-east
England,
location
pseudonymised

Research question or focus
To explore children's views and experiences of crime and fear of crime in their local areas

Theoretical approach
Refers to literature on children's geographies and (to some extent) the fear of crime

Sampling methods and eligible population
Sampling of site not explicitly stated, although there is consideration of its representativeness. Sampling of individuals unclear, although selection of age groups is justified with reference to previous research

Recruitment methods
Letters were sent to parents who could withdraw children if desired. Survey carried out in in lesson time (i.e. children effectively recruited by school)

Sample demographics
For the sample as a whole (NR how many of these provided qualitative data): 223 males, 218 females; 12–15 years (the area is described as mostly white, low SES and high crime)

Data collection methods
Self-completed survey administered in personal and social education class in school with closed (quantitative) and open-ended (qualitative) questions. Survey was circulated to teachers and youth workers and piloted with sample of children prior to the study. Survey forms not included in this report. Questionnaire emphasised confidentiality and focus on children's own experiences

Analysis methods
NR

Limitations identified by author
NR

Limitations identified by reviewer
Only written questionnaire responses, so data are of limited depth

Funding of study
Newcastle University

NR, not reported.

Nelson[343]

Study Nelson[343]	*Research question or focus* To understand the impact of security shutters on the public's perceptions of the urban environment	*Limitations identified by author* 'The informal nature of the in-depth interviews allowed for no ranking of the environmental features deemed to have the greatest influence upon "fear" ' (p. 14)
Quality rating C	*Theoretical approach* NR	
Location Cardiff, Gloucester, Worcester	*Sampling methods and eligible population* Selection of sites: 'somewhat random' (p.14) but designed to present 'a cross-section of cities' (ibid.) In one site (Cardiff) the local authority was aware of the aesthetic impact of shutters as a problem, in the other two not	*Limitations identified by reviewer* Incomplete reporting of methods and limited data are reported. The focus of the study is very narrow
	Selection of individuals: 'In each city, 20 respondents were selected at random, including both shoppers and nonshoppers' (p. 13); unclear what 'random' means here	*Funding of study* NR
	Recruitment methods NR; presumably on-street. Response rate NR	
	Sample demographics NR (although gender and age are appended to quotes)	
	Data collection methods Face-to-face interviews focusing on attitudes to security shutters using closed and open questions	
	Analysis methods NR	

NR, not reported.

Pain a[344,345]

| Study
Pain a[344,345]

Quality rating
C

Location
Newcastle upon Tyne and environs | Research question or focus
'[T]o explore the meaning of crime to respondents [older people], the nature of their reactions, and how their concerns are situated in space and time' (p. 119)[344]

Theoretical approach
Draws on humanist and postmodernist approaches and refers to feminism and other areas of emancipatory research as potential models for investigating older people's experiences

Sampling methods and eligible population
Eligible population was older people (exact cut-off age NR) in three study sites. Author states that a range of ages and social backgrounds were included, suggesting sampling for diversity. Respondents were contacted through electoral registers but unclear how or what principles informed sampling

Recruitment methods
Unclear; 10 households were recruited in each of three sites. Response rate NR

Sample demographics
Older people; a range of ages and social backgrounds but no detail reported

Data collection methods
Unstructured individual interviews (married couples interviewed together)

Analysis methods
NR | Limitations identified by author
NR

Limitations identified by reviewer
Incomplete reporting of methods

Funding of study
NR |

NR, not reported.

Pain b[346]

Study Pain b[346] *Quality rating* B *Location* Newcastle upon Tyne	*Research question or focus* To examine how different people perceive their own and others' personal safety within the city centre; to examine the relationship between experiences and perceptions of crime and other aspects of personal safety; to examine the relationship between the physical and social environment perceptions of vulnerability; and to examine where people feel that there are interventions that would make them feel safer within the city centre *Theoretical approach* NR *Sampling methods and eligible population* Sampled members of five groups (residents, workers, older people, young men, young mothers). Limited detail on sampling as such *Recruitment methods* Different methods for different groups: residents: new housing scheme; workers: approaching shops and businesses; older people: approached in the street and then a drop-in club; young men: flyers in two local universities (hence all students); young mothers: through a nursery in the west end of the city. Response rates NR. Participants received £10 *Sample demographics* NR *Data collection methods* Focus groups held in city centre location. A map and photographs of the area were on display. Moderators encouraged groups to talk about any issue related to feelings of safety and avoided the terms 'crime' and 'community safety'. Loose structure used for focus groups *Analysis methods* 'All discussions were tape-recorded and later transcribed, coded and analysed' (p. 108); no further information	*Limitations identified by author* Small sample size; focus groups may not be the best way to access personal concerns; study includes relatively easy-to-reach groups only, and a broader range of population groups would be required for a full picture *Limitations identified by reviewer* Incomplete reporting of methods. Arguably vague research question *Funding of study* NR

NR, not reported.

Pain c[347,348]

| Study
Pain c[347,348]

Quality rating
C

Location
Gateshead | *Research question or focus*
Two separate projects: Project 1 (P1) focused on crime victimisation, Project 2 (P2) on risks and leisure time (note that virtually all of the qualitative data come from the latter). The primary focus is to explore the impact of mobile phones on safety practices among children and young people

Theoretical approach
NR

Sampling methods and eligible population
P1: sampling of sites NR, but presumably for diversity (across Gateshead; range of school types). Initial discussion group with 55 pupils (sampling NR), then survey, then validation exercise with 45 elected members of Gateshead Youth Assembly (sampling NR, but reported they were of varied ages and varied social backgrounds)

P2: sites sampled by local authority to reflect diversity in SES. For qualitative component, pupils selected to provide a range of backgrounds and leisure lifestyles

Recruitment methods
Through schools; details NR for qualitative component

Sample demographics
P1: aged 10–16 years for initial discussion groups (NR for validation exercise); no further information

P2: aged 11–14 years with a range of social backgrounds and leisure lifestyles

Data collection methods
P1: 10 discussion groups with 55 young people followed by questionnaire in schools in the more deprived areas (1069 responses) and verification exercise using participatory diagramming techniques with 45 members of Gateshead Youth Assembly (10–16 year olds)

P2: questionnaires in five schools with 11–14 year olds followed by qualitative research (in-depth interviews, leisure diaries, photos taken by participants and group discussions)

Analysis methods
P1: discussion groups were tape recorded, transcribed and subject to qualitative analysis; these were used to inform the questionnaire, then verified through research with Youth Assembly members

P2: qualitative data from interviews and discussion groups analysed using NUD*IST software. No further information | *Limitations identified by author*
NR

Limitations identified by reviewer
Incomplete reporting of methods, particularly sampling

Funding of study
Victim Support and Community Fund |

NR, not reported.

Pain d[349]

Study	Research question or focus	Limitations identified by author
Pain d[349]	To explore residents' perceptions of the impact of street lighting on vulnerability and fear	NR with respect to qualitative component
Quality rating B	*Theoretical approach* NR	*Limitations identified by reviewer* No major methodological limitations; however, the reported data are rather limited in scope and depth
Location Four towns in Northumberland: Ashington, Blyth, Cramlington, Bedlington	*Sampling methods and eligible population* Sampling of initial sites unclear – apparently for diversity and the presence of crime 'hotspots'. Sampling of specific sites for qualitative research based on the initial Geographic Information System (GIS) phase, identifying specific hotspots with high crime rates (almost all were also low SES), with specific reference to hotspots with respect to multiple crimes and those with poor lighting	*Funding of study* Northumberland County Council
	Sampling of households: 'In the smaller hotspots, all households were targeted, whereas in larger areas particular streets were sampled, concentrating on those which appeared to have the lowest density lighting according to the GIS output and field observations' (p. 2065). Some individuals were also sampled on-street. Sampling of individuals within households NR	
	Exact response rates NR but reported to be 'excellent' (p. 2066)	
	Recruitment methods Door to door and on-street. 'Interviewing was carried out in each area on different days and at different times to maximise the range of people included' (pp. 2065–6)	
	Sample demographics NR	
	Data collection methods Study contained a GIS component (not considered in this data extraction) and a qualitative component. For the latter: 'We used observation techniques and short semistructured interviews. For the interviews we had a number of set topics (above) but asked about these openly and flexibly, so that the research had a strong emergent component allowing residents to raise the concerns which mattered most to them' (p. 2064). Interview topics included perceptions of crime and fear of crime and views on lighting	
	Analysis methods NR	

NR, not reported.

Parry[350]

Study Parry[350]	*Research question or focus* To explore residents' perceptions of environmental impacts on health	*Limitations identified by author* NR
Quality rating B	*Theoretical approach* NR	*Limitations identified by reviewer* Sampling unclear, otherwise no major limitations
Location Birmingham and the Black Country (exact locations pseudonymised)	*Sampling methods and eligible population* Sampling of sites unclear, except that they are NDC areas. Sampling of individuals unclear; eligible groups were young people (16 years–early 20s) and older people (> 60 years)	*Funding of study* NR
	Recruitment methods 'Participants were drawn from a range of pre-existing community groups in the selected study areas, including luncheon clubs, exercise classes, young parents' support groups, further education classes, youth and social clubs' (p. 125)	
	Sample demographics NR other than age (16 years–early 20s and > 60 years)	
	Data collection methods Focus groups with young people (16–20 years) and older people (60+ years) in three NDC areas in the West Midlands. Each group met twice and was facilitated by two researchers, with focus on questions about healthy lives and aspects of the environment that are good or bad for health. After the first meeting, participants were given disposable cameras and asked to photograph things relevant to the discussion. The second group used the photographs as a prompt to explore the discussion further	
	Analysis methods 'The focus-group discussions were tape-recorded and fully transcribed. The analysis identified major themes emerging from the transcripts and was concerned to explore similarities and differences in the approaches taken to talk about the relationship between place and health and the linking mechanisms' (p. 125)	

NDC, New Deal for Communities; NR, not reported.

Seabrook[351]

Study Seabrook[351] *Quality rating* C *Location* Northern England, location pseudonymised	*Research question or focus* '[H]ow different groups of girls living within the same locality negotiate time and space as part and parcel of their everyday leisure experience . . . an exploration of their ideas and perceptions about the links between their leisure time, space and risk' (p. 129) *Theoretical approach* Draws on work in feminist geography *Sampling methods and eligible population* Young women age 10–17 years. Sampled from two groups: 'The first group regularly attended a girls' group located within a local women's centre, whilst the second group of girls chose not to take part in centre-based activities, choosing instead to "hang out" on the streets' (p. 129) *Recruitment methods* NR *Sample demographics* All female, age 10–17 years; no other information *Data collection methods* Participants formed friendship pairs and photographed spaces that they considered safe or dangerous and added comments to the photographs. Also held poetry workshops drawing on the photographs and art workshops at which participants made collages. Subsequent semistructured interviews in pairs, focusing on questions of community space, leisure and identity *Analysis methods* NR	*Limitations identified by author* NR *Limitations identified by reviewer* Incomplete reporting of methods. Fairly short report with limited primary data presented *Funding of study* NR

NR, not reported.

Squires[275]

Study	Research question or focus	Limitations identified by author
Squires[275]	To evaluate the installation of a CCTV system	NR

Quality rating
C

Theoretical approach
NR

Limitations identified by reviewer
Very little information on methods for qualitative component (the quantitative data are the main focus of the report). Unclear how qualitative data contribute to the overall aims of the study

Location
Brighton

Sampling methods and eligible population
Sampling of households apparently comprehensive: 'We adopted a fairly opportunistic sampling method initially calling at all houses/flats to which access could be gained and seeking an interview with residents. Access issues meant that significantly more house or bungalow residents were interviewed, but access was obtained to a number of low rise blocks and one of the tower blocks' (p. 2). Of people participating in the survey, some agreed to a follow-up interview, which presumably provided the qualitative data. It is unclear how many or whether all participants were asked

Funding of study
NR

Recruitment methods
Door to door (after previous letter explaining study). Response rate NR

Sample demographics
No detail on the subsample who provided qualitative data. For the sample as a whole at baseline: 57.2% female; 9% < 20 years, 20.2% 20–29 years, 24.3% 30–39 years, 18.1% 40–49 years, 8.6% 50–59 years, 12.3% 60–69 years, 7.4% ≥ 70 years; 27.1% employed, 24.7% unemployed, 21.8% retired, 5.7% student, 18.9% full-time parent/carer; 99.6% white

Data collection methods
Individual interviews in participants' homes (although in many cases other household members were present)

Analysis methods
NR for qualitative data

NR, not reported.

