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1 **Line managers and health promotion on construction sites: Fair deal or another**  
2 **responsibility in an already overloaded role?**

3

4

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15

16

17 **Abstract**

18

19 Research on healthy work environments has grown in importance over the last two  
20 decades. Possible explanations for this include the growing recognition and  
21 understanding of the determinants of healthy work environments and the associated  
22 workers compensation and other organizational costs when they are not managed. It is  
23 well accepted that stressful work environments tend to result in negative organizational  
24 and individual health indices. Very little is known, however, about the impact of  
25 stressful work environments on the dietary habits of workers. Work Safety is often

26 researched in construction as the sector tends to have higher injury rates than many  
27 other sectors. The focus of this paper is work environments in project based  
28 construction work. Our interest is the intersection between an industry in which long  
29 hours are worked, wellbeing that is dietary related, and the role of line managers.

30

### 31 **Introduction**

32 Creating an positive food environment at work is important because poor dietary habits  
33 forms one of the five main risk factors (along with smoking, insufficient daily activity,  
34 excessive alcohol intake and obesity) for many so called ‘lifestyle’ or ‘behavioral’  
35 diseases such as Type 2 diabetes and cardiovascular disease (CVD) (Alwan 2011).  
36 Together these risk factors form four of the five top contributors to noncommunicable  
37 diseases (NCD) worldwide (WHO 2012). Taking a global perspective NCDs are  
38 estimated to be the cause of 36 million deaths, or 63% of the 57 million deaths in 2008  
39 (WHO 2012). At an organizational level, research shows that the health risk profile of  
40 a workforce is likely to have a significant impact on total labour costs and also on  
41 organizational performance through reduced employee performance, turnover,  
42 absenteeism, safety, and morale, and in construction, early exit from the industry (Oude  
43 Hengel et al. 2012). Furthermore, employees’ poor health is not confined to their own  
44 performance, but also impacts negatively, the performance of others with whom they  
45 work (Goetzel and Ozminkowski, 2008; Collins et al. 2005).

46

47 Like in the general population, an unhealthy lifestyle is commonly seen throughout  
48 sections of the construction industry; at least in the geographical area of this research –  
49 the eastern seaboard of Australia. Research indicates that blue-collar men are at  
50 increased risk of premature deaths from a range of NCDs including diabetes, colorectal

51 cancer, CVD and melanoma (AIHW 2010). Statistics show harmful alcohol  
52 consumption, rates of smoking, prevalence of overweight and obesity and so on are  
53 considerably higher in construction than in the general male population (Alwan 2011).  
54 Since a substantial part of the ageing population in the construction industry has an  
55 unhealthy lifestyle, morbidity in this group is likely to rise in the upcoming years  
56 (Groeneveld et al. 2008). Absenteeism as a result of CVD and other chronic diseases  
57 may also increase at a significant productivity burden to the industry.

58

59 The work environment in the construction industry is generally considered to be highly  
60 demanding, with longer than average working hours compared to many other industries  
61 (Lingard et al. 2008; Townsend et al. 2012). Many construction sites operate on a six-  
62 day week or even a thirteen-day fortnight basis, and professionals and managers work  
63 many hours of unpaid overtime (Townsend et al. 2012). Sites often begin operation (or  
64 ‘pre-start’ meetings) at 6am, requiring workers – many of whom do not live close to  
65 the worksite and catch public transport owing to parking difficulties – to leave home  
66 very early. Tight deadlines and severe financial penalties if targets are not met add to  
67 the stresses on site and result in ‘cycle’ of activity with peaks and troughs in project  
68 work and limited fixed or long-term employment (Lingard et al. 2012). All these  
69 characteristics are potential workplace stressors that may impact upon employee health  
70 and safety. Work Safety is often researched as the sector tends to have higher injury  
71 rates than many other sectors (Loudoun, 2010; Safe Work Australia 2012) but as a  
72 research topic, construction worker health and wellbeing has received scant attention  
73 to date (Hengle 2013).

