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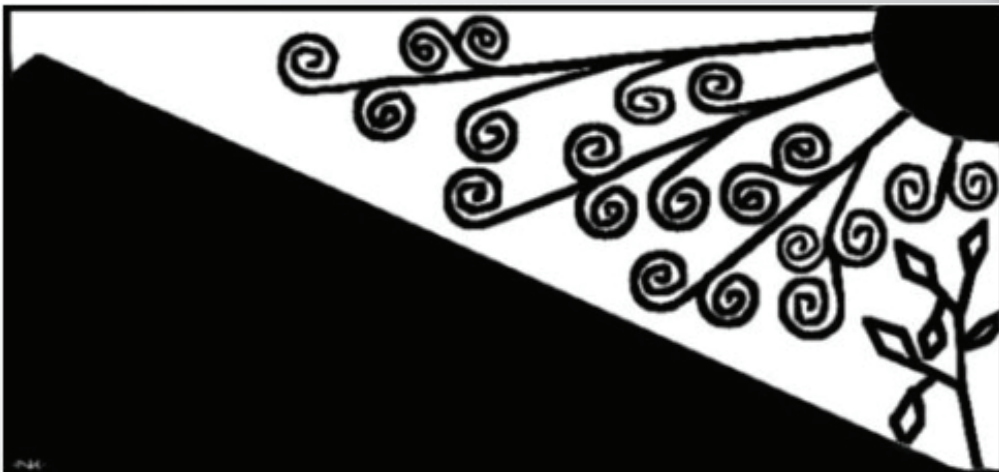
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Editorial

Risk and protective factors associated with attitudes toward suicide**Marco Sarchiapone**^{1,2,3}¹Department of Medicine and Health Sciences, University of Molise, Campobasso, Italy²National Institute for Health, Migration and Poverty (NIHMP), Rome, Italy³"G. d'Annunzio" University Foundation, Chieti-Pescara, Italy

A very useful model for describing and studying suicidal behaviors is the Multifactorial Model of Diseases, developed by Mościcki (1997) that permit to define outlines a "map" of risk and protective factors of a subject towards suicide.

The risk factors, divided into distal (or predisposing) and proximal (or potentiating) factors, represent respectively an underlying vulnerability for a particular condition or event, that is that a person may be at risk for the condition at some time in the future and an immediate vulnerability for a particular condition or event, which is acting as precipitating factors.

Among the predisposing factors, a key role is occupied by the presence of psychiatric disorders: more than 90% of people died by suicide had a diagnosable mental disorder (Bertolote, Fleischmann, De Leo, & Wasserman, 2003), especially mood disorders (56 -87%), schizophrenia (6 -13%) (Kredentser, Martens, Chochinov, & Prior, 2014) and substance abuse (26-55%) (Schneider, 2009).

Also specific socio-demographic factors can be considered as predisposing factors, as for example, to be a white man, have less than 20 years and over 45, never married, widowed, divorced, separated or living alone, is the profile of person with a higher risk of suicide.

To these distal factors must be added some personality traits, as impulsivity and aggression, a family history of suicide and presence of a psychiatric disease in the parents, which are related to an higher rate of suicidality (Lyons-Ruth, Bureau, Holmes, Easterbrooks, & Brooks, 2013).

The genetic factors play an important role among the predisposing factors for suicide, as demonstrated by the historic epidemiological studies on families by Roy and Segal (2001) which described an increase in concordance for suicide in monozygotic

twins in comparison to dizygotic twins (18% vs. 0.7%) and Schulsinger et al. (1979) which reported a suicide frequency 6-fold greater among biological relatives of adoptees with suicidal behaviours without suicidal behaviours in families of adoptive parents. Currently, various approaches are used for the understanding of the role of genetics in the suicidal risk, confirming the implication of genetic a predisposition to suicidal behaviours, even if with some opposing results.

The presence of negative life events/stressors, as the impossibility to receive familiar and social support, immigration, job loss or retirement and the presence of chronic medical conditions or with inauspicious prognosis may be considered, instead, as a potentiating risk factor for suicide (Rowe, Walker, Britton, & Hirsch, 2013).

Self-harm thoughts and behaviours are strong predictor of completed and it's also important to take into account that the risk to commit a suicide is higher when the individual is experiencing the acute phase of a psychiatric disorders, especially psychosis, often accompanied by psychomotor agitation, irritability, inner tension, racing/crowded thoughts, persecutory ideation, anxiety, and hallucinations (Nishiyama & Matsumoto, 2013).

The model conceived from Mościcki identify a suicidal threshold determined by the sum of predisposing factors, to whom are added the potentiating factors, determining the transition from a suicidal ideation to a suicidal act. This threshold, moreover, is influenced by protective factors.

To date, protective factors have not been studied as extensively or rigorously as risk factors, but their understanding are, however, equally as important as researching risk factors.