Taylor[352]

Study Taylor[352]	**Research question or focus** To investigate the impacts of rapid socioeconomic change in urban areas, particularly on well-being	**Limitations identified by author** NR
Quality rating C	**Theoretical approach** Authors explicitly state that they are not interested in 'Grand Theory' (p. xi). The study draws on an urban sociology tradition and particularly a 'sociology of the everyday' associated with Goffman, Giddens and de Certeau	**Limitations identified by reviewer** Very little information on methods generally (although a lot of very rich and relevant data). [The book states that methodological appendices are available (p. 327) but these are apparently no longer extant]
Location Manchester, Sheffield		
	Sampling methods and eligible population Based on preliminary survey, 'which we were then able to use to identify eight categories of "users of city space" and six categories of "non-users or avoiders" of public space . . . We then invited individuals identified within these categories to discussion group sessions' (p. 92); that is, some form of quota sampling based on the categories, but unclear how this worked exactly	**Funding of study** Economic and Social Research Council for main study; University of Salford Research Committee and Greater Manchester Passenger Transport Executive for some of the pilot work
	Recruitment methods Via an on-street survey; people participating in this were then invited to participate in focus groups. Response rates NR although authors suggest that they were high. £10 voucher incentive for participants	
	Sample demographics NR overall; $n = 89$ (out of a total sample of $n = 263$) were schoolchildren. The categories for the focus groups allow some guesses to be made about demographics and show a range of SES and ethnicity, but do not allow a comprehensive description of the sample	
	Data collection methods Focus groups. Groups lasted approx. 90 minutes and were held in a hotel (Manchester) or a private house (Sheffield)	
	Analysis methods NR	

NR, not reported.

Trayers[353]

Study Trayers[353] *Quality rating* A *Location* South-west England	*Research question or focus* 'The aim of our study was to examine the attitudes of four groups of stakeholders – adult community residents, school children, adult students and tutors from a college in the area and local authority planners – on the perceived benefits (with a particular focus on health benefits and physical activity) of a planned neighbourhood renewal' (p. 50) (namely, construction of a home zone and extension of the National Cycle Network) *Theoretical approach* NR *Sampling methods and eligible population* Sampling of site unclear, but based on it undergoing Home Zone redevelopment and being deprived. Four groups were sampled: (1) local residents (all living in local community were eligible), (2) primary school pupils from a local school (sampling NR), (3) college students and tutors from a local further education college (sampling NR), (4) planners working on the developments (all eligible) *Recruitment methods* Residents: letter delivered to all 117 houses in the community. Pupils: through local school and college (details NR). Planners: open invitation to those working on the project. Response rates NR *Sample demographics* NR *Data collection methods* Focus groups, each approx. 90 minutes, facilitated by two authors. Topic guide informed by literature review, mainly focusing on health benefits of environmental change *Analysis methods* 'An iterative version of grounded theory' (p. 50). Themes developed through constant comparison methods, first from groups of residents, pupils and students, then introduced in planners' focus group. All sessions taped and transcribed. Field notes were also incorporated into the analysis. See also detailed description of analysis process on p. 51	*Limitations identified by author* Small samples; purposive and self-selecting sample may limit generalisability. Not all viewpoints may have been expressed in focus groups. Data were collected before the intervention and participants' views may have changed subsequently *Limitations identified by reviewer* Some unclarity around sampling; otherwise none to add to limitations identified by authors *Funding of study* British Heart Foundation and Department of Health

NR, not reported.

Turner[354]

Study
Turner[354]

Quality rating
A

Location
Glasgow and environs (Yardnich, Newhouse, Greenparks and Foundry)

Research question or focus
To explore the perceptions of children from deprived areas of their local communities and specifically of risk and safety

Theoretical approach
NR

Sampling methods and eligible population
Three subsamples:

1. Sampling of sites (schools) on the basis of their all being disadvantaged and in different settings (central/peripheral, economic situation). Aimed to sample children aged 8, 10, 12 and 14 years. Sampling of individuals in schools unclear (all of selected age?).
2. On the basis of sampling for a previous study in same schools. Aimed to sample children aged 8–14 years. Sampling of these individuals unclear
3. (Discussion groups) Similar to (1)

Recruitment methods
Interviewees for phases 1 and 3 recruited by principal researcher in schools, with parental consent. For phase 2, participants were contacted through their parents, who had already been recruited to an earlier study

Sample demographics
(1) + (2): $n = 67$; 28 males, 39 females; 27 aged 8–10 years, 40 aged 11–14 years

(3): 16 discussion groups of five or six individuals; 11 mixed, three all female, two all male; ages 8–14 years. No further information for actual sample, although schools were in deprived areas

Data collection methods
1. Interviews conducted on school premises and lasted from 30 minutes to 1 hour. Questions focused on safety and unsafety and people and places avoided and how children keep safe
2. Individual interviews conducted in children's homes, lasting around 90 minutes; same questions as (1)
3. Group interviews in schools, with similar questions

Analysis methods
Interviews transcribed and coded using NVivo software (QSR International, Melbourne, Australia). Principal researcher then produced descriptive summaries under each theme and investigated comparisons between age groups, genders or areas. Analysis for this report focused on themes relating to the local environment, safe and unsafe places and related topics

Limitations identified by author
NR

Limitations identified by reviewer
No major methodological limitations. Some apparent divergences between findings and conclusions (e.g. street lighting)

Funding of study
Joseph Rowntree Foundation

NR, not reported.

Valentine a[355–358]

Study	Research question or focus	Limitations identified by author
Valentine a[355–358]	To explore women's fear of male violence and its relation to their perceptions and use of public environments	The main limitations discussed are ethical rather than methodological (power imbalances between the middle-class interviewer and working-class participants; issues relating to the use and dissemination of the research itself)
Quality rating A		
	Theoretical approach	
Location Reading	Based on 'humanist' (anti-positivist) theory and feminist epistemology and ethics (pp. 9–26)	*Limitations identified by reviewer* No major limitations. Limited data on sample characteristics. Low response rate for interviews (although there are good reasons for this, which are discussed)

Sampling methods and eligible population
Sampling of neighbourhoods based on diversity: they 'represent the social extremes of Reading' (p. 31) – i.e. one working-class estate and one more middle-class area.

Funding of study
NR

Sampling of individuals for interview apparently based on quotas, with a focus on older women, married women with children, young women and single women. Sampling based on using electoral register to guess characteristics of individuals, but no formal selection procedure

Group interviews sampled according to similar quota structure, but did not include the 'single women' category ['I did not conduct a group with single women . . . because this proved too complicated to arrange' (p. 57)[355]]. Also: 'I consciously chose not to interview coloured [sic] women as a separate group (although two of the young women I interviewed were Afro-Caribbean)' (p. 41)[355]

Recruitment methods
For individual interviews: 'I then knocked on the doors of those women who from the electoral register appeared to fit the categories I was looking for. I showed them a letter of identification from the university, and if she did fit the age and lifestyle category I was seeking I then asked the woman if they would talk to me about fear of crime. If she agreed I then arranged a time when it was convenient for me to come back . . . In total to arrange and complete the eighty interviews I knocked on 407 doors' (pp. 43–6).[355] In addition, older women were contacted through voluntary groups

For the group interviews, all participants were recruited through organisations (senior citizens clubs for older women, youth clubs for young women, mother and toddler groups for married women with children)

Sample demographics
Total across both the interviews and the focus groups:
33 young women (16–22 years), 31 married women
with children, 20 single women, 31 older women
(> 65 years). *n* = 2 Afro-Caribbean, others
presumably white

Data collection methods
Initial pilot study with smaller group of participants
(*n* = 8) that informed tools for the main study.
Individual interviews in participants' homes. Interviews
between 40 minutes and 4 hours. Interviews were
open and followed the natural flow of conversation,
but questions based on pilot studies. Participants were
also asked to provide a 'spatial diary' for the
previous day

Group interviews included between five and eight
participants and were conducted in the places where
the various groups met. Interviews lasted 1–1.5 hours.
Researcher asked participants to describe a range of
places in terms of activities and who is there at
different times, using this as prompt for discussion

Finally, there was a participant observation component,
but these data were used only minimally

Analysis methods
Thematic analysis using index cards to categorise the
data into themes; these were then cross-tabulated
with each other and the different subgroups in
the sample

NR, not reported.

Valentine b[359]

Study Valentine b[359] *Quality rating* C *Location* Peak District, between Manchester and Sheffield; exact location pseudonymised	*Research question or focus* Exploring the views of parents in relation to children's (aged 8–11 years) safety in the context of rural life *Theoretical approach* None reported; draws on geography of childhood to some extent *Sampling methods and eligible population* Sampling of sites for the whole study: 'Ten areas were selected as research sites on the basis of social class, child demography, and macro-geographical environment. Census data was used to identify possible areas, their suitability was then verified by a field survey' (p. 139). However, it is unclear why this site was selected for this study report In the first stage of the study a questionnaire was distributed to parents through primary schools. Participants for the qualitative research were selected on the basis of their responses to the questionnaire. It is unclear how exactly, although there appears to be a dimension of purposiveness, to access both long-term residents and recent incomers *Recruitment methods* Unclear. Response rate NR *Sample demographics* 10 sets of parents with children aged 8–11 years in rural village; half were long established residents (insiders) and the rest were newcomers (outsiders) *Data collection methods* There was an initial questionnaire but no data are reported from this (used more for sampling in the context of this report). Interviews were conducted in parents' homes, based on themes from surveys. Focused on parental attitudes to children's behaviour and parents' memories of their own childhood and their views about childhood. Limited detail on context or conduct of interviews *Analysis methods* NR	*Limitations identified by author* NR *Limitations identified by reviewer* Some limitations in sampling *Funding of study* Economic and Social Research Council

NR, not reported.

Walklate[73,360,361]

Study Walklate[73,360,361]	*Research question or focus* To investigate how people in high-crime areas manage the risk and fear of crime in their everyday lives, particularly as related to perceptions of community	*Limitations identified by author* NR
Quality rating C		*Limitations identified by reviewer* Some unclarity around methods because of the complexity of the design
Location Salford	*Theoretical approach* Not explicitly stated; the background is primarily criminological	
		Funding of study
	Sampling methods and eligible population Limited information on sampling for the qualitative components of the study. Sampling was based on the initial ethnographic phase of the project	Economic and Social Research Council
	Recruitment methods Limited information for the qualitative components of the study	
	Sample demographics NR	
	Data collection methods Mixed methods of data collection: interviews with 'professional and semi-professional workers' (limited detail on methods of this); ethnographic observation; content analysis of local newspapers, etc.; a questionnaire survey (closed questions only, so not included in this data extraction); focus group discussions with residents ($n = 50$); postal questionnaires and follow-up telephone interviews with businesses and community groups; analysis of police data; in-depth interviews and focus groups with police officers; eight focus groups with young people (age 13–15 years); consultation with local policy-makers	
	Who carried out the various phases of data collection is not described in detail, but presumably most, other than the questionnaire survey, were carried out by the study authors, who were all female and had substantive previous connections to the study areas	
	Analysis methods Not clearly described overall; some discussion of particular issues and the co-evolution of data collection and analysis methods	

NR, not reported.

Waters a[362]

Study Waters a[362] *Quality rating* A *Location* University of Glamorgan campus at Trefforest (near Pontypridd) and University of Loughborough	*Research question or focus* To explore perceptions of personal safety on university campuses and make recommendations for the design and planning of campuses *Theoretical approach* Not explicitly stated (other than a brief mention of 'humanistic' qualitative methods). The constructs used derive mainly from the Delphi study conducted as part of the project, rather than from an overarching theory *Sampling methods and eligible population* Sampling of sites unclear in terms of motivation Sampling of individuals: criteria: university staff employed for > 1 year, students in the second or third year of study. Staff and students from Loughborough sampled to provide a 'visitor' perspective. The sampling procedure is described as 'purposive' but this seems to mean only that staff, students and visitors were sampled separately *Recruitment methods* Contacts in university departments were used to identify potential participants, who were then contacted directly by the researcher. £10 incentive for focus group participants *Sample demographics* 35 staff, 28 students; no other information *Data collection methods* Focus groups using virtual reality walk-throughs. Focus groups asked to focus on 'intentionally motivated harm' (p. 129) and to talk about their perceptions of personal safety on the simulated routes. Methodology was piloted before the main study was conducted. (There was also a questionnaire, but qualitative data were not collected from this) *Analysis methods* Themes developed from data iteratively, focusing on key themes that summed up the discussion and could be supported by direct quotes from the groups and/or images from the virtual reality component	*Limitations identified by author* Case study method may not be generalisable. Data may not reflect fine distinctions between, for example, perceived safety and fear. Potential bias in sampling process and small sample size. Some technical restrictions to virtual reality method (e.g. no sound) *Limitations identified by reviewer* Generally robust study but rather limited in scope; the broader contexts of fear and safety are not explored *Funding of study* NR

NR, not reported.