74

75 This paper holds as a starting point, that the role of construction managers is primarily  
76 to ensure the safe completion of a project within a reasonable and agreed timeframe.  
77 Worker safety is a managers' responsibility, as it is the workers' responsibility. We  
78 examine the role of managers in the longer-term aspect of health and safety – the health  
79 component. There is a long history of paternalistic management approaches that are  
80 somewhat out of vogue, and we are not suggesting a return to such times. We do,  
81 however, recognise that in addition to safety, managers and employees already hold a  
82 responsibility for the 'health' of the workforce, as outlined in most progressive  
83 legislation worldwide.

84

85 The following sections consider research on health in construction and the role of line  
86 managers in creating a work environment that supports health. We then provide  
87 information on the study's context, along with our research methodology. Following  
88 this, we develop a thematic analysis of the influence that line managers have over the  
89 health and eating habits of the construction workers in our sites. Having reported our  
90 findings we conclude with a discussion of their relevance to the debate about the nature  
91 of work in construction, drawing insight from a range of related, but rarely considered,  
92 literature, such as health promotion, human resource management and education.

93

#### 94 **Health and Work Environments in Construction**

95

96 Explanations for the elevated risk of CVD in construction generally revolve around the  
97 nature of the workforce and entrenched work organization practices in the industry.  
98 Construction is a male-dominated sector and research consistently shows that men  
99 display less healthy lifestyles and less health promoting behavior, thus increasing their

100 risk of disease, injury, and death (Courtenay 2000; Levant et al. 2009). The industry  
101 sector is also the third highest paid sector in Australia (ABS 2013). The health benefits  
102 generally accrued with higher economic status however, are not present in this  
103 population group, with male blue-collar workers having “poorer than average health  
104 outcomes, increased mortality rates, disability, and serious chronic disease” (Kolmet,  
105 Marino and Plummer 2006).

106

107 There have been improvements in safety on construction sites in recent years, but much  
108 remains to be done about the continuing poor occupational health of the industry’s  
109 employees. There has been a growing interest in improving the ‘health’ of work  
110 organization in general years with the majority of large employers now offering  
111 wellness programs (Mattke et al. 2013). ‘Healthy work organization’ is an extension  
112 of work organization, with the latter referring to the way work processes are structured  
113 and managed, such as job design, scheduling, management, organizational  
114 characteristics, and policies and procedures (DeJoy et al. 2010). Healthy work  
115 organization focuses on how the structure and fabric of the organization function to  
116 impact on the health and wellbeing of employees creating healthy or unhealthy work  
117 systems (DeJoy, Wilson and Griffin-Blake 2006).

118

119 Research in this area has grown in importance over the last two decades owing to the  
120 growing recognition and understanding of the determinants of these environments and  
121 the associated workers compensation and other organizational costs when they are not  
122 managed (e.g., Safe Work Australia 2012; Ostroff and Bowen 2000; Story et al. 2008).

123 Research shows that stressful work environments and associated work-life interference  
124 have been associated with negative organization outcomes such as higher levels of

125 sickness absence (Bergstrom et al. 2007), increased turnover, and reduced  
126 organizational citizenship behavior, i.e. the performance of tasks over and above the  
127 minimum requirements of the job (Bragger et al. 2005). At an individual level, it is  
128 inversely related to general wellbeing, psychological strain, psychiatric disorders and  
129 substance abuse (Carlson et al. 2011; Boyar et al. 2003; O'Driscoll et al. 2003; Hammer  
130 et al. 2004; Siegrist 2008; Van den Berg et al. 2008).

131

132 Many areas of workplace research although not exclusively focused on healthy work  
133 organization, provide understanding and insight into critical workplace systems. For  
134 example, progress in the field of human resources/organizational development area  
135 have provided insight into characteristics of high-performance work systems (e.g.,  
136 Zacharatos et al., 2005; Wood and de Menezes, 2011). Similarly healthy work  
137 environments and their job and organizational influences form a major focus of Job  
138 stress research (e.g., Cartwright, Cooper and Murphy 1995; deJoy et al., 2010; Peterson  
139 and Wilson 2002; Sparks et al. 2001) and health promotion research more broadly (e.g.,  
140 DeJoy and Wilson 2003; Goetzel and Ozminkowski, 2008).