One the principal protective factor is the possibility to guarantee the access to effective psychological clinical care for mental health, as it's

widely recognized that to lower the risk of suicide is fundamental treat the underlying psychological disorder. Equally important is making sure that the person in distress can seek help on their own, overcoming the shame and the stigma to telling their discomfort.

Reducing the availability of lethal means is indispensable to reduce the risk of suicide. It was demonstrated that in the countries in which these restrictions are adopted, a declines in suicide rates of as much as 30%–50% was found (Barber & Miller, 2014).

Cultural value and religion beliefs and also the family and the social support can be very helpful in person with suicidal behavior.

Keeping clear the distinction between predisposing, precipitating and protective factors is important for the research and also for the development of effective intervention strategies since it was demonstrated that planning prevention programs, the strategies used and their potential effectiveness, are likely to differ depending on the nature of the targeted risk factors (Mościcki, 1997).

Identifying the risk and protective factors is essential for the mental health professionals, in order to have the correct information to assess and manage suicide risk in populations or specific at risk groups, and also for the general population, to promote the suicide knowledge, recognize signs and symptoms and increase the attitudes to ask for help (Calear, Batterham, & Christensen, 2014).

The papers published in this issue provide an original overview of some risk factors and protective for the suicidal behaviour, in specific cultural and professional contest, such as in particular at-risk group. The theme of risk and protective factors are presented in different way, as it possible to find original articles, qualitative research, and also an essay and two reviews.

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Review

The anti-suicidal effect of Lithium in drinking water: A short review

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Abstract: The mood stabilizing effects of lithium are well documented and there are numerous studies showing that lithium additionally might have anti-suicidal properties. In contrast to the daily dose usually administered in treatment of mood disorders, studies suggest that even dosages at supplement level ingested via drinking water are associated with lower suicide rates of the corresponding population. Over the recent years this finding has sparked much interest among different research groups. Even though not all studies are equivocal, the findings are promising and further investigations of lithium's effects as a supplement are warranted. However, a substitution of drinking water with lithium can currently not be recommended based on existing ecological studies.

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Lithiumsalts have been known to be an effective treatment for affective disorders for many decades. Besides its mood stabilizing properties, lithium has also been shown to possibly have an anti-suicidal effect (Ernst & Goldberg, 2004; Lewitzka, Bauer, Felber, & Muller-Oerlinghausen, 2013; Muller-Oerlinghausen, Felber, Berghofer, Lauterbach, & Ahrens, 2005; Muller-Oerlinghausen & Lewitzka, 2010). The last two decades have seen a surge in interest concerning the concentration of lithium in drinking water supplies and its potential role as a suicide preventative. But this current trend is not the first time lithium has been at the center of attention.

At the end of the 19th century people were visiting certain wells to benefit from the waters' expected healing powers. The water, sometimes dubbed "crazy water" for its ability to heal people suffering from "the crazies" and other ailments, was later shown to have a high concentration of lithium. At that time, thousands of people visited towns such as Crazy Well each year to bathe in and drink such mineral water (CrazyWater; Fowler, 1992). The lithium level of said water in Crazy Well is measured to nowadays be at 1.7mg/L (CrazyWater; FineWaters).

In 1949, John Cade published a paper on the treatment of patients suffering of psychotic excitement with lithium in the Medical Journal of Australia. He summarized case reports of several patients, noting improvement among agitated patients as well as among patients with "dementia praecox". Cade also noted the ubiquity of lithium in our environment and a possible significance of a deficiency (Cade, 1949). In his exploratory study Cade used doses of 20 grains of lithiumcitrate thrice daily or five grains of lithiumcarbonate twice daily. These dosages would correspond to 3.88 grams of lithiumcitrate or 0.65 grams of lithiumcarbonate per day respectively.

Lithium and suicide – chronology of meta-analyses

The proposed anti-suicidal effect of lithium has been described in several reports published during the past years. The meta-analysis by Tondo *et al.* (2001) included a broad spectrum of studies on lithium treatment (blind or open, controlled or uncontrolled, randomized or non-randomized) from 1970 to 2000 (Tondo, Hennen, & Baldessarini, 2001). It included 22 studies involving 5647 patients

diagnosed with bipolar disorder or bipolar admixed with major affective or schizoaffective disorder. Fatality rates (suicides per 100 patient-years or percent (%) per year) during lithium treatment were compared with rates after discontinuation or with fatality rates in untreated patients. Of the included studies, 13 were informative on suicide rates with and without lithium in the same study. Eight studies were informative on suicide rates during ongoing lithium treatment in comparison to the rates after the discontinuation of such treatment. They concluded that their data showed 81.8% fewer suicides during long-term lithium treatment compared to no such treatment (Tondo *et al.*, 2001).

