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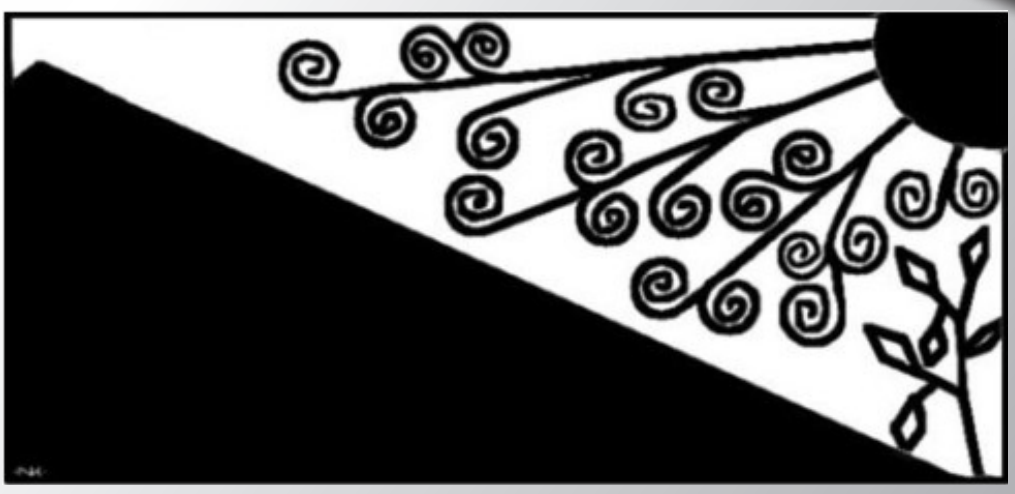

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Editorial

The role of the culture into the multifactorial approach to suicidal behaviour

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Suicidal behaviour is recognized as a multifactorial phenomenon, determined by the influence of significant factors, including biological, psychological and social-cultural aspects. To date, most studies have focused their attention on the relationship between suicide and psychological and biological factors and several data about this are available. Few studies have analyzed the relationship between suicide and cultural aspects, making this study area relatively incomplete and poorly defined (Colucci & Lester, 2012).

Epidemiological data showed that suicide affects all countries in the world, with very different rates across the countries and relatively stable over time (Colucci, 2006).

These differences cannot be explained only by the biological components and/or the individual predispositions, but can be understood taking into account the cultural differences between people.

According to the American Psychological Association (2003), culture is defined as the "belief systems and value orientations that influence customs, norms, practices, and social institutions" of a group of people. Each culture is different from the others for the sense of community-belonging, the religion and the spirituality, the social integration, the different manifestations and interpretations of distress, the impact of stigma and cultural distrust on help-seeking and service utilization (Goldston et al., 2008), the system of values, traditions and sources of support available. All these factors interact with individual predispositions to vulnerability to mental health illness and suicidal behaviour, functioning as risk or protective factors so that the rates of suicidal behaviors have varied widely across cultures (Alvarez, 2002).

For example, as is common knowledge, people with strong religious affiliation and sense of spirituality have a reduced risk of suicide (Dervic et al., 2004), while the experience of shame, associated with the sensation for disappointing the expectations of their parents or others and not respecting the values of the community can increase the risk of suicidal behaviour (Zane & Mak, 2003).

Moreover, different cultures can also influence the way how people respond and view mental health and suicide; culture can define the concept of mental health and mental illness, the ability to access care and the type of care that people seek, the quality of the interaction between provider and patient in the health care system, and the response to intervention and treatment (Reducing suicide, 2002). Of course, this has important implications for treating individuals belonging to different cultural groups.

In many cultures suicidal behavior is not recognized as a serious problem and it's well tolerated; consequently, many people do not seek help and do not receive adequate treatment, increasing their risk of suicide (Cauce et al., 2002). Otherwise, culture influences the type of help that is asked in case of suicidal behaviour: Latino and Asian

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families often do not ask for help to the health care system because they believe that mental health problems, such as suicidal behaviors, should be dealt with by the family or faith community rather than specialty mental health services (Cauce et al., 2002).

The evidence about the relationship between culture and suicidal behaviour need to increase the knowledge in order to promote the develop of suicide prevention programs that are culturally sensitive (Goldston et al., 2008); this means that prevention programs must take into account the relevance of cultural values, customs, and strengths within specific domains, such as work, school, relationships, and therapy (Santiago-Rivera, 1995), when designing preventative interventions. For this reason, it's important to promote the dissemination of guidelines and intervention strategies that are culturally adapted to the target population. Moreover, it's necessary that the actions are articulated in terms of prevention and access to care and structured so that they can reach the largest number of people possible, involving all different cultural contexts. These guidelines should consider also training for mental health professionals: in fact, a greater understanding of the cultural context of mental health problems, such as suicidal behavior, may help the mental health professionals to improve access to and remove barriers to treatment and improve quality of care for vulnerable populations (Joe, Canetto, & Romer, 2008).

Developing and promoting research about the impact of the cultural aspects on suicidal behavior is essential to increase the knowledge in the field of Suicidology. As mentioned in the previous issue, the editorial philosophy of SOL aims at a multidisciplinary understanding of suicidal behaviours, giving voice to research on cultural and sociological aspects of suicide that are often overlooked. For these reasons, in this issue, we have chosen to select important and very interesting papers that have addressed the theme of suicide in different cultural contexts. It's possible to find original researches, case series and qualitative/quantitative studies that analyze aspects of suicidal behaviour in specific culture, as in Belgium, Korea, European Countries and Post-Soviet States, Australia and Norway. Beside these papers, we have chosen other two interesting manuscripts about suicidal ideation among substance users and the processes of suicide contagion from young people bereaved by suicide.

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Original Research

Deliberate self-harm and ethnicity in the city of Sarajevo, Bosnia and Herzegovina

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***Abstract*:** The aim of the present study is to investigate deliberate self-harm (DSH) in Bosnia and Herzegovina (BiH), with special reference to gender, age and ethnicity. Between 2001 and 2003, known hospital cases of DSH in persons aged 15 or older in the Sarajevo area were monitored using standardised methods. In total, 1428 DSH events were registered, giving an annual mean DSH event rate of 119 per 100 000 (118 for women, 120 for men) and a DSH person rate of 110 (108 for women, 111 for men). The mean person-based DSH rate was 124 for Bosniaks (Muslims), 128 for Croats (Catolics), and 88 for Serbs (Orthodox Christians). Self-poisoning was the most commonly used method in all three ethnic groups (66%), with second-most common method self-harm by a sharp object (17%). A very low proportion used guns or explosives. The rates of DSH in Sarajevo during the study period were comparable to those of many other regions in Europe, though with a quite unique pattern of higher rates among men. We identified fluctuating but significantly not different rates between ethnic groups. The general belief that religious denomination is decisive for level of DSH-rates was not supported by the findings of this study; rather the post-war situation with huge demographic changes was reflected in the results. Disruptions to social integration as a consequence of the war are put forward as possible explanations.

Keywords: Sarajevo, DSH, gender, ethnicity, post-war period 2001-2003.

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The present study reports data on deliberate self-harm (DSH) in Bosnia and Herzegovina (BiH). The country constitutes an interesting area for studies on suicidal behaviour, not only due to its multi-ethnic population, but also due to the war experience during the 1990s. To our knowledge such data has not earlier been presented.

We know from previous studies that countries in north-western Europe have the highest suicide attempt rates, countries in central Europe present mixed patterns, and by tradition the lowest suicide attempt rates are found in the Mediterranean region (Hawton & van Heeringen, 2000). According to results from the first period of the WHO/EURO Multicentre Study on Suicidal Behaviour, covering the period 1989-1992, the average female suicide attempts rate for all centres was 193 per 100 000 females while the male average attempt rate was 140 per 100 000 males. In most regions, the female attempted suicide rates were higher than male suicide attempt rates, except for Helsinki (Finland). Self-poisoning was the most commonly used method, used by 80% of the females and 64% of the males (Schmidtke et al., 1996).

There are a limited number of studies on DSH in the Balkans. From Ljubljana, Slovenia, suicide attempt rates of 83 per 100 000 among men and 84 among women are presented from 1998, giving a male to female ratio of almost one (Grad et al., 2004). Self-poisoning be drugs was more common among women than among men (64% vs 36%). Reports from Novi Sad (Serbia) show total DSH rates from 46 to 58 per 100 000 during 1997 to 1999, also with a male-to-female suicide attempt ratio of almost one. The highest rate of DSH was observed in 1999, which researchers explained by the stress and trauma of the concurrent NATO bombing of the area (Selakovic Bursic, 2004).

In Bosnia and Herzegovina (BiH), and especially in the city of Sarajevo, religious denomination has historically been the basis for constituting the three main ethnic communities - Orthodox Christians as Serbs, Catholics as Croats, and Muslims as Bosniaks - a situation even more pronounced after the 1992-1995 war (Velikonja, 2003).

We know that particularly low suicide rates are found in Muslim countries and Muslim populations (Lester, 2006; Kok, 1988), and in the Balkans different patterns of suicide epidemiology are found in different ethnic groups in the region. Traditionally, the highest suicide rates are found in Slovenia, where the population is mainly Catholic, and in the northern Serbian province of Vojvodina, where the population is mainly Eastern Orthodox Christians, with in both areas a majority of men among those dying by suicide (Marusic, 1998; Selakovic Bursic, 2004). However, in a recent study on suicide rates in Bosnia and Herzegovina and the city of Sarajevo before and after the war, there was no such clear evidence for stable ethnic specific patterns. Rather the war experience was suggested as decisive for the level of suicide rates (Music, Jacobsson & Salander Renberg, 2013).

Therefore it is interesting to study not only the magnitude of DSH in BiH as a whole, but also the pattern among different ethnic groups in the region.

Aims

The study examines the incidence of DSH in Sarajevo, with reference to gender and age. The study also describes ethnic-specific patterns of DSH, including methods of DSH.

Methods

Study area

The study was conducted in the Sarajevo area between 2001 and 2003. After the war in 1996, the city was declared a canton consisting of nine municipalities, covering an area of 1277 km^2 and with a population of 356 502 inhabitants. Before the war, there was a mixed population of 49.2% Muslims, 29.8% Serbs, 6.6 % Croats, 10.7% Yugoslavian (i e non-ethnic group) and 3.6 % others. After the war (1997) the population structure changed significantly to about 85.4% Bosniaks (Muslims), 6.6% Serbs, 6.6% Croats and 1.4% others. During the time of the study 2001-2003, there was 79.5% Bosniaks, 11.1% Serbs, 6.7% Croats and 2.5% others in Sarajevo (Federal Office of Statistics, 2008).

Procedure

Persons aged 15 or older in contact with hospitals in Sarajevo after deliberate self-harm (DSH) were defined as the study population. Definition applied for DSH is in accordance with the ICD-10 criteria for intentional self-harm, X60-X84 (World Health Organization, 2009). These criteria include all forms of deliberate self-harm, both suicide attempts and NSSI (non-suicidal self-injury), since they do not ascribe suicide intent. Assessing suicide intent is often difficult (Skegg, 2005) and was not in the scope of the present study.

Over the three-year period of the study, all known hospital DSH cases were monitored at the two hospitals in Sarajevo: at the Psychiatric Clinic and Centre for Urgent Medicine at the University Hospital

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of Sarajevo (Kosevo) and at the State Hospital of Jagomir. A decision was made not to include the Centres for Mental Health (CMZ); this was because very few cases of DSH come into contact with CMZ, and it is general praxis to refer such cases to one of the included hospitals (personal information).

Specially trained psychiatric nurses continuously monitored all cases attending the emergency ward and the two psychiatric clinics. Information was gathered through personal interviews with patients and from medical records. For information gathering, a standardised instrument from the WHO/EURO multicentre study on suicidal behaviour was used, covering areas such as basic demographic data, time and method of DSH, previous attempts, and socioeconomic situation (Platt et al, 1993). In addition, information on ethnicity was collected. Where only medical records were available, ethnicity was assessed by the name of the patient.

To ensure reliability regarding inclusion criteria and to avoid double registration, data were continuously checked by one of the authors (EM), and discussions regarding inclusion criteria were held with the psychiatric nurses involved in the study.

For calculation of DSH rates, population data were gathered from the Sarajevo Bureau of Statistics. However, we were unable to obtain age-specific population data for our study period other than 0-14, 15-64 and 65+, despite several contacts and efforts.

Statistical analysis

DSH rates were calculated as the number of instances of DSH per 100 000 inhabitants and year for specific subgroups, both based on events (incidence) and unique persons (person rates). For descriptive comparative statistics we used chi-square for categorical data and the T-test for comparison mean values. Owing to the non-normal distribution of age data, a nonparametric method for group comparisons was applied by means of the Mann–Whitney *U* test (SPSS Statistics 21.0). The significance level was set at $p \leq .05$.

Ethical considerations

This study, as part of a larger study including various types of suicidal behaviour in Sarajevo, is approved by the ethical committee at the Sarajevo University Hospital (November, 2000).

Results

A total of 1428 DSH events were registered over the study period, giving a mean annual DSH event rate of 119 per 100 000 inhabitants in Sarajevo, 118 for women and 120 for men. The mean person-based annual DSH rate was 110, 108 for women, and 111 for men.

There was no significant difference in median age between men and women, 30 years for women (range 62) and 28 years for men (range 69), respectively. When dividing into ten-year age groups, the highest proportion of DSH was in the age group 15-24, both for women and men (37% vs 39%; ns), and the lowest proportion was in the age group 55-64 (5%), for both women and men.

Due to the lack of population data, we were able to calculate DSH rates only for the age groups 15-64 and 65+ (Table 1).

Table 1. Gender specific person based DSH rates (persons per 100 000 inhabitants) in different age-groups.

	2001			2002			2003		
	Women	**Men**	**Total**	**Women**	**Men**	**Total**	**Women**	**Men**	**Total**
Age group 15-64	129.6	120.9	125.6	175.5	180.4	177.8	160.3	166.9	161.5
65-	22.6	58.1	37.7	29.1	71.5	46.9	53.8	53.3	53.6

There were similar mean rates among women and men over the three years in the 15-64 age group, but a tendency towards higher rates among men than among women in the older age group (t-test; p=.078). The overall mean person based gender rate ratio (women/men) was 0.97 over the three-year period. For the 15-64 age group the rate ratio was 0.99 and for the older group 0.57.

DSH and ethnicity

Annual DSH rates for different ethnic groups are presented in Table 2. The mean DSH rate over the three-year period was 124.1 for Bosniaks, 127.7 for

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Croats and 88.4 for Serbs. No gender-specific population data were available on ethnicity, neither age-specific population data.

Table 2. Person based DSH rate in different ethnic groups. Calculation based on total population.

	Bosniaks	Croats	Serbs
2001	101.1	74.5	60.3
2002	144.8	126.5	111.5
2003	126.4	182.1	93.5

DSH rates in all three ethnic groups fluctuate over the three years with the highest rates in 2002 for both Bosniaks and Serbs, while DSH rates among Croats were highest in 2003, double the rate for Serbs. However the differences did not reach statistical significance.

DSH methods

Overall, self-poisoning, the most common method, was significantly more frequent among women (N=631, 79.3%) than men (N=388, 53.6%) (chi-square=131.4; p=.000). This method mainly included poisoning by psychotropic drugs (94% for both genders). DSH methods by ethnic group are presented in Table 3

Table 3. Gender and ethnic-specific proportions of DSH methods used, 2001-2003 combined

	Women						Men					
	Bosniaks		Croats		Serbs		Bosniaks		Croats		Serbs	
Method	N	%	N	%	N	%	N	%	N	%	N	%
Self-poisoning by drugs, alcohol and chemicals	529	86.3	46	75.4	56	85.6	332	58.5	20	48.8	36	62.1
Sharp object	42	6.9	7	11.5	3	4.8	162	28.5	11	26.8	14	24.1
Jumping from high places	24	3.9	4	6.6	4	6.3	28	4.9	5	12.2	6	10.3
Hanging	11	1.8	4	6.6	0	0	14	2.5	2	4.9	0	0
Guns and explosives	2	0.3	0	0	0	0	18	3.2	3	7.3	2	3.4
Other specified means	5	0.8	0	0	0	0	14	2.5	0	0	0	0
Total	613	100.0	61	100.0	63	100.0	568	100.0	41	100.0	58	100.0

Self-poisoning was significantly more common among women in all three ethnic groups, (p<.05). Gender specific comparisons showed that self-poisoning was less common among Croatian women than among Bosnian and Serbian women (chi-square=9.94; p=.05). For men in different ethnic groups no differences were found regarding self-poisoning. Sharp objects were more often used among men (N=187, 26.3%) than among women (N=52, 7.7%) (chi-square=108.2, p=.000). A low proportion used guns and explosives. Hydrochloric acid, a highly dangerous and toxic substance, was used by 5.6% (N=35) of Bosnian women and by 3.2% (N=18) of Bosnian men, and 3.2% (N=2) among Serbian women and 5.2% (N=3) among Serbian men (not shown in table).

Discussion

This is the first study presenting DSH data from Sarajevo. The study shows that the level of DSH rates in Sarajevo was comparable to rates in most other regions of Europe, according to the WHO/EURO multicentre study (Schmidtke et al. 1996; Hawton & van Heeringen, 2000). However, in contrast to regions in neighbouring countries in the late 1990s, Slovenia (Ljubljana) and Serbia (Novi Sad), the level of DSH rates in Sarajevo was higher (Grad et al., 2004; Selakovic Bursic, 2004). According to earlier studies on suicidal behaviour in different ethnic groups

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(Lester, 2006; Kok, 1988), it could be expected that a Muslim dominated population should disclose lower rates. We have no data on DSH rates before the war in Sarajevo, but it is reasonable to believe that these unexpected high rates probably are explained by the experience of war in BiH/Sarajevo. Beside the trauma experience, people in Sarajevo had a very difficult post-war situation with high unemployment, economic crises and an unstable political situation, more severe than in other neighbouring regions (U.S. department of state website, 2012).

The quite unusual pattern of higher DSH rates among men than among women is shared only by Helsinki (Finland) and Tallinn (Estonia), according to figures presented in the WHO/EURO multicentre study (Schmidtke, 1997; Värnik et al., 2004). This relatively high DSH among males in Sarajevo could be a reflection of trauma experiences during the war and a very difficult situation post war. In addition to the difficult general social and economic situation after the war, for war veterans the challenges of readapting to normal everyday life are even more problematic and complex (Browne et al., 2007). After the war they were alienated from norms and values of society and experienced that their service was unvalued (Shay, 2002). Studies among veterans in USA and UK also describe that exposure to trauma and post-traumatic stress disorder (PTSD) are related with changes in identity, and that such changes may be associated with increase in suicide rates among veterans when they return to home (Kaplan et al., 2007; Kapur et al., 2009). In the present study similar risk factors might be working.

When comparing ethnic-specific rates no significant differences were found; giving further support for this lack of ethnic-related DSH patterns in post-war Sarajevo. The general belief that ethnic-specific values works as a protective factor, especially in a Muslim population, was not supported. Rather than religious denomination per se, the post-war situation with its huge demographic consequences, such as changes in age structures might be reflected in the results. For instance, the first-year low rate among Serbs is probably explained by the population composition, with very few Serbs living in area, and that those who first returned to Sarajevo were older Serbs. One could speculate whether the increasing rates among Croats (though during a short observation period of three years) could be a consequence of a new position for this ethnic group in the Bosnian society, not experienced before the war, i e a minority situation difficult to manage. Therefore, the most likely explanation for the DSH patterns in general is the social consequences of the war, leading to disruptions in social integration due to the huge migration phenomena, political instability and very low standard of living experienced by all three ethnic groups. In addition, the change in identity, from one united country (former Yugoslavia) to the split into separate independent states with main ethnic representations, could lead to difficulties in maintaining the multi-ethnic, stable integration in Sarajevo experienced prior to the war.

Similar to findings from other studies in Europe (Schmidtke et al., 1997), self-poisoning was the most common method used, mainly including intoxication by psychotropic drugs. In Bosnia, at the time of the study these drugs could legally be purchased without prescription - they were the even more easily available after the war since they were distributed as humanitarian help. Today, this situation is becoming regulated in the order to control the availability of drugs in Bosnian society. However, this is still not the case in the private sector, where even psychopharmaceuticals can be purchased without a prescription.

The quite commonly used toxic substances, Hydrochloric acid (HCl) and concentrated acetic acid (essences), represent the most dangerous means of DSH. These methods have to our knowledge not previously been described in the literature. As well as death, HCl can cause severe somatic damage, with incurable and long-lasting consequences. HCl and concentrated acetic acid are available cheaply in ordinary market shops and can be found in many homes. Both HCL and concentrated acetic acid have a corrosive effect potentially harmful to the respiratory organs, eyes, skin and intestines. Controlling their availability should therefore be a priority in discussion of strategies for suicide prevention.

Methodological considerations

The present study suffers from limited access to population data in the post-war region of Sarajevo. As none age-specific population data other than 0-14, 15-64 and 65 and older was available, limited calculation of DSH rates was possible to conduct. The strength of the study lies in the reliable and standardized method for monitoring events of DSH in the two different hospitals in Sarajevo.

Conclusions

The DSH rate in Bosnia was comparable with rates in most other regions of Europe but with a relatively uncommon pattern of higher rates among men than among women. The general belief that ethnic-specific values and norms function as protective factors against suicidal behaviours was not supported by the findings of this study. A question raised is whether social disintegration as a consequence of war is a greater determiner of rates of DSH than any preventative effect of religious denomination.

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Original Research

Suicide Mortality in European Countries and Post-Soviet States since 1955: Illustrating the Longtime Trends and Patterns of Recent Changes

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***Abstract*:** Suicide mortality was analysed in altogether 47 European countries including the post-Soviet States. Age standardized suicide rates were computed separately for males and females by exploring the WHO mortality database. Suicide mortality of males attained higher rate than the female mortality in every country. Suicide rates were relative low also in several Mediterranean countries and south-eastern post-Soviet states. No clear pattern of change could be portrayed in the longer-term (1955-2009) context over which an equal number of upward and downward suicidal trends among countries could be detected. More uniform patterns in suicide rates were obtained for the recent dedaces. Suicide rates were in ascendance in the 1980s in western and in the 1990s in eastern countries. Thereafter, the suicide rates have been in decline in a number of countries. The most recent pentad (2005-2009) presented a markedly high number of countries with their ultimately lowest suicide rates across the region. Over this pentad, the male and female suicide mortalities reached their lowest rates in nearly a half and more than a third of the countries, respectively.

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International comparisons of suicide datasets can help to outline regional variations in suicide mortality and highlight the regions where the suicide rates may be in ascendance. In this way the comparisons can raise awareness about the magnitude and importance of suicide mortality. Moreover, strategies essential to develop effective suicide preventive programs are founded on comparative datasets of several countries in order to study the magnitude of the problem and trends in the time-series (Schmidtke et al., 2004).

Global studies indicate that European suicide rates are very high for both men and women (Bertolote & Fleischmann, 2002). A substantial variation occurs, however, in mortality from suicide even within this continent with no unique pattern of trends detectable in various European countries (La Vecchia et al., 1993). These results show that the national histories of suicidal behavior may differ notably even between neighboring countries. Since the 1980s, feature common to several European countries has been the downward trend in the suicide rates (Chishti et al., 2003), with however substantially higher mortality values in eastern European countries and especially in Russia (Levi et al., 2003). Another geographical characteristic seen in the European data is the increase in suicide rates towards the north, with nadir in corresponding mortality in the eastern Mediterranean region (Bertolote & Fleischmann, 2002; Chishti et al., 2003; Hawton & van Heeringen, 2009).

A recent review of global suicide rates in 62 countries illustrated a continuation of the downward trends in many of the studied countries (Bertolote & De Leo, 2012). Here we continue analyzing the male and female suicide rates in European countries, including the post-Soviet states, by deriving the registered mortality and population values from the WHO Mortality Data Bank. Our main aim was to illustrate the temporal trends in suicide rates in as many of these countries as possible. In order to depict the described increase in suicide mortality in Europe from 1970s to 1980s (Platt, 1988; La Vecchia et al., 1993), the data was acquired over an extended interval, that is, since 1955 when the number of countries providing mortality data into the WHO database increase noticeably.

In comparison to a recent suicidological review (Bertolote & De Leo, 2012), our records of suicide rates were age standardized (Ahmad et al., 2001) and covered the past six decades. While it may be of general interest to have a look at the evolution of suicide mortality in different countries, the present analysis was targeted as a response to rising concerns about suicide within Europe with potentially differing mortality rates in different parts of the continent. Moreover, the recent geographical and time trends in suicide rates are described here by placing them in the longtime context.

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Method

Data collection

Mortality and population data of 47 European countries and post-Soviet states were derived (Holopainen et al., 2014) from the WHO Mortality Data Bank. These countries included Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, TFYR Macedonia, Malta, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, San Marino, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkmenistan, Ukraine, United Kingdom, and Uzbekistan. Among the current countries and states in the region, only Andorra, Liechtenstein, Monaco, Montenegro, and Vatican City State were not included here because of poor data availability.

Statistical analyses

The mortality and population data was typically available for age groups of 5-10, 11-15 … 81-85 years. Accordingly, these age groups were used in subsequent calculations. Subsequent to adopting the suicide counts of these age groups and their population figures from the database, these values were transformed into suicide rates (suicide deaths per 100,000 persons) for each country and calendar year. Suicide rates were further age standardized according to the WHO recommendations (Ahmad et al., 2001). Following previous suicide comparisons (Levi et al., 2003), the suicide rates were averaged for pentads (i.e., quinquennia) over the peiods 1955-1959, 1960-1964 … 2005-2009. Similarly, the long- and short-term trends in the suicide rates were determined for studied countries as the difference between the last (2005-2009) and antecedent pentad (here, 1955-1959, and, 2000-2004).