141

142 Attempts to create 'healthy workplaces' in construction have mainly targeted individual  
143 workers through lifestyle programs such as on-the-spot health assessments and other  
144 preventative health services (Gram et al. 2012; Groeneveld et al. 2011). It is also a  
145 growing practice in Australia to link sickness absence management to preventative  
146 health programs in the workplace, often involving the insurance sector (Snashall 2005).  
147 Interventions that focus on the working environment tend to focus on finding a better  
148 fit between physical work demands and individual constraints and capabilities  
149 (Luijsterburg et al. 2005).

150

151 However, limited gains can be made by aiming interventions at the individual rather  
152 than the work system, and the nature of project-based work in construction presents  
153 considerable barriers to these attempts. For example, symptoms of occupational illness  
154 are in general, less immediately apparent and more difficult to detect than injury, hence  
155 development of illnesses is likely to take longer than the generally short lifecycle of  
156 project work. It is this short life cycle, however, and subcontracting within the industry,  
157 that encourages subcultures to develop (Loosemore and Tan 2000), which may result  
158 in an embedded culture that inadvertently promotes poor diets and alcohol misuse (Du  
159 Plessis et al. 2013). Despite this, very little work has investigated health and wellbeing  
160 considerations for construction workers in project based settings (Turner 2013). It is  
161 imperative that researchers investigate this group to determine how behavioral risk  
162 factors can be improved for a predominantly full-time cohort, in a masculine culture  
163 with unique work arrangements.

164

165 Within all of these related strands of research the active support of a committed senior  
166 management is seen as critical for any improvements in the work environment. This  
167 view is consistent across management literature, broad work, health and safety  
168 literature, general workplace health promotion literature and in construction  
169 specifically defined (Cameron and Duff 2007). Management can create opportunities  
170 for workers to be engaged in healthy and safety (Maloney, Cameron and Hare, 2007).  
171 At present, however there is very little research on the role of line managers in creating  
172 healthy environments. This paucity is significant in construction as site managers are  
173 usually the only contact workers have with the principal contracting firm (Styhre 2006).  
174 The limited work that has been done focuses on quantitative measures of health and



175 wellness and perceptions of support from managers, decision-making climate, and  
176 quality of supervision and communication (Dingsdag, Biggs and Sheahan 2008; Kines  
177 et al. 2010). Researchers note the prevalence of stress-related disorders in construction  
178 due to oppressive management, long work hours, lack of stability, lack of psychological  
179 support, poor hygiene on sites and primitive welfare facilities (Snashall 2005). Very  
180 little is known about the role line managers' play in creating and sustaining healthy  
181 environments in project-based work in construction, particularly from the point of view  
182 of managers themselves (Biggs et al. 2013). In broad health promotion research,  
183 Haslam (2002) demonstrates the unwillingness of managers to address workplace  
184 health and safety (WHS) problems owing to a 'triangle of constraint', whereby sickness  
185 absence can lead to reduced productivity, draining the time and energy of managers,  
186 who become unwilling or unable to deal with underlying problems. With the causes  
187 still in place, absenteeism continues to rise until an unhealthy workplace culture sets in.  
188 Other researchers note that responsibility for workplace health interventions, and  
189 liability and risk management issues, often place the consideration of developing and  
190 implementing health and wellbeing programs in the "too hard" basket (Du Plessis et al.  
191 2013). Whether line managers in construction face these and other barriers in the  
192 context of food environments, however, is unknown.

193

194 This empirical, qualitative study aims to help us understand the role of line managers  
195 in creating and sustaining the dietary habits of workers across six large construction  
196 sites of an Australian construction group. The investigation formed part of a larger  
197 research project and served as a preliminary study to inform the methodology of the  
198 second stage quantitative investigation into dietary habits in project-based construction.  
199 In particular, this research sought to understand the nature and reach of any influence

200 line managers play, or should play, in food environments on site as determined by them,  
201 other managers on site, and workers themselves.