Waters b[363,364]

Study Waters b[363,364] *Quality rating* A *Location* Borough of Rhondda Cynon Taff, south Wales	*Research question or focus* To investigate older people's experiences of crime and the areas that make them feel safe or unsafe *Theoretical approach* NR *Sampling methods and eligible population* Sampling of site: 'South Wales was chosen as the location of the research because the University of Glamorgan is embedded in the local community and there are many communities of high deprivation in this area' (p. 5)[364] Sampling of specific communities based on deprivation and explicit criteria: '1. Established community relations with the University, 2. Strong Communities First projects, 3. Accessible participants, 4. Focus group venues and facilities, 5. A desire to be involved in the project' (p. 6)[364] Sampling of individuals stated to be 'purposive' but little detail reported *Recruitment methods* 'Purposive sampling was used to recruit older people of both genders over the age of 65; project briefings were held and information flyers were distributed at community meetings and older people's groups, and informed consent documents were completed by those who expressed an interest in participating' (p. 50)[363] *Sample demographics* 15 females, five males; aged 65–86 years *Data collection methods* Questionnaires and focus groups with virtual reality walk-throughs, focusing on participants' perceptions of safety on each route and the reasons for it *Analysis methods* Data analysed thematically to identify themes that sum up the discussions and could be supported by quotes and images from the virtual reality component	*Limitations identified by author* Small sample size; case study approach means generalisability is limited *Limitations identified by reviewer* Some minor unclarity around sampling, but no major limitations *Funding of study* Strategic Promotion of Ageing Research Capacity (SPARC) programme (ultimately Engineering and Physical Sciences Research Council and Biotechnology and Biological Sciences Research Council)

NR, not reported.

Watson[365]

Study	Research question or focus	Limitations identified by author
Watson[365]	To examine young mothers' experience of risk and uncertainty in relation to leisure and how this relates to identity formation and social dynamics	NR
Quality rating		Limitations identified by reviewer
C		Limited description of methods. Research question is rather broad and hence it is difficult to distinguish which constructs (e.g. risk) were previous parts of the analytical framework and which emerged from the data
Location	Theoretical approach	
Leeds	Not explicitly stated; introduction draws on theories of leisure and methodology is described as 'a critical reflexive approach that highlighted a number of salient issues in "researching difference" ' (p. 205), but little detail is reported	Funding of study
		NR
	Sampling methods and eligible population	
	Sampling methods NR as such. Eligible population was young mothers (defined as those who had their first child at age < 25 years) living in Leeds	
	Recruitment methods	
	NR. Response rate NR	
	Sample demographics	
	For interviewees ($n = 14$): age at birth of first child 18–25 years; ethnicity white $n = 5$, Asian/British Asian/ Sikh/Pakistani $n = 7$, British West Indian $n = 1$, British African Asian $n = 1$. NR for participant observation ($n=$ 'approximately 25'), although it is unclear to what extent these data are reported	
	Data collection methods	
	Interviews and participant observation; no further detail reported	
	Analysis methods	
	NR	

NR, not reported.

Whitley[233,366]

Study
Whitley[233,366]

Quality rating
A

Location
Gospel Oak,
north London

Research question or focus
To explore the impact of fear of crime on mental health and the interactions of this with age and gender

Theoretical approach
Draws on social psychiatry and the criminological tradition of fear of crime research

Sampling methods and eligible population
Initially from a random sample taken for a separate quantitative survey study. Aimed to sample equal numbers of participants with and without common mental disorders (and of men and women). Other than this participants were randomly sampled from within the larger list

Recruitment methods
By post; response rate 65%

Sample demographics
18 male, 14 female; half of each gender had a mental health problem

Data collection methods
In-depth individual interviews lasting approx. 1 hour and focus groups lasting approx. 90 minutes, facilitated by the first author. Questions focused on fear of crime, safety and impacts on behaviour and feelings. Also a participant observation component (e.g. observing locations identified by interviewees as crime hotspots)

Analysis methods
Interviews and focus groups tape-recorded and transcribed (analysis of these data not described in detail). Emerging findings were also discussed with professional and other 'key informants' to provide an element of respondent validation. Also, data triangulation between interview data and field notes

Limitations identified by author
Qualitative research cannot determine the direction of causality between fear of crime and mental health problems (p. 1686)

Limitations identified by reviewer
None

Funding of study
UK Medical Research Council, King's College Theological Trust, Leverhulme Trust

Appendix 11 Preferred Reporting Items for Systematic Reviews and Meta-Analyses checklist

Section/topic	No.	Checklist item	Reported in
Title			
Title	1	Identify the report as a systematic review, meta-analysis or both	*Chapter 4* (chapter title)
Abstract			
Structured summary	2	Provide a structured summary including, as applicable, background; objectives; data sources; study eligibility criteria, participants and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number	*Abstract*
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known	*Chapter 1*, *Background*, and *Chapter 3*
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes and study design (PICOS)	*Chapter 1*, *Research questions (systematic reviews)*
Methods			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g. web address) and, if available, provide registration information including registration number	*Chapter 4* (first paragraph)
Eligibility criteria	6	Specify study characteristics (e.g. PICOS, length of follow-up) and report characteristics (e.g. years considered, language, publication status) used as criteria for eligibility, giving rationale	*Chapter 4*, *Screening*
Information sources	7	Describe all information sources (e.g. databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	*Chapter 4*, *Searching*
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	*Appendix 2*
Study selection	9	State the process for selecting studies (i.e. screening, eligibility, included in the systematic review and, if applicable, included in the meta-analysis)	*Chapter 4*, *Screening*
Data collection process	10	Describe method of data extraction from reports (e.g. piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators	*Chapter 4*, *Data extraction and quality assessment*
Data items	11	List and define all variables for which data were sought (e.g. PICOS, funding sources) and any assumptions and simplifications made	*Appendices 9* and *10*

Section/topic	No.	Checklist item	Reported in
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or the outcome level) and how this information is to be used in any data synthesis	*Chapter 4, Data extraction and quality assessment*
Summary measures	13	State the principal summary measures (e.g. risk ratio, difference in means)	*Chapter 4, Data synthesis*
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if carried out, including measures of consistency (e.g. I^2) for each meta-analysis	*Chapter 4, Data synthesis*
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g. publication bias, selective reporting within studies)	N/A
Additional analyses	16	Describe methods of additional analyses (e.g. sensitivity or subgroup analyses, meta-regression), if carried out, indicating which were prespecified	N/A
Results			
Study selection	17	Give numbers of studies screened, assessed for eligibility and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram	*Chapter 4, Flow of literature through the review*
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g. study size, PICOS, follow-up period) and provide the citations	*Chapter 5, Characteristics of the studies and quality assessment*; *Chapter 6, Characteristics of the studies and quality assessment*; *Appendices 9* and *10*
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome-level assessment (see item 12)	*Chapter 5, Characteristics of the studies and quality assessment*; *Chapter 6, Characteristics of the studies and quality assessment*; *Appendices 4* and *5*
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group and (b) effect estimates and confidence intervals, ideally with a forest plot	*Chapter 5, Findings*, and *Appendix 6*
Synthesis of results	21	Present results of each meta-analysis carried out, including confidence intervals and measures of consistency	N/A
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see item 15)	N/A
Additional analysis	23	Give results of additional analyses, if carried out (e.g. sensitivity or subgroup analyses, meta-regression; see item 16)	N/A

Section/topic	No.	Checklist item	Reported in
Discussion			
Summary of evidence	24	Summarise the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g. health-care providers, users and policy-makers)	*Chapter 5, Findings, and Chapter 6, Findings 1: physical environment, Findings 2: social environment, Findings 3: other determinants of fear and Findings 4: consequences of fear*
Limitations	25	Discuss limitations at study and outcome level (e.g. risk of bias) and at review level (e.g. incomplete retrieval of identified research, reporting bias)	*Chapter 5, Limitations of the review; Chapter 6, Limitations of the review; and Chapter 7, Methodological reflections*
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research	*Chapter 7*
Funding			
Funding	27	Describe sources of funding for the systematic review and other support (e.g. supply of data); role of funders for the systematic review	*Acknowledgements*

N/A, not applicable; PICOS, participants, interventions, comparisons, outcomes and study design.

Appendix 12 Focus groups and stakeholder interviews: methods and findings

Overview

As part of the overall project, three small-scale pieces of research were conducted across Glasgow, London and Liverpool using a variety of qualitative methods to further understand the views of people who lived in relatively high-crime areas with poor health indicators (Glasgow and London) and to explore how local public officials working within Community Safety Partnerships (CSPs) operated (Liverpool). These pieces of research took place in December 2010 (London), February 2011 (Glasgow) and over several months at the end of 2011 and the early part of 2012 (Liverpool). The focus of the research was to explore participants' views on crime and the fear of crime along with possible links to health and well-being at both a personal level and a community level.

The research with members of the general public in Glasgow and London belongs firmly within the range of qualitative studies that have been systematically reviewed and synthesised. Many of the issues and themes that emerged from these two pieces of empirical work were also found in the qualitative research covered by the systematic review and provide further confirmation and validity to the overall project. The research with local public officials working in CSPs is more novel and explores how those charged with reducing crime and antisocial behaviour operate and conceptualise the links between crime and fear of crime and health and well-being.

Research with the public

London: methods

The London research was conducted with 26 adults from the borough of Waltham Forest ranging in age from their mid-20s to their 80s, along with several of their younger children, using the World Café method.[375] This qualitative method involved no more than six participants sitting round tables at the Walthamstow School for Girls, eating hot food and discussing a series of questions presented to them by facilitators on how crime impacts on their individual health and that of their communities. After each group had discussed a question and summarised their views, a number of participants then moved to another table to share ideas and discuss the next question. When all of the questions had been discussed, the participants then collectively discussed their views with the assistance of facilitators and the main themes are presented here.

London: thematic findings

The participants were first asked to discuss in groups what constitutes crime and who commits it. There were a wide range of views on crime with a general tendency to see relatively minor crimes, such as petty vandalism and graffiti, as incidents that contributed to the loss of a sense of community. More serious crimes, such as rape or murder, were much more likely to bring the community together because the severity of the incident invariably struck a chord with the decent, law-abiding majority, who felt a sense of outrage following such an event. However, by far the dominant theme to emerge from this discussion was the wide range of concerns about the behaviour of young people. The antisocial and criminal behaviour of young people was a major source of concern for participants. This group, particularly young males, was widely perceived to be the group responsible for antisocial behaviour and crime, because of a combination of factors that included peer pressure, the role of gangs, and drug and alcohol use, along with a lack of respect for adults that had been present in the past. This resulted in many people being fearful of young people and avoiding areas where groups of young people were likely to 'hang around', because of feeling intimidated, especially after dark. However, given the predominantly negative perceptions of young

people, it was acknowledged that these concerns could lead to 'exaggerated' perceptions of crime. Furthermore, it was also recognised by some participants that younger people were also at greater risk of being a victim of crime from their peers and could therefore be fearful as well as feared. As the groups noted:

> *Young people hang about in groups because it makes them feel safer. It's when they come into contact with other groups that it becomes dangerous.*

> *Years back kids would run off. Now they turn on you. It's groups of them. Do you feel it is worthwhile getting involved?*

The next area for deliberation was the consideration of the factors that stop people from engaging in crime or encourage them to engage in crime. There was a series of contested views as to why people, particularly young people, become involved in crime and antisocial behaviour. These included peer pressure, which escalated from dares to antisocial behaviour and minor criminality, and a lack of activities for young people or places for them to go. There was also a resolute debate on the role of parents in providing appropriate guidance or not, as the case may be. The transmission of 'good values' that enabled young people to make the 'right choices' when faced with situations that could lead into antisocial behaviour and crime was considered to be important in determining criminality. Children and young people needed to learn to take personal responsibility for the choices they made and the actions they took if crime was to be reduced. A wider structural explanation for crime based on the lack of activities for young people, the entrenched disadvantage faced by people in the local area, and the part played by the media for highlighting the role of gangs was also considered to be important. Education, strong outreach and early interventions with children and young people were all considered to be important in preventing a drift into antisocial behaviour and criminality. As the groups noted:

> *People make their own choices – ultimately everyone has the same chances in life. There are many opportunities for crime but most people don't commit crimes. Some people are exposed to crime and violence growing up, and resolve not to get involved. Compare smoking – my parents smoked, and that put me off because I saw the consequences. Families and role models are important, but in many cases children come from 'good' families and still get involved in crime because of outside influences.*

> *[There is] Nowhere for kids to go. Not a lot of facilities, when there are, the family don't have the money for them.*

> *How do parents not know where their kids are? They are just kids. You need to intervene really early to take them out of it.*

> *Everybody has the capacity to understand the consequences of their actions, but some people choose not to. It comes down to values. Many criminals would actively discourage children from getting into crime and want them to have a better life.*

> *Media has highlighted and glorified gangs, given names and made it a celebrity status. They have made it easier for kids to get in trouble.*

Of particular relevance in the context of this project, there was an acknowledgement that the built environment was a factor in crime and antisocial behaviour, leading to stress and poorer health. Housing blocks were considered to be badly designed with a lack of security measures and few safe social spaces that would enable people to act in a neighbourly manner. However, this line of thought was less clearly articulated than individual and social explanations for crime, although the groups noted:

There are no safety doors at XXX house. They just open up. Kids go to these blocks. The washing gets stolen from the line. Spending money and it just goes. They just ignore you. If you say anything you are scared that they will smash a window. The kids get back at you. Kids use the short cut across our garden. They walk through. Though there is now a fence going up to stop that. Residents signed a petition. I have been here 14 years. We need something secure.