An important feature of the dataset is its time-varying availability (Fig. 1). While a set of countries provide their suicide mortality continuously since 1955, the number of countries with available data increases since the 1980s predominantly following the inclusion of post-Soviet states into the dataset, with a maximal coverage for the pentad

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1995-1999 (Fig. 2). Nevertheless, not all countries come with sufficient data needed to calculate the most recent suicide rate for pentad 2005-2009. These features represent the time-varying availability of the WHO mortality data that unavoidably inflect its analyzability (Bertolote & De Leo, 2012). Nevertheless, the studied countries showed similar data availability in the case of males and females, that is, the years with and without sufficient data were the same for the same countries. Bearing in mind for these features in the dataset, we also calculated the proportions of countries showing their highest and lowest suicide rate in each pentad. Two-sided 95% confidence intervals were determined for each proportion (Wilson, 1927; Newcombe, 1998). All calculations were carried out separately for male and female data.

Figure 1. Countries with available data (black) to compute suicide rates for selected pentads. Grey color indicates (here and in the subsequent figures) unavailability of data.

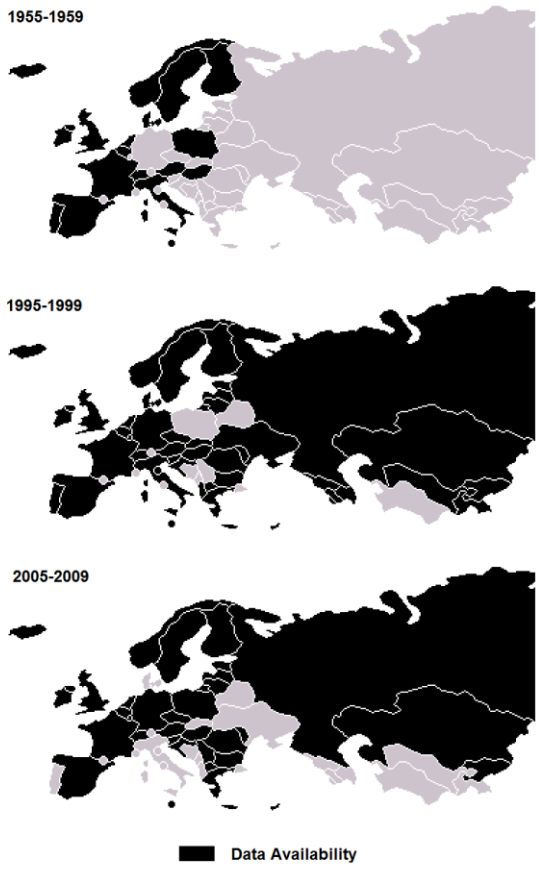
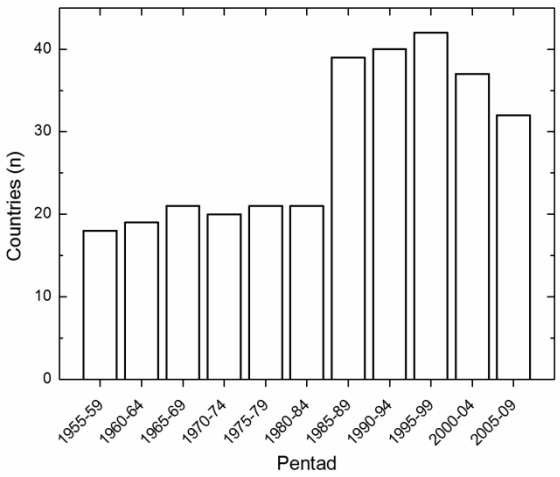


Figure 2. Time-varying number of countries with available data to compute suicide rates.



Results

Suicide rates, as derived from the WHO mortality database, differ greatly between the studied countries (Fig. 3). While the lowest rates for males were, on average, less than 5, the countries with the highest suicide mortality exhibited rates above 50. Overall, the suicide rates were considerably lower for females, the countries with the lowest suicide mortality showing rates below 2, whereas the countries with the highest mortality exhibiting suicide rates well above 10. The lowest suicide rates occurred, for both sexes, in Armenia, Azerbaijan, and Malta. Among the countries with the highest suicide rates, Lithuania had the highest and the third highest mortality rates in the case of males and females, respectively. These figures could be regarded as suggestive, because they could not be calculated strictly over a common period, owing to data availability.

Change in suicide rates

During the 1950s (here, 1955-1959), the highest mortality rates were obtained for Finland, Hungary, Austria, Switzerland, and Denmark, all these countries having the suicide rates of males above 30 (Fig. 4). These countries were also exactly the same for the highest female mortality rates and the only countries with the corresponding rates above 10 over the same period (Fig. 5). For males, the suicide rates remained below 10 in Malta, Ireland, Netherlands, and Spain (Fig. 4), whereas Malta, Ireland, Spain, Poland, Norway, Italy, and Portugal showed the suicide rates of females below 5 (Fig. 5).

Figure 3. Overall suicide rates averaged for each country over the years of available data.

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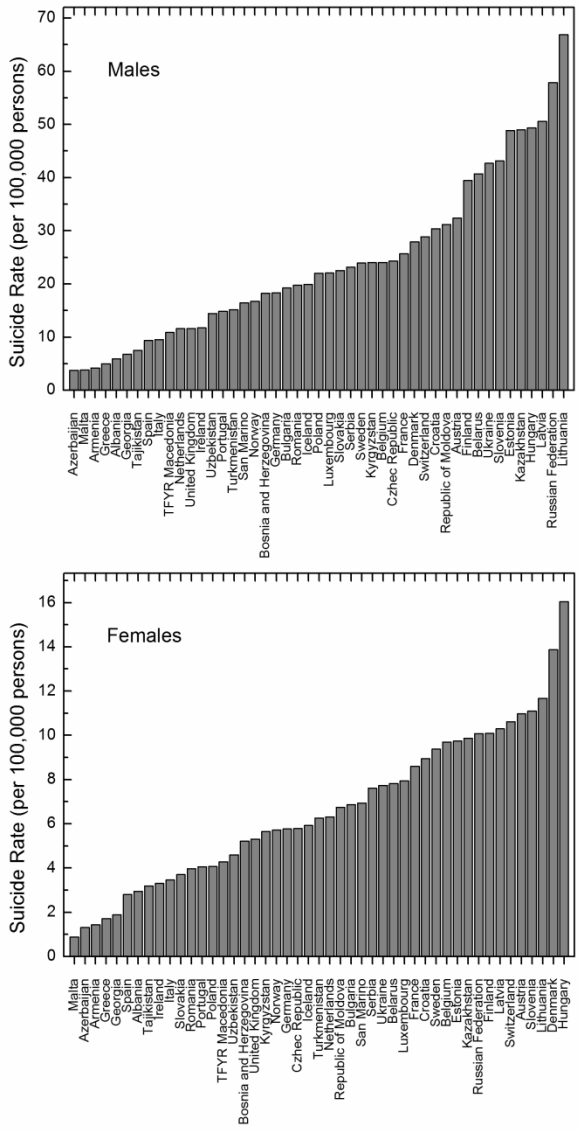


During the latest pentad (here, 2005-2009), the countries with the highest mortality showed an inclination by region towards the east. Among the countries with the suicide rates of males above 30, only Hungary was not representative of the post-Soviet states (Fig. 4). Among ten countries with highest male mortality, only Finland originated from west of the Iron Curtain. The highest rates were obtained for Lithuania, Russian Federation, and Kazakhstan. Such east-west divergence was not similarly obvious for females. The countries with the suicide rates of females above 7.5 were Kazakhstan, Finland, Lithuania, Belgium, Hungary, Switzerland, and Russian Federation (Fig. 5). Sex-independently, the countries with the lowest suicide rates were Greece, Malta, and Spain, that is, the countries originating from the Mediterranean region. Yet, the United Kingdom displayed the fourth lowest suicide rates for both sexes.

Figure 4. Suicide mortality in 1955-1959 and 2005-2009 (deaths per 100,000 persons) defined for males.

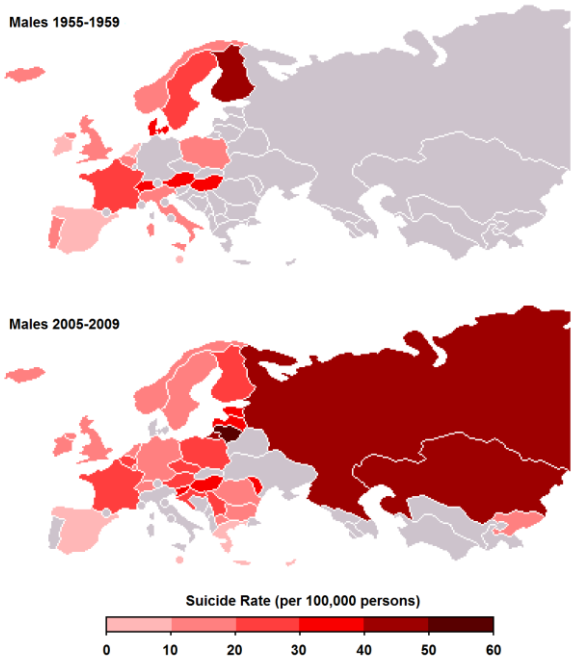
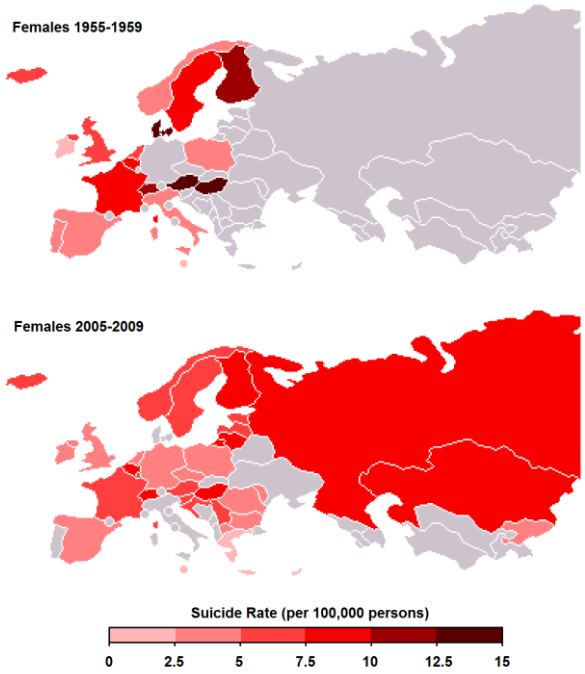


Figure 5. Suicide mortality in 1955-1959 and 2005-2009 (deaths per 100,000 persons) defined for females.



Temporal trends

Longer-term changes (1955-2009) in the suicide rates in different countries did not indicate uniformly wide-spread patterns of change. For males, the suicide rates have ascended in seven countries,

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whereas a downward trend over the same period was also found for seven countries (Fig. 6). Rather similarly, the longer-term trends in the suicide rates of females were in ascendance in six countries, whereas altogether eight countries showed declining suicide rates (Fig. 7). Nevertheless, these trends were predominantly parallel in the studied countries for both sexes, with an exception of Spain, where the suicide rates of males and females were ascending and declining, respectively.

Over the recent past, the suicide rates indicated a clear decline. Among the thirty countries with sufficient data, the suicidal trends of males were declining in 27 counties (see Fig. 6). Ascending trends were found only for Malta, Macedonia, and Greece. Rather similar picture could be derived for females with 26 countries showing declining suicidal trends (see Fig. 7).With these regards, the exceptions were Sweden, Ireland, Norway, and Kyrgyzstan, where the suicidal trends were higher in 2005-2009 in comparison to 2000-2004. The countries with most rapid declines in their suicide rates were Lithuania, Estonia, Latvia, Slovenia, and Russian Federation.

Figure 6. Suicidal trends as change in suicide mortality between 1955-2009 and 2000-2009 defined for males.

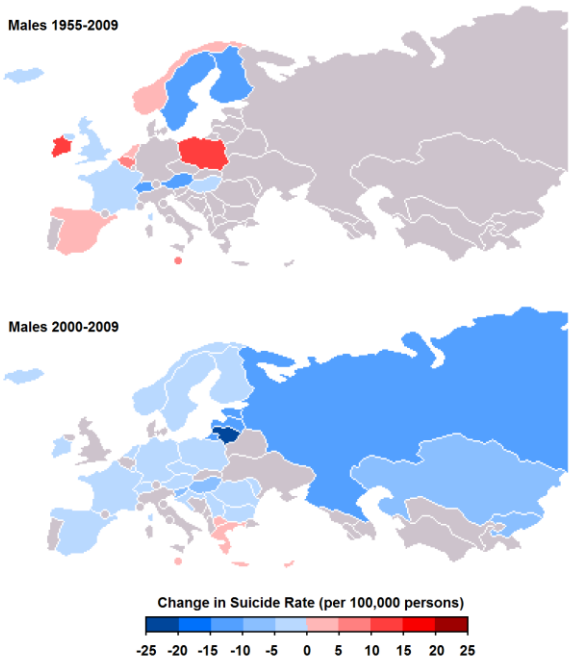
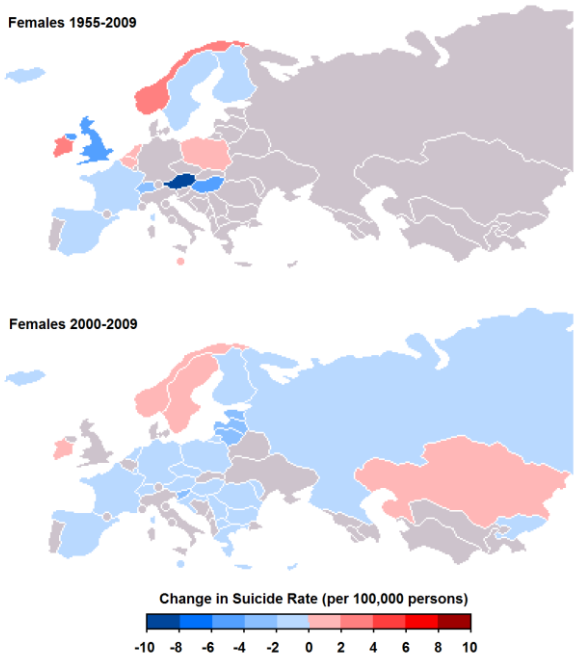


Figure 7. Suicidal trends as change in suicide mortality between 1955-2009 and 2000-2009 defined for females.



Patterns of suicidal changes

Apart from suicidal trends, the pan-European patterns of changes were obtained over several intervals of time (Fig. 8). It could be seen that the proportion of countries reaching their maximum suicide values was increasing especially in the 1980s and 1990s. This pattern was particularly obvious for males. For females, an increased proportion of countries with their highest suicide rates were most evident in the 1980s. A more detailed look at these countries showed that the countries with their maximum suicide rates in 1980-1985 predominantly originated from the western Europe, whereas the countries with their peak values in 1995-1999 originated from the eastern Europe (Fig. 9). A caveat in this respect, the data from the post-Soviet states is sparse for the former period, and it could not be concluded whether this pattern is, at least partly, driven by data availability.

The most anomalous feature in these diagrammatic presentations was, however, the unprecedented proportion of countries showing their lowest suicide rates in the most recent pentad, 2005-2009 (Fig. 8). In the case of males, altogether 15 out of 32 available countries showed their ultimately lowest suicide rates during this pentad, with exception of only Malta displaying its highest suicide rate during the same period. For females, the figures were even more anomalous, as 23 out of 32 counties had their lowest suicide rates occurring in 2005-2009. A spatial view on this decline confirms it to exist for both sexes, specifically in Finland and the Baltic countries, and through the belt of countries from

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Germany towards the Balkan Peninsula (Fig. 10). Fir females, this eastward extension becomes evident with recent suicidal declines also in Russian Federation, and Kazakhstan.

Discussion

Our study has materially a descriptive value in picturing the substantially heterogeneous trends and patterns of suicide mortality in a representative set of European countries. Whenever suicide rates of various countries or states are presented for comparisons, there are two main issues typifying the concerns, namely, the reliability and comparability of the data across countries (Bertolote & Fleischmann, 2002). Here, we refer to several research papers and essays having addressed the bedeviled issues including varying recording, coding and classification systems in different countries, with their consequences to suicide misclassification (Kleck, 1988; Phillips & Ruth, 1993; Chishti et al., 2003; Rockett et al., 2011). Yet, not all countries provide their data to WHO regularly for a variety of reasons (Bertolote & De Leo, 2012), and the resulting dataset contains geographical and temporal gaps. Clearly, these issues represent a complex problem, remaining immanent both for the WHO database and any international comparison. These deficits notwithstanding, the need for international comparisons has not been questioned in any occasion known to us, and it actually remains a meaningful task to portray the changing trends in mortality from suicide in different countries, to respond to increasing concern about suicide on European and global scale (Hawton & van Heeringen, 2009).

Generally, the suicide rates presented in this study (Fig. 3) agreed with the features presented previously for suicide mortality in that the suicide rates of males were considerably higher than the female rates for each country (Hawton & van Heeringen, 2009), and in that the suicide rates were relative low in several Mediterranean countries (Bertolote & Fleischmann, 2002; Chishti et al., 2003; Hawton & van Heeringen, 2009). As also noted (Bertolote & Fleischmann, 2002), this Mediterranean belt extends further eastward with a group of post-Soviet states exhibiting relatively low suicide rates, especially Azerbaijan, Armenia, Georgia, and Tajikistan (Fig. 3). This did not, however, hold true for several other post-Soviet states with considerably high, especially male, suicide rates, concerning Lithuania, Latvia, Kazakhstan, Estonia, Ukraine, Belarus, or the Russian Federation.

Figure 8. Proportion of counties showing their highest and lowest suicide mortality since 1955, defined for males and females. The vertical bars indicate the 95% confidence interval of each proportion.

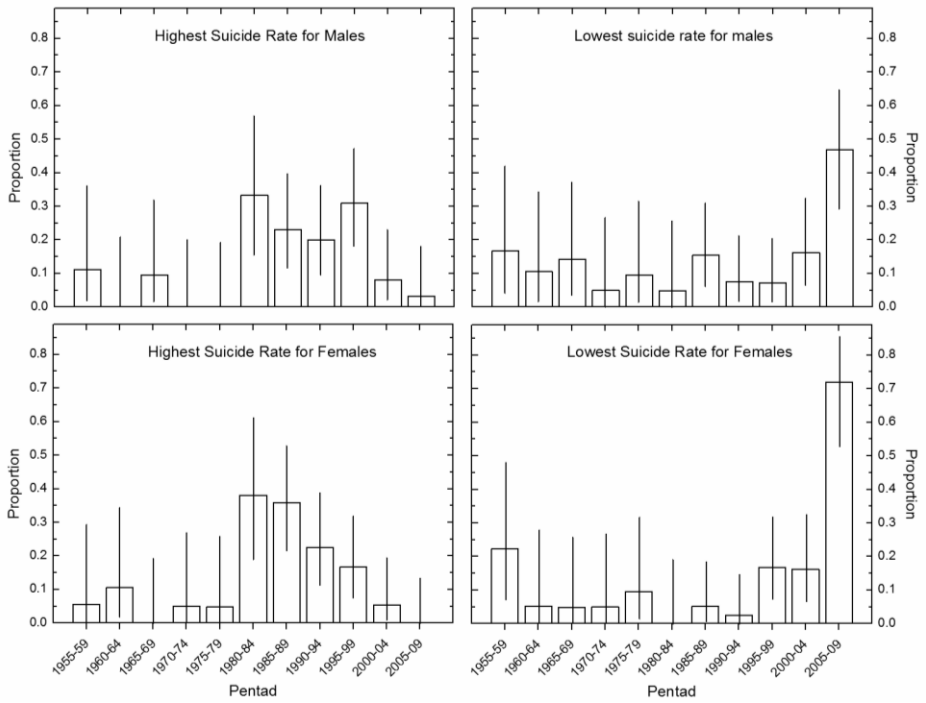

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Figure 9. Grouping of countries showing their highest suicide mortality in 1980-1984 (blue) and 1995-1999 (red) defined for males and females.

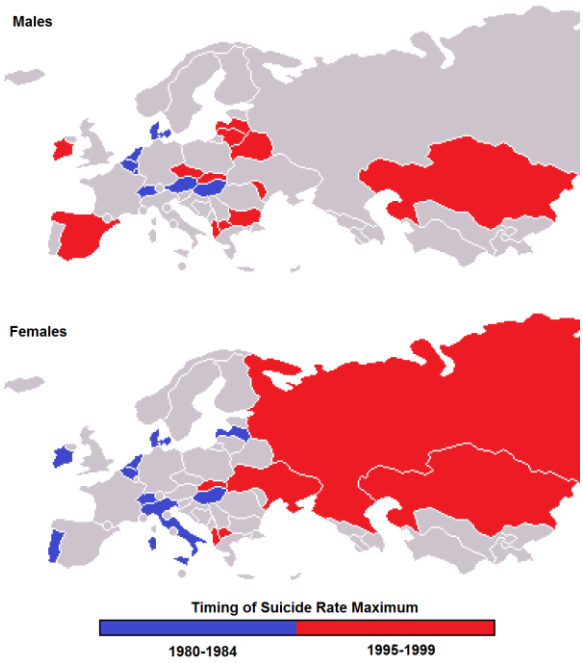
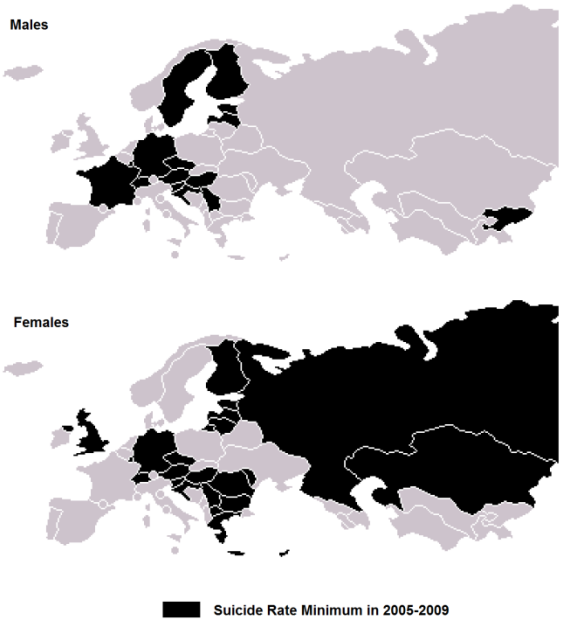


Figure 10. Grouping of countries showing their lowest suicide mortality in 2005-2009 defined for males and females.



Exploiting suicide rates over temporal scales displayed the 1980s as a period when the suicide rates experienced high rates in several countries (Fig.9). It could also be seen that the tendency of high suicide rates continued to the 1990s, especially in the case of male mortality, whereas the examination of female figures indicated a smaller number of countries showing peak values in the 1990s (Fig. 8). The ascending suicide trends towards the early 1980s were indeed notified by the contemporary research (Platt, 1988; La Vecchia et al., 1993). Moreover, our results suggested that the timing of these upward trends reached their maximum values earlier in the western countries, with later peak values in eastern countries in the 1990s (Fig. 9). These views were not at odds with previous observations indicating that while the suicide rates decreased in several northern and western European countries from the late 1980s to the early 1990s, they actually tended to ascend in eastern European countries (Sartorius, 1995). It has also been seen that among Soviet states, the suicide rates remained at relatively low level during 1984-1988, at least in its Slavic and Baltic regions (Värnik et al., 1998), after which the suicide rates ascended (Wasserman & Värnik, 1994; Lester, 1998)

Thereafter, the suicidological analyses have reported declining trends for several countries, albeit with differing rates, for both males and females (Levi et al., 2003; Chishti et al., 2003; Bertolote & De Leo, 2012). Our exploration highlighted this pattern of recent change towards lower suicide rates. Among countries with available data for the past decade, a great majority exhibited declining trends both for males (Fig. 6) and females (Fig. 7). This uniform pattern of downward trends clearly contrasted the longer-term trends 1955-2009 showing mixed signals with equal number of upward and downward suicidal trends among countries with long-term data. As a result, the most recent pentad (2005-2009) presented a markedly high number of countries (Fig. 8) with their ultimately lowest suicide rates during this particular quinquennium around Europe (Fig. 10). These results also indicate that the recent decline is not merely a recovery from the high mortality rates in the 1980s and 1990s. As such the results emphasize the unified pattern of the recent change, thus placed in the long-term context. Despite the large-scale reduction in mortality from suicide is an encouraging news it should not be taken as an indication to reduce the efforts for further suicide prevention and research (Bertolote & De Leo, 2012). As exemplified for Finland, belonging to the group of countries with its record-long lowest suicide rates in 2005-2009 (Fig. 10), and where the nation-wide suicide prevention program has been running since its implementation in early 1990s (Lönnqvist, 2009), the Finnish female suicide rates still remain at the second highest level in European scale (after Kazakhstan), thus at the highest level in western Europe.

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Original Research

Predicting the natural suicide rate in Belgium

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***Abstract*:** This paper presents results of a time series (1950-1997) and an ecological study of suicide and homicide in Belgium and its ten provinces. Study 1 was based on Durkheim's classic theory of suicide and Henry and Short's model of suicide and homicide. Study 2 calculated the 'natural suicide rate', i.e. suicide rate if the social conditions are made 'ideal' (zero divorce and unemployment rates). Study 1 found that the rates of suicide in Belgium over time were positively associated with unemployment and divorce rates, and negatively correlated with marriage and birth rates. On the level of provinces only population density and ethnicity correlated with suicide. Contrary to Henry and Short's theory, the homicide and suicide rates showed similar associations with social indicators. The natural suicide rate in Belgium was 12.1 per 100,000 (time series study) and 10.9 per 100,000 (ecological study). The studies supported the assumptions that the association between social variables and suicide differs depending on the aggregation level and even if the socio-economic conditions were made 'ideal' from the sociological point of view, the suicide rate in Belgium would still be positive and nonzero.