202

### 203 **Methodology**

204

205 The data used in this paper were collected at five different worksites across the same  
206 city. Each of the sites were completing projects involving substantial refurbishment or  
207 new-build mixed residential, office and retail space; they had the same construction  
208 firm overseeing operations. Ethical approval was granted by Griffith University Human  
209 Ethics Committee (EHR/01/14/HREC).

210

211 We used a purposeful sampling strategy at each worksite to ensure a vertical and  
212 horizontal representation of the workforce. At each site the research team interviewed  
213 the site manager, the health and safety officer, and the foreman - all employees of the  
214 principal contractor – resulting in 15 interviews in total. Following this, interviews were  
215 also conducted with the supervisors of three sub-contractors at each site. Fifteen focus  
216 groups in total across the sites were then conducted with employees from various trades.  
217 The focus groups varied so that an adequate sample of trades was involved, however,  
218 the number of employees in these focus groups varied between two and four depending  
219 on the availability of employees. Qualitative approaches were used for the research  
220 because they have the advantage of providing in depth, rich information about a  
221 particular topic, which was appropriate for the purpose of this specific research.  
222 Interviews were completed until data saturation was reached.

223

224 Our analysis began at the start of the interviewing process and concluded after all data  
225 were collected. Specifically, the research team met after the interviews at each site  
226 identified preliminary themes or categories that were emerging, to assess the relevance  
227 of existing codes to new data, and to discuss relationships between codes (Goetz and  
228 LeCompte 1981). The process used through data collection and research team  
229 discussions formed a version of convergent interviewing; a technique advocated by  
230 Dick (1998) and more recently, Jepson and Rodwell (2008). Jepson and Rodwell argue  
231 that the process of convergent interviewing improves the internal validity, external and  
232 construct validity of qualitative data techniques.

233

## 234 **Results**

235

236 As one of our key interests was the role that line managers play in the health and safety  
237 habits of construction workers focussing primarily on dietary risk factors, we  
238 determined it would be a most appropriate approach to simply ask every participant in  
239 our qualitative data collection the straight forward question – “what influence can line  
240 managers play in the eating habits of construction workers?”. The general theme given  
241 in response was unanimous, and the most common response was “no influence  
242 whatsoever”. Some people did elaborate, including one site manager who explained:

243 *The line managers have zero influence over what the blokes eat ...I don't think I*  
244 *should have any responsibility over what blokes eat on site. We tell them what to*  
245 *do all day, they can have that for themselves.*

246

247 This view was consistent from employees and all managers throughout the six  
248 worksites with another manager stating:

249 *No. No. I think I have enough to do, hard enough getting them to do what they're*  
250 *supposed to do. They're grown men for Pete's sake. They've made it this far in*  
251 *life.*

252

253

254 Site managers also expressed that they were already too busy with their work role to fit  
255 in influencing eating, and that it was outside their role.

256

257 While there was a consistently held view that the line managers have no influence over  
258 the eating habits of construction workers on their site, the evidence we have suggests  
259 otherwise. With responses employees and line managers give, questions asked later in  
260 the interviews reveal there are in fact a number of ways that line managers' decisions  
261 can (and do) influence the eating habits of employees. Our analysis provides us with  
262 three broad themes that we address in order: work pressure/time pressure; environment;  
263 and leadership behaviors.

264

### 265 **Work Pressure/Time Pressure**

266

267 The first area where it was clear that line manager decisions have an impact on the  
268 eating patterns of construction workers while on site relates to the area of work and  
269 time pressure. Numerous employees suggest that they are often feeling time and  
270 workload pressures due to deadlines, and that has a real influence on their decision-  
271 making on a daily basis. Employees explain that when the time pressures are high, their  
272 decision-making does change, for example:

273

274 *...if you hadn't already prepared lunch and if they were already pushing you as*  
275 *hard as you can you're going to go the fast food option just to get enough time to*  
276 *get it.*