Think about the design of the estate. It's 50 years old and the design hasn't changed. Many areas aren't accessible. Having play areas would make parents feel safer for children.

A further area for discussion was on the health impact of crime on individuals and the wider community. There was widespread support for the view that numerous health and well-being effects stem from crime and the fear of crime, including anxiety, leading to sleepless nights or panic and asthma attacks. Many people reported restrictions on their freedom to go out to certain places after dark, leading to feelings of social isolation and vulnerability in their own homes. As the groups noted:

Many people do not feel safe in their own homes (especially older people who live alone) and so they don't feel safe going out.

Many people are scared to go out – often to the extent it affects their physical health through asthma attacks.

Couldn't sleep. In house, but don't feel secure, put chair on door, get up to check in middle of night.

Mentally we are scared – impact psychologically on whole community. Scared re burglary, that they will be next target.

It causes the elderly lady's asthma to get worse and also when she get scared her heart raced, causes problems for her.

The impact of crime and the fear of crime had become embedded within the psyche of the community, leading to further fragmentation, with people 'looking after themselves' rather than being concerned about their neighbours. Social bonds were often considered to be weaker than in the past and there was a lack of trust in the police and council to provide solutions to the problems faced by people in their every day lives. Consequently, residents recounted various ways in which they had changed their behaviour to mitigate the negative effects of crime, such as not going out at night, not allowing children to play outside and avoiding certain areas or hiding their valuables. As the groups reported:

There's a lack of trust in the police – in some cases people have given information to the police and got other residents in trouble.

I'm less at risk of robbery because I have fewer possessions, e.g. don't wear an expensive watch

People adapt to their surroundings, e.g. dress appropriately. If you know an area has high crime, you adjust your behaviour.

A final area for debate and deliberation was on how youth crime could be reduced, given that it was considered to be such a major issue for local residents. There was strong support for collective community action as a critical part of any intervention to reduce youth crime and promote community well-being. This approach needed to be based on building trust and understanding between generations rather than on the fear and suspicion that characterised the current situation. This type of initiative was thought to be most effective when people and professionals worked together in the spirit of co-production rather than being something that was 'done to' the community by local agencies. What was needed in the view of

most residents was local people working with local agencies and professionals who would be able to provide the necessary access to resources and advice. As the groups noted:

Adults need to engage with young people. You can't change things overnight because young people don't trust people they don't know – you need to start with small changes and interactions.

Have to start up small. Build it up with them . . . Ask them to move or talk to them. Need to go to them to speak to them, as adults we have to go to their level, break the barrier down. We are the adults.

Community centres, meeting spaces, bring people together. So people can see the impact it is having on others lives.

These crimes have been around for ages. The problem can't be solved without stemming from the community. Maybe knife and gun crime has increased a little. But it has to be solved from inside a community.

Have informal meeting with the kids so they get to know each other and also know the impact on one another.

In conclusion, the World Café research confirmed a number of key points from the literature on crime and the fear of crime in relation to health and well-being. Low-level crime and antisocial behaviour is a common nuisance that has become embedded in the community and contributes to pervasive anxiety and stress for some people. Fear of crime kept people, particularly older people, isolated at home and fearful when they ventured out to certain places, especially after dark. The causes of crime and antisocial behaviour are complex but there was a tendency to emphasise individual choices and parenting, although structural social and economic factors were also acknowledged as contributing to the decline in the sense of community and neighbourliness, as well as a poor-quality built environment. The solution to these deeply entrenched issues lay with the community working with local agencies to foster intergenerational tolerance and understanding to build social cohesion, leading to safer and stronger communities with less crime and fear of crime, which can lead to anxiety and diminished health and well-being.

Glasgow: methods

A focus group was held with eight people, five women, including two pensioners, and three men, including one pensioner, with the youngest participants being in their 40s. The participants were all social housing tenants of many years living in relatively new-build houses in a district of northern Glasgow. The area had been characterised by tenements and high-rise developments dating back to the 1960s but had undergone extensive regeneration since 2000 and, although far from being crime free, was not regarded as a high-crime area by local people, despite some problems with drugs and associated gangs that were considered relatively normal for the city.

Glasgow: thematic findings

Although there were problems with more serious forms of crime associated with drugs and gangs, it was antisocial behaviour that was regarded as a greater nuisance for this group of older residents. The abuse of private space, such as gardens being used as a short cut, and the vandalism of public space were considered to be more important issues by some participants than the potentially more serious criminal threat posed by 'junkies' and young people hanging around chemists in the local shopping centre. Avoiding this area was relatively easy but violation of private space and the more generalised fear of young people were much more difficult to manage. The locations for fear-inducing threats associated with antisocial behaviour and more serious criminal activity were communal areas such as the local shopping centre, which contained two chemists where methadone was dispensed as well as cash machines and a Post Office that provided targets for street robbery. Although none of the participants reported any direct

experience of being a victim of crime in this location, it was regarded as a risky place that induced fear whenever they went there in the course of their daily lives.

The fear of crime was both for their personal safety and vicariously for children, who were particularly at risk of harassment from young people. This led to feelings of anger and anxiety because of a lack of control, with sleepless nights reported because of worries about younger family members being out and getting into trouble through drugs and gangs. A link was acknowledged with mental health, with fear of crime leading to general anxiety and particular paranoia when in certain situations, such as being in a risky area after dark. However, this link between fear of crime and poor mental health depended on individual resilience and was far from universal, as some people were not adversely affected by fear of crime.

In terms of reducing crime and the fear of crime, it was felt that having fewer young people in the area was a major factor as this was the key group involved in antisocial behaviour and criminality. Respondents viewed the CCTV system positively in terms of reducing antisocial behaviour and crime in the public areas that it covered, although its effectiveness was reduced in public areas where people were able to scatter along a variety of exits when the police responded to an incident. There was also support for target-hardening measures, such as anti-climbing paint on walls around bin shelters and more secure doors in homes, which would deter and prevent antisocial behaviour and crime.

Although young people were viewed as a particularly problematic group, the participants acknowledged that this was often because young people lacked the facilities and money to engage in positive activities rather than hanging around on street corners. Providing accessible activities for young people so that they do not engage in antisocial behaviour was regarded as desirable. Perhaps more importantly, it was also recognised that there needed to be greater intergenerational understanding between younger people and older people as the current situation was based on the assumption that young people were up to no good when that was not always the case. The general view was that, although improvements to the built environment could be made, it was people and their behaviour that were more important than place when it came to antisocial behaviour and crime.

Research with the public: conclusions

There was a great deal of common ground both between the two research sites and with regard to the themes from the qualitative literature. The pervasive nature of antisocial behaviour, particularly associated with young people, in relatively deprived urban environments should never be forgotten. A wide range of abusive and threatening behaviour, vandalism and other incivilities directed towards people was commonly reported and contributed to anxiety and isolation because of the fear of crime. Although young people were deemed to be responsible for a disproportionate amount of the problems that people faced on a daily basis, there was an acknowledgement that young people needed activities, assistance and guidance if they were to make a positive contribution to their communities. It was also encouraging to find that people recognised that there was a need to improve intergenerational understanding as not all young people were causing problems in the community but virtually all young people were deemed to be a potential source of fear.

Although deficiencies in the built environment were an issue for people, and improvements, such as target hardening, were seen as being part of the answer, the problems and solutions were in the social domain. Although physical place mattered to people's perceptions of fear, it was 'risky' people such as young people and 'junkies' who were the real source of problems for people.

Research with community safety professionals

Background and methods

The final phase of the empirical research was with a small sample of community safety professionals to explore how the people charged with implementing interventions to reduce crime and the fear of crime

operate at the local level, particularly in relation to their use of evidence and conceptual links between crime and the fear of crime and health and well-being. Community safety has developed as a public policy concept in the UK over the last 20 years and has been institutionalised in England and Wales since the Labour government introduced the Crime and Disorder Act 1998.[376] The Act established Crime and Disorder Reduction Partnerships, now known as CSPs, consisting of the responsible authorities of the appropriate local authority, the police (service and authority), the fire and rescue service, the probation service and the local health authority (primary care trusts in England and health boards in Wales), and charged them with the task of preventing crime and disorder. Partnerships faced the considerable challenge of implementing New Labour's mantra to be 'tough on crime, tough on the causes of crime', which represented the apparent merging of the concerns of the criminal justice system with wider social policy issues through the adoption of a more holistic and preventative approach.[377,378]

Reducing crime and improving community safety continue to be recognised as important issues by the coalition government, with the Home Office adopting a new strategy. The primary objective of the police service is to cut crime, with locally elected police commissioners introduced in 2012 in place of the local police authority, whereas partnerships are to solve community safety problems by working together as well as reduce criminality. The extensive system of targets and reporting to Whitehall developed by New Labour has been ended, with partnerships to be action orientated rather than talking shops, with the emphasis on looking to local communities for priorities rather than Whitehall. The mapping of local crime data is intended to increase transparency and the Early Intervention Grant provides some resource for prevention and, following the Newlove review on safer communities,[379] the aim of moving away from dependency on professionals and agencies and towards more active citizens and developing community spirit to tackle crime and the fear of crime.

It is within this policy context that a series of interviews with members of partnerships were conducted. An opportunistic approach to sample generation was adopted and it produced nine semistructured interviews with senior professionals working in partnerships in an urban area. Interviews with these people working across public services lasted between 45 and 90 minutes and were digitally recorded, transcribed and thematically analysed to identify key findings. The interview schedule was flexibly deployed given the different roles that interviewees had in relation to community safety and covered issues such as the role of 'objective' data and public consultations in shaping partnership priorities, how and why the main priorities emerged and were addressed, the use of research evidence and the links between crime and the fear of crime and mental health and well-being. Ethical approval for this research was secured from the London School of Hygiene and Tropical Medicine and all interviewees gave signed consent to participate with the undertaking that their views would be anonymous. All interviewees received either a summary and/or a full transcript of their interview for approval and clarification; all participants were content with the resulting product. Every effort has been made to ensure that the people who assisted in this research and the areas in which they work are not identifiable.

The limitations of this research include the small number of participants who agreed to be interviewed. A number of approaches were made to other potential participants but despite repeated efforts it was not possible to secure additional interviews. A decision was made not to seek to interview locally elected representatives involved with the work of CSPs given the severe time constraints that councillors invariably face and the potential limitations of not achieving a range of interviews with local politicians. It became apparent that councillors and senior community safety professionals work closely together and, from the officers' perspective, do so in a supportive fashion, but this cannot be confirmed without the views of elected members being explored. The extent to which the views expressed and findings generated can be more widely generalised from is clearly limited by the small number of people and places involved in this set of interviews. There are likely to be views that are commonly shared by other professionals working in community safety but, given the limitations of interview focus, duration and timing in relation to budgetary issues that local agencies are facing currently and in the future, they are certainly far from comprehensive in terms of coverage. Despite these limitations, they do provide some useful insights into the work of CSPs in terms of actions at a local level and the conceptualisation of the link between crime

and the fear of crime and health and well-being as well as the use and limitations of research evidence in this process.

Thematic findings

Intelligence analysis, community consultations and the role of research evidence

Partnerships are charged by the Home Office with being intelligence-led and outcome-oriented to be effective in tackling crime and reoffending at the local level.[380] This involves a mixture of analysing 'hard' data sets and a wide range of methods for consulting with local communities to develop appropriate priorities for the partnership. All of the partnerships analysed a wide range of data sets to inform their work with particular attention paid to police-recorded crime and incidents, calls for service to the local authority for antisocial behaviour and environmental incidents and other core data sets used by the responsible partners in the locality. National data sets such as the Index of Multiple Deprivation were also used to build up a detailed profile of local areas and to show how areas that experienced deprivation across domains such as income, employment, health, education, housing and the living environment were also more likely to experience higher levels of crime and disorder. Geodemographic software was used to identify trends in crime and disorder in localities, with analysis by partnerships taking both a wider view of the social determinants of crime and a longer-term view of these patterns than the police service, which tended to be more concerned with short-term operational performance issues related to individual offenders and victims. In general, information sharing between the responsible authorities was considered to be relatively good and to have improved in recent years as partnership working had developed, although there were still areas that could be improved further and were considered to be a barrier to partnership working, such as accident and emergency admissions for injuries sustained from an assault or for alcohol-related injuries.