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Belgium is a Western European country with a relatively high suicide rate and significant differences in the incidence of suicide among its three geographical and administrative regions: the northern Flemish region, the southern Walloon region, and the capital region of Brussels. The Belgian suicide rate rose from 12.9 per 100,000 per year in 1950 to 23.8 in 1984 before dropping to 18.0 in 1991 (Lester & Yang, 1998). In 2011 the suicide rate in Belgium was 19.0 per 100,000 with 2,084 self-inflicted deaths recorded, and the regional suicide rates for Flanders, Brussels, and Wallonia were 18.1 per 100,000, 13.0 per 100,000 and 22.6 per 100,000, respectively (Statistics Belgium, 2014). Two questions regarding the epidemiology of suicide in Belgium arise: which social indicators may be associated with the yearly suicide rate and could the suicide rate ever be zero?

Durkheim's (1897) classic theory of suicide proposed that decreases in social integration and social regulation would increase suicide rates. Based on Durkheim's theory it can be expected that high rates of divorce in a country will be associated with increases in the suicide rate since divorce decreases social integration and indicates a lack of social regulation. On the other hand, high rates of marriage and births would be associated with lower rates of suicide as they are related to higher social integration. Lester and Yang (1998) examined these associations by analyzing in a time-series study the suicide rate of a sample of 29 nations from 1950 to 1985. They found that divorce rates were a much more consistent correlate of suicide rates than were birth or marriage rates. Divorce rates were positively correlated with suicide rates for 22 of the 29 nations. Marriage rates were negatively correlated with suicide rates for 20 of these 29 nations, and the correlations between suicide and birth rates were also inconsistent: 12 of the correlations were positive and 17 correlations were negative. In case of Belgium, Lester and Yang (1998) found a significant positive correlation between suicide rates and divorce rates, while the correlation between suicide and marriage rates, and suicide and birth rates, was not significant. Other cross-sectional and longitudinal studies also demonstrated a positive correlation between divorce and suicide, indicating that the suicide rates of divorced people are often higher than the suicide rates of married people, and the higher the divorce rate, the higher the rate of suicide (Stack, 2000a). Using more recent time-series data, Lester and Yang (2013) also found that the unemployment rates in nations were accompanied by higher suicide rates, a result frequently reported in cross-sectional and longitudinal studies (Platt, 2011).

Although Durkheim's theory did not consider homicide, Henry and Short (1954) argued that homicide would show opposite associations to those for suicide. According to Henry and Short (1954), societies where external restraints and pressures on the citizens were strong would have higher homicide rates and lower suicide rates. Conversely, societies where external restraints and pressures were weak would have higher suicide rates and lower homicide rates. Lester (1989, 1995) explored the theories and empirical work suggesting that suicide and homicide may be generated by similar etiological factors differing only in the direction of aggression and concluded that there may be some merit in the suggestion.

According to Durkheim (1897), suicide rates are higher at very high and at very low levels of social integration and regulation. However, his theory did not stipulate that the suicide rate would be zero at intermediate levels of social integration and social regulation. Moreover, Maris (1981) speculated that the suicide rate could never be zero however ideal the socio-economic conditions were. Yang and Lester (1991, 2009) empirically explored the notion that the suicide rate of a society could never be zero (i.e., a 'natural suicide rate'), even if the social and economic conditions were made 'ideal' from the point of view of suicide, i.e., the country had no divorce and no unemployment (two well-established suicide risk factors). In a demonstration with thirteen nations, Yang and Lester (2009) showed, that, if divorce and unemployment rates were entered into a linear regression equation to predict the suicide rate over time, and then if these rates were set to zero, the regression equations still predicted a positive suicide rate for the nations[1].

Although the epidemiology of suicide in Belgium was studied extensively up to the 1990s (Linkowski, Martin, & De Maertelaer, 1992; Maes, Cosyns, Meltzer, De Meyer, & Peeters, 1993; Moens, Loysh, Honggokoesoemo, & van de Voorde, 1989; Moens, Loysch, & van de Voorde, 1988; Moens, van Oortmarssen, Honggokoesoemo, & van de Voorde, 1987), since 1997 no annual mortality data for the whole country have been available (Bossuyt & Van Casteren, 2007), and suicide mortality data have become available only for a few recent years, including 2005 (Statistics Belgium, 2014). The current study aims to fill in the gap in the literature and

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[1] It should be noted that this type of analysis is based on the assumption that the unemployment and divorce rates in the 'ideal' society would be zero. Other social indicators, such as birth or marriage rates, are not included in the estimation of the natural suicide rates as it is not possible to know what their values would be in an 'ideal' society, i.e., one which minimizes its suicide rate.

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provide insights into the associations between social indicators and suicide (and homicide) in Belgium.

The present paper reports two studies. Study 1 explores the associations between the social indicators and suicide and homicide rates in Belgium (time series analysis over 1950-1997) and between the social indicators and the suicide rates in the ten provinces of the country (ecological study data for 2005). Based on the same data, Study 2 calculates the natural suicide rate for Belgium over 1950-1997 and for the ten provinces in 2005. Many sociological theories and models of suicide have been proposed since Durkheim's classic theory (Pescosolido & Rubin, 2000; Stack 2000a, 2000b) and Durkheim's theory itself has been a subject of scientific scrutiny and critique (Wray, Cohen, & Pescosolido, 2011). Nonetheless, in line with previous work (Lester & Yang, 1998; 2013), we have decided to apply the original concepts as developed by Durkheim (1897) and Henry and Short (1954). The present study focuses on both suicide and homicide rates in Belgium in order to explore the question whether the correlates of suicide rates are the same as or different from those of homicide rates.

Method

The suicide rates for Belgium in the time series study were obtained from www.who.int and from Lester and Yang (1998) for the period 1950 to 1997, the latest year for which the WHO data base had suicide rates for Belgium. Divorce, marriage and birth rates were obtained from the United Nations *Demographic Yearbook* (annual) and unemployment rates from the International Labour Office's *Yearbook of Labour Statistics* (annual).

In the ecological study the population and area of each province was obtained for the ten provinces of Belgium[2] (statoids.com/ube.html) for January 1, 2005. The number of unemployed for December 31, 2005, marriages and divorces for 2005, and suicide rates of the provinces for 2005 were obtained from Statistics Belgium (2014).

Analysis

SPSS 18.0 was used to calculate Pearson correlations between the variables and to run stepwise regressions. T-test was used to compare the suicide rates and social indicators between provinces in Flanders and in Wallonia. The study derived regression equations predicting the suicide rate of Belgium and of the ten provinces from the divorce and unemployment rates. Once the divorce and unemployment rates were set to zero the constant term provided an estimate of the natural suicide rate.

[2]Antwerp, East Flanders, Flemish Brabant, Hainaut, Liège, Limburg, Luxembourg, Namur, West Flanders and Walloon Brabant, (Brussels excluded).

Study 1: The Durkheimian Analysis

Results

The associations between the social indicators and suicide rates over time (time series) are shown in Table 1.

Table 1: Correlations over time (1950-1997) between social indicators and the suicide rate

	Year	Suicide rate			Homicide rate
		Total	Male	Female	Total
Correlations					
Unemployment	0.67*	0.80*	0.87*	0.60*	0.82*
Divorce rate	0.94*	0.83*	0.89*	0.65*	0.88*
Birth rates	-0.93*	-0.88*	-0.85*	-0.83*	-0.86*
Marriage rate	-0.87*	-0.78*	-0.86*	-0.58*	-0.80*
Year	-	0.85*	0.87*	0.74*	0.87*

* $p < .001$

It can be seen that all four social indicators were strongly associated with the suicide rate in the expected way. Years with higher divorce and unemployment rates had higher suicide rates, while years with higher marriage and birth rates had lower suicide rates. These associations are consistent with Durkheim's theory of suicide since marriage and birth rates would be predicted to increase the degree of social integration and regulation while divorce and unemployment would be predicted to decrease the level of social integration and regulation. The associations between the homicide rates and the social indicators were similar to those for the suicide rate, opposite to the prediction of Henry and Short (1954) that the associations would be reversed for homicide rates.

The suicide rates of the ten Belgium provinces (ecological study) differ considerably, ranging from 15.6 in Limburg to 26.6 in Luxembourg (Table 2). The correlations between the suicide rates of the provinces and the social variables are shown in Table 3.

The suicide rate was significantly associated with the population density (negatively), but not with the other social variables. A comparison between the five Flemish provinces and the five Wallonian provinces indicated that they differed significantly in population density and unemployment rate, as well as in their suicide rate. The mean suicide rate for the Flemish provinces was 18.5 per 100,000 per year (SD = 2.67) and for the Wallonian provinces 22.5 (SD = 2.50) ($t = 2.43$, $df = 8$, two-tailed $p = .04$).

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Table 2: Suicide rates in the ten provinces of Belgium in 2005 per 100,000 (Statistics Belgium, 2014)

Flanders	
Antwerp	16.7
East Flanders	19.9
Flemish Brabant	18.0
Limburg	15.6
West Flanders	22.3
Wallonia	
Hainaut	20.9
Liège	23.1
Luxembourg	26.6
Namur	21.5
Walloon Brabant	20.3

Table 3: Correlations over the ten provinces between social indicators and the suicide rate

	Correlations	Regression (betas shown)
Population density	-0.74*	-1.08#
Population	-0.47	0.83
Marriage rate	0.61	-0.19
Divorce rate	0.32	0.54
Unemployment rate	0.29	-1.29
Flemish provinces	-0.65*	-1.21
Multiple R		*0.92*

** p < .05*
#significant in backward multiple regression

Study 2: The Natural Suicide Rate

Results

The regression equations for predicting suicide and homicide rates in the times series study from divorce and unemployment rates were:

Total suicide rate = 12.06 + 2.34*(divorce rate) + 0.32*(unemployment rate)

Male suicide rate = 16.65 + 3.12*(divorce rate) + 0.51*(unemployment rate)

Female suicide rate =7.50 + 1.66*(divorce rate) + 0.14*(unemployment rate)

Total homicide rate = 0.39 + 0.38*(divorce rate) + 0.04*(unemployment rate)

Setting the divorce rate and unemployment rate to zero gives natural suicide rates of 12.06, 16.65 and 7.50 for the total, male and female suicide rates, respectively and 0.39 for the homicide rate. Thus, in an ideal Belgium (sociologically), the suicide rate might be close to 12 per 100,000 per year and the homicide rate close to 0.4.

Using the same technique, the following equation estimated the natural suicide rate for the ten provinces:

Total suicide rate = 10.91 + 3.39*(divorce rate) + 0.14*(unemployment rate)

Thus, if there were no divorce and no unemployment in the provinces, the estimated natural suicide rate based on the ecological study in Belgium would be 10.91.

Discussion

The time-series analysis (Study 1) found that suicide rates in Belgium were positively associated with indices of social disintegration and weakened regulation as predicted by Durkheim's (1897) classic theory of suicide. This association was found both in males and in females and for the total suicide rates. However, in our study homicide rates showed similar associations with these social indicators as those for suicide, the opposite of the prediction made by Henry and Short (1954). Apparently, homicide and suicide require different theoretical explanations (Lester, 1995).

Study 1 found few correlates of the provincial suicide rate in Belgium. Only population density and the ethnicity of the provinces (i.e., Flemish versus Wallonian) were significantly associated with the suicide rate in the ecological study. A negative correlation between suicide mortality and population density has also been reported in the study of community-level correlates of suicide mortality in Flanders (Hooghe & Vanhoutte, 2011). Earlier studies on the regional differences in epidemiology of suicide in Belgium (Moens et al., 1988; Reynders et al., 2011) found higher suicide rates in the French-speaking provinces of Wallonia than in Dutch-speaking Flanders, a phenomenon possibly related to differences in availability of suicide methods, socio-economic factors and cultural differences between these two parts of Belgium. Contrary to results of the time-series analysis, marriage, divorce and unemployment rates did not yield significant results. This disparity between the results of the two components of Study 1 might be explained in relation to the different level of analysis:

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the time series study used aggregated data for the whole of Belgium while the ecological study focused on data for the ten provinces. The associations between socio-economic characteristic and suicide might depend on the size of areal units, and the impact of variables related to social integration and regulation may vary on different levels of social organization (Rehkopf & Buka, 2005). The present study did not allow testing these assumptions; however, smaller units may be more homogenous sociologically and better reflect the socio-economic position of an individual, and some contextual processes related to social cohesion or networks might work differently on smaller levels of aggregation (Rehkopf & Buka, 2005).

Study 2 showed that if divorce and unemployment rates in Belgium and in the ten provinces were zero, there would still be positive and nonzero suicide and homicide rates. The estimated natural rate based on a time-series analysis was 12.1 per 100,000 for suicide (and 0.4 per 100,000 for homicide), not far different from an estimate of 10.9 per 100,000 in the ecological study and 10.3 per 100,000 over 1950-1985 reported earlier by Yang and Lester (2009). Such positive, nonzero natural suicide rates have also been found in other countries in Europe, as well as in North America, Asia and in Australia (Yang & Lester, 2009). Of interest, the estimates of the natural suicide rate differ considerably among countries, ranging from 2.9 per 100,000 in Norway and 5.0 per 100,000 in the Netherlands to 19.3 per 100,000 in Sweden and 25.0 per 100,000 in Japan. A number of explanations have been proposed regarding the question why natural suicide rates differ between nations (Yang & Lester, 2009). Genetically caused, physiologically based factors, such as the Finno-Ugrian gene, found primarily in Finnish and Hungarian people (Voracek, Fisher, & Marusic, 2003) and the distribution of blood types associated with psychiatric disorder and suicide (Lester, 2004), have been proposed as factors determining the differential natural suicide rates of different nations. Nonetheless these explanations remain speculative and require further studies.

The present study has several limitations. All of the measures used in the present study (suicide and homicide rates and social indicators) increased over time during the period studied. Thus, there was a high degree of inter-correlations between all of the variables. Furthermore, many social indicators might be examined for their association with suicide and homicide rates. However, in order to estimate the natural suicide and homicide rates, it is necessary to have variables that can be set to an 'ideal' level, and so it is appropriate to use social indicators (such as unemployment) than can be set to zero. Nonetheless, choosing other social indicators for the regression equation might give different estimates of the natural suicide and homicide rates. The present study is also limited by the absence of data for the suicide rate in Belgium for recent years and by the small sample size for the regional study. Future research should update the time-series study as more recent data become available and expand the regional study to smaller communities, for example, at the district (arrondissement) level, so that the sample size for the regions is larger, thereby permitting a more reliable analysis.

Conclusions

The time series study provided support for the Durkheim's (1897) theory of suicide, as indicators of social integration correlated with suicide rates in Belgium in the expected direction. The ecological study found a different set of correlates than the time series study suggesting that the impact of socio-economic variables might differ depending on the aggregation level. Our results did not support an assumption that suicide and homicide may be generated by similar etiological factors, the only difference being the direction of the expressed aggression. The estimations of natural suicide rate found for Belgium and the provinces supported the proposition that, even if the socio-economic conditions were made 'ideal', the suicide rate in the country would still be positive and nonzero.

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Original Research

Variations in Suicidal Ideation Among Substance Users

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***Abstract*:** Research suggests that substance use may be a risk factor for increased suicidal ideation. Impulsivity is also suggested to be associated with suicidal thoughts/ behaviors and substance use. This study sought to determine (1) if trait impulsivity is predictive of both heavy episodic drinking and suicidal ideation; (2) whether there is a positive correlation between the number of substances used and both suicidal ideation and impulsivity; (3) if substance use would predict suicidal ideation above and beyond other risk factors associated with suicide; and (4) whether substance dependence would be a better predictor than substance abuse or heavy episodic drinking. Data was collected from 82 participants through self-report and semi-structured interviews. Analyses indicated that substance use classification, poly substance use, and severity of use predicted severity of suicidal ideation. Trait impulsivity accounted for a significant amount of the variance in both suicidal ideation and substance use. Findings suggest that it would be productive to gather information regarding past and current substance use when evaluating risk for suicide. Also, treatment for at risk clients should include techniques to assess for and decrease trait impulsivity.

Keywords: suicidal ideation, suicide, substance use, substance dependence, impulsivity

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Suicidal thoughts and behaviors are a worldwide public health concern with disturbing prevalence rates. A review by Nock, Borges, Bromet, Cha, Kessler, & Lee (2008) reported 16.7 per 100,000 individuals commit suicide worldwide and 10.8 per 100,000 die by suicide in the United States (National Center for Injury Prevention and Control, 2008). Additionally, one in ten college students and 5.6 to 14.3 percent of adults across the country have seriously considered suicide (Brener, Hassan, & Barrios, 1999; Nock et al., 2008). Risk markers associated with suicide have included being in the age range of the teens, early twenties, or elderly, being female, previously married, lower education, previous suicide attempts, and meeting diagnostic criteria for at least one mental disorder (Borges, Walters, & Kessler, 2000; Kessler, Berglund, Borges, Nock, & Wang, 2005; Kessler, Borges, & Walters, 1999; Rudd et al., 2006). Such pervasiveness indicates a need for further attention and research regarding risk markers for suicidal thoughts and behaviors.

Substance Use and Suicidality

Substance use disorders are included as one of the known mental health problems associated with suicidal thoughts and behaviors (Kessler et al., 2005). More specifically, substance use has been identified as a risk marker in several studies including those that found individuals who engage in heavy episodic drinking are three to four times more at risk for suicide than the general population, those with diagnosable alcohol use disorders were ten times more at risk, and those with opiate dependence were 13.5 times more at risk (Conner, Britton, Sworts, & Joiner, 2007; Pfaff, Almeida, Witte, Waesche, & Joiner, 2007). Additional studies have identified current substance use and the number of substances used as a better predictor of suicidality than past use, single substance use, or type of substance used (Brenner, et al., 1999; Borges et al., 2000; Landheim, Bakken, & Vaglum, 2006). Notably, it has also been reported that while depressive symptoms significantly predict suicidal ideation and history of attempts, those who consume alcohol in high quantities and at low frequencies tend to have the most suicide attempts (Pfaff et al., 2007).

Impulsivity, Substance Use, and Suicidal Ideation

As described by Pfaff and colleagues (2007), it is possible that suicidal behaviors and problematic substance use may be an unplanned reaction to a stimulus for which the individual has not considered the potential negative consequences. Brady, Myrick, and McElroy (1998) stated that individuals with impulse related disorders and/or who exhibit other impulsive behaviors are more likely to use substances. State and trait impulsivity, as measured by both self-report measures and laboratory studies, have been related to poly substance use, substance abuse and substance dependence (Allen, Moeller, Rhoades, & Cherek, 1998; Bond, Verheyden, Wingrove, & Curran, 2004; Kirby, Petry, & Bickel, 1999; Kruedelbach, McCorkmick, Schulz, & Grueneich, 1993; Lane, Moeller, Steinberg, Buzby, & Kosten, 2007; Madden, Petry, Badger, & Bickel, 1997; McCown, 1988; Mitchell, 1999; Moss, Yao, & Panzak, 1990; O'Boyle & Barratt, 1993; Patton, Stanford, & Barratt, 1995; Swann, Dougherty, Pazzaglia, Pham, & Moeller, 2004; Vuchinich & Simpson, 1998). Evidence has been presented in previous research that a relationship exists between impulsivity and both suicidality and substance use (Allen et al., 1998; Brady et al., 1998; Cherpitel, 1993; Magid & Colder, 2007; Mann, Waternaux, Haas, & Malone, 1999; McCown 1988; Moss et al., 1990; Neufeld & O'Rourke, 2009; O'Boyle & Barratt, 1993; Patton et al., 1995; Smith, Fisher, Cyders, Annus, Spillane, & McCarthy, 2007; Smith, Witte, Teale, King, Bender, & Joiner 2008; Swann et al., 2004; Witte, Merrill, Stellrecht, Bernert, Hollar, Schatschneider, & Joiner 2008) suggesting examination of this relationship may be beneficial for further understanding of both behaviors.

It is clear that suicide is a significant public health concern. While there is some evidence that substance use and impulsivity are risk factors for suicidal thoughts and behaviors, information regarding the specific aspects of substance use and impulsivity that contribute to this risk is lacking. In addition to identifying similar risk factors as determined by previous research the current study expected to find trait impulsivity as predictive of both heavy episodic drinking and suicidal ideation. Considering poly substance use, we hypothesized a significant positive correlation between the number of substances used and both suicidal ideation and impulsivity. The current study further predicted that the incremental validity of substance use would predict suicidal ideation above and beyond other risk factors associated with suicide. Finally, we hypothesized that substance dependence would be a better predictor than substance abuse or heavy episodic drinking.

Method

Participants

Given prior research, as noted in the introduction, demonstrating heighted risk of suicide in young adult populations, recruitment targeted this demographic. Furthermore, prior research indicates

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that suicide is not uniquely associated with clinical populations (Garlow, Rosenberg, Moore, Haas, Koestner, Hendrin, & Nemeroff, 2008; Luoma, Martin, & Pearson, 2002). Thus, recruitment efforts were concentrated on young adults in both clinical and non-clinical settings during this cross-sectional study. More specifically, participants were drawn from an outpatient community mental health clinic (*n* = 31) and a university campus (*n* = 51). The mean age was 25.8 across both population samples, falling within the demographic known to evidence heightened risk, as intended. A majority of the participants were female (65.9%), single (78.0%), and Caucasian (62.2%; 13.4% African-America; 9.8% Hispanic; 3.7 % Asian or Pacific Islander; 1.2% Native America; 9.8% other). The study was conducted in compliance with the ethical code (American Psychological Association, 2010) and approval from the Institutional Review Board.

Measures

Several interview and self-report measures were utilized to collect relevant study information. The following measures were counter-balanced to minimize order effect.

Structured Clinical Interview for DSM-IV (SCID) substance use module. The substance use module of the SCID-I Research Version (First, Gibbon, Spitzer, & Williams, 2002) was administered in the current study. Previous research indicates that the substance use module maintains good inter-rater and test-retest reliabilities (Martin, Pollock, Bukstein, & Lynch, 2000; Zanarini, Skodol, Bender, Dolan, Sanislow, Morey et al., 2000). This measure was useful in collecting information about frequency, severity and classification of substances used.

Alcohol Use Disorders Inventory Test (AUDIT). The AUDIT (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) supplemented information regarding alcohol use, particularly heavy episodic drinking. This measure has demonstrated high internal consistency and good test re-test reliability (*r* = .86; Babor et al., 2001).

Scale for Suicide Ideation (SSI). The SSI (Beck, Kovacs, & Weismann, 1979) has been reported to have good inter-rater reliability (*k* = .83), internal consistency (α = .84 to .89), and concurrent validity when compared to the Beck Depression Inventory (*r* = .41; Beck, Brown, & Steer, 1997; Beck et al., 1979). The SSI was administered as a measure of the severity and frequency of suicidal ideation currently and at the worst period.

UPPS-P Impulsivity Behavior Scale (UPPS-P). The UPPS-P (Lynam, Smith, Whiteside, & Cyders, 2006) is a 59-item self-report measure with a five factor structure; Positive Urgency, Negative Urgency, Lack of Perseverance, Lack of Planning, and Sensation Seeking. Previous studies on the UPPS (Whiteside & Lynam, 2001) determined good internal consistency among the facets, ranging from a coefficient alpha of .80 to .89 (Cyders & Smith, 2007; Smith, Fischer, Cyders, Annus, Spillane, & Mccarthy, 2007). Discriminant and convergent validity has also been established (Cyders & Smith, 2007; Smith et al., 2007). The Positive Urgency facet added to the UPPS-P has been evaluated and found to have high internal consistency (α = .94) and good convergent validity based on a multi-trait multi-method analysis (*r* = .65; Cyders & Smith, 2007). This measure was used to examine the relationships between trait impulsivity, substance use and suicidality, including an examination of the predictive ability of the individual facets.

Psychiatric Diagnostic Screening Questionnaire (PDSQ). The PDSQ (Zimmerman, 2002) is a screener for psychiatric diagnoses that fall on axis I of the DSM-IV. Previous literature describes good internal consistency (α = .85; alpha range of .66 to .94), acceptable to good test-retest reliability (α = .61 to .93), and an average convergent validity coefficient of .64 (Zimmerman, 2002). The PDSQ was used to collect information about additional risk factors for suicide to be used as covariates in several of the study analyses.

Data Analyses Plan

The variables being studied are considered dimensional rather than categorical given that suicidal ideation and substance use may be conceptualized as having a range of severity. In order to increase the variability in severity, the two participant groups were combined in the analyses. Analyses focused on substance use and impuslvity characteristics that are predictive of the scores for current or worst period of suicidal ideation. Nonparametric bivariate correlations first focused on identifying the variables with the strongest relationships with suicidal ideation to narrow the number of relevant variables then included in the final analysis.

A stepwise regression was conducted in which the independent variables were those identified through other study analyses (as described in the following results section), correlation tables, and the variables relevance to the hypothesis that substance use may predict suicidal ideation. One such independent variable was a composite score representing specific Internalizing disorders on the PDSQ found to be correlated to SSI worst (which included major depressive disorder, post-traumatic stress disorder, obsessive compulsive disorder, panic disorder, generalized anxiety disorder, and somatization disorder subscales). Research on the Internalizing (as well as Externalizing) has received

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considerable support (Krueger & Markon, 2006). Additional variables included in this regression analysis included the subscale score for psychosis on the PDSQ, lack of premeditation on the UPPS-P, the number of substances used, the number of symptoms for alcohol problems endorsed on the SCID-I , the number of symptoms for drug problems endorsed on the SCID-I, marital status, highest frequency of substance use within a month, whether criteria was met for dependence, age, gender, and if drugs in the "other" classification was the most used substance. The later variable was selected based on a desire to examine if drug classification was predictive of suicidal ideation and "other" had the highest, though still extremely small, relationship to worst period of suicidal ideation.

Results

The relationship of impulsivity to substance use and suicidal ideation

The first regression, with heavy episodic drinking (HED) measured by the AUDIT, found the UPPS-P facets accounted for approximately 9.4% of the variance in HED (n = 81). The UPPS-P facets were identified as accounting for 9.6% of the variance in the score for worst period of suicidal ideation. Both regression analyses identified lack of premeditation as being most influential for both dependent variables (β = .28, p = .04 mutually). No other facets on the UPPS-P significantly contributed to the variance of the dependent variables.