277

278 *... (when we are) under the pump and having to get the quick option cause you*  
279 *don't have much time to wait for a sandwich to be made at a shop or something*  
280 *like that ...*

281

282 *You don't have time to wait for something healthy to be made in front of you,*  
283 *there isn't the quick healthy option, you don't have pre-made sandwiches*  
284 *anywhere around here.*

285

286 Additionally, the nature of working hours within the industry, combined with  
287 employees often working on projects at least an hour of driving time from their house,  
288 means that 4-4:30am is a common wake up time for these workers. Numerous  
289 employees tell us that '*the body isn't ready for food at 4am*' but they do require food  
290 and sustenance prior to starting work. As one employee explains:

291

292 *... most blokes won't want to get up at 4am to get something healthy. If you go*  
293 *past McDonalds at 5 (am) in the morning you'll see utes (utility vehicles) lined*  
294 *up around the corner.*

295

296 Another employee states:

297

298           *You've got to eat before you start. Three quarters of the blokes I reckon don't eat.*  
299           *But you've got to. There's a fair few blokes that travel. The guys that don't eat*  
300           *breakfast (have) energy drinks and smokes.*

301

302   The time and work pressures that have long been associated with the construction  
303   industry clearly have some impact on the eating habits of the workers. These work  
304   hours have a long history in construction and are ingrained in the culture of the industry,  
305   which makes the ability of line managers to influence these starting times more limited.  
306   However while limited, the site managers' influence was not negligible with one  
307   choosing to not open the site on Saturdays and others choosing to finish early on Fridays  
308   as a direct attempt to change the long hours culture at least at site level.

309

## 310   **Environment**

311

312   Our second clear theme that is drawn from the data is the environment. It was very clear  
313   from the interviews that line managers make some decisions that relate to the work  
314   environment, and these decisions have an influence over the eating habits of employees  
315   on the site. In every site there are activities that are central to the planning that line  
316   managers make, for example, the number and positioning of 'eating areas', the number  
317   and positioning of water fountains, and the availability of vending machines. These are  
318   decisions that have a direct impact on the eating habits of the employees, as our data  
319   demonstrates.

320

321 *The smaller the site is the easier it is to heat up something from home because*  
322 *it's not far to the meal rooms. So the set up of the site becomes important if you*  
323 *have to walk five minutes to get to it then it changes the way you eat.*

324

325 Coupled with this comment, the size of the site and where a site manager decides to  
326 locate 'smoko rooms', becomes important for employees.

327

328 *This is a big site, we've got something like 20 floors. And if I'm working too far*  
329 *away from the smoko room, by the time I down tools, get to the room, heat up my*  
330 *meal, sit down and eat it, all my time is gone. It's much quicker and easier to dive*  
331 *out the back gate to the pie shop and get something and have a bit of a breather.*

332

333 Employees tell how the set out of the eating environment is important. They want the  
334 rooms to be a comfortable size and well lit. One employee compares quite positively  
335 the current worksite to previous ones he has been on:

336

337 *... (this room is) better. Massive smoko shed – an eatery pretty much!*

338

339 Interestingly, on this site the site-manager made the point that he felt the eating  
340 environment was very important for employees and that he had planned it very carefully  
341 to ensure there was a spacious, well lit area for the workers to relax during their breaks.

342 Many employees echo these sentiments and further explain the importance of storage  
343 spaces (refrigerators, etc.) and reheating facilities like microwave ovens. In many sites  
344 matters of refrigerators and microwave ovens can be dictated in the union-management  
345 negotiated enterprise bargaining agreements for the site. Other sites have canteens and

346 a number of employees suggest that when they have worked on sites with canteens,  
347 their overall decision-making about food choices is improved. Hence, the idea of  
348 managers influencing eating habits in this manner is not an unnecessary impost,  
349 managers are making these decisions already, and these decisions are influencing  
350 employee eating habits.