Community consultations took a variety of forms across partnerships, with some using a large-scale survey of local residents administered by a market research company designed to track perceptions on community safety and others relying more on traditional methods such as self-administered questionnaires and a range of public meetings connected to responsible authorities such as neighbourhood police teams. The surveys provided scope for a detailed analysis of the views of local areas in relation to issues beyond narrow conceptions of crime and disorder such as community cohesion and social capital. However, in some areas the future funding for such surveys was an issue, given the budgetary restrictions faced across the public sector. The role of councillors in providing local democratic legitimacy and being in regular contact with the public was also recognised as being important to the work of partnerships. The support that councillors gave to the work of partnerships was widely appreciated and valued by officers who reported working extremely well with elected members. Local priorities for partnerships were decided by a combination of factors including analysis of crime and antisocial behaviour patterns, the views of the public and councillors and how multidisciplinary teams of professionals framed issues and possible solutions in the light of guidance and experience. Partnerships that carried out regular surveys of public perceptions were able to track changes over time, both across and within the wider community, to assess performance. As a partnership manager stated:

> *I thought at the time it would be incumbent on me to say with a degree of certainty that X% of residents within our community felt safe during the day and X% felt safe during the night because ultimately what we deliver is not something we deliver to people who are our customers but to people who live in our community. So we took our partners on that journey from being customer orientated to being community orientated, from being victim orientated and offender orientated to being community orientated.*

Established research evidence on crime and disorder provided both a framework for detailed local intelligence analysis and the basis for interventions. For example, the Vulnerable Localities Index developed by the Jill Dando Institute of Security and Crime Science in collaboration with the National Centre for

Policing Excellence (now part of the National Policing Improvement Agency) was used in several partnerships to identify priority localities. One partnership, having identified the most vulnerable locality in its area, employed the 'weed and seed' approach developed in the USA that starts with 'weeding' through enhanced enforcement to clear the area for a longer-term process of 'seeding' through community engagement and regeneration. The partnership worked in collaboration with the police and registered social landlords to weed the area of individuals and families who were responsible for a disproportionate amount of crime and disorder. This was a sustained enforcement effort with the explicit intention of building links with local people through the establishment of micro-beats in neighbourhoods to build confidence and community engagement. There was a sustained effort to encourage local residents to subscribe to a targeted messaging scheme using texts and e-mails to communicate 'You Said, We Did' messages and a wider programme of initiatives to build the capacity of people to work together to meet local needs, gain skills and qualifications, develop community events and work more closely with professionals in various organisations. The partnership knew that this area had poor perceptions of crime and disorder compared with the rest of the authority, with a greater proportion of residents reporting that a range of issues such as burglary, gang violence and vehicle crime were a major problem at the start of the project. The partnership developed a bespoke survey for this area-based project and over the course of the seeding year there were significant improvements in the perceptions of residents in relation to crime and disorder, influencing decisions that affected their area and community cohesion.

In another area, the partnership worked closely with the developers of a new housing estate in a high-crime area to use Secured by Design principles based on combining physical security with natural surveillance and defensible space along with a range of target-hardening measures to promote community safety. The partnership was planning to monitor the incidence of crime and disorder in this area and the views of residents when the development opened and after 6 months so that they could evaluate the work undertaken and continue to learn lessons from local experience. Finally, another major initiative that had been based on research evidence was the prevention of burglaries through the installation of alley gating in areas containing concentrations of back-to-back terraced housing. This was a multimillion pound programme that had run for almost a decade and was shown to be particularly effective in reducing burglaries through rear entry in terraced housing that lacked natural surveillance.

Partnerships used similar approaches to intelligence analysis and although there were many similar methods of consulting with the public the use of local tracker surveys gave some practitioners an additional tool to monitor perceptions of community safety. There was a good deal of knowledge of established research evidence among practitioners, particularly in relation to crime prevention, but an acknowledgement that the use of research was partial and could be improved.

Achieving reductions in crime and antisocial behaviour

All of the partnerships had seen falls in recorded crime in recent years, unsurprising given the downward national trend over the last decade, and a decline in the measured level of antisocial behaviour. Interviewees were adamant that the falls in levels of crime and antisocial behaviour were a fair representation of the situation rather than a change in reporting behaviour by the public. For example, in one partnership area the number of burglaries was reduced from nearly 1600 to just over 400 per annum over a 5-year period whereas in another area the number fell from > 1500 to approximately 550 annually. Given that burglary is a crime that will usually have a considerable impact on victims in terms of feeling less safe in their home and being unable to replace some possessions, it is unlikely that reductions on this scale are due to a change in reporting behaviour.

Common factors in explaining the fall in the number of burglaries in each area included being part of the national trend and local initiatives such as a variety of target-hardening measures including alley gates and better locks on doors and windows; managing spree burglars more effectively so that they were less prolific until they were arrested; and crime prevention messages altering people's behaviour so that they took sensible precautions that limited burglary opportunities. It was also commonly reported that the alley gating intervention had not only reduced burglary as anticipated but also reduced criminal damage to

vehicles and contributed to a reduction in antisocial behaviour because it blocked escape routes for young people who might otherwise hang around on street corners. It is important to emphasise that interviewees stressed the multiplicity of factors that contributed to the reduction in number of burglaries rather than attributing it to a single built environment intervention such as alley gates or even a range of target-hardening measures. Changes in the behaviour of local people and the close co-operation of the police and probation services were also credited with influencing the decline in number of reported burglaries.

When it came to matters of antisocial behaviour there was a distinct dissonance between the populist rhetoric of national policy-makers with their tendency towards punitive measures and the views of local practitioners when it came to implementation. There was recognition that enforcement measures were a necessary element of dealing with antisocial behaviour but there was a much more thoughtful approach that emphasised the importance of diversionary activities. The general approach was to target the most impactful individuals and families and leave them in no doubt that antisocial behaviour would not be tolerated, with social housing tenancy agreements being a potentially powerful influence in terms of requiring good behaviour. Simultaneously, there was a strong case for providing young people with positive diversionary activities, such as youth clubs or free swimming during the school holidays, so that they were less likely to engage in antisocial behaviour. This approach represents a balanced and thoughtful approach to tackling antisocial behaviour by implementing measures that are tough when necessary while seeking to give young people a route to stay out of trouble when they face difficult circumstances.

Although practitioners were firmly of the view that antisocial behaviour had been reduced, there was an acknowledgement that it was still affecting the same areas so that, although there were fewer incidents, they still had a negative impact on people's lives; in addition, the collective memory within neighbourhoods lasted a long time. This memory of antisocial behaviour and criminal activity contributed to the view among community safety practitioners that the public were highly sceptical of performance figures that showed sustained reductions and that it was very difficult to change this view. As one interviewee stated:

> We've gone from nearly 1,600 burglaries per year to just over 400 . . . yet my belief is that if you went into most communities and said did you know that ASB [antisocial behaviour] has gone down by 40% then you'd be laughed out of court. The same goes for crime figures, people don't believe them whether they're national or local.

Accompanying this public scepticism about performance figures on crime and antisocial behaviour was an underlying intolerance that was usually aimed at children and young people. This sense of intolerance prompted calls for service for antisocial behaviour that was nothing more than children playing football on a communal green or young people simply hanging round on a street corner or near local shops. Part of the work of community safety practitioners was to increase intergenerational tolerance and change perceptions that young people always caused disorder in the neighbourhood. As an interviewee commented:

> . . . believe me there's a hardcore of intolerant – and I mean unbelievably intolerant – people out there. I mean we even got complaints during the summer holidays of children out playing during the day and what am I going to do about it? Part of my role is to say that I'm not going to do anything about it; there's no criminality, they're good kids, we've met with the parents and they won't even talk to the parents about it. I mean sometimes I go out with the members with me on this and we've got good members because they've been on a journey with us on this . . . the other thing is that you've got to get out there and meet people where it's happening and talk to the people involved so you can understand what's happening.

Finally, repeat calls for service with regard to antisocial behaviour were a very important issue for partnerships following the Pilkington case in Leicestershire in 2007. In this case there were repeated calls from the mother of a disabled woman about antisocial behaviour by local youths but no effective action

was taken to deal with it, leading to Mrs Pilkington setting fire to her car containing herself and her daughter and causing their deaths. The coroner's verdict was highly critical of the roles of the police and local authority services for not adequately communicating during the years of complaints and this prompted an Independent Police Complaints Commission investigation into the conduct of officers. A more thoughtful approach to the analysis of calls for service had been adopted, with consideration given to people who called in frequently and those who entered or exited this group over a 3- or 6-month period. Systems had been developed so that calls from vulnerable adults who were being supported by adult social services were identified and if antisocial behaviour escalated into hate crimes then actions by the partnership were more intensive and supportive. As a practitioner commented:

> In the first instance what Pilkington is actually about is reports coming in that agencies weren't picking up and joining the dots together so that they could respond to it properly. Now what we've said is that it's no good putting resources where you'd like to put them . . . we need to put resources, especially in the era of diminishing resources which has gone on now for a few years, we should and always have put resources into the areas that need them the most and hence we've achieved the year on year reductions. So Pilkington encouraged people to be intelligence-led but I think we'd already got there and realised that we were doing what we should be doing. Pilkington has had an impact in terms of linking ASB [antisocial behaviour] governance with the work of adult safeguarding so that we're now making sure that there's a crossover between the two and we're doing the same in respect of domestic abuse where there's a link to adult safeguarding because it incorporates that and we've got a children's safeguarding officer who is a permanent member of the team and there are close links with children's safeguarding and the work we do around preventing domestic abuse.

Avoiding a partnership failure, such as that which so tragically occurred in the Pilkington case, was certainly a factor motivating the actions of partners. All interviewees were convinced that there had been a reduction in crime and antisocial behaviour but there was a unanimous view that partnerships had not succeeded in reducing the fear of crime to the same extent, although this had been a key performance indicator under the Labour government. Although partnerships were no longer required by the coalition government to include reducing the fear of crime as one of their priorities, it was universally acknowledged that it was a foundation for community safety.

Difficulties in reducing fear of crime

There was a common view among respondents that the relationship between crime and the fear of crime was complex and needed to be much better understood if reductions in crime were to be translated into gains in community safety. Those partnerships that conducted a detailed survey of local residents were able to speak more precisely about their populations' fear of crime and how they were attempting to change peoples' perceptions about crime and antisocial behaviour. However, even in those areas that had undertaken a survey to measure fear of crime, using standard questions about whether people felt safe in their home or in certain places during the day or at night, or the level of confidence and trust that they felt within their neighbourhood, there was an acknowledgement that it was an elusive concept to measure. Fear of crime was deemed to be strongly influenced by an individual's characteristics and views, making it a subjective concept that was difficult to change. There were some crimes, such as violence in public places, that generated disproportionate fear compared with the level of incidence. There were some relatively deprived areas that had both a high level of crime and a high level of fear of crime along with dissatisfaction with services but there were also areas with similar profiles in terms of deprivation and crime that had relatively low levels of fear of crime. There were also relatively affluent areas that had lower than average levels of crime but reported high levels of fear of crime, indicating to practitioners that there are social factors such as cohesion, confidence and trust at work within communities.

Practitioners had a range of views about why fear of crime was such an intractable issue for partnerships to reduce, given that levels of crime had fallen so much in recent years. In addition to the general public being sceptical about the crime figures and the collective memory of neighbourhoods, particularly of a

signature crime that happened nearby, the fear of crime was part of contemporary society. As one interviewee thoughtfully contended in relation to fear of crime and community safety:

> . . . it is still out of sync with levels of crime. I'd also say that we have had success and our numbers have shifted on both levels of satisfaction with what we're doing and general feelings of safety although we've reached a plateau now and this is my take on it . . . I think the negative is that we live in a more fearful society when paradoxically we are undoubtedly safer in every respect – I'm talking about health, disease, crime, economically and they talk about the age of austerity nowadays but my mum and dad were born in the mid-30s and you can't call this an age of austerity compared to that . . . For me it's a dynamic proposition informed by a range of social and cultural variables but sometimes we've got to not worry about it so much. It's got to be an important part of the time mix but you'll never get absolute correlation between low crime, high satisfaction with services and low levels of fear because an individual signature crime happening here or elsewhere will play out in the cultural context of crime because there is nowhere else to go with it with the atomisation of society so we know less about our neighbours but more about the world through the media. At some point you've got to say that I'm going to take that as a temperature check and acknowledge that it is important but if I'm a slave to it then I'll be paralysed.