The relationship of substance use to impulsivity and suicidal ideation

Spearman's rho correlations were conducted to determine if poly substance use is related to increased scores on suicidal ideation (Table 1) and impulsivity (Table 2). Results suggest that the number of substances used has a significant positive relationship to SSI scores for both current and past suicidal ideation. Observations regarding the lack of association captured between the PDSQ suicide score and the number of substances used may potentially be due to the limited number of questions representing suicidal ideation on the PDSQ or the difference in reporting method (self-report versus interview).

An examination of the relationship between the UPPS-P impulsivity facets and the number of substances via Spearman's Rho correlations yielded a significant positive relationship with negative urgency, lack of premeditation, and lack of perseverance for the total sample (Table 1). Thus an association exists between aspects of impulsivity and the number of substances used.

Analysis of variance was conducted to evaluate substance dependence as a superior predictor of suicidal ideation than abuse or HED. Participants were categorized based on the highest level of substance problems including: a) no substance use, b) occasional substance use, c) criteria met for substance abuse or endorse HED, and d) criteria met for substance dependence. The results, reveal a significant difference among the mean SSI-Worst scores for the four groups F (3, 78) = 2.760, p = .048, partial η^2 = .096. A Tukey post hoc analysis suggesting that the largest difference in means was present between those who occasionally use substances (M = 8.95) and individuals who met criteria for substance dependence (M = 17.29).

Predicting suicidal ideation

Spearman's Rho correlations were again examined to determine if the current study supports the risk factors for suicide identified in previous studies and can be found in Tables 1 and 2. As described above, the hypothesis that the incremental validity of substance use will predict suicidal ideation, over and above other factors associated with suicidal ideation was tested using a stepwise multiple regression. The results displayed in Table 3 indicate that the Internalizing composite from the PDSQ accounted for 24% of the variance in suicidal ideation (F (1, 75) = 24.37, p < 0.01). The number of symptoms endorsed on the SCID-I alcohol section significantly contributed to the regression equation model with an increase of .05 to R square (F (2, 74) = 15.43, p < 0.01). Whether the participant endorsed being married versus single, separated, or divorced also significantly increased R square by .05 (F (3, 73) = 12.91, p < .01); however, the B coefficient for this variable was negative, indicating an indirect relationship. This suggests that being single, separated, or divorced are the predictive components for increased suicidal ideation.

Discussion

Results of the current study indicate that symptoms of alcohol abuse/dependence demonstrate incremental validity in predicting worst period of suicidal ideation, over and above Internalizing psychopathology. While number of alcohol abuse/dependence symptoms is a reliable predictor of suicidal thoughts when accounting for mood related pathology, Internalizing disorders in the current study were found to also play a significant role in predicting suicidal ideation. Finally, not endorsing being married was identified as a significant predictor of suicidality. One interpretation of this finding is that being married functions as a protective factor for suicidal thoughts. Similarly, Brener and colleagues (1999) identified those who cohabitated with a romantic partner or participated in a college fraternity were less likely to experience

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suicidal ideation. These findings may relate to the idea that positive social interactions, or perceived belongingness, may lower suicidal ideation.

Further exploration of components of substance use that influence suicidal ideation identified a difference in the mean scores for severity of suicidal thoughts between substance use groups, particularly those who met for substance use dependence had a higher severity of suicidal thoughts than those who occasionally used substances. This finding is congruent with research presented by Borges et al. (2000) detecting an increasing odds ratio of suicidal ideation as severity of substance use increased. However, it was surprising to see that individuals who did not report substance use did not have a significantly different score on worst period of suicidal thoughts from those who abused or were dependent. This may be a consequence of there being a limited number of participants within each substance use group. Additionally, a moderate positive relationship between number of substances used and suicidal thoughts was discovered in the current study, indicating that as the number of substances used over a lifetime increases the severity of suicidal ideation increases. This result is consistent with previous findings (Borges et al., 2000).

The current study found that the number of substances used was associated with the impulsivity facets; negative urgency, lack of premeditation, and lack of perseverance. This supports the hypothesis that poly substance users exhibit higher impulsivity, also reported by McCown (1988) and O'Boyle & Barratt (1993). Given negative urgency's association with poly substance use, individuals with an impulsive reaction to negative events may cope with substances. Additionally, Cyders & Smith (2007) determined lack of premeditation and lack of perseverance may fall under the broader construct of deficits in conscientiousness. In relation to the current findings this may indicate that multiple substance users may be more likely to engage in activities without a conscientious effort, resulting in impulsive substance use without consideration of potential consequences.

Impulsivity, particularly lack of premediation, was also found to be a significant predictor for both heavy episodic drinking and severity of suicidal ideation. The inability to plan resulting in drinking more than would necessarily be desired is also supported by previous research (Magid & Colder, 2007). Additionally, individuals who struggle with severe suicidal ideation may not be considering all their options when planning for their future.

We also attempted to validate previous research regarding risk factors associated with suicidality. Some, but not all, previously identified risk factors were identified in the current study. Unlike Landheim et al. (2006) a certain gender was not identified as risk factors for suicidal thoughts. Kessler et al. (1999) identified those in their teens and early twenties at higher risk, given the age range recruited in the current study and based on Kessler's findings we were surprised to find a significant positive relationship between age and suicidal ideation. The inability to replicate previous findings regarding gender and age may be due to limits in variability in the current sample, particularly considering this study specifically targeted the young adult age group previously identified as being at higher risk for suicidality. Assessing the generalizability of these findings to other age groups is recommended for future research. As previously discussed being married was identified as functioning as a protective factor against suicidal thoughts; however, the characteristics of the relationship between suicidal ideation and different marital status suggests that having lost that particular type of social support may put an individual at higher risk for suicidal thoughts. However, it is possible that these associations with relationship status are more indicative of relational impairment due to psychological distress, including suicidal ideation.

Consistent with the suicide literature, a relationship between psychiatric symptoms and suicidal ideation was found (Landheim et al., 2006: Rudd, et al., 2006). The correlation coefficients suggests that Internalizing psychopathology may have more effect than Externalizing psychopathology, suggesting a potential difference in level of risk between different axis I disorders. The overall T-score on the PDSQ was found to have a moderate positive correlation to both current and past suicidal ideation, indicating level of distress may be a separate risk factor. Bryan and Rudd (2012) investigated the experiences of active duty soldiers in the 24 hours preceding a suicide attempt and determined emotional distress was the most common experience, followed by external experiences and trauma related experiences. These findings indicate a need for further study on the relationship between suicidal ideation and subjective distress rather than diagnostic symptoms.

Results from the current study also indicate that suicide risk assessments of young adults need additional inquiries in specific risk factors. Particularly, information regarding history of problematic alcohol use and any substance dependence should be standard practice in assessing for suicide risk. Additionally, clinicians should be aware of subjective distress in addition to psychiatric symptoms being experienced by a client. Some of the current findings may also be useful in extrapolating suggestions for future research on clinical interventions. Chiefly, research into the potential

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benefits of encouraging clients experiencing suicidal thoughts to engage in social activities or increase the number of sessions attended during times of emotional distress. This may simulate the protective nature of marriage, or perceived belongingness, through other social support. Furthermore, if impulsivity appears to be a relevant risk factor for a client, examination of the incorporation of skills training to reduce impulsivity, such as mindfulness, may be helpful.

Directions for future research, that may address limitations in the present study, include replication of the current findings in a diverse and large sample to assist with generalizability. Additionally, a longitudinal study design would limit the effect of retrospective data collection and allow the field to gather evidence that suggests a causal direction between substance use and suicidal thoughts and behaviors. Finally, the inclusion of additional independent variables, such as family history of suicide or mental illness, history of childhood adversity, and personality disorders, would provide additional indication of who is at risk for suicidal ideation and behaviors.

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Appendix

Table 1

Summary of Spearman Correlations Between Substance Use and Suicide Variables to All Other Study Variables- Total Sample

				PDSQ		SCID				SSI	
Variable	SUD	Frq SU	No. subs	Alcohol	Drug	Alcohol	Drug	AUDIT	PDSQ suicide	Current	Worst
Age	.27*	.29	.34**	-.03	.00	.32**	.21	.06	.11	.24*	.00
Education	-.02	.03	.05	-.13	-.13	-.01	-.01	-.14	.18	.14	-.10
PDSQ scales											
MDD	.13	.09	.13	.10	.12	.25*	.10	.07	.63**	.51**	.40**
PTSD	.20	.21	.26*	.06	.07	.25*	.18	.04	.24*	.21	.28*
Eating	.23*	.09	.20	.20	.34**	.21	.20	.13	-.07	-.02	.12
OCD	.21	.23*	.17	.14	.34**	.23*	.26*	.14	-.03	.18	.28**
Panic	.09	.07	.08	-.08	.31**	.14	.14	.06	.24*	.31**	.32**
Psychosis	.37**	.22*	.29**	.25*	.26*	.35**	.34**	.31**	.26*	.26*	.33**
Agoraphobia	.12	.11	.11	.02	.24*	.12	.10	.09	.03	.09	.11
Social phobia	.24*	.19	.20	.20	.31**	.31**	.20	.22	.10	.17	.19
GAD	.32**	.27*	.26*	.15	.28**	.33**	.21	.24*	.33**	.42**	.35**
Somatization	.40**	.31**	.39**	.22*	.31**	.39**	.21	.20	.13	.15	.35**
Hypochondriasis	.16	.09	.15	.21	.07	.22*	.01	.22	.13	.13	.11
Internal comp	.31**	.26*	.31**	.17	.32**	.38**	.25*	.21	.42**	.46**	.44**
External comp	.59**	.53**	.45**	.85**	.69**	.61**	.54**	.71**	.01	.06	.29**
PDSQ T-score	.39**	.33**	.37*	.27*	.41**	.44**	.36**	.30**	.35**	.41**	.42**
UPPS-P Scales											
Negative urgency	.25*	.22	.23*	.15	.32**	.29**	.22	.23*	.06	.15	.30**
Positive urgency	.09	.11	.14	.01	.33**	.09	.22	.03	.22*	.27*	.33**
Lack of premeditation	.23*	.25*	.38**	.28**	.25*	.24*	.34**	.29**	.35**	.30**	.35**
Lack of perseverance	.29**	.23*	.27*	.09	.34*	.31**	.26*	.23*	.02	.28*	.21
Sensation Seeking	.08	.07	.20	.18	-.02	.01	.11	.12	.15	-.01	.14

Table continues

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Table continued

Note. SUD = The highest substance use group met; PDSQ = The Psychiatric Diagnostic Screening Questionnaire; Frq SU = Highest frequency of substance use recorded in days per month; No. subs = The number of substance classifications used in lifetime; SCID = The number of symptoms endorsed on the Structured Clinical Interview for DSM-IV Disorders during heaviest period of use; AUDIT = Alcohol Use Disorders
Identification Test; SSI = Scale for Suicide Ideation; MDD = Major depressive disorder; PTSD = Posttraumatic stress disorder; OCD = Obsessive-Compulsive disorder; GAD = Generalized anxiety disorder Internal comp = Composite score for internal subscales; External comp = Composite score for external subscales.
* $p < .05$. ** $p < .01$; two-tailed.

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Table 2

Summary of Spearman Correlations for Substance Use Variables and Suicide Measures- Total Sample

Variable	1	2	3	4	5	6	7	8	9	10
1. Frq SU	-									
2. No. substance	.72**	-								
3. PDSQ alcohol	.38**	.30**	-							
4. PDSQ drugs	.46**	.42**	.29**	-						
5. SCID alcohol	.70**	.60**	.54**	.36**	-					
6. SCID drugs	.71**	.79**	.33**	.57**	.63**	-				
7. AUDIT	.57**	.53**	.73**	.35**	.70**	.53**	-			
8. PDSQ- Suicide	.05	.11	-.01	-.02	.10	.17	-.07	-		
9. SSI- Current	.24*	.31**	-.02	.06	.24*	.33**	.05	.55**	-	
10. SSI-Worst	.22*	.31**	.24*	.17	.35**	.30**	.25*	.43**	.52**	-

Note. Frq SU = Highest frequency of substance use recorded in days per month; No. substance = The number of substance classifications used in lifetime; PDSQ = The Psychiatric Diagnostic Screening Questionnaire subscale scores; SCID = The number of symptoms endorsed on the Structured Clinical Interview for DSM-IV Disorders during heaviest period of use; AUDIT = Alcohol Use Disorders Identification Test; SSI = Scale for Suicide Ideation.

*p< .05. ** p < .01; two-tailed.

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Table 3

Stepwise Multiple Regression Analyses Predicting Severity of Worst Period of Suicidal Ideation

Variable	*B*	*SE B*	*β*	R^2 (Adjusted R^2)	ΔR^2
Step 1:				.25 (.24)**	
Internal composite	.52	.10	.50**		
Step 2:				.29 (.28) *	.05
SCID - Alcohol	.83	.36	.23*		
Step 3:				.35 (.32)*	.05
Married	-7.13	2.94	-.23*		

Note. Internal Composite = sum of major depressive disorder, post-traumatic stress disorder, obsessive compulsive disorder, panic disorder, generalized anxiety disorder, and somatization disorder subscales on The Psychiatric Diagnostic Screening Questionnaire; SCID - Alcohol= The number of symptoms endorsed on the Structured Clinical Interview for DSM-IV Disorders during heaviest period of alcohol use.

* $p < .05$. ** $p < .01$.

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Qualitative/Quantitative Research

Thematic categorization of coroners' reports of Indigenous and non-Indigenous suicide using the International Classification of Functioning, Disability and Health

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***Abstract*:** This study sought to explore whether using the structure of the International Classification of Functioning Disability and Health (ICF) for the thematic coding of coroners' reports would provide insights into the array and relative importance of different influential factors in Indigenous and non-Indigenous suicide. A total of 411 coroners' reports from the Northern Territory, Australia, were thematically analyzed according to an adapted ICF structure, using a process established by consensus across authors. Categorized statements were tallied and represented graphically. The ICF structure provided a meaningful way of categorizing factors. Key factors associated with suicide across both Indigenous and non-Indigenous cases comprised the following in order of frequency of identification by coroners. *Environmental Factors*, namely (a) alcohol and drug abuse, categorized under *Products and technology* and (b) conflict and relationship breakdown, categorized under *Support and relationships*. The other major factors were within the category *Body functions and structures*, namely (c) mental illness and mental health concerns, categorized under *Mental functions*. Substantial differences were evident between factors for Indigenous and non-Indigenous cases. An array of factors was associated with completed suicide, with considerable variability across populations. There were indications of the relative importance of environmental factors. Implications are noted for suicide prevention and the utility of the ICF in psychiatry and the study of suicide.

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Suicide is a leading cause of death worldwide and a particularly concerning public health issue. In Indigenous communities in the Northern Territory (Australia) the suicide rate is more than double that of non-Indigenous communities, and four times the national average (Pridmore & Fujiyama, 2009). Numerous factors have been proposed as contributing to suicide including, social (Durkheim, 1951), medical (Dorpat & Ripley, 1960; Scocco, Marietta, Tonietto, Dello Buono, & De Leo, 2000), environmental (Foster, 2011), predicament-related (Pridmore, 2009), and other factors.

Likewise, numerous methods have been applied to study of suicide. Beyond statistical and epidemiological studies; in research which seeks to explore cases, psychological autopsy has been an important approach (Bertolote, Fleischmann, De Leo, & Wasserman, 2004; Scocco et al., 2000). While this method provides rich data, it may also be subject to selection bias, the confounding influence of extraneous variables, and poor standardization of assessment instruments (De Leo & Evans, 2004; Pouliot & De Leo, 2006). More recently, concerns over validity and reliability of information have led to calls to abandon psychological autopsies in some settings (Hjelmeland, Dieserud, Dyregrov, Knizek, & Leenaars, 2012). Computer assisted lexical analysis of coronial reports has been trialed (Kuipers, Appleton, & Pridmore, 2013) and found to be useful, but somewhat limited for in-depth interpretation.

Approaches using thematic and sociological analyses of coronial reports and findings have also been used (Scourfield, Fincham, Langer, & Shiner, 2012; Valle, Gosney, & Sinclair, 2008; Ward, Shields, & Cramer, 2011). While these studies have led to important new insights, there are also acknowledged limitations in such analyses. In this as in all research, the methods, conceptual frameworks and even research questions can influence the nature of factors identified (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In particular, using these approaches, the classification structure (themes) can substantially influence the nature of the findings (Sandelowski & Barroso, 2002). While in some qulaitative settings, where themes emerge from the data, this may be desirable; it may also lead to unintentional bias, and a failure to let the data speak in cases where the themes are generated by the researcher.

In response we sought to conduct a thematic coding of coroner's reports, but to do so by applying a formally accepted, and widely adopted classification system to structure our thematic coding. We noted that psychiatry classification systems such as the DSM-IV (APA, 2000) may be strongly medically oriented, and may not accommodate numerous social and other dimensions of suicide, and that conversely, measures of social well-being may lack appropriate psychiatric and psychological dimensions. We noted that a highly useful framework based on a broad bio-psycho-social conceptualization, that portrays inter-related constructs of health conditions, is the World Health Organization's International Classification of Functioning, Disability and Health (ICF) (WHO, 2001). The ICF is part of the WHO "Family of International Classifications", which includes the International Classification of Diseases (ICD).

The ICF is a classification system aimed at supporting standardized identification and description of health and health-related domains (Üstün, Chatterji, Bickenbach, Kostanjsek, & Schneider, 2003). The ICF is reported to have application across cultures, to be etiologically neutral and to be applicable with any health condition (WHO, 2001). It has been used for conceptualizing and targeting interventions for patients with complex health conditions (Allet et al., 2007), for informing professional practice, and for facilitating research (Cerniauskaite et al., 2011). While it has not been extensively used in psychiatry (Álvarez, 2012), the ICF focuses on human functioning, a domain which has attracted some interest from psychiatrists in the region (Mellsop et al., 2011). The ICF would appear to have potential application and utility in psychiatry (Ávila, Cieza, Anaya, & Ayuso-Mateos, 2012), and cross-cultural psychiatry (Kastrup, 2011; Sjolund, Kastrup, Montgomery, & Persson, 2009) (Figure 1)

The full form of the ICF includes a comprehensive coding system that provides a standard language for describing human functioning, disability and health. It comprises and defines a number of components, namely Body Functions, Body Structures, Activities and Participation as well as Environmental Factors (such as the physical, social, and service environment), and consists of numerous subsidiary chapters or categories within each. It also notes, but does not categorize Personal Factors (such as personality, age, culture and coping strategies). In the model overview (Figure 1), the ICF depicts a comprehensive model of health and functioning that can be used to conceptualize a variety of medical, health and welfare issues (Cerniauskaite et al., 2011; Resnik & Allen, 2007). On this basis, we sought to address the following questions:

1. Is the ICF framework suitable for categorizing suicide related data; and is this suitability

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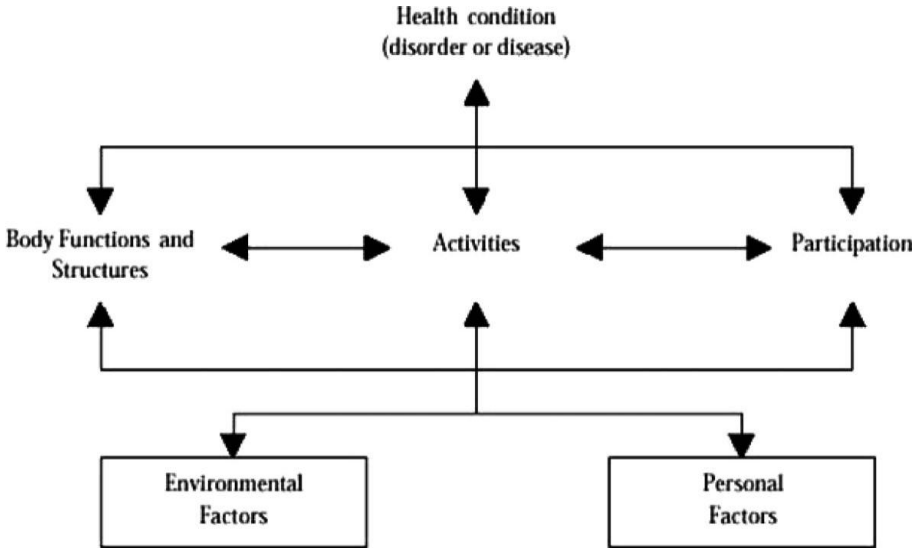
reflected in the array of factors that can be identified?

2. Does the categorization of coroners' reports using the ICF framework permit meaningful identification and summary of influential factors in Indigenous and non-Indigenous suicide?

Figure1: The ICF model



Method

The design for this study involved the application of qualitative data analysis software to perform a structured thematic coding as well as quantitative tallying and calculations of percentages of a large number of coroner's reports, using the ICF as the coding structure. Coroner's reports were drawn from the national internet based data storage and retrieval system for Australian coronial cases, the National Coroners Information System (NCIS). All cases from the Northern Territory were selected in which the coroner had determined that the cause of death was a result of intentional self harm and where an electronic record of the coroner's findings was available. Reports of deaths over the period of a decade, between July 2000 and December 2010 were included. In total, 411 cases were available and consisted of 198 Aboriginal and/or Torres Strait Islander cases and 213 non-Indigenous cases.

Electronic copies of coroner's findings were imported into QSR NVivo 8 software (QSR, 2008) for qualitative data coding. Using the software functions of assigning codes to text, any information pertaining to factors which may have been associated with each suicide was coded according to the ICF coding structure (Appendix). In particular, issues which were specifically identified by the coroner as leading up to the person taking his or her own life were identified and coded against the ICF categories.

The process of coding to this structure entailed one researcher (JA) reading each report in its entirety and then identifying all text relevant to ICF concepts at the component level (Body Functions and Structures, Activities and Participation, and Environmental Factors), and also at the chapter or category level. To ensure quality and consistency, and as a verification of the accuracy of coding, the other two experienced researchers were provided with (a) randomly selected coded sections from five of the chapters (to validate the content of the data within chapters) and (b) the coding from five randomly selected reports (to validate the accuracy of coding of text to chapters). Consensus was established through discussion of points of agreement and disagreement to determine consistent coding principles.

Where a section of text pertained to more than one component or chapter, it was coded accordingly. As reflected in the coding structure, given the topic of our research, the mental functions chapter was specifically itemized to permit identification of issues relevant to brain and mental disorders (Appendix). Thus the current adaptation of the ICF involved focusing on relevant categories, however the structure of the categorization was not altered. For example alcohol and drug abuse are categorized under Environmental Factors (and not Personal Factors as some may interpret them), and mental illness and mental health concerns are categorized under Body Functions and Structures (which implies a biological view on mental health). We sought to make our categorization consistent

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with the existing structure of the ICF. To maximize consistency in coding over time, files were analyzed year by year but not in chronological order, and the order of coding was alternated between Indigenous and non-Indigenous cases

Ethics approval was obtained in keeping with NCIS requirements (Victorian Department of Justice – Human Research Ethics Committee (CF/10/3519), which included an additional Indigenous ethical review procedure).

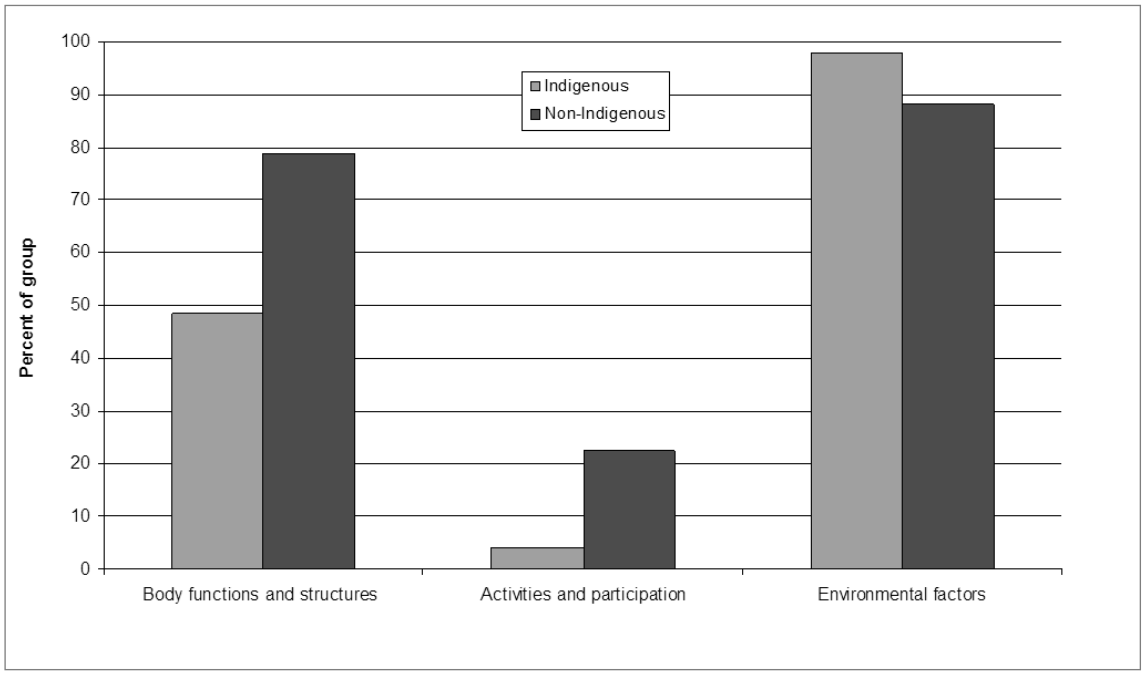
Results

The following results, while applied to the context of Indigenous and non-Indigenous suicide in the NT, provide an indication of the potential connection between the ICF and suicide-related issues.