351

352 One line manager was formerly a chef and has taken it upon himself at every site he  
353 works to arrange better quality food alternatives for the site staff. As he explains:

354

355 *... (I) organise a (nearby) cafeteria to have special construction site discount*  
356 *meal deals, salad sandwich and OJ 'bargain'. We commit bulk numbers, for*  
357 *example, 90 blokes, send business their way ... I've done it here with Milano's*  
358 *café – happy hour prices for drinks and snacks.*

359

360 Akin to this idea is the notion of having payroll deductions for quality food deliveries.

361 As one employee states:

362

363 *I used to work for a place that did it (had payroll deduction for lunches) – it was*  
364 *cheap so everyone ate better on that site.*

365

366 All the construction sites in our sample had vending machines. Some vending machines  
367 were for drinks only and mostly filled with high sugar cans of popular varieties, while  
368 some had food vending machines with packets of chips (crisps) and chocolates. Many  
369 employees and line managers suggest that the decisions to have these vending machines



370 on site with what would be considered unhealthy options would be just as easily  
371 changed to include more healthy eating and drinking alternatives.

372

373 One site manager says:

374

375 *Most people buy drinks from the machine – they're \$1.20 so pretty cheap ... I*  
376 *suppose in reality I could not have the coke machine here, and that would take*  
377 *away the option, they'd get the shits for a while...*

378

379 When asked directly if he tries to influence what employees drink on site, one manager  
380 says:

381

382 *I do, probably, yeah I definitely do, probably uh ... I've got some guys who I*  
383 *actually believe they're energy drink addicts, and I do speak to them about it, but*  
384 *once again, 98% of the time like, I, it's laughter is the reply. ... obviously I can't*  
385 *stop them, but I try to get them to cut down and drink more water, that's part of*  
386 *my role here definitely, just to keep them on their feet all day.*

387

388 Because the sub-tropical climate does create a hot and humid environment, the  
389 importance of hydration is very important on sites, particularly in summer. Employees  
390 suggest that the presence of vending machines is not the problem for them – it's what  
391 is in the vending machines. Here the tension between individual choices becomes  
392 apparent, as one employee states:

393

394           ... you've got to pay money to get it, ... if you get something from a vending  
395           machine that's not healthy it's your decision you know 'cause you put the money  
396           in and press the number, you know so ... I don't think that's affecting poor eating  
397           on site, yeah, it's your choice, to eat poorly.

398

399   Clearly some managers have an influence over the work time eating habits of the  
400   workers on site through their planning of the on-site eating environment. Areas  
401   identified by employees and managers that had a positive influence on their decision-  
402   making were the spacious, well lit, and well 'fit-out' designated eating areas; and the  
403   opportunity to have good quality food on site either through an eatery or with an  
404   arrangement with a local supplier. The positioning of designated eating areas seem to  
405   have both a negative and positive impact – those sites with numerous, well positioned  
406   areas were seen as more beneficial compared with those sites that had fewer areas  
407   resulting in a longer time for the employees to get there in short breaks. Finally, the  
408   decisions to have drink machines on site and equally as important, what to include in  
409   those drink machines was a clear area of influence over which the line managers had  
410   control.

411

## 412   **Behavioral Influence**

413

414   The final theme that developed from our data was the notion of behavioral influence.  
415   By behavioral influence we refer to the sorts of actions that line managers take over  
416   food consumption for themselves or for the site which leads to what would commonly  
417   be called 'custom and practice' or a 'workplace culture'. Again, despite employees and  
418   managers alike agreeing that the managers have 'no influence' over worker eating

419 habits, our evidence suggests to the contrary. As one employee refers to a site he has  
420 worked on where the manager takes a great deal of care over his own diet:

421

422 *Although in some cases, I suppose at the Nundah job ... a lot make their food on*  
423 *site I think they see (the site manager) making his own lunch.*

424

425 This influence of line managers is further demonstrated when workers reminisce on  
426 their early years of employment:

427

428 *My supervisor brings his lunch every day. So I guess you just do what everyone*  
429 *in the crew does. You don't want to be the guy that takes off to the shops, you get*  
430 *given shit when you're back.*