Cipriani *et al.* (2005) published the first meta-analysis focusing solely on randomized controlled trials (RCTs), comparing lithium with placebo or other drugs in the treatment of unipolar depression, bipolar disorder, schizoaffective disorder, dysthymia and rapid cycling (Cipriani, Pretty, Hawton, & Geddes, 2005). The authors included only studies lasting longer than three months. The primary outcome variables investigated were: suicide, deliberate self-harm (including suicide attempts) and death from all causes. In total, 32 RCTs (from 1968 until 2001) were included: Of the papers included 19 were comparing lithium against placebo, three to amitryptiline, nine to carbamazepin, one to divalproex, one to fluvoxamine, three to imipramine (alone or in combination with lithium), two to lamotrigine, one to mianserin, one to maprotiline and one to nortryptiline (alone or in combination). In total 3458 patients were included, 1389 of which were assigned to receive lithium and 2069 to other drugs or placebo.

Seven of the included trials reported suicides (in comparative studies of lithium against placebo, amitryptiline, carbamazepine, lamotrigine). Two of the 13 reported suicides occurred in patients treated with lithium and 11 in patients receiving a different drug. Seven incidences of self-harm were reported in comparator groups, none in the lithium-groups. Comparing the results of these 32 RCTs, Cipriani *et al.* (2005) found a significant decrease in the likelihood of a suicide occurring in the patients treated with lithium (Peto's OR: 0.26, 95% CI = 0.09 - 0.77, $p = 0.01$). They concluded that lithium appears to reduce the risk of death and suicide by approximately 60% and of suicide and deliberate self-harm by around 70% (Cipriani *et al.*, 2005).

Baldessarini *et al.* (2006) published a re-evaluation of available data. Again, blind/open, randomized/non randomized, and

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controlled/uncontrolled studies of patients diagnosed with bipolar disorder or major affective or schizoaffective disorder (from 1970 until 2005) were included. They found 31 studies comparing suicide rates with and without lithium treatment including in total 33,340 patients. The meta-analysis showed a significantly lower (by 80%) suicide risk for patients in long-term lithium treatment compared to treatment without lithium (Peto's OR = 4.42, 95% CI = 2.79 – 5.15; $p < 0.0001$) (Baldessarini et al., 2006).

In a 2013 update on their earlier publication, *Ciprinai et al.* published an extended meta-analysis. As before, only RCTs were included in the evaluation. In the 48 studies published between 1968 and 2013, 6674 patients were included, diagnosed with unipolar depression, bipolar disorder, schizoaffective disorder, dysthymia and rapid cycling.

Comparing Lithium to placebo they found a significant effect in preventing suicide (Peto's OR =

0.13, 95% CI = 0.03 - 0.66) and thus repeating the outcome of a risk reduction by 60%. On the other hand, no statistically significant reduction in suicide rates could be shown when comparing lithium with active comparators (Cipriani et al., 2013).

In summary, most of the, thus far published, meta-analyses conclude that a significant negative correlation between the variables of suicide and lithium therapy can be found. In this regard it is of course important to note that such analyses can only ever find mathematical correlations and do not allow a determination of causality. This is also true for the following papers, which investigated the correlation between suicide rates and the concentration of naturally occurring lithium in the communities' drinking water supplies.

Author (Year)	Country	Examined years	Study population	Water samples	Methods	Results
Sugawara et al. (2013)	Japan (Aomori prefecture)	2010	1,373,339 (2010) counting the 40 municipalities of the examined prefecture.	Multiple water samples were obtained from different suppliers within the 40 municipalities and the mean value was calculated.	Calculated SMRs of suicide per municipality. Weighted least squares regression analysis to test the association between SMR and lithium levels in drinking water adjusted for the size of the population. Model 1: lithium level as the independent variable Model 2: Adjustment for unemployment rate and density of medical institution per 10,000 people	Overall SMR in 2010: 123 (96–186). Lithium levels in tap water ranged from 0.0µg/L to 12.9µg/L. Model 1: Suicide SMR was significantly and negatively associated with lithium levels (for females only). Model 2: After adjusting for confounders, no significant association remained.

Author (Year)	Country	Examined years	Study population	Water samples	Methods	Results
Blüml et al. (2013)	United States of America (Texas)	1999–2007	(not given) Whole of Texas 2007: estimated population 20 milion (Services, T. D. o. S. H., 2007)	3,123 water samples from public wells in 226 counties of Texas. Taken between 1999 and 2007 (1–331 measurements per county).	SMR was calculated for each of the 266 counties. Method of lithium measurements was not given. Linear regressions and Poisson rate regressions using fractional polynomial transformation were employed to test for association adjusted for: county-based population density, possible confounders included: ethnicity/race, median income per household, poverty and unemployment rates.	SMR not given. Lithium levels in water ranged from 2.8µg/L to 219.0µg/L. SMR significantly and negatively correlated with lithium levels – even after adjusting for socioeconomic factors.
Giotakos et al. (2013)	Greece (national)	1999–2010	(not given) 34 (out of 52) not further specified prefectures of Greece in 2011	149 samples of tap water during the last trimester of 2012 (and 21 samples of different bottled waters). 1–17 measurements per prefecture.	SMR of suicide was calculated in the 34 prefectures included. Lithium levels of obtained water samples were measured by inductively coupled plasma mass spectrometry. A linear regression was employed to test the association between SMR and lithium levels.	SMR not given. Lithium levels ranged from 0.1µg/L to 121µg/L (average: 11.1µg/L). Significant and negative association between lithium levels and SMR.
Kabacs et al. (2011)	England (East of England)	2006–2008	5.7 million (2007)	Obtained tap water samples in public places such as restaurants, public toilets, pubs, cafeterias and petrol stations in all 47 subdivisions of East England.	SMR of suicide was calculated in the 47 subdivisions. Lithium levels of obtained water samples were measured by inductively coupled plasma mass spectrometry. Pearson's correlation coefficient and bivariate scatter plots	SMR in East of England in 2006–2008 was 98 (36–194). Lithium levels in drinking water ranged from <1µg/L to 21µg/L No association between SMR and lithium levels in drinking water found.