Thematic Coding to Components of the ICF

Coding of coronial reports at the ICF component level is depicted in Figure 2. This illustrates mention of relevant concepts across all reports, and may be seen as an ICF related representation of issues described in this sample. Figure 2 reflects coding according to case rather than frequency (that is, multiple instances of coding against one component are recorded once per report, but one report may be coded against more than one component if relevant information is present in the content of the report).

Figure 2. Percentage of Indigenous and non-Indigenous cases which include reference to major ICF components



This figure illustrates that in a substantial number of Indigenous and non-Indigenous case reports (49% and 79% respectively) there was mention of body functions and structures. It also reflects that environmental factors were mentioned in the majority of cases (98% and 88%). The relevant sections (chapters) that comprise these components are detailed below.

Activities and participation were not often mentioned in coroners' reports, which suggests they were not directly reflective of the concerns of coroners. The emphasis given to this category may reflect the historical roots and flavor of the ICF, focusing on activities of people with disabilities and their participation in daily life.

Thematic coding to chapters under Body Functions and Structures

At the chapter level (Appendix), coding to *Mental functions and/or structures of the nervous system* was more frequent than for all seven of the other chapters combined. Since there were few instances of coding to other chapters, these were combined and are depicted under *Other chapters* (Appendix and Figure 3). This includes an array of instances of physical illness and injuries which may or may not have been related to the suicide, serious illnesses and evidence of previous physical injuries. Coroners' descriptions of injuries caused by the suicide itself were not included (Figure 3).

Thematic coding to chapters under Activities and Participation

As noted above, this ICF component pertains to the engagement of the person (particularly persons with disabilities) in activities of daily living and their participation in such activities), these

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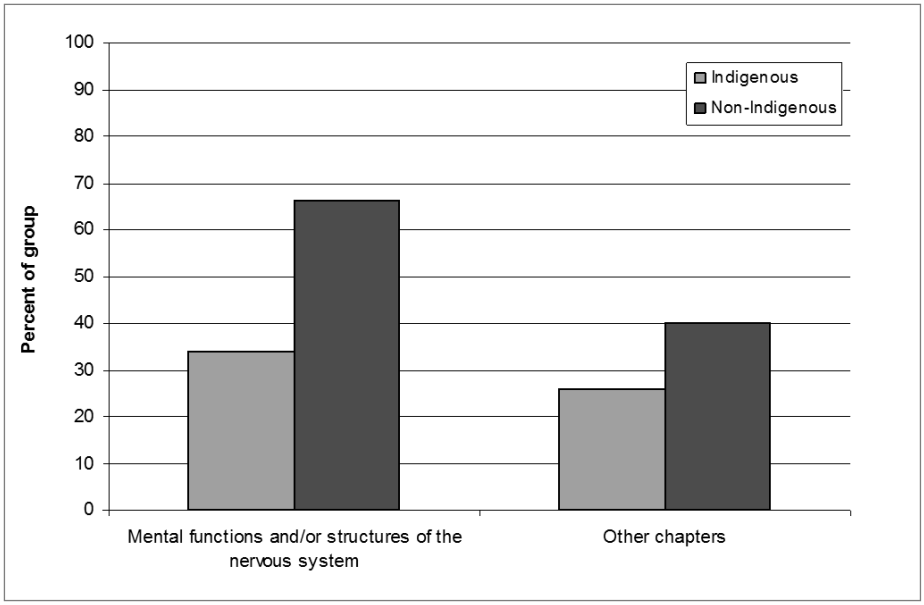
components did not have great relevance to the subject matter. This was borne out in the coding.

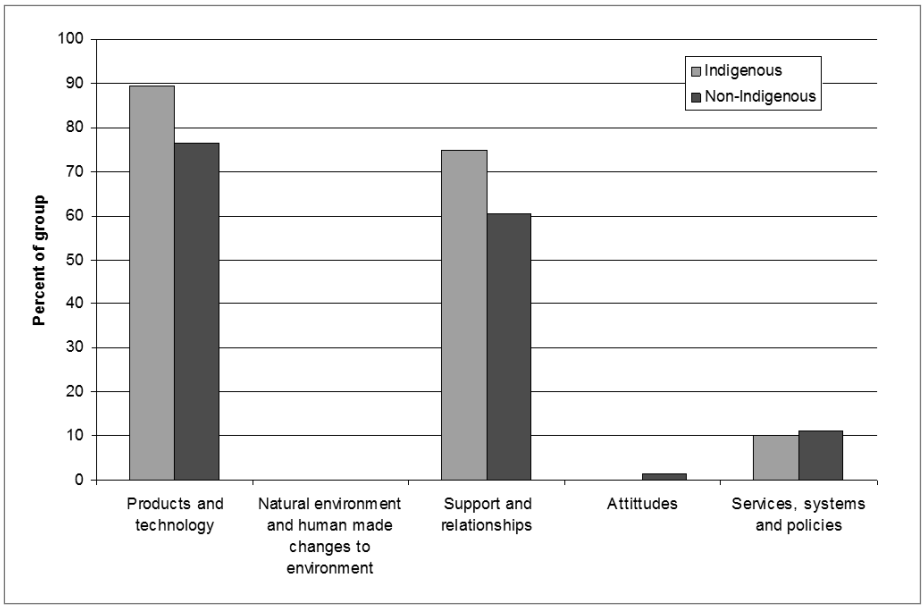
Figure 3. Percentage of Indigenous and non-Indigenous cases which include reference to chapters within the ICF Body Functions and Structures components.



Thematic coding to chapters under Environmental Factors

The relative percentages of reports in which various chapters under the ICF Environmental factors component were mentioned, are depicted in Figure 4.

Figure 4. Percentage of Indigenous and non-Indigenous cases which include reference to chapters within the ICF Environment component.



As reflected in Figure 4, a key environmental factor was *Products and technology* (which includes the use or presence of substances such as alcohol or cannabis in the blood, or the presence of illegal and prescription drugs). Similarly, *Support and relationship* issues, (which includes conflict, arguments with spouses, relatives and others, support or lack thereof, by parents and partners, or the death of a friend or relative), were frequently mentioned in reports.

No issues were coded relating to the chapter *Natural environment and human made change to the environment. Service systems and policies* were mentioned in approximately 11% of coroners reports, noting problems with the legal and housing systems (n=45), and *Attitudes* of others towards homosexuality were mentioned in 3 cases.

Discussion

With regard to the first research question, the ICF proved to be a useful tool for categorizing such data with some limitations. The use of the ICF provided informative indications of the relative proportions of factors across these coronial reports. Results obtained using these methods concur with the literature in confirming the broad array of factors that are influential in suicide. This methodology and the application of the ICF proved sensitive enough to indicate the relative frequency of categories implicated in suicide cases, and to show differences in these factors across Indigenous and non-Indigenous groups.

The bio-psycho-social underpinnings of the ICF allowed the relative importance of issues such as mental functions to be depicted alongside environmental and social factors. The ICF might provide a constructive starting point for developing a framework to assist in

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conceptualizing suicide. To further elucidate specific factors implicated in individual suicide cases, the examination of key issues such as alcohol consumption or instances of conflict prior to suicide would be required through more in-depth coding of reports.

With reference to the second research question, the current thematic classification of coroners' reports using the ICF framework resulted in a number of factors being identified as influential in cases of suicide. Figures 2 and 3 illustrate that across coroner's reports of suicide in the Northern Territory, *Body functions and structures* were mentioned frequently, and that (unsurprisingly) the majority of these instances tended to relate to *Mental functions and/or structures of the nervous system*. This suggests that in keeping with recent international research (Manoranjitham et al., 2010; Phillips, 2010), mental health issues were an important, but not ubiquitous factor in coroners' considerations. They were noted in well under half of the Indigenous suicides and just over half of the non-Indigenous suicides in our sample. As such these findings provide some support for the assertion there is a need for greater understanding of the role and prominence of mental illness in suicide (Manoranjitham et al., 2010; Phillips, 2010; Pridmore, 2009).

Further, it may be noted that the ICF chapter *Mental functions and/or structures of the nervous system* is very broad in scope. Coding to this chapter included mention of major depressive disorders, such as clinical depression and bi-polar disorders, psychiatric disorders such as schizophrenia and other disorders, for example post traumatic stress disorder, anxiety and anorexia nervosa. This category included cases where diagnosis and treatment by a medical practitioner was reported, and also cases where there were anecdotal reports from family or friends of low mood, depression or even just acting strangely. It also included a few cases in which epilepsy, prior brain damage or a brain tumor was mentioned. Despite our broad coding of this chapter, it is clear that coroners in our sample did not find mental disorders present in all cases. While this may to some extent reflect the capacity of coroners to identify mental health issues, we suggest that it may also reflect the complex array of factors beyond mental health concerns.

The pattern of fewer Indigenous cases with mental factors noted, is consistent with a recent Queensland study (De Leo, Sveticic, Milner, & McKay, 2011). These findings may reflect greater access to services for the more urban non-Indigenous population, the failure of the health system to meet the needs of the Indigenous population, the limited engagement of the Indigenous population with mental and other health services, or possibly that mental health issues do not feature as significantly in Indigenous cases of suicide as they do for non-Indigenous cases. Regardless, these data suggest that mental and physical issues were not mentioned in a substantial number of coroners' examinations of this sample of Indigenous and non-Indigenous completed suicides.

Our findings from the Northern Territory indicate that factors such as substance abuse and relationship breakdown, which have also been noted in the literature (De Leo & Evans, 2004; Scourfield et al., 2012) are highly important. Indeed our study suggests that these factors, which are categorized within *Environmental factors* in the ICF, are even more important contributing factors than mental and physical factors. *Environmental factors* as noted in figures 2 and 4 generally show that reports of Indigenous cases of suicide mentioned environmental factors (particularly *Products and technology* and *Support and relationships*) more frequently than non-Indigenous reports.

From the current findings, it would appear that *Environmental factors* are the most prevalent factors associated with both Indigenous and non-Indigenous suicide cases. The *Products and technology* chapter includes substance abuse, in particular excessive alcohol consumption, which has been implicated in suicide indirectly through inducing psychiatric problems and stressful situations, as well as indirectly by influencing inhibition and impulsive behavior (De Leo & Evans, 2004). Clearly it also impacts on *Support and relationships*, reflected in incidents of interpersonal conflict and violence. Regardless of whether factors such as alcohol and drug use are regarded as *Environmental factors* (as in the ICF) or more integral to mental functions, their importance as factors in suicide is clear.

The observation in the current study that there are differences in Indigenous and non-Indigenous suicide is supported by the literature (Hunter & Milroy, 2006; Tatz, 2004). Political and cultural factors, the legacies of colonialism, chronic unemployment, alcohol and drug use, along with a range of other disadvantages have been presented as a unique constellation of factors (Tatz, 2004). While the 'specialness' of Australian Indigenous suicide has been challenged (Dudley, 2004), the myriad of cultural, social and economic difficulties remain (Hayman, 2008; Hunter & Milroy, 2006), and such differences are evident in the current sample of coroners' reports.

To more adequately investigate these issues, analysis must go beyond aligning coding to ICF components and chapters. Such reports and cases will need to be studied more closely and individual issues examined to understand whether there are

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differences between Indigenous and non-Indigenous groups which correspond with other factors.

While these findings elucidate some dimensions of suicide, a number of limitations of the method should be noted. First, bias arising from variations in coronial recording and reporting practices should be acknowledged (Williams, Doessel, Sveticic, & de Leo, 2010). The current study drew from a relatively small jurisdiction, so there was considerable consistency across coroners involved. However, potential bias in coroners' reporting of details and causal factors across gender, Indigenous status, location, context and other factors may have substantially influenced reports, and consequently the raw data of the study.

Second, coroners' reports are not clinical documents and they may lack the "clinical focus" of other methods of assessment. However, since they use rigorous procedures, and are informed by a range of expert witnesses, friends, relatives and other stakeholders, they are valid data sources and hold considerable potential for this area of research.

Further, thematic coding may be seen as subjective, lacking the criteria and rigor of formal tools. In this study we have sought to address this concern by coding to an objective international classification system, according to established criteria and by verifying the method across researchers.

With regard to the application of the ICF to suicide research, the fact that *Personal Factors* are not specified is a considerable limitation and will have influenced the current findings. Clearly issues such as race, gender, age and educational level have substantial relevance to mental health, and their classification would be meaningful. Likewise, the degree of specificity of Mental Functions in the ICF may not currently be adequate for this area. Future revisions of the ICF may categorize these factors more clearly, which will considerably broaden its applicability to psychiatry and suicidology.

The current study confirms the use of the ICF as having relevance to the study of suicide in context. It confirms, using this independent classification system, the relative importance of environmental, mental and physical factors in suicide across Indigenous and non-Indigenous cases. Specifically it underscores the importance of alcohol, legal, illegal and prescription drugs and of relationship breakdown in cases of suicide across Indigenous and non-Indigenous populations.

The current findings provide strong support for interventions and strategies which emphasize community-based (DoHA, 2007), and social/environmentally oriented (DoHA, 2009) approaches. Psychiatry and suicide prevention activities should balance mental health interventions with strategies which may address the implications and antecedents of alcohol and drug use and relationship breakdown. Further, these results suggest that acknowledging certain limitations, the ICF could be used as a foundation for specific suicide-related classification structure or as a basis to inform interventions and assessments at the behavioral, social and population levels (Üstün et al., 2003; WHO, 2001).

Author notes

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Saxby Pridmore is a Professor of Psychiatry at the University of Tasmania, and has been studying suicide for two decades. He has a free ebook - Suicide and Predicament: life is a predicament. He received an Order of Australia for services to psychiatry.

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Appendix

ICF classification structure adapted for the current study

ICF Component	Chapter (Code relevant mention of…)

Body Functions and Structures	• Mental functions and/or structures of the nervous system. In particular, note:
	  ○ Mention of brain damage (other than as a result of the current suicide act)
	  ○ Mention of organic brain disorder (e.g. dementia)
	  ○ Mention of major depressive disorder
	  ○ Mention of low mood other than major depressive disorder
	  ○ Mention of psychosis or psychotic disorder
	  ○ Mention of other psychiatric or mental disorder
	• Other chapters
	  ○ Senses, pain, and/or the eye, ear and related structures
	  ○ Voice and speech – structures and functions
	  ○ Cardiovascular, hematological, immunological and respiratory systems – structures and functions
	  ○ Digestive, metabolic and endocrine systems – structures and functions
	  ○ Genitourinary and reproductive systems – structures and functions
	  ○ Movement related – structures and functions of the neuro-, musculo-, skeletal systems
	  ○ Skin and related structures – structures and functions

Activities and Participation	• Learning and applying knowledge • General tasks and demands • Communication • Mobility • Self-care • Participation in domestic life • Participation in interpersonal interactions and relationships • Major life areas • Participation in community, social and civic life
Environmental Factors	• Products and technology • Natural environment and human-made changes to environment • Support and relationships • Attitudes • Services, systems and policies
Personal Factors	(These are not classified in the ICF and were not coded in the current study)

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Qualitative Research

Insights into the processes of suicide contagion: Narratives from young people bereaved by suicide

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***Abstract*:** Death by suicide can have a profound and long lasting impact on the people left behind. Research has demonstrated that, in comparison to the general population, those bereaved by suicide, particularly young people, are at increased risk for suicide. However, the process of suicide contagion, as it has now become widely known, is poorly understood.

This paper examines the phenomenon of suicide contagion amongst young people who have been bereaved by suicide with data from research into student suicide in the UK (Stanley et al., 2007). It presents two in-depth case studies which draw upon participants' narratives of their experiences of suicide and their perceptions of suicide contagion. One explores the suicide of two close friends in succession and the subsequent belief among friends that this was contagious. The second explores another young person's own view of 'suicide as contagious', formed following the suicide of her best friend. Our analysis provides insights into the processes of suicide contagion and transmission not previously described, including identification, internalisation, and imitation and also Edwin Shneidman's assertion that suicide is the result of psychological pain.

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Introduction

Suicide 'contagion' refers to the process by which one suicide facilitates the occurrence of another (Gould, Wallenstein, & Davidson 1989). The term contagion is often used in relation to media reporting (for example the Werther effect (Philips, 1974)). Other terms used include imitation, copy-cat, and transmission. Such terms can sometimes be used interchangeably in the literature.

The term suicide cluster has been used to refer to the factual occurrence of two or more attempted or completed suicides that are non-randomly bunched together in space or time. Clusters have been classified as either mass clusters or point clusters. Mass clusters involve suicides that cluster in time – irrespective of geography – and are often associated with media reports. Point clusters involve suicides that are close in time and / or space (Joiner, 1999).

However, suicide clusters are a rare and underresearched phenomenon (Niedzwiedz, Haw, Hawton & Platt, 2014) and evidence for why point clusters come about is generally lacking (Haw, Hawton, Niedzwiedz, & Platt, 2013). Suicide contagion – the social transmission of suicidality from one person to another – has been put forward as an explanation for suicide clusters following the 'infectious disease' model but has not been conceptually well developed or empirically well supported. For example, in the case of an infectious disease the agent of contagion and its mechanism of transmission are clearly specified. It is questionable whether applying the language of disease to suicide in this manner is accurate or constructive. The term 'contagion' depicts the individual who dies in the wake of another death as passive and strips them of agency in suggesting that suicide can be 'caught' like a virus. The use of this term also serves to reinforce the stigmatisation of suicide by likening it to an infectious disease. For suicide, no agent of contagion or transmission mechanism has been articulated. The one exception to this is behavioural imitation which borrows from a social learning model.

Social Learning Model

The Social Learning Model (e.g., Bandura, 1977; Millar and Dollard, 1941) expresses the view that to some extent suicide has to be learned. According to this system, people can learn through observation. By observing significant others, one forms an idea of how new behaviours are performed.

On later occasions this coded information serves as a guide for action (imitation).

Internal mental states are also an essential part of this process. Human behaviour is regulated to a large extent by anticipated consequences of prospective actions. We need to be able to take into account what happens to other people when deciding whether or not to copy someone's actions. This is known as vicarious reinforcement. Bandura (1977) also stressed the role of memory as a major function involved in observational learning: a person needs to have a memory of an observed behaviour if he or she is to imitate it. Response patterns must be represented in memory in symbolic form (internalised) along with their functional value; that is their anticipated reinforcement / consequence.

According to this model then, we are more likely to imitate behaviour when: we identify in some way with the person being observed; we feel it is appropriate to ourselves and the circumstances we are in; it is performed by those who are similar to us, those who are powerful or influential, those who we aspire to be and those who are caring (Bandura, 1977).

Similar to this is the view that suicide contagion can be a culturally learned idea and behaviour. The ***idea*** of suicide as a cause of suicide was noted by Kral (1994) who draws upon the work of Emile Durkheim, Garbriel Tarde, and Edwin Shneidman to argue that suicide is a form of ***social logic*** – social logic and imitation are central to how ideas spread. Alfred North Whitehead (1933; 53) wrote that an idea 'has creative power, making possible its own approach to realization'. The person who dies communicates to those left behind the idea that this is a way of solving seemingly insoluble problems (Wertheimer, 2001) and so begins the internalization of the idea. Or, in the words of one anonymous bereaved individual, referred to by Alison Wertheimer 'it enters your bloodstream' (Wertheimer, 2001; 163).

Edwin Shneidman (1993; 1996) used the term psychache to refer to the psychological pain and mental anguish which is the common stimulus in suicide. There is some suggestion that those bereaved by suicide can inherit this pain. This can be explained by empathy. For example, individuals who are bereaved by suicide are often tormented with questions about the reasons for the death and with searching for meaning for the death. In order to answer these questions the person has to try to imagine the state of mind of the deceased – to put themselves in the shoes of the person who died, or, rather in the mind of the person who died. This activity requires empathy. So, the more a person is able to recognise and identify with the emotional

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state of the deceased person; that is, the more they are to able feel their ***psychache*** and suffering, the more likely they are then to think about how they themselves could end up there.

This explanation suggests that individuals are more likely to internalise the idea of suicide if they are able to identify and empathise with the deceased. Shneidman refers to the importance of the 'interior dialogue', a point we will return to later. This explanation is also consistent with the behavioural imitation paradigm; if, in the search for meaning of the suicide death, individuals find details to identify and empathise with, the more likely they may be to internalise the idea of suicide and imitate the behaviour.

According to Hollander (2001), the strong reactions and extreme grief of those bereaved by suicide make them more at risk of taking their own lives in the wake of a suicide of a close person. An act of suicide forces those surrounding it to face huge questions about what life means, about how to be in it, about what keeps pain from overwhelming us, and many other questions that go to the very centre of the human condition. Thus those who are bereaved by suicide are likely to experience additional challenges, including shock, stigma, blame, guilt and anger (Jordan and McIntosh, 2011; Ratnarajah and Maple, 2011; Bell, Stanley, Mallon, & Manthorpe, 2012) and are forced to endure complicated and traumatic grief (Jacobs and Prigerson, 2011).

Despite widespread recognition and acknowledgment of this phenomenon, social modelling of suicidal behaviour through peers still appears to be a largely un-researched topic (De Leo and Heller, 2008). This could be partly due to the methodological constraints of quantitative research, which limits substantive understanding of the complexity of suicide. Kral, Links, and Bergmans (2012) argue that research in suicidology has been restricted by such constraints. Very little emphasis has been given to qualitative research or people's subjective experiences. However, recent calls to add qualitative research to this arena have increased in intensity (Lakeman and Fitzgerald, 2008; Krall et al., 2012) with recognition that the lived experiences of those with suicidal feelings represents important knowledge (Webb, 2010).

To our knowledge there is no research to date which has reported on the processes for identification and imitation and how it is experienced by those whose lives have been touched by suicide. Based on a national study into student suicide in the UK, we seek to demonstrate insight into the ***processes*** of contagion shown in the narratives of participants. In this study we found evidence of transmission in four out of twenty cases of student suicide. This paper reports on two of these case studies, chosen for their diversity, depth and level of insight into this subject matter.

Method

The data presented here were derived from a UK study of 20 completed student suicides (see Stanley, Mallon, Bell, and Manthorpe, 2007). The research took place between 2004 and 2006 and focused on suicides of students attending Higher Education Institutions (HEIs) between May 2000 and June 2005. In order to achieve a detailed understanding of the psychological circumstances contributing to the suicides, we employed a modified version of the psychological autopsy approach to studying suicide (Shneidman, 1981; Beskow, Runeson, & Asgard, 1990). This involved qualitative interviews with relatives and significant others, and reviews of various documents relating those who had died by suicide.

The research drew together a range of accounts of the death and its impact on the bereaved. Several data sources were collected for each case, including interviews with people bereaved (parents, friends, siblings, and academic and student support staff from HEIs who knew the student well), coroners' records, medical records and other information from health professionals, letters and suicide notes. Interviews were also undertaken with parents whose child had taken their own life whilst a student, those whose friends had taken their own lives whilst a student, and staff from HEI support services who had experience of responding to a student suicide.

As shown in Table 1, participants connected to the 20 cases comprised 29 family members; 12 student friends; 17 HEI staff; records from 15 Coroners and Procurators Fiscal. Additional interviews included 9 parents; 4 students; 10 staff from HEI support services. Interviews were recorded with permission and followed a semi-structured style (described by Cooper, 1999). Each interview began by asking questions about the circumstances of the death. Following this, interviews sought to establish the chronological sequence of events and development of any perceived problems to provide information on the suicidal process (Hawton et al., 1998). Details covered included family background, childhood, significant life-events and difficulties, relationships, social and personality factors, physical and mental health, exposure to suicidal behaviour, academic progress, social support, reaction to the death, aftermath, coping and help-seeking. The development of our schedules was influenced initially by those used by Houston, Hawton, and Shepperd (2001) on previous psychological autopsy work on previous psychological autopsy work on young

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Research Participants	Case Studies	Parents' Perspectives	Students' Perspectives	Positive Practice	Total
Family Members	29	9			38
Students Friends	12		4		16
HEI Staff	17			10	27
Coroners and Procurators Fiscal Records	15				15

Table 1 – Total number of research participants and data collection.

people[1]. Emphasis was placed on encouraging the informant to talk freely about the person who died and to 'tell the story' of the suicide as they perceived it (Owens, Lambert, Lloyd, & Donovan, 2008).

Data were analysed thematically using a Grounded Theory Approach (Ritchie and Spencer, 1994; Strauss and Corbin, 1990). Themes across and within data sources were compared and contrasted by all four researchers who are experienced in qualitative research with backgrounds in Social Work, Psychology and Sociology. Inter-rater reliability was addressed by cross checking analysis to ensure consistency in interpretation of data.

Following the interview, participants were given the opportunity to comment and amend the transcripts. In line with good practice in suicide research (Hawton and Simkin, 2003), interviewees were offered a 'bereavement pack' containing details of sources of help and support (Hill, Hawton, Malmberg, & Simkin, 1997). All were contacted shortly after the interview to check their responses to the experiences of participating in the study. Participants were assured of anonymity and identities and locations are disguised here. The research received ethical approvals from the NHS Multi-Region Research Ethics Committee and from the University of Central Lancashire's Research Ethics Committee.

Results

In this section, we present analyses of two case studies which draw upon participants' narratives of their experiences of suicide and their perceptions of suicide contagion. The first of these case studies gathered interview data from parent, University tutor, and girlfriend (Lisa) of the student (James) who died by suicide. The second draws on data gathered from three close friends (one female and two male) of the student who died. We start by outlining the background to each case and follow by presenting data on **contagion** from respondents.

Case 1 - James: Background

James was one of a group of friends of another student (Adam) who took his own life. James was described as popular, laid back (on the surface), sporty, bright, and gentle with a good sense of humour. He had no psychiatric history. He was living in a shared house with other students. One morning, after enjoying a night out with the housemates, one of them discovered that another (Adam) had taken his own life. He was found in his room.

Adam's death came as a complete shock to everyone. No one was aware of anything wrong in his life. James played a major responding and supporting role in the immediate aftermath of Adam's death. He also received support from University staff in the months that followed. Shortly before the anniversary of Adam's death James very rapidly became depressed and anxious (his parent confirmed he was prescribed anti-depressant medication by his GP). His girlfriend, Lisa, described him as 'morbidly obsessed' with his death. Within the space of a few days he took his own life using the same method as Adam.