431

432 And:

433

434 *I remember when I was on the tools I was always keen to see what someone was*  
435 *bringing in, what leftovers. If someone bought something from a shop you'd*  
436 *comment on it but there's always a joke when someone goes to the shop. It was*  
437 *never a welcome choice.*

438

439 *...if a bloke wants to go off site and get something, and the supervisors bring their*  
440 *sangas (sandwiches), then they'll get the shits with the blokes running off site or*  
441 *going to heat things up in the kitchen...*

442

443 Again, it is clear that employees are influenced by their line managers, but the influence  
444 is on first consideration somewhat hidden. Commonplace on constructions sites is the  
445 ‘site bar-be-que’ (BBQ). Again, it is clear to everyone that this is a choice that is made  
446 by line managers to have the BBQ, what they serve at the BBQ, and for individual  
447 employees to eat at the BBQ. Some of our line managers’ state:

448

449 *We do put on a BBQ with a can of coke. We did start with juice but cheaper and*  
450 *easier to get coke for 50c can.*

451

452 *We run site BBQs so can influence that – steaks, sausages, onions, eggs. If it was*  
453 *healthy they’d eat it but would complain. It’s a fine line. It takes time but if we*  
454 *can we should try to improve eating habits. It would improve morale and get*  
455 *people to feel better.*

456

457 And an employee comments:

458

459 *I guess the fatty sausages aren’t great. They are everywhere. I don’t go to the*  
460 *BBQs because I feel crap all day but everyone else rushes down there.*

461

## 462 **Discussion**

463

464 Overall, our findings indicate considerable disparity between the views of managers  
465 and workers about the perceived influence of managers in creating and influencing the  
466 food environment and food habits and choices on site and the reality of their  
467 considerable influence. The findings reflect an apparent cognitive dissonance

468 (Festinger 1962) between what is actually occurring (multiple influences) and what is  
469 perceived to be occurring ( i.e. no influence). Views regarding personal responsibility  
470 appeared to shape perceptions of influence, creating a ‘silo’ effect where actual  
471 influences are noticed but not taken into the silo.

472

473 It is difficult to explain this disparity. Certainly, beliefs that an individual’s personal  
474 responsibility and choice are primarily driving food intake are prevalent and persistent.  
475 Personal responsibility is a key argument in the obesity epidemic, in particular by the  
476 food industry with regards to food choices (Brownell et al. 2010). Further,  
477 “...judgments about obesity are linked to values of individualism, self-determination,  
478 political conservatism, and secular morality” (p382). Australian society has an  
479 individualistic focus that may be underpinning the observed silo.

480

481 Another body of literature that may provide some insight into these issues is the hidden  
482 curriculum literature found within education. This literature argues that there is a  
483 ‘hidden curriculum’, a distinction between the curriculum that is officially stated by the  
484 educational system, “and what teachers and learners actually do and experience on the  
485 ground, a kind of de facto curriculum” (Sambell and McDowell 1998). Snyder first  
486 raised this notion in the 1970s, suggesting that at the Massachusetts Institute of  
487 Technology, the formal curriculum places an emphasis on higher order educational  
488 goals like independent thinking, while the assessment items suggested that the hidden  
489 curriculum involved memorising facts to achieve success. Within the construction  
490 industry there will be a range of trades and labourers working together on projects, each  
491 with their own knowledge, skills and attitudes that are specific to their trades.  
492 Educational experts claim that regardless of the formal training through educational

493 institutions, it is the hidden curriculum in workplaces where learning actually occurs  
494 (Galbraith, Clyman and Melnick 2011).

495

496 The results of this study suggest that one aspect of the hidden curriculum that  
497 construction workers learn is around dietary behaviors. It is our view that a central part  
498 of this hidden curriculum can be conceptualised as the ‘hidden influence’ line managers  
499 have over the eating habits of employees, much akin to the hidden curriculum. Line  
500 managers of all levels have a direct influence over employees at the workplace –  
501 direction of work, timing of work, interpretation of organizational policies and so on.  
502 However, line managers also have an influence over employee actions that is not so  
503 explicit.