Author (Year)	Country	Examined years	Study population	Water samples	Methods	Results
					were used to investigate association between lithium levels in drinking water and suicide SMR.	
Kapusta et al. (2011)	Austria (national)	2005–2009	8,297,964 (avg. 2005–2009) In all 99 political districts of Austria.	6460 water samples from all 99 districts between 2005 and 2010 (1–312 samples per district),	SMR of suicides was calculated in all 99 districts. Lithium levels were measured by inductively coupled plasma mass spectrometry optical emission spectrometry (lowest measurable lithium level was 3.3µg/L). Weighted least squared regressions adjusted for population density. Possible confounders included: average income per capita, proportion of Roman Catholics, unemployment rates, density of general practitioners, psychiatrists and psychotherapists.	SMR not given. Lithium level: median 11.3µg/L (<3.3µg/L – 1.3mg/L). SMR of suicide was significantly and negatively associated with mean lithium levels per district in both genders.
Ohgami et al. (2009)	Japan (Oita prefecture)	2002–2006	1,206,174 (2006) In 18 municipalities of examined prefecture.	Tap water samples obtained from all municipalities (multiple water samples where averaged within the same municipality). Measurements were (in part) retaken after a year.	SMR of suicide was calculated for each of the 18 municipalities. Lithium levels of each water supplier were measured by either ion chromatography or mass spectroscopy (minimal lithium level that can be measures: 0.1µg/L). To use parametric statistical procedures log-transformation was employed Weighted least squares regression analysis adjusted for the size of each	SMR of Oita prefecture for 2002–2006 was 105 (60–181). Lithium levels range from 0.7µg/L to 59µg/L. SMR of suicide across the 18 municipalities were significantly and negatively associated with lithium levels in males but not in females.

Author (Year)	Country	Examined years	Study population	Water samples	Methods	Results
					population was used to investigate the association between lithium levels in drinking water and the SMR.	
Schrauzer et al. (1990)	United States of America (Texas)	1978–1987	27 of the 266 counties. In 1986: total population: 11,062,000 1,253,000 in group A 546,000 in group B 9,269,000 in group C	Water samples from the 27 counties included in the study.	27 of the 266 counties were classified as “high”, “medium” and “low” according to lithium levels in tap water: Group A “high”: 123±25µg/L (70–160) Group B “medium”: 35±15µg/L (13–60) Group C “low”: 5±4µg/L (0–12) Group D: (group C without large cities). Lithium level measured by: not given. Levels of statistical significance were determined by Student’s t-test with Bonferroni correction.	Schrauzer et al. (1990)

Lithium in environment

The natural element lithium, the lightest alkali metal, is ubiquitous in our environment in different ionic compounds. Concentrations in rock formations and soil differ. It is dissolved by rainwater (reaching levels up to 500µg/L in groundwater and up to 100mg/L in mineral water) and enters our food chain either in this form or via agricultural products such as vegetables, grains or animal products (Schrauzer, 2002). The estimated dietary intake of an adult varies depending on the region and is between 348µg/day and 1560µg/day on average but can be as high as 100mg/day in some regions such as the Camarones in Chile (L. T. Figueroa et al., 2013). Lithium gets absorbed by sodium-channels in the intestine and, while the ion is uniformly distributed in body water, concentrations in individual organs may differ. It is taken up into cells where it accumulates, resulting in a lower concentration of intracellular potassium (L. Figueroa et al., 2012; L. T. Figueroa et al., 2013; González-Weller et al., 2013; Leeman & Potenza, 2011; Phiel & Klein, 2001; Schrauzer, 2002).