This view from a senior practitioner characterised the view that, although partnerships were making progress in reducing crime and antisocial behaviour, it was much more difficult to reduce fear of crime because of the wider structure of society. There have been improvements in general feelings of community safety but there was a fear that partnerships were reaching a plateau in terms of how much more they could reduce the level of crime and increase levels of satisfaction given the difficult economic climate affecting people and public services. A range of social factors, such as the cohesion and resilience of a community, were recognised as being important in the relationship between crime and the fear of crime. A practitioner discussing how the perceptions survey helped to understand and build resilience in communities stated that:

> So if crime becomes a risk then resilience becomes a protective factor for a sustainable community and the moderating factors between crime and fear of crime are really important because you may have a community that is at risk from crime but is also incredibly resilient because internally it is strong and internally it is self-regulating. So what we know is that the simple prevalence of a crime doesn't always reflect the fear of crime so we try to understand the level of resilience, the level of capable guardianship within the community and how that moderates between crime and the fear of crime and that can come from our understanding of what is the internal resiliency of a community. Do people trust their neighbours? Would they intervene or do they think that people in their community would intervene if they saw x, y or z? And we're able to say with some degree of assurance that in our communities that figure could be anything from just over 50% to as high as 86%.

This level of analysis allowed those partnerships that carried out surveys of residents' perceptions to develop more appropriate community safety messages for different communities. For example, areas with low levels of a high-impact crime such as burglary but high levels of fear of crime are more likely to have an enhanced sense of community safety if they receive reassurance messages about their low relative risk and the need to take sensible precautions such as closing windows and locking doors. In contrast, areas with high levels of burglary but relatively low levels of fear of crime are more likely to benefit from target-hardening measures and increased enforcement. This partnership described in the previous quote was implementing this differential approach within certain areas although it was too soon to evaluate the impact of this more nuanced strategy.

In terms of the factors driving the fear of crime, there was widespread belief that personal experience and word of mouth from friends and neighbours were the most important influences. The role of the local and national media was generally considered to be negative, because of the intensive coverage given to

signature crimes, but to be of less importance. Respondents tended to take the view that the commercial reality of bad news stories about crime selling papers was a feature of modern media even though it made their task of promoting community safety somewhat more difficult. As one practitioner somewhat wearily commented:

> It's much like when we want to put good news stories out into the press – and we're not unique here – you have to buy advertising space to put a good news story in but they're quite happy to hear that some poor soul has been murdered. So we're working against that sort of background and we do our best.

There were also some negative comments on the website mapping police crime data for the general public, which was launched in 2011 as part of the coalition government's wider strategy of providing more information to the general public as it was felt that only a partial picture was provided. Although the website showed police-recorded crime, it did not show how the criminal justice system was operating to detect and prevent crime and so could give the public a more fearful view of society. A considerable amount of resources must have been used to establish the website at a time when local policy-delivering organisations were cutting services. For example, a relatively recent initiative to tackle fear of crime – community crime fighters – which involved recruiting volunteers to provide informal reassurance about crime within communities, was ending, even though it was deemed to have been successful in the relatively short period of time that it was running. Further examples of cuts included reductions in expenditure-intensive target-hardening measures and the use of property marking kits and the closure or reduced opening times of public buildings such as community centres, libraries, children's centres or local police stations, which were considered to be signal buildings that contributed to the wider well-being of the community. Finally, and perhaps most importantly in terms of reducing fear of crime, budgets for communication and social marketing had either been severely cut or been entirely eliminated because of financial requirements.

Although it was acknowledged that some initiatives such as improved street lighting and alley gating reduced both crime and the fear of crime, the favoured approach for addressing fear of crime was a clear communications strategy. Partnerships used a variety of means to inform and persuade the general public that they had less reason to fear crime now than a decade ago. The means for communication included press releases, posters on bus stops, e-mail and text messages, notes in newsletters of partner organisations, distributing personal safety devices to the public, leafleting at public meetings and so on. Given the public's scepticism about quantitative measures of reductions in crime and antisocial behaviour, there was a preference for narrative communication because people were more likely to be moved by compelling stories that could permeate the public's thoughts on crime.

One partnership had conducted focus groups for a social marketing campaign intended to reduce fear of crime and found that dispelling urban myths about crime in the locality and understanding that people and neighbourhoods had a sense of memory about events that needed to be changed were critical to success. People's perceptions were often grounded on vivid experiences of an incident from the past and mistaken beliefs about the current situation. For example, a widely held perception among the public was that drug users were responsible for a large proportion of acquisitive crime and that drug treatment services were ineffective. This view was based on an emotional and subjective view of the situation that was not matched by the reality; drug users were responsible for much less acquisitive crime than people thought and local services for drug users were among the best performing in the region. When the focus groups were exposed to key facts that gave them an objective view of the situation, their views began to change and the partnership was able to develop a social marketing campaign based on these insights. After testing with focus groups for approval of the content and style, a number of communities were identified using Experian's geodemographic lifestyle classification system and targeted with messages intended to reduce their fear of crime by giving them a suitably tailored leaflet and inviting them to read it and reassess their views before passing it on. Evaluation of the intervention indicated that it was generally well received and it appeared to have a modest impact over time on feelings of safety in these areas.

However, this initiative was conducted at a time when budgetary resources were less stretched and there is little likelihood of it being developed further.

Reducing fear of crime and improving people's sense of community safety are complex tasks that present an even greater challenge to partnerships than reducing crime and antisocial behaviour. This is because of a combination of the subjective beliefs of individuals, the memory of past events within communities and the wider social and cultural context that has constructed a strong sense of fear of crime. There were numerous acknowledgements that practitioners were unsure of how they might reduce the fear of crime or that they lacked the necessary skills to undertake such a task. This may be the case but there should be no doubt that reducing the fear of crime at a local level is an onerous task when expectations of what the criminal justice system can do are not realistic and there is a widespread sense of anxiety about crime and social cohesion across contemporary society. Even with these barriers there were some examples, such as the 'weed and seed' approach and the social marketing research interventions, that showed some success in reducing the fear of crime. The central strategy of partnerships to continue to reduce levels of crime and antisocial behaviour and to keep the public informed through an active communications strategy may well reduce the fear of crime but it will take time and is unlikely to be equally effective across all communities.

The impact of crime and fear of crime on health and well-being

Being a victim of a crime or antisocial behaviour can be directly detrimental to an individual's health and well-being and there was universal recognition that the fear of crime could have indirect effects on the wider population at risk of secondary victimisation. These common concerns were widely recognised in terms of communities facing multiple disadvantages associated with higher crime levels and poor health and social indicators. As one interviewee commented:

> *Health will call them patients, our colleagues in the police might call them offenders and we'd call them people because they live here. It's the same cohort of people and when you look at the drivers . . . there is an enormous crossover between health and wellbeing, public health, offending and the drivers of offending and also the broader characteristics of wellbeing in the community. And I think what we have to do both within our field and within health, is to agree a mutual definition of what does wellbeing actually mean and whether it becomes encapsulated as a health outcome or whether it you defer to Marmot and say that health inequalities flow from social inequalities and I was interested to read in Marmot's drivers there was only one that pertained directly to health while the others flowed from social factors.*

Another respondent was equally forthright and stressed the need for the partnership to work with adult social care services when dealing with vulnerable victims of antisocial behaviour:

> *The whole basis for the piece of work that I did for the JSNA [Joint Strategic Needs Assessment] was about crime being a wider determinant of health and wellbeing, there's no doubt about that. If you live in an area that is repeatedly the target of crime or ASB [antisocial behaviour] then that will impact on people's health and wellbeing. I mean across the news nationally and locally there are always stories about vulnerable victims of ASB who are repeatedly targeted and you see the real impact of that not only on the figures but even when you're doing the analysis you try and put yourself in other people's shoes and imagine what it must be like for them if every Friday and Saturday evening there's regularly ASB. There is a link to health and wellbeing for vulnerable victims and ASB where there's almost like a risk assessment conference because I think people have realised that somebody who calls repeatedly to report ASB – although in some case it's not ASB, they're just ringing because they've always called – then there has to be a different response from the CSP. The CSP can't really deal with somebody who calls 50 times a year about ASB because there is a risk to their health and wellbeing, particularly their mental health, because of the vulnerability of a victim.*

Particular groups of people, such as people with mental health issues or those at greater risk of being a vulnerable victim because of their ethnicity or a disability, were considered to be more likely to experience negative effects of crime or antisocial behaviour on their health and well-being. At a more general level there was a clear grasp of the risks of secondary victimisation as a result of the fear of crime, leading, albeit through an often diverse range of biological and social pathways, to negative influences on health and well-being across much larger groups within the community. One interviewee was particularly lucid in making this point but the sentiment was widely shared:

> We shouldn't in a civilised society accept people living in fear and if people are experiencing fear then there will be certain thought processes that run into physical processes of fight or flight – injections of adrenaline because I'm ready to fight or lack of appetite because I'm ready to fly – will be a permanent feature of people's daily existence particularly where anti-social behaviour may be low level but its unpredictable in time, nature and expression. So for me, if we allow people to live like that then we will be impact on their health and wellbeing. Equally, if people have no investment in their community and feel hopeless and helpless then drug and alcohol use becomes a way of medicating their existence, there's no doubt in my mind. If people have no self-worth because they feel worthless now I can't promise to solve that because it's something more fundamentally solved by economic participation, by functional relationship, certainly as young people mature but generally we can do something . . . But it's difficult to trace cause and effect but if people feel they're living in fear; if young people are living in their bedrooms and families are living in their back rooms because they can't living in their front room that looks out on the street then that has an impact [on people's health and wellbeing]. You can measure it in some cases because occasionally through those narratives which emerge when somebody is ill because they've been repeatedly harassed.

Partnerships were clearly concerned with issues related to health and well-being, such as the social effects of misuse of alcohol and drugs, for example a night out leading into the criminal justice system through an arrest or the health-care system through an injury. Although there was recognition that the responsible authorities often dealt with the same or similar groups of people, there were also reports of differences and disagreements even within partnerships that generally worked well together. For example, although there were common concerns among the responsible authorities, there were also some conflicts about the most appropriate way to address a major issue such as alcohol misuse, as one practitioner noted:

> If you look at our profile then our performance on alcohol-related crime and violence is better than the national and regional average but the health outcomes are shocking because we haven't got an integrated care pathway because health have spent more time – and you can turn the sound up on this one – they've been spending far too much time agitating for minimum pricing rather than getting the proper care offer in place and we're still not there yet and I've been amazed at that. The government's plan to move the NTA [National Treatment Agency for Substance Misuse] into Public Health England and to have local authorities as the commissioning lead is entirely correct because the problems can't be solved entirely medically, it's a social issue. I mean we've got clinicians who will hand out a script from now until their service user dies and that's their planned exit and I'm sorry to say that but that's their plan . . . It isn't good enough and it's not like they've been starved of money. We lost £40,000 on a £1.9 million treatment bill so I've got to say that the government has nailed it's colours to the mast on that one and I'm not uncomfortable about the settlement on that one but we've got to deliver better and as soon as it comes to us in terms of control over that process locally then the better for me because a script is only dealing with the immediate physiological needs of that person and their addiction to an opiate. It's not dealing with the why or where they're going with their lives – stop lying to yourself, what do you want to do with your life? We've opened a recovery centre that's peer led by local people with a structured abstinence and reduction pathway that's going really well but at the moment it's being starved by our core provider who has 770 people on script none of whom want to do anything or go anywhere and I don't believe that.

This is certainly indicative of silo thinking restricting partnership working on an issue of common concern for the responsible authorities. However, it also needs to be seen in the context of what was considered to be a generally effective partnership and numerous examples of agencies working together effectively. In many ways partnerships are seeking to influence the social determinants of crime and antisocial behaviour to build community safety. The same factors of the situation in which people live will influence both the level of crime and antisocial behaviour and health and well-being. Given the differences in emphasis between reducing crime and improving health and well-being as well as organisational barriers, it is not surprising to find some examples of ineffective partnership working. The general impression given by respondents was that they found there to be considerably more benefits from partnership working and, although there were obstacles, they all shared a common goal of improving people's quality of life.