504

505 Within the mainstream management literature in recent decades there is consistent  
506 agreement that line managers are crucial to organizational performance (Jacoby 2004).  
507 The line managers in this research project are employed by the primary contractor to  
508 manage a building site and typically have a small amount of direct employees (usually,  
509 three or four), but a large number of sub-contractors reporting to them (there can be up  
510 to 200 or more on site).

511

512 Research in the area of people management within construction often depicts a difficult  
513 working environment with long working hours (Townsend et al. 2011; Lingard et al.  
514 2008) and high rates of health and safety incidents (Loudoun 2010) among two  
515 commonly cited areas of concern. Management styles undoubtedly vary between firms  
516 and across countries, making generalisation difficult; nevertheless, the sector is  
517 perceived to approach human resource management and union-management relations

518 rather poorly (ILO 2001). It is the two aforementioned areas of research (working hours  
519 and safety) that would appear to have a strong relationship with our primary area of  
520 concern – consumption habits of construction workers.

521

522 It appears that in order to improve food choices in workers, due to the observed  
523 relationships, a ‘comprehensive approach’ is needed. This approach, advocated for by  
524 Noblet and LaMontagne (2006) for implementing job stress health promotion  
525 programs, would incorporate both individual and organizational interventions. For  
526 instance, work support has previously been found to influence both mental health and  
527 good health (Love, Edwards and Irani 2010). Whilst immediate supervisors and  
528 managers do have some reported impacts on behavior and environment, time pressures  
529 would be expected to be less modifiable at a site level.

530

531 In a Canadian auto setting, general and human resource managers’ motivations for  
532 worksite health promotion were improving indirect health costs (Downey and Sharp  
533 2007). General Managers were also motivated by moral obligation. In this study, there  
534 was an undercurrent in supervisor interviews of a moral obligation for safety, but this  
535 perceived obligation did not appear to overlap into healthy behaviors. This also reflects  
536 the disconnect between the priority of occupational health and safety in most Australian  
537 industrial settings. Economic benefits can be definitely accrued and demonstrated by  
538 safety interventions (e.g., Tompa et al. 2008), whereas health promotion interventions  
539 have tangible costs but less tangible outcome savings (Downey and Sharp 2007).  
540 Supervisor energy is focused on safety and productivity measurable outcomes.  
541 However, adopting a ‘human capital framework’ that focuses on both health and safety  
542 (Goetzel and Ozminkowski, 2008) could lead to productivity gains.

543

544 **Conclusion**

545

546 Personal liberties and choice is an important element of living and working in a liberal-  
547 democratic nation, and we do not wish to imply that this research is designed, or is  
548 suggesting that, personal liberties and choices should be impinged upon in the  
549 workplace. What we have investigated here is the notion of decisions that are *already*  
550 being made in workplaces, and the way line managers are *already* having an influence  
551 over employee dietary habits. We have drawn on a theory from the education realm –  
552 the ‘hidden curriculum’. The hidden curriculum refers to the notion that there is a  
553 formal curriculum that is espoused, but surrounding this is a ‘hidden’ curriculum that  
554 students soak up as they progress through their educational experience.

555

556 In this article, we have also drawn on the broad human resource management and  
557 employment relations literature on line managers that clearly demonstrates that the  
558 many levels of line managers in workplaces play a central role in influencing  
559 performance at the workplace. These two elements combined to provide us with the  
560 scope to understand what the perceptions on construction sites were about the role of  
561 line managers in influencing employee dietary habits. It was clear that all participants  
562 in our study viewed line managers to have ‘no influence’, but the data collected  
563 indicated something quite to the contrary. Hence, we deemed the question of whether  
564 line managers should be involved in promoting healthy food choices and habits onsite  
565 to be a redundant question. Our findings show line managers are already having a  
566 ‘hidden influence’ over the consumption of workers at their site even though it is largely  
567 unintended. This influence does not impinge on personal choice, however, line



568 managers already make decisions that could be changed and with these changes, a  
569 positive impact on employee consumption is likely to follow.

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