Contagion

The tutor described his own perception of the factors that led to James's suicide. In his narrative he clearly sees James's suicide as directly linked to Adam's and acknowledges this from the very start:

> *The whole group and James included were totally baffled as to why Adam had killed himself, there was no obvious reason...there wasn't any sign of any significant mental health problem, there wasn't any sign of anything particularly going wrong in this life, his academic work was all fine, he seemed to be pretty successful, he had plans for the future, so he didn't fit the profile at all. So, I think... the complete lack of any reason... that anyone else could make sense of for Adam's death was one of the things that, ...James just couldn't get rid of that. That kept coming back to him.*

[1] We acknowledge here their kind permission.

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In this extract we see the first clues that something had taken hold of James following Adam's suicide, which the tutor senses but struggles to articulate. What is clear however is that his inability to understand Adam's death troubled him deeply. He expands:

> *I sometimes wonder whether one part of why James killed himself was a, some kind of curiosity...curiosity doesn't sound strong enough to be a reason to kill yourself and I'm sure it wasn't enough in itself, but I suspect there was a component of it.... I think it was probably part of what was going on and beyond that I don't know. What was it about Adam's death that it awoke in him? I don't mean about the loss, I mean it was as if it awoke something, this sort of depression that.... it was like it was there sometimes and you could kind of feel it sometimes but he couldn't articulate it....*

In this extract, he refers again to an underlying depression (psychache), this time suggesting that it was awakened by Adam's death – something that grew to engulf him around the anniversary but something that he couldn't put into words.

He relates some of things that James was able to put into words:

> *....well he was asking questions, he was certainly asking questions about death. And beyond and you know what happens... what the meaning of it is, what the nature of it is.*

All three interviewees pointed to the importance of religion in their perceptions of the factors that led to James's suicide. Lisa recalls:

> *.... I remember.... he prayed so hard.... it was quite intense*

From James's parent there was some sense that Adam's death corresponded with a disconnection from God for James. His parent remembers him saying '*God let me down*' in relation to his feelings about Adam's death. Narratives from both Lisa and the tutor hint strongly at an existential crisis of sorts: his '*morbid obsession*' with Adam's death; his '*curiosity*' and questioning of the nature and meaning of death; his '*intense praying'*, '*puzzlement*', '*underlying depression*', and uncertainty about God.

According to Lakeman and Fitzgerald (2008) a disconnection from others, culture or God appears to be a common feature of the suicidal experience; for Joiner (2005), this feature is fundamental – one of three factors that mark those most at risk for death. For Joiner, a secure sense of belongingness or connectedness (to family, community, faith or religion) is an essential ingredient of the will to live – an ingredient that gives meaning to life. Those who lose these connections over a period of time may come to view death in peculiarly positive ways. So in the sense that connection with God gave meaning to life for James, having that connection thwarted may have brought about an existential crisis from which he may have begun to form connections to the idea of death.

Lisa's story

Lisa was one of the housemates who lived with James and Adam and was at the house when Adam died. She was also James's girlfriend. So within the space of a year Lisa had experienced the suicide of two close people. She talked about her inability to understand the factors that led to Adam's death:

> *I honestly have not got a clue.... I couldn't even begin to tell you, I mean it just, the whole, that just seemed totally bizarre,... I don't know.... I just have not got a clue....*

Lisa also attributed James's suicide directly to Adam's death and talked about the speed with which his mental state deteriorated in the run up to the anniversary:

> *I think just 'cos of the dates and everything and.... I mean literally James just started to go down the week before* [the anniversary of] *Adam's death. ....It was only a really short space of time. He literally switched kind of overnight almost.*

Whilst she had an explanation for James's death, Lisa talked about areas that were still confusing for her:

> *...I'm confident that it was because.... he was affected by what Adam did, and that had.... obviously some sort of traumatic, traumatic effect on him, but at the same time, there was kind of another nine people in that friendship group that didn't react how he did so I guess you wonder why it affects somebody enough that they cannot live with it...*

Contagion

After James's death, concern that others in the friendship group might be susceptible to suicide spread rapidly. The spotlight turned on Lisa; her parents, the University tutor and her close friends all worried that she would be next. The tutor was candid about his concerns:

> *I mean frankly I was terrified about Lisa, because.... she'd been a really close friend of Adam's. And she was James's girlfriend. So I*

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was very, very concerned for her.

Lisa was clear that she did not ever feel suicidal herself in the aftermath of either Adam's or James's death. She hinted quite strongly nonetheless at an increased feeling of vulnerability to suicide:

> *No, I ... used to get worried, because with James and Adam they seemed so fine, I used to think.... well what if one day I feel kind of, but I never actually felt like that. But I used to think well if.... a normal lad of nineteen or twenty can just wake up one morning and do that when he seemed reasonably fine, what if I woke up one morning.... Yeah, that's how I felt. But I never, that was just a, kind of ridiculous paranoia.*

In this extract she testifies to having had the *idea* of suicide running through her mind. It seems to be represented as some kind of terrifying force that could come and get her or something that could happen to her without warning (*what if I woke up one morning...),* something invisible, unpredictable and without logic. Despite Lisa's acknowledgement that this was a 'ridiculous paranoia', the fear of contagion – the belief that it could happen again and to Lisa in particular – persisted and dominated the thoughts of those close to her:

> *...one of the hardest things since that I've had to deal with is my parents worrying about me doing it. My dad would ring me every morning to make sure I was alive. But I guess that's how you would get, 'cos no-one ever thought you know, two people in the friendship would do it, so why not a third? And I've found out since, that.... girls that I lived with used to always be terrified of going up to my room in the morning, 'cos they'd ... God if she's done something and so it does.... I think because it happened twice, you start thinking well who's next?*

There is no logic to this idea, but in the absence of any logic in the other two deaths, logic is irrelevant as a way of furnishing an explanation. This finding is also supported by Higgins and Range (1996) and Kaltreider (1990). For example, Kaltreider (1990) reported on the impact of a medical student's suicide and found that students' own sense of identification and vulnerability was increased because of the seeming randomness of the event. Similarly, Adam's death was seemingly random. There was nothing wrong in his life: no mental illness, no major problems, nothing that marked him out as different in any way. This is the part that others identify with and the part that makes them feel vulnerable. We see this in Lisa's narrative: *'if a normal lad of nineteen or twenty can just wake up one morning and do that when he seemed reasonably fine'* she reaches the conclusion that this can happen to anyone. And if this is the case, it would beg the question '*who's next?*'

Case 2 - Tara: Background

Tara was described variously by those who were interviewed as a deep thinking intellectual person who was gentle, caring, fun-loving, loyal, charming, generous, bright, friendly, energetic, ambitious, stroppy, arrogant, temperamental, beautiful, strong, eccentric, and impulsive. Tara also suffered from depression, and was engaging in suicidal behaviour which increased with severity and intensity as the academic year progressed. She was very reluctant to seek professional help. Eventually the situation reached crisis point towards the end of the academic year when she eventually took her own life.

Sophie's story

Sophie met Tara at University where they quickly became firm friends. Sophie described how she was attracted initially to Tara's charismatic personality. She recalls the time when she first found out about Tara's suicidal tendencies:

> *....and I thought she was just being silly and then she said 'no, actually I was trying to kill myself'. And that was the first I heard of it and it was just a complete blow, I had no idea it was coming and I never experienced anything like that before. I just didn't know what to do and that was when it first started and literally from there it just got worse and worse and worse, more and more episodes and more and more disruptive behavior.*

Prior to University and meeting Tara, the idea, even the notion, of suicide was alien to Sophie. She was not prepared for it, nor was she equipped to deal with Tara's problems and behaviour. She reiterated this a number of times:

> *I was a supremely sheltered child as well and I had absolutely no concept of these things like when she first cut herself I just was flabbergasted, I didn't even know this kind of thing existed, it just absolutely blew my world away, I just didn't have a clue about what it was all about....*

Latterly, Tara became heavily dependent upon Sophie for support:

> *... and she just needed constant looking after,... you ...never knew what she would do or what would happen, and it was a huge stress... and I just thought it was my responsibility to help her....*

In this narrative we see how she became increasingly entangled in Tara's problems and how,

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over time, this took its toll on Sophie. She undertook the role (*it was my responsibility*) and their interdependence intensified.

So, ultimately, when news of Tara's death came, it changed everything:

> *...it was an absolutely life altering moment the day that... I found out that she'd killed herself.... if I could say there was one day that changed my life forever it would be that one....*

Contagion

In talking about the immediate aftermath of Tara's death and her own reaction to it, Sophie quickly turned the topic of conversation to contagion:

> *No, I think it is contagious, I mean I tried to kill myself.... I thought about killing myself after Tara did, and I have not got any of these problems.*

Here Sophie expresses the view that suicide is contagious and that her thoughts about killing herself had been acquired through direct experience of Tara's situation. There was nothing else in her life that would account for why she would think about killing herself (*I have not got any of these problems*).

Sophie reflected both on how she was affected emotionally by Tara's death (horror, shock, trauma) and how the idea of suicide and self-harm first emerged in her consciousness:

> *my reaction to the death was absolutely... I can't even begin to quantify what happened to me as a result of it. It turned my world literally upside down and inside out for a very long time.... Like I said, I thought about killing myself in the aftermath but there were various times where I'd been upset in that sort of timeframe and something really upset me, I thought maybe I should cut myself, you know I just caught myself thinking it. What a stupid thing to say, I mean you know it's just, I mean now it sounds ludicrous to me but then it was horrible you know, if you're feeling bad cut yourself, if you're feeling really bad kill yourself, you know, it's just stupid.*

Tarde's (1904) metaphor of a mental imprint becomes useful here in explaining Sophie's thoughts. Having been exposed to suicide, the idea of suicide is planted – Tara leaves a 'mental imprint', a model of behaviour for Sophie to copy (*maybe I should cut myself?*). Sophie inherits the idea of suicide as a solution to seemingly insoluble problems from Tara (*I just caught myself thinking it... if you're feeling bad cut yourself, if you're feeling really bad kill yourself*). The learned aspect of Sophie's suicidality is even more clearly articulated in the following account of her near suicide attempt. She had reached crisis point. Here we see how she went from fleetingly thinking about it to, based on what Tara did, seeing this as the only solution:

> *when I thought about killing myself, I was feeling the most excruciating pain you could possibly imagine and I thought the way out of this is to kill myself, how will I do it? Oh I'll [kill myself], that's what Tara did…..*

Sophie then went on to describe how she took steps to end her own life adopting the same method used by Tara. She explains:

> *….I.... wanted to stop feeling the pain. That was the most important thing to me and sleeping wasn't doing it, I was dreaming about her, being awake wasn't doing it, it was killing me, you know inside. So the only way out was to kill myself, as far as I could tell, that's what she did it, it worked....*

In this account Sophie describes her *psychache* (*the most excruciating pain you could possibly imagine... killing me inside*) which was brought about by Tara's death. Her solution to this pain is explained by the social learning model and vicarious reinforcement (*I thought the way out is to kill myself, how will I do it? Oh [states means of death] – that's what Tara did' ... so the only way out was to kill myself, as far as I could tell, that's what she did, it worked*). This narrative also offers some insight into Sophie's internal mental state in this process. It emphasises how the memory of what Tara did was internalised, along with its functional value and anticipated consequence.

Sophie's examination of her own feelings, thoughts, and motives also correspond strikingly with Shneidman's (1996) important proposal that suicide is the result of an interior dialogue. He suggested, at the point of intolerable pain and despair, 'the mind scans its options; the topic of suicide comes up (*maybe I should cut myself*), the mind rejects it (*what a stupid thing to say*), scans again; there is suicide (*if you're feeling really bad kill yourself*), it is rejected again (*sounds ludicrous; just stupid*).... then finally the mind accepts suicide as a solution' (*the only way out was to kill myself, as far as I could tell, that's what she did, it worked)* (Shneidman, 1996, p. 15).

Interestingly, Sophie then goes on to explain how she thought herself out of it as the stark reality of what she was doing entered her consciousness:

> *... and I suddenly thought if I do this I'm going to die and it wasn't the fact I was, you know it, that suddenly made that connection and the*

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> *thing that actually stopped me doing it was I thought, I imagined the look on my dad's face if he found me and I couldn't do it. I just didn't do it and I never, I've never even thought about it since and that's what stopped me, it was actually being able to make that final step and saying I'm going to kill myself but the thing that stopped me was the consequences, the knowing what it meant, the actual being able to put that ... into lucid rational kind of form.*

Although Sophie did not ultimately take her life, she was nonetheless very clear that experiencing the death of her best friend changed her forever:

> *Surviving the suicide of your best friend is an entirely different thing and living with it has been the most awful thing.... I feel like it's a cross I have to bear, no matter what happens, no matter how I try and get rid of it, because it happened to me at such a vulnerable age, it's there now....And that's completely changed me.*

Interviews with two others (George and Marcus) from the friendship group at University revealed how others, who were close to Tara, also suffered:

> George: *everybody who was in that group didn't do as well as they ought to have done...*

George talked about another friend who suffered a breakdown and spent some time in a psychiatric unit following Tara's death: *absolutely nuts, she went nuts...*

Marcus also reflected upon this and how Tara's death had affected him:

> *...she went into an institution....I... visited her and yeah that was kind of, it kind of meant that the memory really stayed.... Certainly I kind of suffered quite a lot, I think, personally because like all our friendship...kind of... just kind of fell apart.... I think I had less ideals and less kind of, you know the world wasn't rosy anymore, you know it's not like all promising and wow the world is much more cold and...people are much more... sinister kind of self-absorbed, including myself of course.... I think that was really... fortified by that experience.*

Discussion

This paper has attempted to understand the phenomenon of suicide contagion or transmission from the point of view of the individual who is affected, recognising lived experience and first person accounts as important sources of information. In doing so, it provides insights into these processes not previously described. Our data expands the concept of contagion described by others to further illuminate the processes by which that comes about. We are not aware of any other qualitative studies which explore this. Our data have been interpreted and analysed in terms of infectious disease model, social learning model and suicide contagion or transmission as a cultural phenomenon. It has linked the processes of identification, internalisation, and imitation with Shneidman's concept of pyschache to provide a model for the transmission of suicide.

What gets transmitted is the *idea of suicide*. The case studies presented in this paper illustrate how suicide as an *idea* is planted and emphasises the 'power of ideas' (how the unthinkable can become thinkable). It has explored what happens when people are metaphorically 'infected' with the *idea* of suicide and what is transmitted to others when a death by suicide occurs.

Suicide is something that disrupts the narrative of individual lives. There was evidence that James felt significantly guilty about Adam's death. But James's psychache was also existentially driven. The idea that death by suicide raises crucial issues about the meaningfulness and rationality of life is supported by other research (e.g., Dunne, 1987). Our analysis suggests that the experience of losing a friend to suicide triggered a form of existential pain in James. It provoked introspection about the foundations of his beliefs and his sense of reality and mortality (puzzlement, lack of reason, meaninglessness). Did James identify with Adam? Was this a result of his empathy with Adam? Did he internalise the idea of suicide? Did he inherit his pain?

Sophie was able to describe the psychological pain brought about by Tara's suicide in some detail. Sophie's narrative also portrayed a strong sense that she had been in some way contaminated by the suicide of her best friend and that this is still in her *bloodstream* (*no matter how I try to get rid of it... it's there now*). Like Sophie, Lisa had never thought about this before, subsequent to Tara's death she felt that it could happen to anyone. Lisa's friends, parents and the university tutor were terrified it would happen again – to her. For them, the concept of contagion was the best way of explaining how it affected them, what it did to them and how they experienced it phenomenologically: like an external force; something they could catch from each other – a kind of referred pain.

Our analysis explored how this type of thinking translates into action (empathy, identification, internalisation, imitation). Sophie's suicide attempt can be explained by processes of imitation outlined in the social learning model and vicarious reinforcement. Her narrative shows us how the *idea* of suicide as a way of escaping from intolerable pain spread into her consciousness as a result of prolonged exposure to Tara's suicidality. It

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is an account of how a person went from feeling supremely sheltered and having no concept of these things, to being something she briefly caught herself thinking, to reaching the conclusion that suicide is the only solution. This analysis suggests that imitation may be more likely in combination with traumatic grief and in those of a vulnerable age or stage of development who may have a limited repertoire for solving difficulties in life.

This paper has shown that in-depth interviews using qualitative methods can provide new knowledge and understanding about suicidal behaviour. Our findings are based on an in-depth exploration of two case studies. We make no claim that these findings can be generalised to others who have been touched by suicide; not everyone who has been devastated by the loss of someone by suicide goes on to take their own lives. Everyone's experience of suicide is unique and each suicidal person's story has to be understood in terms of the dynamics in the relationship between the individual and his or her specific socio-cultural context. It has been noted that the term 'suicide contagion' and the use of the language of disease is problematic in relation to suicide. More research is needed to critically examine this concept. More research is also needed to contribute to knowledge that can be used to inform and postvention strategies and a fuller understanding of the suicidal process.

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Qualitative Research

Sudden and unexpected death in Sámi areas in Norway - A qualitative study of the significance of religiosity in the bereavement process

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***Abstract*:** Sudden and unexpected death represents a severe life event incorporating multiple stressors and is potentially more traumatizing than natural deaths. Religiosity is an important resource in everyday life and may be especially important during times of loss. The aim of this paper is to explore the significance of religiosity in the coping process after sudden death, using a qualitative semi-structural in-depth interview guide to investigate the experiences of 30 bereaved people from different Sámi areas in Northern Norway. The findings showed that religiosity might be a great source of help in the grieving and coping process.

Keywords: Sudden death, bereaved, religiosity, coping, indigenous Sámi

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Sudden and unexpected death (accident, sudden infant death, suicide, homicide) represents a severe life event incorporating multiple stressors, and is potentially more traumatizing than natural deaths (Li, Precht, Mortensen, & Olsen, 2003; Rostila, Saarela, & Kawachi, 2012; Stroebe, Schut, & Stroebe, 2007). The high prevalence of sudden and unexpected deaths, especially suicides and accidents, is well documented both among indigenous and majority populations in the Arctic (Ahlm, Hassler, Sjölander, & Eriksson, 2010; Silviken, Haldorsen, & Kvernmo, 2006; Holck, Day, & Provost, 2013; Bakke Kvåle & Wisborg, 2011). However, there has been a limited focus on bereavement in the Arctic. Furthermore, bereavement and coping of the bereaved in Sámi areas in Northern Norway has never before been explored in a systematic way.

Bereavement and coping

The terms "bereavement" and "grief" are utilized in this paper according to the definitions provided by Stroebe, Hansson, Stroebe, & Schut (2001). Bereavement refers to the new state of being and the objective situation of having lost someone close. Grief is defined as the emotional, psychological and somatic reactions to the loss of a loved one through death. It is recognized that there is no single process through which all bereaved people must necessarily go, in order to resolve and cope with their grief, and the sources of individual variation are particularly important (Stroebe, Schut, & Boerner, 2010). Coping is defined as an ongoing cognitive and behavioral effort to manage specific external and/or internal demands (Lazarus, 1993). According to the dual process model of coping with bereavement, there are two parallel tracks where bereaved people alternate between loss-orientated and restoration-orientated coping (Stroebe & Schut, 1999). The grieving process also involves a process of reconstructing and creating new meaning in life without the deceased (Keesee, Currier, & Neimeyer, 2008).

There is an agreement that a healthy outcome of a grief process is when the bereaved have adapted and adjusted to the new situation without the loved one and the loss is integrated in the ongoing life. A non-adaptive outcome is when bereaved people experience a persistent sense of disbelief regarding the death and resistance to acceptance of the painful reality (Shear & Shair, 2005). Bereaved people after sudden and unexpected deaths have a higher risk of complicated grief where they struggle in a long-lasting loss-orientation process without the necessary alternation between restoration- and loss-orientation processes (Stroebe et al., 2007). Such processes may be influenced by different factors such as cultural context and religiosity. This will be elaborated on in the following.

The Sámi people

The Sámi people are one of the indigenous groups residing in the circumpolar area, and have traditionally lived in the northern parts of Finland, Sweden, Norway and the Russian Kola Peninsula. The estimated population size is about 100 000 and the majority of the Sámi people live in Norway (60 000) where they are formally recognized as an indigenous people. The Sámi have their own language, history, and culture with their own traditions and norms.

In Norway, the Sámi people live in different multiethnic areas with Sámi, majority Norwegians, and in some areas also a small minority of Kvens (descendants of Finnish speaking immigrants who immigrated to Northern Norway in the 18th and 19th centuries) and also sometimes other foreign minority groups. Like other indigenous peoples, the Sámi people have been colonized and subjected to dominating missionary practices and assimilation policies by the Norwegian government resulting in a strict and long standing assimilation process (Norwegization) with a fatal effect on the Sámi language, worldview and identity. The strict and intense assimilation process prohibited the use of the Sámi language in schools and public places, and many Sámi children were placed in boarding schools (Minde, 2005). However, during the last four decades there has been a subsequent revitalization process among the Sámi people in Norway.

Christianity and folk religiosity

In former times, the pre-Christian Sámi religion consisted of a worldview divided into three connected realms, the "heaven", "earth" and "underworld", which included the realm of the dead. The idea of the presence of the deceased had a central place in pre-Christian Sámi religion. Death did not mean the end of a person's existence, but a transition to a different relationship between the living and the dead (Myrvoll, 2010). This is in accordance with an indigenous belief system with a holistic notion of an interconnectedness of the

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elements of the earth and the universe, animate and inanimate where people, plants, animals, landforms and celestial bodies are interrelated (Grieves, 2008).

In the 17th century missionaries forced Christianity into the Sámi communities, but different aspects of Sámi religion continued to exist integrated in the Christian worldview (Myrvoll, 2010). In addition, today many Sámi are strongly influenced by Laestadianism, a pietistic and conservative revived movement within the Lutheran tradition, which originated in the mid-19th century. A part of the traditional medicine is integrated in the Laestadian Christian movement where the healing ritual consists of prayers. Regardless of ethnicity and religious affiliation, many inhabitants in Sámi areas still adhere to their traditional medicine and worldview (Sexton, 2009). The parallel between Christianity and traditional worldview and practices can be termed folk religiosity, a phenomenon that also could include spirituality.

Folk religiosity and bereavement

Folk religiosity is characterized as being present in the moment of everyday life and is closely bound up with culture and way of living (Myrvoll, 2010). It is an important force in everyday life and may be especially important during times of loss as a resource and coping strategy during the bereavement process. Although inconsistent, a significant body of research indicates that the relation between religion, spirituality and adjustment to bereavement is generally positive (Becker et al., 2007; Wortman & Park, 2008a). In a study by Parker (2005) spiritual and religious belief systems were associated with an adaptive outcome of grief. Parker found that "extraordinary experiences", experiences that occur at the time of or after the death of someone close, and are assumed to signify contact or communication with the deceased facilitate the grieving process of the bereaved. According to Parker (2005) further research on the significance of extraordinary experiences and the grief process may lead to powerful new therapeutic approaches to bereavement. To accomplish this, Parker (2005) particularly calls for qualitative and phenomenological methodology.

Bereavement will be expressed differently depending on the cultural context in which it takes place. The aim of this paper is to explore if and how both religiosity and folk religiosity are important in the coping process after sudden and unexpected death among bereaved people in Sámi areas in Norway.

Method

The data analyzed in this paper is part of the North Norwegian Bereavement Study consisting of data from two samples, "the community sample" and "the bereaved sample". Both quantitative (self-administered questionnaire) and qualitative methodology (in-depth interviews) were applied, and this paper concerns the findings from the in-depth interviews of the bereaved in the latter sample. The North Norwegian Bereavement Study is a replication of a previous research project that was conducted on the majority population of Norway from 1996 to 2000 (Dyregrov, 2003), although the present study has an extended cultural and resilience focus. The Regional Committee for Medical and Health Research Ethics in Northern Norway approved the study.

Procedure

The informants in the bereaved sample were recruited by the leading general practitioners or leaders of the crisis teams in all municipalities in Northern Norway (n=88) and 8 selected municipalities in the Southern Sámi area.

The recruiters were initially contacted by phone and invited to recruit bereaved people from their municipalities. Two peer organizations, LEVE-Troms (a local unit of the nationwide association for the bereaved after suicide) and LUB (the Norwegian SIDS and Stillbirth Society), were also invited to recruit members that fitted the inclusion criteria. The general inclusion criteria for participants were: 1) 18 years or older, 2) having lost a close person by sudden and unexpected death (accident, sudden infant death, suicide, homicide), 3) having lost the person from 6 months up to 7 years ago, and for the interview sample: 4) being resident in the selected Sámi areas. The different Sámi areas were preselected to cover the variation of the Sámi population in Norway (i.e. Southern Sámi, Lule Sámi and Northern Sámi areas).

The recruitment letter informed about the study and asked those who decided to participate to respond by returning the consent form. In the consent form, the bereaved also responded yes or no to whether they agreed to be contacted later for an interview. Altogether, 424 letters/requests were distributed to the communities (336), LEVE-Troms (37) and LUB (51). In addition, six bereaved people recruited themselves after publicity about the study in the media. In total 151 consent forms were returned, with altogether 244 consents from bereaved to participate in questionnaires and/or in-depth interviews. From the 204 bereaved who consented to be interviewed, 34 bereaved from selected Sámi areas were invited to participate. Thirty-one of the latter agreed to take part in in-depth interviews. Based on the principles of breadth and variation within the inclusion criteria, an

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interview sample was formed from those who had accepted to be interviewed. One interview was excluded from the sample due to a faulty tape-recording. Thus, the total sample consisted of 30 participants, representing 29 interviews.