Recent studies have also shown that the pharmacokinetics of lithium seem to be influenced by altitude above sea level suggesting a possible relationship to oxygen density as an influence on the effects of lithium on suicide rates, independent of the positive correlation between lithium concentration in drinking water and height one would expect (M. Helbich et al., 2013)

Dawson et al. published the first study on lithium levels in drinking water and its effect on mental illnesses in the general population in 1970 (Dawson, Moore, & McGanity, 1970). In this study, tap water samples of 26 randomly selected counties in the state of Texas (taken in 1968) were correlated with the admission records of the states’ mental hospitals from 1967 to 1969. For every county multiple water samples were taken (2 - 5 per region) and analyzed with a spectrophotometer. Data on elevation, annual rainfall as well median temperature in the individual counties were also collected. Clustering the municipalities according to lithium levels in drinking water, which ranged from 0 -

160µg/L, into four categories (≤ 11.0 , 11.0 - 29.9, 30.0 - 69.9 and ≥ 70 µg/L), the authors postulated a significant negative correlation between water lithium levels in municipalities and the diagnostic rates of psychoses, neuroses and personality disorders. A significant negative association with the incidence of admissions to mental hospitals and water lithium level was found.

In 1972, Dawson *et al.* published a study on lithium and its correlation to homicide and suicide rated for 1968 and 1969 for the same counties (Dawson, Moore, & McGanity, 1972). They demonstrated a significant negative correlation between water lithium levels (0 - 139µg/L) and homicide but could not show a significant correlation between lithium levels and suicide rates. In this study 3400 urine samples, taken (in 1968) from 860 selected subjects living in the respective counties for more than ten years, were also included. Both, water and urine samples were analyzed for lithium concentration with an electrophotometer. The authors reported a significant positive correlation between lithium levels in water and urine, as well as a significant negative correlation between lithium and admission rates to psychiatric hospitals and psychotic and neurotic disorder diagnostic rates (Dawson *et al.*, 1972).

Nearly twenty years later, in 1990, Schrauzer *et al.* published similar results in a cross sectional study involving the population of 27 Texan counties. In their study they evaluated the data from the period 1978 - 1987. According to the levels of lithium found in the cities' municipal water supplies three groups were created, "Group A, High", "Group B, Medium" and "Group C, Low" (123 ± 25 , 35 ± 15 and 5 ± 4 µg/L lithium respectively) and tested for incidences of homicide, suicide, rape, robbery, burglary, theft and assault. In addition, a forth group, "Group D", was created which consisted of Group C excluding larger cities to account for the higher population density in this group. Comparing B, C and D against A by means of a Student's t-test, they found significant differences in suicide rates between the groups - also in the rates of homicide, rape, robbery, burglary, and theft, but not assault (Schrauzer & Shrestha, 1990).

In 1994, Schrauzer *et al.* (Schrauzer & de Vroey, 1994) further investigated the effect of lithium in a double blind placebo controlled RCT with 24 patients (16 male, 8 female) assigned to either daily 400µg of lithium orally (Group A) or placebo (Group B) for four weeks. Each week the individual patient's mood was assessed using the "Naval Psychological Research Unit Mood Scale questionnaire" (Moses, Lubin, Naitoh, Johnson, & CALIF., 1974; Ryman, Biersner, & La Rocco, 1974) and voluntary comments

recorded. The scores of the plotted changes in the mood scale scores showed a significant improvement of mood in the lithium group but not in the placebo group. It is also interesting to note some of the voluntary comments given, for example, "My mood is stable and I can think more clearly now. I feel pretty good" or "I have had tempers, but I have made a drastic difference since I am taking these vitamins." And even more so, from a patient who was suicidal before the study, "I am no longer depressed. I see a light at the end of the tunnel." (Schrauzer & de Vroey, 1994)

Further 15 years later, in 2009, a study by Ohgami *et al.* was published using data of the entire population of the prefecture of Oita, Japan (population $n = 1.2$ million) covering from the years from 2002 until 2006 (Ohgami *et al.*, 2009). Measuring the lithium levels in drinking supplies (range 0.7 - 59µg/L) and evaluating the weighted bivariate association with the municipalities Standardized Mortality Ratios for suicide (mean SMR = 106, range 60 - 181), they found a significant and negative correlation. However, when examined separately for both sexes, the association remained significant for men, but not for women.

In 2011, Kabacs *et al.* published their report on lithium in drinking water and suicide for the region of East of England (population $n = 5.7$ million) for 2006 - 2008 (Kabacs *et al.*, 2011). However, no significant bivariate correlation between lithium levels in drinking water (range $<1 - 21$ µg/L) and SMR for suicide (mean SMR = 98; range 36 - 194) was found in this study.

It has been discussed that the reason for this negative result might be due to the low variation in lithium levels across the examined region (Blüml *et al.*, 2013).

In the same year Kapusta *et al.* published results for the population of Austria (population $n = 8.3$ million) for the years 2005 until 2009 (Kapusta *et al.*, 2011). In addition to lithium levels (range 0.0033µg/L - 1.3mg/L) and SMR for suicide, data on average income per capita, proportion of Roman Catholics, unemployment rates and the density of general practitioners, psychiatrists and psychotherapists were included. Bivariate and multivariate associations showed a hypothetically preventive effect of lithium in drinking water on suicide rates and SMRs.