The role of evidence linking community safety with improved health and well-being

One of the reasons for difficulties in partnership working between the responsible authorities would appear to be different conceptions of evidence between practitioners in different organisations with a wide range of professional experiences and perspectives. Evidence-based practice appeared to be conceptually and operationally different for a community safety practitioner, a public health professional and a police officer. All are dealing with the complexity of life in contemporary society but the level of professional discretion and evidential proof for interventions was somewhat different. Community safety practitioners tended to adopt an iterative problem-solving approach to issues based on a combination of professional and personal experience, examples of best practices highlighted from other areas and how they could achieve key performance indicators that had become so associated with the monitoring of partnerships during the years of the Labour government. This pragmatic new public managerialism is exemplified by this statement from a community safety practitioner:

> *We look below the headline figures and we look for causal and contributory factors and try to respond on that basis as well. That's what our analysts here are all about, they're about problem analysis triangle and actually providing us with the hard evidence to go out and engage with other partners in the problem solving approach. So to that end we really try and look at what is causing and what is contributing to the issue and then we'll go along to partners and say that this is really impacting on your performance indicators and budget and it's doing the same for us so let's work on it together . . . So really it is a matter of looking where we are now, identifying the problem, we know the scale of it is and identifying the individuals and then we'll look at things round a table with everybody throwing ideas in as to the ways of resolving the problem.*

This approach informed some of the partnership's work on domestic violence when it was found that one of the key performance indicators was that the person experiencing domestic violence should not return to a Multi-Agency Risk Assessment Conference (MARAC) within 1 year, due to the role of alcohol in a cycle of behaviour. Approximately one-third of the cases that returned to the MARAC did so because people were part of an alcohol–domestic violence contact with public services cycle and the partnership was seeking ways to break it to reduce domestic violence. This involved working with the police, accident and emergency departments, the family safety unit and the drugs and alcohol team to develop ways to engage with this often difficult to reach group and find solutions that might involve conditioning cautioning or alcohol banning orders as well as additional support for the victims of domestic violence. There was a small role for evidence from experience elsewhere in the country but given the local circumstances there was a tendency to develop solutions in a relatively ad hoc manner and to gauge their effectiveness over a period of time. Similarly, there were a number of interventions and operations to reduce the level of violence in the night-time economy and over a period of time they were deemed to be successful. However, as a senior police officer acknowledged:

I couldn't give you a specific indication of which one of those operations has resulted in a drop in violent crime or ASB [antisocial behaviour], I simply can't do that, it's too complex to say. I suppose that it is really down to a combination of professional judgement, results showing outputs, keeping the pressure on, feedback and publicity that's justified a continuation of those initiatives. But even at the national level . . . when we look at what's called best practice we're not able to pinpoint what is among these or those things that are making violent crime go down but it must be a combination of these things.

There was widespread acceptance that there was a lack of research evidence for some elements of crime and antisocial behaviour reduction and the promotion of community safety, but partnerships learned from experience and expertise as well as good practice guidance and satisfying the often numeric monitoring of key performance indicators. This method of operation in the complexity of the 'real world' was the reality that local officers faced when charged with policy implementation and they endeavoured to do the best that they could given the inherent intricacy and uncertainty of the situation. As one interviewee candidly and shrewdly stated:

Now this is in confidence but a lot of things that were done in the early years of feast were not that compelling anyway, that's what we found. Coming back to that question about evidence, well it's really quite crude. The evidence for why we're doing something is generally quite crude. The evidence for why we are doing something is generally not led by evidence of effectiveness per se, but an agreement that there's a real problem there. So it's driven by something we can measure and articulate as a problem to be solved. The evidence for the solution sometimes isn't there at all because we've not done it or it relies on the iteration or development of something we've done before but in a more intense or thoughtful form and sometimes it emerges because you understand your own profile so a problem that is pitched to you but you don't buy it . . . So I'd love it be an academic analysis of an issue but really it's a combination of understanding what evidence you can gather in terms of volume numbers, understanding the behaviours of your key populations – so we know how our young people behave – then looking at what we can do and testing it . . . not everything works everywhere. It is all about empiricism in the delivery stage and we have a truth only approach and that was quite brutal for partners, particularly for health.

For community safety practitioners, evidence, particularly academic research, was one of several factors that justified action across communities to promote community safety. As a group they were keen for research evidence linking reductions in fear of crime and improvements in community safety with improved health and well-being as this would give them a stronger basis for claims on resources in the health sector. By contrast, the use of evidence-based practice by public health professionals in the organisational context of primary care trusts was more rigorous. Consequently, when the partnership made the case that reducing crime, such as assault or domestic violence, would lead to fewer people going to their general practitioner or accident and emergency department or that reducing the fear of crime would contribute to improved mental well-being the typical response from health professionals was that there was a lack of evidence to justify a commitment of resources. There was frustration among some community safety practitioners that, on an issue such as alcohol misuse, public health professionals were seemingly fixated on making the case for a minimum price for alcohol and raising awareness of the harms that it causes rather than directly tackling the problem. In the words of one respondent:

What I don't want is £200,000 spent by health on an awareness raising campaign that alcohol isn't good for you because we know that and our target population don't care because behaviourist theory says it's long-term, uncertain and not evenly distributed and I'm drinking this I'm getting progressively more handsome and interesting. We want boots on the ground not public health messages.

There was a more positive approach towards partnership around early intervention to influence the wider social determinants of crime and health, with the prospect of the Community Budgets for working with troubled families providing a spur for redesigning public services at a local level. Community Budgets offered the potential for public service organisations to provide a more integrated approach to improve outcomes for families facing multiple problems. There appeared to be a grasp and acceptance of the approach advocated by Sir Michael Marmot in *Fair Society, Healthy Lives*[381] in terms of giving children the best start in life and enabling children and young people to maximise their capabilities and exercise control over their lives; the major questions revolved around how and when to intervene and from which organisational budget should the public money come from.

There was demand for research evidence to guide spending patterns under the emerging funding arrangements of a Community Budget approach supplemented with the new Early Intervention Grant distributed from the Department for Education. This system is replacing the range of spending grants from central government that had developed under the Labour government and which were often for particular initiatives and were broadly based on area deprivation. The new system of funding was expected to be at a lower level of expenditure but with greater freedoms for local partnerships to develop new approaches to deep-seated and complex social problems faced by individuals, families and communities. A respondent who had been involved with developing plans for the Community Budget wanted research evidence on the predicted dividends from early intervention and prevention measures across the life trajectory. For example, early interventions to give all young children the best start in life may well start before birth and involve intensive but varying degrees of support during the first years of a child's life. The immediate benefits are likely to be in the health domain in terms of meeting child development milestones but the intermediate benefit was of a child who arrives at school with social skills and ready to learn as a result of having developed appropriate behavioural skills. A further dividend is likely to be passed on to the criminal justice system as a child who is enjoying school and fulfilling his or her potential is generally less likely to engage in antisocial behaviour or develop into a youth offender. Research evidence and guidance was needed to develop answers to questions such as when do interventions start? What forms should they take? What are the likely outcomes? Who is best placed to deliver them and how are they to be paid for? These were acknowledged to be a complex set of questions that revolved around the broad concepts of crime, health and well-being, but one interviewee was keen to emphasise that:

> A sustainable intervention is an outcome that is owned by the client and not by the service. The service is there to hold the hand of the client for as long as the client needs that hand to be held and it is not there to create a dependency culture. It has got be an enabling power that allows that person to move on and say 'you don't need to hold my hand any more'. So I like the idea of personalisation in this process with organisations as enablers.

Another interviewee shared the anonymised plot of a family from his patch who had a multiplicity of complex problems, including alcoholism, drug addiction, concern about the safeguarding of young children, antisocial behaviour and a pregnant teenager, along with the range of interventions and support that they were receiving from various local agencies. This family was at the interface of the criminal justice system and the wide range of health and social services and there was felt to be a need for better local intelligence and research evidence for working with such families:

> Now enforcement isn't going to solve that, treatment isn't going to solve it either. It'll be the thoughtful combination of a plan which combines those options that is starting to emerge under this community budget agenda. So we do contribute to health outcomes and feelings of improved wellbeing and for me satisfaction with services and confidence in the community is almost a proxy measure of health anyway, isn't it? If you're feeling fearful then that can't be good for my health and wellbeing.

Community safety practitioners recognised the links between enhancing community safety and improvements in health and well-being. However, the evidence used to justify local actions was of a different standard to that used by health professionals more accustomed to clearly defined evidence-based practice. Although research evidence played a sometimes significant role in shaping the actions of CSPs, there appeared to be a greater degree of professional discretion around the priorities and operational activities of their organisations than is the case with health professionals. Research evidence was used by community safety practitioners to justify actions but the complexity of social situations and interventions meant that a more intuitive and iterative approach appeared to be taken.

Discussion

This set of interviews with CSPs highlighted a number of findings about how and why they work to reduce crime and antisocial behaviour and the ways in which issues such as the links between crime and the fear of crime and health and well-being are conceptualised. Although partnerships have been a preferred means of addressing complex social issues in recent years, they can be difficult to manage given the tendency towards organisational silos and the differences in the primary purpose of services such as the police and health care. All of the interviewees, perhaps unsurprisingly, were positive about the work of their partnership, with occasional acknowledgements of the difficulties and obstacles that they experienced. Given the common strains on budgets that are being faced across the public sector, there was an acknowledgement of the greater pressures on organisations and professionals to work more closely together and to develop innovative means in partnership, even as local health and police services faced major structural changes.

There was a significant change in language around crime and antisocial behaviour among the people who implemented policy at the local level compared with the more punitive approach often adopted at the national level. A reasoned and thoughtful approach to local issues was the stance adopted by people working as part of a CSP, with a clear realisation that there was no way to arrest a way out of this situation. Enforcement had a role to play, and in some cases it could be punitive 'weeding out' of families who consistently engaged in antisocial behaviour and so breached their tenancy agreement, but there was a far greater emphasis on seeking to influence the wider social determinants of crime to prevent crime and antisocial behaviour. It is perhaps pertinent to note that most of the respondents spoke about how crime and the fear of crime personally affected them either directly or in relation to their family. They lived and worked in local communities affected by crime and the fear of crime and showed a strong commitment to improving the lives of the local people who they felt that they served. This personal experience may well play a part in why local implementation of policies to reduce crime and antisocial behaviour tends to be somewhat different from the punitive rhetoric of national politicians for whom being 'tough on crime' is considered to be electorally essential. For local CSPs it would seem that imposing 'civility through coercion' was not sustainable beyond the short term of a few weeks of enforcement effort nor desirable in the long term for community cohesion and resilience, which kept areas affected by high levels of crime socially functioning.

The complexity of concepts such as community safety, fear of crime and well-being for practitioners working in the field needs to be fully appreciated. Although all practitioners had a broadly similar conception of community safety and fear of crime, essentially two sides of the same coin, they are often elusive to manage and measure. Even partnerships that had undertaken relatively large-scale and sophisticated surveys of local public views acknowledged that they were dealing with a limited degree of precision with regard to complex concepts such as community safety. The wide range of interventions that partnerships undertook – target hardening, better street lighting, alley gates, police community support officers, community payback from offenders and so on – had an even wider range of invariably uncertain effects across the community. Even cause and effect relationships that might be considered to be relatively straightforward, such as the installation of alley gates preventing rear entry burglary in terraced properties, had ripple effects on people's behaviour. Alley gates tended to have wider benefits in terms of reducing

the levels of other crimes and antisocial behaviour and were generally welcomed by local residents although there were exceptions to this general pattern, such as the gates being a target for vandalism or some residents perceiving them to be a sign of neighbourhood decline. A huge challenge that all partnerships face is to change people's views about crime and community safety, and that involved not only rational arguments based on showing reductions in the number of incidents but also changing the narrative and people's views about the behaviour of young people or the scale of the impact of drugs in their area.

The notion of improving people's health and well-being through enhanced community safety was certainly readily acknowledged but how to define well-being and put it into operation was elusive. Community safety is based on notions of quality of life, for all people to enjoy their daily lives free from fear of crime and to feel part of a functional community where they can influence events. There is certainly much common ground between the concerns of community safety and broader notions and official measurements of well-being but there still appears to be some way to go in terms of local partners developing and sharing a common approach that all can work towards. It may be that the development of Community Budgets in the next few years will accelerate this process although this is far from certain. There are grounds for optimism given the generally positive development of partnership working over the last decade but there are risks and uncertainties given structural changes across the public sector and the levels of resources that will be available in the future to meet local needs.

Community safety professionals: conclusions

In practice, CSPs are involved in a multiplicity of interventions that can affect crime and the fear of crime, which consequently influence health and well-being. In terms of the range of interventions identified during the course of the effectiveness review, measures such as improving home security through target hardening are widely used. They are often undertaken after a burglary has been attempted or taken place and cover the property targeted and neighbouring properties that are more at risk and deemed to benefit from an intervention that is preventative and reassuring. However, intensive target-hardening measures can be costly, so in these times of budget constraints a more selective approach is being adopted in some partnerships such as securing a perimeter through alley gates, Stega Strips on the top of walls and treatment to prevent graffiti.

Improving street lighting is an issue that partnerships are involved with to reduce crime and the fear of crime and as part of a wider effort to reduce the carbon footprint of local authorities by using smarter variable lighting. In one partnership there was a large programme of street lighting renewal that was viewed as an intervention that could reduce both crime and the fear of crime, with local intelligence analysis of patterns of crime and antisocial behaviour playing a part in informing the sites selected and a subsequent impact evaluation. Improving street lighting in premium locations was recognised as being potentially useful but was considered to be only one part of the more complex drive to reduce crime and the fear of crime.