The interview sample

The sample consisted of 30 bereaved: 20 women and 10 men. The majority was between 35 and 55 years (mean age 46 years). The interviewees were indigenous Sámi (n=10), Norwegians (n=10), multi-ethnic Sámi-Norwegian (8) and two with minority Kven affiliation. They all lived in various Sámi areas of Norway, one in a town and the rest in coastal and inland rural localities. The majority of the participants had lost children (20), while others had lost siblings (5), parents (2) or nephews/nieces (3). Some deceased were represented by one participant and others by two, e.g. both parents, two siblings, or a parent and an aunt/uncle. The deaths were caused by suicides (8), accidents (9), sudden infant/child deaths (2), and homicide (1). Mean time since loss was 3 years, and ranged from 1.5 to 10 years. (The inclusion criteria number 3, time since loss, was not used in a strict manner accepting cases up to ten years).

The interviews

Twenty-nine interviews (one couple was interviewed together) were conducted between April 2010 and April 2011. An interview guide based on previous research (Dyregrov, 2003) was further developed and adapted to the Sámi and Northern Norwegian culture by the project group. The interview guide for the whole study consisted of themes connected to the two main research questions and sub-questions: 1a) What kind of help and support had the bereaved received/been offered from the public assistance scheme, and their natural social networks? 1b) What were their needs for help, e.g. in the long-term? 2a) What had been the process of bereavement and coping in their cultural context? 2b) What had been helpful in order to adjust to the dramatic loss? 2c) Was religion and/or folk religiosity helpful and if so how? The analysis of this article concerns theme 2c.

The second and third authors conducted the interviews. As neither spoke Sámi fluently, the Sámi participants were offered an interpreter before the interviews. However, all participants refused the offer as they considered themselves to be bilingual and preferred to speak Norwegian instead of having a third person in the setting. Two options were presented as a location for the interviews, either the participants' homes (24) or a local government office (5). The interviews were completed individually, except for one where the spouses agreed to be interviewed together. The length of the interviews varied between 65 to 270 minutes (120 minutes on average). The interviews were completed in one session, except for one interview that was conducted in three parts because of practical and emotional reasons. All the interviews were audiotaped and transcribed verbatim by two trained transcribers. The data material consisted of 845 pages (12 point, single-spaced). The transcripts were de-identified to ensure the anonymity of the participants.

Analysis

A hermeneutical-phenomenological approach was used to explore the importance of how religiosity and folk religiosity can help bereaved in Sámi areas. The analysis proceeded through the following steps (Kvale, 1996; Smith & Osborn, 2003): 1) All the interviews were read to get an overview of the material and main issues. 2) The transcripts were read through carefully and quotes that dealt with or were related to religion and folk religiosity were identified as meaning units for further analysis. 3) The meaning expressed in the units was condensed into more essential meanings. 4) The condensed meaning units were categorized (for example prayers, memorial services, Christian traditions, Sámi traditions, contact with the other side, faith). 5) Based on the contents of the categories from all the interviews, logical connections were made, and the categories were sorted into general themes. Importantly, the process of analysis constantly alternated between parts of the data material (parts and units from individual interviews) and the whole (patterns of meaning across interviews).

Findings

Three major themes of importance for religious coping were found: *Rituals, After death communication,* and *Signs and warnings.* Many of the participants lived in communities strongly influenced by Laestadianism, and some were committed to the traditions of Laestadianism and other Christian denominations. For the majority of the participants folk religiosity had been important for coping strategies previous to the deaths, or became important after the sudden loss of their loved ones. Only few of the participants were not religiously or spiritually committed. For these participants other elements in life were important in coping with the sudden loss of a close person. There were no differences across geographic areas, gender, or ethnicity in relation to the two first themes, but in the last theme most of the descriptions came from the Sámi participants.

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Rituals

All the participants described various kinds of public and private rituals that were performed in order to remember the deceased. Such rituals helped the participants to remember, pay respect, and keep the deceased present.

Candles were important components in almost every ritual, e.g. in the funeral and memorial ceremonies, when time was spent with the deceased before the funeral and at the cemetery. Many of the participants kept a photo of the deceased at home with a lit candle beside. The photo was usually given a place on its own in one of the main rooms in the house. This was not meant to be an altar to worship the deceased, but a way to remember, pay respect, and keep the deceased present in the family.

The participants performed several rituals from the time of death until the funeral, such as candlelight ceremonies and different ways of spending time with the deceased. Many participants emphasized the importance of time with the deceased. Although it is the routine in Norway to keep the deceased in hospitals, infirmaries or chapels until the funeral, some of the bereaved kept the deceased at home from the time of death until the funeral. Others kept their deceased at home the night before the funeral, and some described this as a Sámi tradition. One mother related that when they had their daughter at home this last night, they had to ensure that family members always stayed together with her. The family members sang songs together, the mother sang hymns, and all night there were lit candles. Although the mother described this as an emotionally demanding experience, it was also an important and positive experience that helped in coping with the situation.

Some of the participants described prayers and hymns as something to hold on to through crises and difficult times. The participants explained that they used prayers, both related to the Christian God or Jesus and/or to another universal greater power, to receive help and release the pain. Some would use prayers to serve as an anchor in life or when lacking someone to talk to: “I don’t have many people to talk to about this. So, I pray, I pray, I usually pray. I use prayer”.

Many of the participants visited and created rituals around the place of death. These sites were described in various ways. If it was outdoors, by the road, by the sea or by the river, the participants went to these places and put down flowers and lit candles, and spent time there. Some of the deceased died by suicide at home. In these circumstances their relation to the place of death was complicated, especially if the parents had found the deceased. The home would forever remind them about the suicide. A father got the priest to come to make a blessing in the room where his daughter had died by suicide:

> *I wasn’t able to go in there. I was terrified and had avoided the room. However, he (*the priest*) made me go and we had a touching and positive time there. It was the way he took his time, and changed his clothes and put on a proper priest robe, which gave me this inner peace and allowed me to go in there. I could see that this was going to happen in a proper way, and he actually wanted this for us. It was only the three of us* (the parents and the priest) *and suddenly I got this incredible peace inside of me, an incredible peace. It was beautiful… it was so beautiful...yes, with the candle lit. He did his part, and then we sang and were in peace. He was so calm, his movements were slow, and he showed respect. This was so helpful…, that he made me go in there, and the way he did it, completely calm. It was amazing.*

Almost all the bereaved described the cemetery and the grave as an important place that they frequently visited, especially early in the aftermath of the deaths. Despite the tradition in some Sámi areas of not visiting the cemetery too often, participants from these areas also frequently visited the grave of their lost ones. A mother stated that, just as other parents put their children to bed, she went to the grave in the evenings to sing for her deceased little son and wish him good night.

After-death communication

About half of the participants described a direct or indirect communication with the deceased. The participants described the phenomena in a variety of different ways such as through sensations, sounds, visualizations, visits by wild animals or birds, or by particular natural phenomena.

The most common descriptions of after-death communication were a sensation and feeling of presence of the deceased. It could be a physical sensation on the skin or a general sensation of presence, and it was often followed by a message from the deceased, e.g. that he or she was fine. One participant said that she felt the odor of her deceased mother on her fathers’ deathbed, with the explanation that she was there to retrieve the father. Some participants described their children’s stories of visits from their deceased siblings or relatives, or that the children saw the deceased together with other living family members. Other participants described that the deceased sometimes came to visit the bereaved in their dreams to tell them that they were

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fine. This did not scare them or wake them up; rather, it was a comfort.

Several participants had been in contact with the deceased through mediums where they got a message from the deceased. In addition, one father recounted what he called an "angel letter" that the parents suddenly received after their daughter's death. This was a letter from an unknown person from another part of the country, who claimed she had a message from the daughter through meditation. The letter consisted of information that was consistent with the daughter and her life and the letter also included greetings to different persons that this unknown person could not possibly have known, according to the father.

Some bereaved stated that a sudden, unexpected (unnatural/violent) death implies that the deceased has a "long way to go to get peace in the spiritual world", and may remain in the intermediate stage between reality (earth) and death (underworld). In some instances, the deceased do not receive peace because the bereaved had difficulty in struggling with the loss. A deceased uncle expressed it this way: "We must look up and appreciate life. If we refuse to move forward, it won't be good for the boy. He gets no peace, unless we feel good".

Common to the various after-death communications was the importance they had for the participants in the grieving process. The experience particularly had the ability to ease the emotional pain of the loss and to give a kind of peace to the participant. One grieving aunt described it as a comfortable calmness that still continued, mainly because she had learned that her dead nephew was fine where he was. She also described her own observation of her brother who lost his son: "However, after he got that message, that 'I am fine' and other things… it was just like he got another life afterwards. It started to move forward. You could see it, life went on". One father elaborated on his pain after having received a message from his deceased daughter:

> *.. and that made the intense pain in my chest, and the element of shock and so on, ease up a little, and after a while I thought, there must be something more, a spiritual dimension, I mean, on the other side, and that it's okay that her body's lying in a coffin at the cemetery, because her spiritual energy is somewhere else*.

Another father talked about the transparency between the visible and invisible world: "...and in this way the deceased are still with us and you can both pray and ask for help from them".

Signs and warnings

The third main theme of importance for coping was signs and warnings through phenomena in nature. This could be a special light in the sky, as expressed by a mother who lost her child:

> *I looked up at the sky, which was red, this was February, the light which shines is red, and it was so beautiful. And right then it felt like a gasp. This was Jonas, and he was fine. This was a kind of sign, as I understood it, this is Jonas. It's Jonas smiling to me. It was a very clear form of contact.*

Another example of signs and warnings was the aurora borealis shaped like a cross in the sky. The parents interpreted the cross as if their deceased little son was looking down, telling them that he was fine and that it was those left behind who felt pain and sorrow. Some participants described signs and warnings as a natural part of their life, often closely connected to nature. Several of the participants had received signs and/or warnings in advance of the death. This could be a sign in nature, a dream, or an unusual thing that the deceased had verbalized or done before he or she died. The sign could also be related to specific feelings that something was wrong the days before the death. According to the participants, reading signs in nature was about paying attention to the signals that nature gives. It was e.g. birds, fishes, animals, or trees that gave signals and clues about things that were going to happen. A father elaborated on this phenomenon:

> *Nature is a part of us, we are also animals, and animals read nature… Nature tells us about things, but if you don't notice it, you don't notice it. But if you do notice it and then analyze it in retrospect then you may start noticing things in nature. (..) I pay attention to signals, and signals hold true. Perhaps in Sámi society we are good at this. We have been part of nature, lived in nature, and have been living in harmony with nature for a very long time.*

Discussion

The aim of this paper is to explore whether and how religiosity and folk religiosity are important in the coping process after sudden and unexpected death in Sámi areas in Norway.

Our findings concur with previous studies, indicating that religion and spirituality are important and helpful in the bereavement process after sudden death (Becker et al., 2007; Marrone, 1999; Wortmann & Park, 2008b). Furthermore, the results indicate that

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the Sámi traditional worldview and values are still parts of modern bereavement processes. The findings will be discussed in relation to: a) the pre-Christian Sámi worldview, and b) the function of a safe place to grieve and the significance of accepting death. In this paper, culture is related to how people experience, understand, and communicate their reality as a basis for social action (Geertz, 1993 (1973)).

Bereavement in Sámi areas in relation to the pre-Christian Sámi worldview

Our findings indicate that folk religious coping strategies are common in the bereavement process among bereaved people in Sámi areas, and that they are expressed in different ways through rituals, after-death communication, signs, and warnings. The use of folk religious coping strategies is in accordance with other studies of Sámi indicating that traditional folk religiosity is present in modern times and that it exists integrated and/or in parallel with Christianity (Myrvoll, 2010; Sexton, 2009). In the literature the phenomena of after-death communication is termed extraordinary experiences (e.g. Parker, 2005). In the context of Sámi communities, after-death communication is not necessarily experienced as extraordinary, but rather as a part of everyday life. According to the traditional worldview, death did not mean the end of a person's existence, but a transition to a different relationship between the living and the dead (Myrvoll, 2010). The deceased continued to live in their world (underworld) and could be of help and benefit for the persons still alive. Furthermore, after-death communication seems to reconstruct and create a new meaning in the bereavement process, assisting the bereaved to adapt to a new life without the deceased.

In many Sámi areas there are traditions of determinism, both from the traditional worldview and the Christian saying "the day we die is predetermined the day we are born" (Kristiansen, 2005). Believing in a greater plan and purpose is found comforting (Wortmann & Park, 2008a) and it provides an opportunity to create meaning. Central in grieving is the process of reconstructing and creating a new meaning in life (Keesee et al., 2008). The profound loss from sudden death challenges the coherence of the bereaved individuals' existing beliefs about themselves and the world (Neimeyer, 2005). The individual and cultural belief system may be regarded as a "myth" - a constellation of beliefs, feelings, images, and rules that operate largely outside the conscious awareness, yet nevertheless influence how the individual interprets sensations, construct new explanations, and direct behavior (Parker, 2005). This serves as a lens that gives meaning to every situation one meets and determines what one will do in it (Feinstein & Krippner, 1997).

Religion and spirituality offer powerful ways to address existential questions that arise in the face of death and create new meanings for a loss experience (Wortmann & Park, 2008b). According to Johnsen (2007) today many Sámi have become more detached from the traditional belief system, closeness to nature and ecological balance. In the encounter with loss and suffering, many of the bereaved may find themselves in a process of revitalizing their roots and traditional worldview. The experience and use of signs and warnings among the bereaved is in accordance with the Sámi worldview where humans are close to nature and part of a greater universal whole (Kristiansen, 2006). Our interpretation of these descriptions was that the signs and warnings are verifications of the interconnectedness with nature, earth and universe in addition to their importance in the bereavement process. For many of the participants the after-death communication was also an important event in their own religiosity development. Some of the participants described themselves as non-believers before the experience of after-death communication. However, after the experience they were more certain about the existence of after-life and they considered them self as spiritual beings and believers, even though they did not feel affiliation to church. Religion and spirituality offers powerful ways to address existential questions that arises in the face of death and creates new meanings for a loss experience (Wortmann & Park, 2008a).

In accordance with findings by Parker (2005), our results indicate that after-death communication also created a continuing bond with the deceased, described as adaptive in the grieving process. The relationship between continuing versus relinquishing bonds and adjustment to bereavement is complex (Stroebe, Schut, & Boerner, 2010). Today researchers in the field of bereavement have abandoned the claim that the recovery or completion of grieving involves relinquishment of the attachment and bond to the deceased (Neimeyer, Baldwin, & Gillies, 2006; Parker, 2005; Stroebe et al., 2010). Bereaved people suffering from complicated forms of grieving will need to work towards more adaptive ways of either continuing or relinquishing their bond with the deceased depending on their individual attachment styles and the duration of bereavement (Stroebe et al., 2010). However, for many with complicated grief patterns a continuing bond with the deceased may be mal-adaptive (Neimeyer, 2005). It keeps the bereaved detached from ongoing life unable to move on in life filled with bitterness and anger unable to accept that

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death has occurred (Neimeyer, 2005). In this situation a need for letting go and relinquish the bond by replacing it in a symbolic relation to the deceased seem necessary to be able to adjust to the loss. Sudden and unexpected death is associated with a higher risk of complicated grief (Neimeyer, 2005). However, almost all of the participants with an after-death communication experience in this study described it as positive, mainly because of the knowledge that the deceased was at peace, and secondly because it enabled a continuation of the bond, which was helpful in their adjustment to the loss. As previously discussed, the phenomena of after-death communication and a subsequent continuing bond with the deceased can be considered as culturally appropriate in Sámi areas in Norway.

The function of a safe place to grieve

All the participants described different types of rituals as important and helpful elements in the grieving process. Reeves (2011) defines a death-related ritual as a ceremony directly involving at least one person and a symbol of the loss. The analysis revealed that the rituals had two main functions: to create a safe place for the grieving process and to achieve acceptance.

The first main function of the rituals was to create a safe place, a phenomenon previously described by Reeves (2011) as a place for the participants to grieve, express emotions and feel the pain of loss. In general, many of the participants spent a great deal of effort to avoid the intensive and overwhelming pain of the loss by suppressing it or denying that death had occurred. In this context, rituals provided predictability; they had a beginning and an end that created a safe environment to grieve. The rituals allowed the participants to open up and get closer to the deep pain of the loss. The experiences with rituals were both peaceful and pleasant, but at the same time also painful. In addition, rituals play an important role in restoring some kind of order and predictability in the chaotic situation that arises in the wake of unnatural death (Romanoff & Terenzio, 1998).

The significance of accepting death

The intersection point between pain and serenity created by the rituals appeared to be essential in the process of accepting death, i.e. the second main function of rituals: they helped the participants towards an understanding and acceptance that death had occurred. Our finding is consistent with Gennep's (1960) description of how rituals in general help participants to cross thresholds from one status to another, for instance from spouse to widow. In this manner, the death rituals help the bereaved to progress in the process towards acceptance of death and adaptation to the new situation without the deceased (the new status). Our analysis revealed that after-death communication was another pathway to acceptance. Getting the knowledge that their loved one was at peace had an all-important meaning for them and made it easier to grasp the fact and accept that death had occurred. For some of the participants the after-death communication became a turning point in the grieving process where life went forward again as they started to accept what had happened.

Acceptance is an important part of the grieving process to integrate the death and adjust to a new life. Without some degree of acceptance it is difficult to achieve an adaptive outcome of grief and it may imply a higher risk for a complicated grief process (Prigerson & Maciejewski, 2005). According to the dual process model of coping with bereavement, in the loss-orientated process one is in denial to avoid the pain of the reality (Stroebe & Schut, 1999). To achieve an adaptive outcome it is necessary to alternate between the two tracks, the loss-orientated and restoration-orientated, and gradually spend more and more time in restoration-orientated tasks (Stroebe & Schut, 1999). For some people with complicated grief patterns a continuing bond with the deceased may be maladaptive (Neimeyer, 2005). In this situation a need for letting go and relinquishing the bond by replacing it with a symbolic relation to the deceased seems necessary to be able to adjust to the bereavement situation. However, our results indicate that the religious dimension was helpful for many of the participants to accept the death and achieve the restoration-orientated coping.

Clinical implications

For most of the participants, folk religious coping strategies were important in the bereavement process and helpful in adapting to a new situation worth living. In general, religion and spirituality is often a non-topic within the health care system. In addition, after-death communication and healing traditions may be experienced as challenging to talk about for different normative reasons, being considered secret and/or taboo. Since after-death communication may be a relatively frequent phenomenon among both Sámi and Norwegian bereaved in Sámi areas in Norway, it is important that the health care system, in addition to general knowledge about bereavement, has a culturally sensitive approach and local knowledge. This will ensure that the experiences of bereaved people are met in an appropriate manner and not merely categorized as psychotic symptoms or delusions.

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Conclusion

Religiosity may be a great resource of help in the grieving process of the bereaved, and especially coping strategies based on local culture as it is integrated in everyday life. As many people bereaved by sudden and unexpected death face a deep existential crisis, the folk religious coping strategies may become important in order to find a safe place to grief, to accept death and adjust to the new situation. It is important that health care personnel are culturally sensitive and acknowledge the experience and significance of religiosity in the bereavement process. Our results indicate that health workers in Sámi areas should be aware of, accept, and possibly encourage the use of religiosity and folk religious coping strategies for the bereaved, as they may benefit from them in the grieving process.

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Case Series

Suicide Study of Korean Entertainers: A Report on Causation of Korean Entertainer Suicides Presented by Media

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***Abstract*:** Suicide in South Korea is one of the most serious societal issues. While the general public's suicide rates have been continuously increasing over the last 30 years and largely concerned as a societal issue, majority of previous studies found that public figure's suicide has an impact on increasing public's suicide rate. However, insufficient attention has been given to entertainers' suicide themselves. In the current study, I attempt to discover particular patterns in the individual characteristics of these entertainers and their causation. By using publicly available profiles and an archival database of electronic news articles, I conduct a collective multiple-case profiling. According to the analysis, young female actresses are the predominant group in which suicides are committed, and no comedians have committed suicide. Furthermore, the news media have postulated the possible causation mainly as psychological depression, which is caused by two circumstances: job-related stress and cyber bullying. Moreover, possible regulation suggestions are made accordingly.

Keywords: entertainer suicide, South Korea

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South Korea is currently ranked as the top country regarding suicide rates among the Organization for Economic Co-operation and Development (OECD) countries (2012). Moreover, suicide rates have been increasing continuously over the last 30 years in the country. Along with the general population suicide rates growing, considerable numbers of famous individuals, such as singers, movie stars, sports figures, and even a former President of South Korea, have committed suicide over the last decade. The seriousness of this phenomenon has garnered much attention throughout the country. Many studies suggest that these suicides of famous individuals have a serious impact on the overall suicide rate (Kim, 2009; Shin et al., 2010). According to an analysis by the Korean Association for Suicide Prevention, approximately 600 "copycat" suicides occur after one famous person commits suicide (2011). The suicides of famous people are considered to be a serious public concern due to their high level of publicity.

There is much concern about this so-called "Werther's Effect" ; however, little attention has been paid to the famous people themselves. Since the suicide of famous people has had much impact on the suicide rate of the general public, why not prevent their suicides in the first place? Why do they commit suicide?

In order to start shaping a possible theory and develop prevention strategies for the suicides of famous people, the current study attempts to uncover the reasons for these suicides, particularly of entertainers in South Korea. Like Hollywood stars in the United States, entertainers in South Korea, such as singers, actors/actresses, and comedians, live in fame, and every move of these entertainers is highly publicized. At the same time, these entertainers have both physically and emotionally high-stress jobs—the public is only exposed to the glamorous side of their work. The underlying causes of the suicides are largely unknown until the actual suicide events are occurred and reported by mass media. It is important to understand the causation of entertainers' suicides to prevent not only suicide by entertainers themselves but general population suicide by avoiding copycat suicides. In the current study, I attempt to discover any existing idiosyncrasies of this population through a collective multi-case analysis using publically open access information and news article archive.

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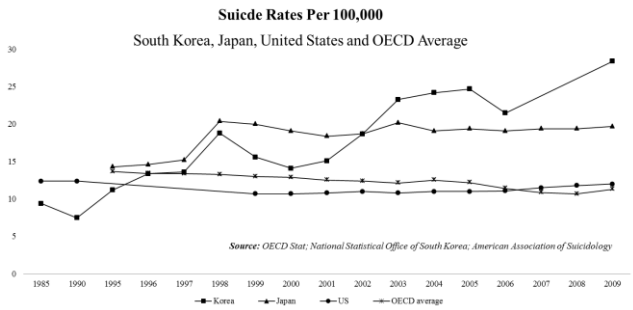
Facts and Previous Studies on Suicide in South Korea

For over a decade, the suicide rate in South Korea has ranked in the first place among OECD countries (OECD, 2012). Moreover, the rate is exceptionally higher —33.8 per 100,000 individuals— than the second highest-ranked country, Japan (21.2) (OECD, 2011) and the third highest, the United States (12.4), in the same year (McIntosh & Drapeau, 2012). The issue is becoming more and more serious as the suicide rate substantially increases every year. According to National Statistical Office of South Korea, the suicide rate was 9.4 per 100,000 individuals in 1985. However, the rate drastically grew between 2000 and 2005—from 14.0 to 25.5 (National Statistical Office of South Korea). Considering that suicide is violence, this fact is peculiar because South Korea has one of the lowest violent crime rates among countries (Supreme Prosecutor's Office Annual Crime Report, South Korea, 2012). For instance, the homicide rate in South Korea is 2.6 per 100,000 (1,251 counts), while in the United States it is 4.8 (14,748 counts) and the global rate is 6.9 (United Nations Office on Drugs and Crime, 2012).

Figure 1.
Suicide Rates of South Korea, Japan, the U.S., and the OECD Average



In most countries, males commit suicide two times more than females, regardless of age group. Considering that the proportion of males to females is approximately 3 to 1 in most Western countries, more females commit suicide (1 to 1) in South Korea than in any other countries (Sin, 2007). Along with the overall growth of the suicide rate, the suicide rate in all age groups has increased. The suicide rate for those 75 and older is currently the highest, heading towards 200 for males and 120 for females per 100,000. Typically, about half of those committing suicide are married and/or do not have a stable income, such as students, the jobless, and housewives (National Statistical Office of South Korea, 2012).

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As the suicide rate is becoming one of most important concerns nationwide, South Korean scholars began to study the phenomenon from various perspectives to discover possible reasons as well as prevention strategies (Park, 2013; Moon & Park, 2012; Kim, 2010; Lee, et al., 2009; Park, 2009; Sin, 2008; Park & Lester, 2006). Similar to prior studies in Western countries, sociological and psychological approaches have been applied to contemporary Korea's suicide trends. Socio-demographic status, social class, and social integration have been the main subjects related to suicide (Park, 2013; Moon & Park, 2012; Lee, et al., 2009; Kim, et al., 2006; Park & Lester, 2006). Even though the studies present valuable ideas regarding the descriptive nature of the issue, significant evidence is required to determine the reasons behind this phenomenon, and furthermore, practical prevention strategies.

Despite the continuing increase in the suicide rate for almost 30 years, there are two drastic escalations—one in 1998 and another in the first decade of the 2000s. The first peak of the suicide rate in 1998 is often explained by the economic crisis of 1997 (Moon & Park, 2012). Yet researchers have not sufficiently determined the reason for the second increase from 2000 to 2010. One hypothesis regarding the second increase is the so-called "Werther effect," or copycat suicides (Shin, et al., 2010; Pirkis, et al., 2006). In South Korea, there has been a substantial number of famous figures' suicides, including entertainers', and the incidents have been well publicized. Despite of a recent study found minor contradicting results opposite to the previous results that suicide by famous people increases copycat suicides by public (Fu & Chan, 2013), majority of published studies found the danger of publicizing famous figures' suicides that it has been proven to cause copycat suicides within the public by individuals who had previously been thinking about committing suicide (Pirkis, et al., 2006).

At this point, I turn the focus to celebrities' tendencies toward suicide at the micro level to understand the exact nature of this phenomenon.

Facts and Previous Studies on Suicides of Famous People in South Korea

Despite the fact that the Korean entertainment business is thriving not only within the nation but worldwide, every year, with the exception of 2006 only, famous entertainers have committed suicide, and the number of suicides has been increasing since 2005[1]. Overall, the suicides are mainly faulted as the result of psychological depression caused by various situations they were experiencing.