In 2013, Blüml *et al.* re-examined the population of the state of Texas, based on a comprehensive and current data-set. For this state-wide study ($n = 23$ million) (Services, T. D. o. S. H., 2007) suicide rates from 1999 to 2007 were linked to lithium levels (range 2.8 - 219.0 µg/L) as well as population density, ethnicity, household income and

unemployment rates. Using several statistical models, a significant negative association between lithium levels in drinking water and suicide rates was replicated again (Bluml et al., 2013).

Giதாகოს et al. (2013) published results for 34 out of 52 prefectures of Greece in the same year showing a significant negative correlation between lithium levels in drinking water (range 0.1 – 121µg/L) and suicide rates in the studied regions between 1999 and 2010.

Recently, *Sugawara et al.* (2013) published a study based on data from the Aomori prefecture of Japan (population $n = 1.4$ million) for the year 2010 showing a significant correlation between lithium levels (0.0 – 12.9µg/L) and suicide rates in females but not among males. However, after adjustment for unemployment rates and density of medical institutions, correlation could neither be shown for females nor males in this study (Sugawara et al., 2013).

Conclusion/future perspective

A number of studies have shown a correlation between lithium levels in our environment and the suicide risk of the local population. Over the years multiple, independent study groups concluded that effects of lithium at naturally occurring levels warrant further investigations.

The presented data sparked enthusiastic, but likely premature, calls to add lithium into the communal tap water to prevent suicides, similar to the cost effective methods of adding iodine or fluoride to products. Indeed, the simple method of adding fluoride to dentifrices, milk and water has been shown to lower the incidences of caries and missing or damaged teeth by 36 - 89% depending on the region (Banoczy, Rugg-Gunn, & Woodward, 2013; Uceda, Sanzone, Phillips, & Roberts, 2013). Similarly, iodine supplementation has been shown to prevent goiter and cretinism and is said to have significantly lowered child mortality rates (Ghirri, Lunardi, & Boldrini, 2014; L. B. Rasmussen et al., 2013; Lone B. Rasmussen et al., 2007; Taylor, Okosieme, Dayan, & Lazarus, 2014).

There is a rationale for a benefit from an individual supplementation with lithium for persons in lithium-depleted regions. A minimum daily requirement of 100µg dissolved lithium per day for a healthy adult has been postulated (Schrauzer, 2002) and dosages similar or equal to the environmental levels found in some areas might be suitable for daily intake. In fact, some natural mineral waters contain even much higher levels of lithium, up to 100mg/L and are consumed unsupervised every day

(Schrauzer, 2002). However, unlike voluntary supplementation under monitoring of a physician, adding lithium in our drinking supplies is a more delicate issue. Supplementing an entire population puts vulnerable people at risk of adverse events. Based on existing ecological studies, caution is necessary when extrapolating a rationale for a substitution of drinking water with lithium. Without the necessary RCT the safety not only of the population as a whole but especially of people with increased risks such as children or patients with pre-existing medical conditions can not be guaranteed (Aral & Vecchio-Sadus, 2008; Gupta, Girish, Goyal, Subhendu, & Tyagi, 2013; Ivkovic & Stern, 2013). Even in the case of a seemingly harmless fluoride supplementation adverse effects have been suggested. In a study on supplementation in mice, fluoride has been postulated to cause depression (Liu et al., 2014). In some areas fluoride or iodine levels are deemed too high and a reduced intake is being advised to avoid possible adverse effects such as hypothyroidism, dental or skeletal fluorosis, developing kidney problems, cancer and impaired mental development (Meng, Zhao, Liu, Liu, & Liu, 2013; Molina Frechero et al., 2013).

Therefore, besides randomized controlled studies on the effect of low-dose lithium in rodents and humans, cost-benefit analyses seems to be necessary to calculate the balance between potential risks and harms prevented. So far *Muller-Oerlinghausen et al.* have hypothesized a potential prevention of suicides for Germany due to lithium (250 suicides per year or five per year per 1.000) resulting in a net saving for the national health service of 110 million Euro per year (Muller-Oerlinghausen, 2003).

But before any of such questions can be seriously discussed, further research is needed to address not only the efficacy but also the safety of lithium as a supplement. A serious concern regarding the undifferentiated alimentation of communities' drinking water supply is the potential accumulation and retention time of lithium in water and its unforeseeable, possibly toxic, effects on (marine) life.

This is not just a problem of lithium, but of pharmaceuticals and chemical products in general.

Barnes et al. detected contaminants in 80% of the groundwater samples taken in the United States – pharmacological substances such as sulfamethaxole (in 23% of the samples), fluoxetine (4.3%), diltiazem (2.1%), dehydronifedepine (4.3%), ibuprofen (2.1%) and acetaminophen (6.1%) or others, such as caffeine (12.8%), cotinine (2.1%) and bisphenol A (30%) (Barnes et al., 2008). In a similar study, published by *Fram and Belitz* for California, carbamazepine (1.5%) and codeine (0.16%) were

detected as well (Fram & Belitz, 2011). For carbamazepine Kleywegt *et al.* have postulated higher detection rates in drinking water in Ontario, Canada (25% in 2011) (Kleywegt *et al.*, 2011). Even more frequent were detection rates in Serbia with 36.11% of the water samples taken (Petrovic, Skrbic, Zivancev, Ferrando-Climent, & Barcelo, 2014). Only seven per cent of this compound are eliminated by sewage treatment (Nentwig, 2007). Oetken *et al.* have shown carbamazepine to significantly block the pupation of *Chironomus riparius* (non biting midge flies) and hypothesized potential risks for other aquatic life forms (Oetken, Nentwig, Löffler, Ternes, & Oehlmann, 2005). Nentwig *et al.* have investigated the effects of fluoxetine, believed to also accumulate in soil, on gastropods and found that it significantly affects their reproduction rates, posing a potential risk for their survival (Nentwig, 2007).