Closed circuit television monitoring was an intervention that all partnerships had in place in areas considered to be at significantly raised risk of crime or antisocial behaviour and there was integration with the local police service. CCTV was considered to be useful and there were recollections of opposition to the introduction of such a 'big brother' approach to maintaining public order although this tended to swiftly disappear. Mobile CCTV systems were also used in particular areas in a number of partnerships to provide footage of events and were considered to be a useful tool in promoting community safety when used in conjunction with other interventions.

The quality of the built environment was an issue in the work of partnerships in terms of both crime prevention in new housing development through Secured by Design and maintaining and improving environmental grot spots blighted by graffiti, litter and tipping. The latter also provided the opportunity to

use Community Payback, which involved offenders being supervised to perform socially useful environmental clean-up activities as a form of signal justice to reassure the general public that community sentences were not a soft option and that the area was not being neglected. Another example of a built environment intervention being part of a wider solution was the installation of planters to discourage young children from playing football in the streets and disturbing a number of intolerant older people who complained about the noise that they were making. The wider solution in this case involved the partnership advising older people that as an organisation they had few powers to prevent young children playing football in the streets and that a solution needed to be found between neighbours based on tolerance and mutual respect. Built environment interventions were recognised as being part of a possible solution to reduce crime and also fear of crime but they appeared to be regarded as less important than interventions that promoted social cohesion, interaction between people and interaction with organisations and were usually regarded as being insufficient in their own right to solve complex social problems. For example, the 'weed and seed' project conducted by one of the partnerships included some relatively minor built environment interventions but the real success and legacy of the intervention was in the improvements in the social environment. Giving local people confidence that addressing crime and antisocial behaviour was a priority for the partnership and all the responsible authorities required a concerted effort but appears to have improved the situation in a very hard-pressed area.

Community Safety Partnerships face a difficult task in reducing crime and the fear of crime as well as contributing to improving the health and well-being of local people. It is a task based on local intelligence and knowledge within the wider framework of established research evidence and good practice guidance. Partnerships have generally been successful in reducing crime, although the extent to which they can claim credit for a national trend that has been in motion since before they were established is certainly open to question, but they have found reducing the fear of crime and promoting community safety to be a much more challenging task. Once again, the role and impact that local partnerships can have in developing community safety in a society that is widely considered to be increasingly insecure and fearful is both hugely challenging and open to question in terms of the difference that they can make to deeply held views.

Integrating conclusions

The empirical research with stakeholders confirmed many of the key themes identified in the review of qualitative literature, such as the pervasive sense of fear associated with antisocial behaviour by young people in public places and the general but complex link between crime and the fear of crime and poorer health and well-being, as well as exploring the views of practitioners who manage these issues at the local level. The research with the public used both World Café and focus group methods with differing participants in different areas of the country, albeit both urban and relatively deprived, and, although there were differences in findings, there was also considerable commonality, with people sharing similar views. This commonality is unsurprising and further empirical research in different settings with a range of participants would be desirable to strengthen the thematic findings. The research with community safety practitioners is somewhat novel and provides interesting insights from experienced practitioners who have worked in the front line for many years. The complexity and uncertainty of the effects of interventions to reduce crime and the fear of crime is apparent and, although the links to health and well-being are recognised by community safety practitioners, there is insufficient robust evidence to demonstrate effectiveness to partners across the public services.

Appendix 13 Protocol

PHR Protocol – project ref: 09/3000/14
Version: 2
Date: October 2010

Crime, fear of crime (CFOC) and mental health: evidence synthesis of theory and effectiveness of interventions

Chief investigator: Professor Mark Petticrew

Sponsor: London School of Hygiene and Tropical Medicine

Funder: Public Health Research programme

NIHR Portfolio number: 09/3000/14

Research objectives
The objectives of the project are:

  i. To review theories and empirical data about the links between crime, fear of crime, the environment and health and wellbeing, and to develop from this a conceptual 'map' that underpins the types of intervention that stem from the theories;
 ii. To synthesise the empirical evidence (quantitative and qualitative) on the effects on mental health and wellbeing of community-level interventions, primarily changes to the built environment (such as changes to local environments, 'target hardening', security measures, CCTV and other interventions);
iii. To summarise the evidence on whether the interventions in question have the potential to reduce health and social inequalities; and
 iv. To produce policy-friendly summaries of this evidence which can be used to inform decisions about policy and disseminated to appropriate policy/practice audiences.

Methods
The project incorporates a range of evidence synthesis methods, including: a critical review of theoretical frameworks for taking action on the links between crime and mental health; a systematic review of studies evaluating the effects of community level interventions (aimed at reducing crime) on mental health; and synthesis of qualitative studies to understand more about how and why the interventions work or do not work. This set of three inter-linked reviews will have input from consultation with the public and stakeholders in three locations (London, Glasgow and Liverpool). These consultations will be used to refine the set of research questions, to comment on the theories on pathways, and to help interpret the findings of the reviews and inform the dissemination strategy.

Distinct methodologies will be adopted for the review of theory and for the two systematic reviews (of effectiveness and of qualitative evidence).

Summary of how the research activities map onto the research objectives
Objective (i): This objective will be met by a critical review of existing theory and conceptual frameworks for taking action on links between crime and mental health and wellbeing and the logic models that underpin the theory. The results of this review will be useful in two ways. First, we will use it in our dissemination activities to raise awareness of what might be tried: the full range of possibilities for different types of interventions in this field and the soundness of the programme logic (or the 'theory of

change') underpinning them (Whitehead, 2007). Second, we will use the results to guide the subsequent stages of our evidence synthesis of interventions that have been tried. The use of logic models in the systematic review process has been recommended (see e.g. the recent MEKN report, which emphasises their importance in developing a social determinants approach to tackling health inequalities; Kelly *et al.* 2007), but this approach is still uncommon. We will conduct focus groups with local communities in London and Glasgow at which the scope of the work will be refined, and again at the end of the project at which findings will be presented and discussed.

Objective (ii): This objective will be met through systematic reviews of intervention studies (i.e. evaluations of interventions) and of relevant qualitative studies.

Objective (iii): As well as synthesising the evidence on the overall effects of interventions, we will investigate the differential effects of the reported interventions, stratified by any indicators of social position that are reported in the primary studies. These analyses will be guided by the 'PROGRESS Plus' framework.

Objective (iv): The content and dissemination strategy – to include the production of policy-friendly summaries – will be informed by discussions with the advisory group, and also by discussions with stakeholders in Liverpool, including representatives of the police and Community Safety Partnerships. The findings of the evidence synthesis will be used to produce a short policy summary and a longer report. Both these reports will be circulated through our academic and non-academic networks. We anticipate that our end users will include national and local policymakers, the police, PCTs, regeneration agencies, spatial and economic planners, researchers. We will consult with our advisory group to determine the most appropriate outputs for each of these end user groups.

Review of theory

For the review of theories and pathways, it is likely that a non-systematic methodology will be used, informed by methods such as Critical Interpretive Synthesis. Searches for this review will be iterative and non-comprehensive with a focus on 'pearl growing' methods. Selection of studies will be informed by principles of theoretical saturation, and by their contribution to the emerging synthesis.

Synthesis will take the form of a graphical overview setting out the relationships between key variables, outcomes, and potential intervention points, accompanied by a summary of relevant theories and evidence. We will also take into account broader theoretical debates around crime, health and wellbeing, and address methodological issues which may influence the conduct of the systematic reviews.

Systematic reviews

We intend to use the new CRD guidance on systematic reviews in conducting this review, and will ensure that the methods are consistent with the PRISMA (formerly QUORUM) statement on the reporting of systematic reviews (see http://cochrane.co.uk/en/authors.html).

Searching

Search sources

Search sources for the review will include a range of databases covering health, social science, criminology and urban planning, and including several which cover grey literature:

- ASSIA
- CINAHL
- Conference Proceedings Citation Index
- Criminal Justice Abstracts
- EconLit
- EMBASE

- ERIC
- HMIC
- Inside Conferences
- MEDLINE
- NCJRS
- PsycINFO
- SCI
- Social Policy and Practice
- Sociological Abstracts
- SSCI
- Urban Studies Abstracts

We will also search the websites of research bodies, policy bodies and other relevant organisations to locate unpublished research. These will include, for example, national Ministries of Justice in several countries; relevant research groups and units (e.g. the Scottish Centre for Crime and Justice Research); and international research networks (e.g. European Institute for Crime Prevention and Control, International Centre for the Prevention of Crime).

The citation lists of studies included in the systematic reviews will be scanned. Finally, we will consult with subject experts on the project Advisory Group to locate other potentially relevant material.

Search strategy
Search strategies for the systematic reviews will be finalised based on the outcomes of the theory review and the public consultations. The strategy is likely to take the form:

((crime terms) OR (fear of crime terms)) AND ((built environment terms) OR (terms for specific intervention strategies))

Terms for study methodology will not be used, to maximise the sensitivity of the searches. No date or language restrictions will be placed on the searches initially, although we will reconsider this if the volume of references is large. A wide range of synonyms will be used to maximise sensitivity.

Screening
Inclusion criteria for the systematic reviews will be finalised based on previous stages, but may take the form:

1. Does the study report data on crime, safety and/or the fear of crime, or evaluate an intervention intended to reduce crime and/or the fear of crime?
2. Does the study report data on fear of crime, or any health or wellbeing outcome?
3. Does the study report data the built environment?
4. Is the study a primary research study or a systematic review?
5. Was the study conducted in a country which is a current member of the OECD?
6. Is the study either a qualitative study or an evaluation of an intervention?

An initial sample of 10% of abstracts will be screened by two reviewers independently; if there is sufficient agreement at this stage, subsequent screening will be conducted by one reviewer. All studies for which the full text is retrieved will be screened by two reviewers independently.

Quality assessment and data extraction
We have previously used the Effective Public Health Practice (EPHPP) tool for systematic reviews of public health interventions, and will pilot it (suitably adapted) for use in this project (http://www.ephpp.ca/aboutus.html). For the qualitative review, we will consult available quality assessment tools and construct an appropriate tool for the studies included.

Data extraction tools will be designed separately for the two reviews, and will cover key methodological aspects of the studies and a comprehensive extraction of relevant findings.

Synthesis

For the review of effectiveness, we will consider the use of Risk of Bias and Summary of Findings tables for synthesising and presenting the findings (Higgins & Green, 2008). These have been developed for Cochrane Reviews, and have not yet been widely used in public health systematic reviews, but may prove useful for incorporating judgements about study quality into systematic reviews of complex interventions (GRADE Working Group, 2004).

We will conduct a narrative synthesis with studies grouped according to intervention type based on programme logic. If there are a sufficient number of studies of similar interventions with similar outcomes, then we will also conduct a meta-analysis using Comprehensive Meta-Analysis (CMA) software (http://www.meta-analysis.com/). In either case we will investigate the differential effects of the reported interventions, stratified by any indicators of social position in the reported studies to explore effects on inequalities. We have routinely done this in previous reviews, and have piloted new methods of graphically presenting the findings (Ogilvie *et al.*, 2008). We will use the PROGRESS-Plus approach which has been used to guide the extraction of data in equity-focussed systematic reviews, where PROGRESS stands for Place Race, Occupation, Gender, Education, Religion, Ethnicity, Social Class, and 'Plus' relates to other relevant indications (e.g., age, disability, sexuality) (Tugwell *et al.*, 2006). This will also be used to guide appropriate sub-group analyses, where the data are available.

For the review of qualitative evidence, we will adopt methods that have been developed in other reviews examining people's experiences and perspectives (Thomas & Harden, 2008) and using the outcome of the quality assessment to gain an understanding of the relative strengths and weaknesses of the body of evidence. The findings of qualitative studies will be synthesised using thematic synthesis; we will also consider using a meta-ethnographic approach, where appropriate, as developed by Noblit and Hare (1998), which has been used in innovative systematic reviews on public health issues (e.g., Graham and McDermott, 2005).

Ethics

The review itself does not require ethical approval. However the conduct of focus groups and any other community consultation activities will require ethical approval, which will be sought via LSHTM as the sponsor institution. We will ensure that the process complies with the ESRC's research ethics framework and will submit the approval documents to the PHR programme as required before conducting the focus groups.

Advisory group

A review advisory group (AG) will be set up to advise on the objectives and methods, and to advise on the dissemination of the findings to different audiences. The AG will include academic specialists in criminology, the built environment, public health and systematic review methodology. It will also include policy-makers and other non-academic stakeholders from relevant fields, in particular a representative from the National Policing Improvement Agency (NPIA).

Public involvement

We will conduct consultations in three locations, aiming to utilise the outcomes to inform the methods for the review and to develop effective dissemination strategies. The three consultations will use different methodologies. In London, we will conduct a 'world café' event, allowing members of the public to offer their views informally on our proposed research questions. In Glasgow, we will conduct a more traditional focus group. In Liverpool, we will conduct individual interviews with a range of stakeholders identified through the Merseyside Community Safety Partnership.

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