Even though there had been a few cases of entertainers' suicides in previous years before 2005[2], the current study did not count them in current study due to two main reasons: inconclusive type of death and different exposure method to the public. The entertainers' suicide cases before 2005 raised much-heated arguments on their type of death – suicide or homicide. Some assumed that the suicide entertainers had experienced psychological difficulties which caused them to commit suicide. On the other hand, others, especially close friends and family members, argued that they had no reason to commit suicide therefore they were killed. Without concrete evidence determining their death was due to suicide, I excluded these cases for the current study. Moreover, as the use of the internet majorly increases since 2000 in South Korea, the delivery method of news shifted paper to the internet, which increased level of public exposure significantly.[3]

In February 2005, movie actress Eunju Lee committed suicide at her condominium, leaving a suicide note mentioning work stress and financial issues. The news was widely spread[4]. Statistics Korea reported that daily average suicides increased 2.5 times, from 0.84 to 2.13, after her suicide (Shin, et al., 2010). In 2007, rising singer, Unni (legal name: Yoon Heo), ended her life after suffering from vicious comments about her on the web. The following month, in February, actress Dabin Jung (legal name: Hyesun Jung) committed suicide due to a lack of job stability and cyber bullying. The very next year, actor Jaehwan Ahn killed himself due to financial problems and marital frustration.

In 2008, the same year Ahn committed suicide, Jinsil Choi, who was considered to be the "public actress" of the nation, also committed suicide after experiencing a divorce due to domestic violence accusations and cyber bullying mentioning a rumor that Choi was responsible for Ahn's suicide because Ahn had owed her money. Later, in 2010, her younger brother, Jinyoung Choi, actor and singer, also committed suicide because of depression from his sister's death as well as job distress. Recently, in January 2013, Jinsil Choi's former husband, retired famous baseball player Sungmin Cho, committed suicide while he was spending his time coaching regional baseball teams and operating some businesses—not very glamorous compared to his

[1] The information on celebrity including entertainers and their suicides was gathered from two major South Korean search engines portals: NAVER (www.naver.com) and Daum Communication (www.daum.net).

[2] Seongjae Kim (Singer, Died 11.20.1995 at age of 22), Jiwon Seo (Singer, Died 01.01.1996 at age of 19), Gwangseok Kim (Singer, Died 01.06.1996 at age of 31)

[3] No significant suicide case by entertainer was reported during 2000-2005.

[4] The number of Internet news articles was less than expected; however, the Internet was not as prevalent then as in recent years.

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younger years[5]. Most recently, Choi's former manager committed suicide in November 2013[6].

Between Choi's relatives' and acquaintances' suicides, the trend of famous people's suicides continued. In March 2009, actress Jayeon Jang left notes that she was struggling with her agency and was stressed from sexual demands by various work-related authorities. The following month, rookie actress Seungyeon Woo also committed suicide due to depression from being in the entertainment business. That same year, former President Roh Moo-hyun committed suicide during an internal investigation of illegal lobbying.

In 2010, Yongha Park, a famous actor and singer in both South Korea and Japan, ended his life while his father was fighting cancer and while he was creating his own entertainment agency and working as an actor and singer. The following year, singer Dongha Chae (legal name: Dosik Choi) committed suicide under the pressure of a lack of public attention to his solo career after leaving the promising group, SG Wannabe. The same year, a sports reporter, Jisun Song, finished her life 16 days after she wrote a suicide note on her personal blog. Song had become the center of attention due to rumors regarding her relationship with a baseball player and the suicide note. The public attention changed into cyber bullying, resulting in her suicide. In 2012, promising actress Ah-yul Jung and veteran actress Yoonjung Nam committed suicide due to the pressures of being famous and financial issues, respectively. Most recently, middle-aged actress Sujin Kim finished her life in March 2013 because of financial issues and job instability.

In addition to entertainers and public figures, sports stars and entertainment business-related individuals have committed suicide. After experiencing public accusations of game manipulation, three soccer players related to the affair ended their lives in 2011 and 2012. Volleyball player Yongtaek Lee also decided to take the extreme end due to the pressure of not being able to play the sport anymore because of injury. In addition, movie and drama producer Hyungil Cho committed suicide because of financial and job distress. Fashion business professional Jongwon Woo also committed suicide after he was convicted with hit-and-run charge as well as due to the financial failure of his shopping mall website. Moreover, fashion models Jihoo Kim (October 2008), Da-ul Kim (November 2009), Hyerin Lee (October 2010), and Yuri Kim (September 2011) committed suicide after experiencing job distress and cyber bullying. (See table 1).

Even though famous people's suicides are becoming a visibly serious issue, only a handful of studies has handled the subject. Nonetheless, most of the studies solely analyzed the effect of publicizing famous people's suicides—the Werther Effect or the role of media when the incidents occurred (Lee & Kim, 2012; Shin, et al., 2010; Kim, 2010; Kim, 2009).

The one of the major difference between suicides in the general public and famous people's suicides is the level of publicity. This notion heavily focused attention on the influence of celebrity suicides on the public, not on the problems within the entertainment business and with the individuals. Therefore, I argue that we must try to find out the reasons behind and prevention strategies for the suicides of famous individuals as much as we try to prevent suicide in the general public, which can ultimately help to mitigate suicide in the general public. In order to convey the details, first, the selected subjects were analyzed in a descriptive manner.

Study Subjects and Analysis Methods

Because the study attempts to discover the suicide characteristics and patterns of a certain group, entertainers; a collective multi-case study is considered to be a proper approach. In order to conduct the collective multiple-case study, I built an archival database of electronic news articles related to the entertainers' suicides. Despite the media's high level of publicity about these entertainers' suicides, little factual information is provided, and that which becomes redundant. To sustain reliability within the data, the search terms used were strictly "[Entertainer's Name] Suicide[7]." The period for article collection was also consistent, being within one week of the date of the entertainer's suicide[8]. Moreover, to avoid threatening internal reliability, the information was used only when more than 80% of the articles presented the same information[9]. For general data on suicides at the country level, three main data sources were selected: OECD Stat, Statistics Korea, and the Korean Association for Suicide Prevention.

[5] Cho was recruited by the prestigious Japanese baseball team, Yomiuri, in 1996. However, in 2002, he had to leave the team due to a failure to recover from an elbow injury. Also, his marriage to Choi was greatly celebrated; nonetheless, it ended in domestic violence accusations and a legal fight.

[6] Not much information on this is available. The news presented the person simply as "Choi's former manager."

[7] For example, search 'Eunju Lee Suicide' in Korean (i.e., 이은주 자살) on two major South Korean search engines portals: NAVER (www.naver.com) and Daum Communication (www.daum.net). The list of names are provided in Table 2.

[8] For those suicides that the dates were unspecified, first report of the incident is considered as the suicide date.

[9] The same information is related to possible causation of suicides. This process is due to exclusion of news reports that speculate the cause of suicide. The content analysis software, Atlas.ti (Word Cruncher function), was used.

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Table 1. Suicide of Famous People in South Korea from 2005 to 2013[14]

No.	*Date of Suicide*	*Name*	*Occupation*	*Gender*	*Age at Death*	*Assumed Main Cause(s)*
1	*02.22.2005*	*Eunju Lee*	*Actress*	*Female*	*24*	*Job distress & Financial issue*
2	*01.21.2007*	*Unni*	*Actress/Singer*	*Female*	*25*	*Cyber bullying*
3	*02.10.2007*	*Dabin Jung*	*Actress*	*Female*	*26*	*Job stability & Cyber bullying*
4	*09.2008*	*Jaehwan Ahn*	*Actor*	*Male*	*36*	*Financial & Marital frustration.*
5	*10.02.2008*	*Jinsil Choi*	*Actress*	*Female*	*39*	*Marital stress & Cyber bullying*
6	*03.07.2009*	*Jayeon Jang*	*Actress*	*Female*	*29*	*Dispute agency & sexual demands*
7	*04.27.2009*	*Seungyeon Woo*	*Actress*	*Female*	*23*	*Job distress*
8	*05.23.2009*	*Roh Moo-hyun*	*Former President of South Korea*	*Male*	*62*	*Lobby accusation & investigation*
9	*03.29.2010*	*Jinyoung Choi*	*Actor/Singer*	*Male*	*39*	*Sister's death & Job distress*
10	*06.30.2010*	*Yongha Park*	*Actor/Singer*	*Male*	*32*	*Father's cancer & Business distress*
11	*05.2011*	*Dongha Chae*	*Singer*	*Male*	*29*	*Stress from obscurity*
12	*05.23.2011*	*Jisun Song*	*Sports reporter*	*Female*	*29*	*Cyber bullying*
13	*05.06.2011*	*Kiwon Yoon*	*Soccer player*	*Male*	*23*	*Accusation of play manipulation*
14	*05.2011*	*Jongkwan Jung*	*Soccer player*	*Male*	*29*	*Accusation of play manipulation*
15	*09.07.2011*	*Yongtaek Lee*	*Volleyball player*	*Male*	*25*	*Failure from injury*
16	*09.15.2012*	*Jongwan Woo*	*Fashion director*	*Male*	*46*	*Hit-and-run charge & Business Failure*
17	*04.14.2012*	*Kyunghwan Lee*	*Soccer player*	*Male*	*24*	*Accusation of play manipulation*
18	*06.12.2012*	*Ah-yul Jung*	*Actress*	*Female*	*25*	*Pressure of being popular*
19	*08.01.2012*	*Yoonjung Nam*	*Actress*	*Female*	*58*	*Financial issue*
20	*01.02.2013*	*Hyungil Cho*	*Movie/Drama Producer*	*Male*	*48*	*Financial & Job Distress*
21	*01.2013*	*Sungmin Cho*	*Former baseball player*	*Male*	*39*	*Former relatives' suicide*
22	*03.2013*	*Sujin Kim*	*Actress*	*Female*	*37*	*Financial issue & Job stability*

[14] The information was excerpted from two search engines' (Naver and Daum Communication) news results related to the famous individuals and their suicides.

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Finally, individuals' information was collected from publically open profiles on the Internet[10].

The research subjects were selected based on one criterion: that he or she is an entertainer figure (in these data, actresses/actors, singers, and sports reporters). The purpose of this selective sampling was to generalize the findings within this unique and homogeneous group (Johansson, 2003). Furthermore, their level of publicity was measured as an indicator of their level of fame. Fourteen cases were selected for the study. (See Table 2).

As a collective multiple-case study, two common and highly regarded case study techniques were used: pattern-matching and explanation building (Tellis, 1997; Yin, 1994; Trochim, 1989). By applying these techniques, I attempt to construct a descriptive framework (Tellis, 1997) to explain the entertainer suicide phenomenon in South Korea.

Before the analysis of entertainers' suicides, the suicide rate of the general population is analyzed to examine the macro-level circumstances in South Korea.

Findings

A Summary of Korean Entertainers' Suicides and Causation

Almost every year since 2005, on average, two entertainers have committed suicide. Even though there is not a particular pattern regarding the seasons of the suicides, each year's pair of suicides tend to cluster together: 1) Unni and Dabin Jung (January and February 2007), 2) Jaehwan Ahn and Jinsil Choi (September and October 2008), 3) Jayeon Jang and Seungyeon Woo (March and April 2009), and 4) Jisun Song and Dongha Chae (May 2011).

The major occupation of the subject group is actors and actresses, followed by three singers, and a sports reporter. No comedians were reported to have committed suicide. Compare to gender aspect of general population suicide in South Korea where the ratio of male to female is one to one, more female individuals committed suicide among entertainers, ten out of the 14 individuals (71%) were female. Furthermore, unlike the age groups of the highest rate among general suicide population is the elderly (75 and older), the average age of the entertainers who committed suicide is 32 years old. Except one case, Yoonjung Nam, who was 58 years old, all other celebrities committed suicide in their 20s or 30s.

According to cumulative contents analysis, job stress (including career stability, pressures related to being famous, and financial issues) and cyber bullying were the two key circumstances that the subjects were experiencing when they committed suicide.

The Nature of Career and Job Distress

Fame is an essential element in entertainers' lives. Without fame, it is safe to say the entertainment job no longer exists. This reality causes two crucial issues: job instability and the danger of psychological issues. According to Park's research, "A Study on the Stress, Depression, and Suicidal Thought of the Actors," job distress is significantly related to depression, which results in suicidal thoughts; 40% of actors and actresses experience depression and have considered suicide (2009). Fame is associated with both of the elements, job distress, and depression.

Agencies are a crucial component of celebrities' lives, especially for pre-entertainers. In order to reach the desirable level of fame, an entertainer must first be exposed to the public via mass media. Without the agency's investment and lobbying, an individual is almost unable to be shown to the public, even though she or he is highly talented. These inequitable relationships between agencies and entertainers create a disadvantaged work environment for entertainers (Park, 2009). This circumstance often results in unfair contracts. The so-called "slavery contracts[11]" have been an issue in Korean entertainment business since 2005.

Furthermore, sexual favors as bribes have continued behind the scenes. Despite the level of seriousness of the crime, the victims are afraid to report as that could cause the end of their career. Jayeon Jang's suicide was significantly related to the issue of sexual bribes according to her suicide note.

After entertainers obtain their jobs, unlike most jobs, they have career breaks for various periods and reasons. While the break periods vary from a few months to years, the reasons also vary, such as preparing for upcoming work; personal breaks (marriage, having children, studying, mandatory military service[12]), and lack of work contracts. Since the major component of a continuous and developing career is fame, along with the ego required to be a famous person, entertainers put their best effort into gaining the public's attention.

However, the public's attention to entertainers is unpredictable (J. Lee, 2012). This fact results in great career instability in the entertainment business and creates a part-time job market (Lee & Chun, 2012; Park, 2009). In fact, except for a few

[10] Majorly obtain from two major South Korean search engines portals: NAVER (www.naver.com) and Daum Communication (www.daum.net).

[11] Slavery contracts are often excessively long-term exclusive contracts (e.g., 10 years or life) violating national employment law (e.g., more than 18 hours of work per day) without the protection of basic human rights (e.g., well-being, study, and sleep for under-age entertainers).

[12] Every man over 18 years old in South Korea has an obligation to enlist in the military for about two years, with a few exceptions.

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famous top celebrities, most entertainers are part-timers without health-, employment-, and industrial accident insurance (Lee & Chun, 2012; Lee, 2012). Moreover, during the process of becoming famous, entertainers become emotionally vulnerable and become afraid of "not being remembered." The representative case of this is Dongha Chae, who ended his life being afraid of obscurity.

Table 2. Subjects of the Current Study – Entertainer Suicides in South Korea from 2005 to 2013

No.	Date of Suicide	Name	Gender	Age at Death	Assumed Main Cause(s)	Number of Articles[13] (For one week)	
						Daum	Naver
1	02.22.2005	Eunju Lee	Female	24	Job distress & Financial issue	244	315
2	01.21.2007	Unni	Female	25	Cyber bullying	482	431
3	02.10.2007	Dabin Jung	Female	26	Job stability & Cyber bullying	713	664
4	09.(08).2008	Jaehwan Ahn	Male	36	Financial & Marital frustration	1,780	1,633
5	10.02.2008	Jinsil Choi	Female	39	Marital stress & Cyber bullying	4,550	4,397
6	03.07.2009	Jayeon Jang	Female	29	Dispute agency & Sexual demands	1,040	1,094
7	04.27.2009	Seungyeon Woo	Female	23	Job distress	174	192
8	03.29.2010	Jinyoung Choi	Male	39	Sister's death & Job distress	1,900	2,055
9	06.30.2010	Yongha Park	Male	32	Father's cancer & Business distress	2,560	2,495
10	05.23.2011	Jisun Song	Female	29	Cyber bullying	1,770	1,686
11	05.(27).2011	Dongha Chae	Male	29	Stress from future obscurity	954	907
12	06.12.2012	Ah-yul Jung	Female	25	Pressure of being popular	289	232
13	08.01.2012	Yoonjung Nam	Female	58	Financial issue	149	128
14	3.(29).2013	Sujin Kim	Female	37	Financial issue & Job instability	144	115

[13] The number of articles that share the same information on cause of suicide by subjects.

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Even though entertainers live their dream of fame, they experience another type of industrial distress: psychological distress. When an individual experiences recurring extreme situations, the person is more likely to develop panic disorder (Barker, 2003). As a contract worker, the entertainer endures a heavy schedule and is involved with numerous people. However, when they take their break after work, the entertainers feel that all the people and fame just disappear. While experiencing these extreme situations recurrently, entertainers develop a tendency to feel extreme loneliness and fear of lack of success all the time (Park, 2009). Various celebrities have testified on talk shows that they were experiencing panic disorders[14].

This emotional distress is not simply psychological. Entertainers' emotional strain is also considered another vital element in terms of presenting a danger to entertainers' mental health. When intentional emotion controls can deliver monetary earning (e.g., actors get paid for their performance), these controls are considered to be emotional labors (Hochschild, 1979; Morris & Feldman, 1996). Regardless of inner emotions, actors and actresses follow their roles, singers follow the songs, reporters, and anchors report the news, and comedians make people laugh. These disparate emotions between inner and outer self can create psychological anxiety (Hochschild, 1979). Since psychological distress is a strong indicator of suicidal tendencies, the entertainment environment is not considered a safe place.

Financial issues are one of the main circumstances behind suicide as well among entertainers. Most of these entertainers rarely experience absolute poverty status, such as lack of food or housing. However, the financial issues of these entertainers were more likely related to relative poverty, for example, comparing their financial situation to their past or other entertainers. Because of the nature of the business—intensive work, the relationship between fame and one's earnings and irregular breaks—financial anxiety is strongly related to the characteristics of an entertainment job. This is also considered one of the components in causing depression.

Some of the current study's cases related to job distress are presented below. Most entertainers who committed suicide (9 out of 14 cases) were experiencing the job-related distress and enduring a career break. (See Table 3).

Cyber Bullying

Among the cases in this study, the other major suicide indicator was cyber bullying. All the cases whose reasons for suicide were related to cyber bullying were female and of relatively younger ages, while none of the male entertainers committed suicide due to cyber bullying. The types of cyber bullying mainly included posting vicious comments and rumors in news articles. The sources of the rumors were all unidentified. Thus, it has been difficult to hold someone responsible for these actions. (See Table 4).

Bullying is generally considered to be adolescent behavior among peers involving aggressive actions targeting a person, such as vicious rumors and peer exclusion (Herba et al., 2008). Researchers have found evidence that bullying—including both off-web and on-web—has a significant relationship to suicide among the youth (Hay, Meldrum, & Mann, 2010; Hay, & Meldrum, 2010). Since school bullying gained attention, the concept of bullying has been widened to encompass various circumstances—military bullying, parental bullying, prison bullying, workplace bullying, and cyber bullying.

Since the public is easily exposed to the personal lives and actions of entertainers, entertainers are vulnerable targets for cyber bullying. Internet communication has unique characteristics, such as anonymity, easy dissemination, and a lack of boundaries. These characteristics allow Internet users to post vicious comments and violate privacy without a conscience (Kim, 2007).

These insults by unknown individuals, considered to be the public by the entertainers, often cause "public shame." Shame in a social dynamic is one of the most crucial components related to suicide (Fullagar, 2003; Kalafat & Lester, 2000; Hastings, Northman, & Tangney, 2002). For entertainers who desire high level of publicity, this public cyber bullying threatens their existence and becomes traumatic incidents (Wilson, Drozdek, & Turkovic, 2006).

The cyber bullying of entertainers is a serious problem due to an unidentified source of the rumor and continuous tendency. Bullied entertainers are mostly helpless unless they formally report the incidents and charge those responsible. However, this option might not be possible because a legal charge against the public could ruin their publicity. Inside of these complicatedly intertwined circumstances and along with career distress, entertainers feel deserted—resulting in suicide.

[14] They include Taehyun Cha (actor), Kyungkyu Lee (comedian), Haneul Kim (actress), Taesung Lee (actor), Moosong Lee (singer), and Janghoon Kim (singer).

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Table 3. Suicides Due to Career Distress

No.	Date of Suicide	Name	Gender	Age at Death	Assumed Main Cause(s)
1	02.22.2005	Eunju Lee	Female	24	Job distress & Financial issue
2	02.10.2007	Dabin Jung	Female	26	Job stability & Cyber bullying
3	03.07.2009	Jayeon Jang	Female	29	Dispute agency & Sexual demands
4	04.27.2009	Seungyeon Woo	Female	23	Job distress
5	03.29.2010	Jinyoung Choi	Male	39	Sister's death & Job distress
6	05.(27).2011	Dongha Chae	Male	29	Stress from obscurity
7	06.12.2012	Ah-yul Jung	Female	25	Pressure of being popular
8	08.01.2012	Yoonjung Nam	Female	58	Financial issue
9	3.(29).2013	Sujin Kim	Female	37	Financial issue & Job stability

Table 4. Suicides Due to Cyber Bullying

No.	Date of Suicide	Name	Gender	Age at Death	Assumed Main Cause(s)
1	01.21.2007	Unni	Female	25	Cyber bullying
2	02.10.2007	Dabin Jung	Female	26	Job stability & Cyber bullying
3	10.02.2008	Jinsil Choi	Female	39	Marital stress & Cyber bullying
4	05.23.2011	Jisun Song	Female	29	Cyber bullying

Conclusion

A number of findings were discovered from the current study. First, in terms of the time period, the events of entertainers' suicides were tended to cluster. Second, a major occupation of entertainers who committed suicide is actor and actress – no comedian presented. Third, more number of female entertainers committed suicide than male entertainers. Forth, ages of suicide committed entertainers were mostly in their 20s and 30s. Lastly, and most importantly, the circumstances discovered behind entertainers' suicides include two main elements: job distress and cyber bullying. Even though there has been some effort to build a better employment environment for entertainers, it is hard to change the situation due to the nature of the career. Still, more efforts are required to keep work circumstances more stable, for example, by agencies adopting a minimum require wage system. Moreover, cyber bullying should be prevented by website administrators, and the individuals who bully should

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be held legally responsible for their actions. Lastly, the most problematic issue behind entertainers' suicides is lack of psychological support (J.Y. Lee, 2012). This support should be mandatory and initiated by the agencies. Since preventing entertainers' suicides will prevent potential suicides in the general public, the social cost will be saved in various ways.

There are several limitations of the current study. First, the sample size of the subject might be questionable to generalize the conclusion. This issue is primarily due to the occurrences of phenomena are less than the number that statistically satisfactory in nature. I believe that the suicide by entertainers in South Korea will not be a satisfactory number to run any statistical analysis other than descriptive. Therefore, while understanding the limitation of providing statistical results, the current study profiled the individuals to find possible causation. Second, use of the internet and news articles to find out facts may not be reliable compare to using of previously published literatures. However, published literatures on the current topic are very limited and hard to find the evidence of any kind regarding the current topic.

Regarding future research on the current topic, a qualitative approach (e.g., interviews of friends and family members of suicide entertainers) may help better understanding of causation of suicide by entertainers. I also suggest future research on the population among entertainers who are not committing suicide: comedians. There is possibly a particular reason that comedians are less likely commit suicide. If we better understand this group, more informed suggestions to prevent entertainers' suicide can be created in the future. Other potential studies can be comparative studies such as between entertainers and other occupation or between entertainers from South Korean and other countries.

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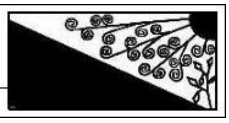

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The EPA Section of Suicidology and Suicide Prevention is one of the nineteen sections of the European Psychiatric Association.

The Section aims at improving research in this field and translating research findings into clinical practice. In this sense it adheres to a bio-psycho-social perspective and involves an international and multidisciplinary network of researchers and clinicians.

The objectives of the EPA Section of Suicidology and Suicide Prevention are:

- Raising awareness about suicide as important public health issue and fighting the stigma surrounding it;
- Improving understanding of risk and protective factors;
- Sharing experience and knowledge on suicide prevention;
- Disseminating best practices on management and treatment of the suicidal patients.

ACTIVITIES

The EPA Section of Suicidology and Suicide Prevention organises symposia and workshops during major scientific events, such as the annual congress of the European Psychiatric Association or the European Symposium on Suicide and Suicidal Behaviour.

The Section organizes Itinerant CME courses in collaboration with National Psychiatric Associations and other organizations.

MEMBERSHIP

The EPA Section of Suicidology and Suicide Prevention comprises 99 members from more than 20 countries. Besides psychiatrists, the Section includes experts in several scientific areas, such as genetics, psychology, anthropology and public health.

To apply for membership, please send your request to the Section Chair (marco.sarchiapone@me.com).

FURTHER INFORMATION

For further information, please visit our website www.suicidology.net/epa.

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Section of Suicidology and Suicide Prevention

The **EPA Section of Suicidology and Suicide Prevention** is organizing the **1st Roman Forum on Suicide – International Meeting on the Treatment of Suicidal Behaviour Across the Lifespan** that will take place under the patronage of EPA and in collaboration with the WPA Section of Suicidology in **Rome** from **17–18 September 2015**. The aim is to start a collaborative process of discussion on strengths, weakness, opportunities and threats related to the Treatment of Suicidal Behaviour across the Lifespan; hopefully, coming to the identification of major priorities in this field.

The treatment of suicidal behaviours represents one of the major challenges for mental health professionals. Despite the knowledge already acquired in this field, many interrelated factors contribute to determine such behaviours, so generating a high level of complexity. Furthermore, this combination of factors is specific for each individual, making the use of a standardized treatment protocol difficult. Individually tailored and evidence based treatments models are needed, for example, considering the differences related to the age of the patients.

The venue has limited capacity and can accommodate no more than 200 participants. For this reason only the first 200 persons that will register will have their participation guaranteed. **Registration is free of charge for members of the EPA Section of Suicidology and Suicide Prevention and members of the WPA Section of Suicidology.** Visit the **Forum website** for more information.

Date: 17–18 September 2015