Widespread use of antibiotics in human- or veterinary medicine and aquaculture is believed to accelerate the spread of antibiotic resistance genes in bacteria (Zhang, Zhang, & Fang, 2009). Marathe *et al.* reported 86% of bacteria found in a waste water treatment facility to be resistant to 20 or more antibiotics (Marathe *et al.*, 2013). In some areas human pathogens with antibiotic resistance have been detected in drinking water and may pose a risk to the exposed population (Zhang *et al.*, 2009).

In further research serum lithium levels of the residents should be measured and the association with suicide rate in the corresponding area should be investigated in order to compensate for the indirect association between lithium levels in drinking water and suicide rate.

Especially interesting to note is also how closely connected the early beginning and the future outlook of lithium as a treatment option seem to be: The legend of the "Crazy Water"-Springs in Texas goes back to people noticing how a woman suffering of dementia supposedly got better after drinking lithium containing water in the 19th century (CrazyWater). Nowadays, the neuroprotective properties of lithium are being investigated and suggest it as a possible treatment for Alzheimer's and Huntington's disease (Forlenza, de Paula, Machado-Vieira, Diniz, & Gattaz, 2012; Pouladi *et al.*, 2012).

Conflict of interest

Nestor D. Kapusta, Victor Blüml, Jakob M. Klein and Daniel König declare that they have no conflict of interest.

We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has

been approved by all of us.

We confirm that we have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing we confirm that we have followed the regulations of our institutions concerning intellectual property.

Authors' contributions

Daniel König contributed in literature research, writing the manuscript and correction of the final draft. Jakob M. Klein contributed in the outline of the manuscript, literature research and correction of the final draft. Victor Blüml contributed to the writing and the correction of the final draft. Nestor D. Kapusta contributed in all stages of the production of this manuscript. All authors contributed to and have approved the final manuscript.

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Original Research

Medical Reporting of Suspected Self-Poisoning Patients at a Teaching Hospital in Pakistan

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Abstract: Objective: Deliberate self-poisoning is a frequent suicide mechanism in Pakistan. Documenting details of such events is essential for secondary prevention. This study assessed the quality of medical reporting of suspected self-poisoning patients in Pakistan

Methods: This case series study was conducted at the Federal Government Poly Clinic, Islamabad. Medical charts of all patients presenting to the emergency department with suspected self-poisoning from Oct 1, 2011 to Dec 31, 2011 were reviewed. Information extracted included age, gender, presenting complaints, substance used, treatment, and outcome (e.g., discharge).

Results: Of 87 patients, two-thirds were 25 year or less (68%), and females (n=54, 62%). Frequent presenting complaints were vomiting (32%), altered consciousness (22%) and abdominal pain (21%). Common substances used were benzodiazepines (n=15), analgesics (n=10), organophosphates (n=8), and toilet cleaner/bleach (n=7). Psychiatrist consultation was taken or planned in 28% (n=24) of patients. Only one of two patients (n=43) had discharge records and 24% had a planned follow-up.

Conclusion: This study found that information about risk factors and follow-up care was not documented in about 30-96% of self-poisoning patients. Findings suggested that health care professionals, especially emergency department staff may need to be sensitized about documenting this information for facilitating secondary prevention.

Keywords: Injury; self-harm; suicide; Pakistan, self-poisoning.

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Introduction

Suicides account for about 900,000 deaths globally (World Health Organization [WHO], 2014). Self-poisoning by ingesting or inhaling harmful substances is a common mechanism of self-harm (Camidge et al., 2003). It accounts for more than a third of deaths and hospitalizations related to self-harm (Patton et al., 2009). Common substances used in self-poisoning include alcohol, illicit substance, prescription drugs especially tranquilizers and analgesics, organophosphates, carbamates, and pyrethrinoids (Aggarwal et al., 2000; Srivastava et al., 2005).

Self-poisoning is amenable to prevention (Mann et al., 2005), in particular, secondary prevention which focuses on high-risk patients profiled as having a history of previous attempts or mental health problems (Ganz and Sher, 2010; Makhija and Sher, 2007). A Scandinavian cohort study showed that about 25-40% of suicide attempters died by suicide following the first attempt (Tidemalm et al., 2008). Therefore, any self-poisoning patient presenting to an emergency department offers an important prevention opportunity. Prompt diagnosis, adequate treatment and planning follow-up care during emergency care can significantly reduce consequent attempts (Fleischmann et al., 2008; Mann et al., 2005; Vijayakumar et al., 2011).

Pakistan, a Muslim majority country with over 180 million inhabitants faces a suicide epidemic (Shahid and Hyder, 2008). Suicide attempts whether fatal or non-fatal are considered as a criminal act in Pakistan, which potentially leads to their underreporting, and thus far there are no accurate national estimates of this problem (Farooq et al., 2010; Khan and Reza, 1998b, c, 2000). Fragmented evidence mostly from patients admitted in psychiatry units suggests that self-poisoning, especially by benzodiazepines and organophosphate insecticides, is a common suicide mechanism in Pakistan (Khan and Reza, 1998b; Khurram and Mahmood, 2008). Another study from Karachi reported that self-poisoning were more common in youth (Ali et al., 2003), among whom it is also the second leading cause of death globally (World Health Organization [WHO], 2014).

While some studies explored inpatient management of suicide attempters in Pakistan (Khurram and Mahmood, 2008), how these patients are processed at emergency departments was rarely

studied (Khan and Hyder, 2006; Shahid and Hyder, 2008). Anecdotal reports suggest that usual care of these patients might depend on facility where they present. In case where a facility has an inpatient psychiatry department, patients may be referred directly to the psychiatry department after initial emergency management. In clinics or hospitals without psychiatry units, patients are usually referred to psychiatry clinics or other hospitals after emergency management. An essential step in evaluating the quality of care in self-poisoning patients would be assessing documentation of risk factors and planned care in medical charts, especially the ones done at emergency department without psychiatry support. This study assessed the quality of medical reporting, especially about previous attempts, mechanisms and post-event care, in self-poisoning patients in Pakistan.

Methodology

Study settings and design

The study setting was Islamabad, the capital city of Pakistan. The official population of Islamabad is over two million, but patients from neighboring regions also use its health facilities. This case series study was conducted at one of the three government-run tertiary care hospitals in Islamabad, namely the Federal Government Poly Clinic. The emergency care treatment is provided at no cost in this hospital. There was no inpatient psychiatry service in this hospital, the psychiatric consultation is provided by the hospital-employed psychiatrist during weekdays from 8AM to 2PM when a referral is made. All consecutive patients of self-poisoning from Oct 1, 2011 to 31 Dec, 2011 were included in this study. Medical charts of these patients were extracted and reviewed. Ethical approval was obtained from the institutional review board.

Patient inclusion

Under Pakistani law, any injury as a result of criminal act including suicide attempt has to be reported by a medico-legal officer, who may assist in court proceedings if needed (Farooq et al., 2010). So, almost all government-run hospitals have a designated medico-legal officer, usually the in-charge of emergency department, who systematically records information in a specified register. In this hospital, the emergency duty medical officer reported all patients with a suspicion of self-poisoning in a medico-legal register. This register served as the basis for patient inclusion. All suicide attempt patients aged 15 years or more who had ingested a chemical substance as per International Classification of Disease Codes X60-X69 were included.

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Data collection and measures

Data were extracted from medico-legal register, emergency department register, and medical charts. A standardized questionnaire was pilot tested before being used by two investigators to extract required information. Extracted information included age, gender, date and time of visit, presenting complaints and physical signs. Type, amount of poison, time since ingested, and mode (e.g., oral) were recorded as well. Care-related information included treatment given, i.e., gastric lavage, antidote administration, patient intubation, ventilation time. Information about consultations (e.g., psychiatry), outcomes (e.g., discharge or referred), and follow-up (if planned) was noted as well.

Analyses

The data was entered in Microsoft Excel® spreadsheet by one of the investigator. Ten percent of entries were verified by a second investigator. Proportions were computed for categorical variables (whereas mean and standard deviation were computed for quantitative variables). Data was analyzed using SPSS version v 19.0.

Results

Sample

A total of 87 patients were presented to hospital during the period of three months. Table 1 describes the characteristics of included patients. The age of the patients ranged from 14 to 66 years. Most (37%) were in the age group 20-25 years followed by 31% in teenager's group. Among the total, 62% were females and 38% were males. More patients (37%) were presented during night time followed by 36% in the evening time.

Ingested poisons

Fifteen patients (17%) ingested benzodiazepines including five of them taking Alprazolam. Ten patients (12%) ingested analgesics, nine (10%) toilet cleaner/bleach, eight (9%) organophosphates, and nineteen (22%) other compounds. No compound was reported in 30% of patients (n=26). The average number of benzodiazepines tablets ingested was 10 (standard deviation [SD=4]) and of organophosphates was 6 (SD=5.1) (Table 2). The average quantity of toilet cleaner/bleach ingested was 176mL (SD=114).

Clinical presentation

The common presenting symptoms were vomiting (32%) followed by altered consciousness (22%) and abdominal pain (21%). Events leading to self-poisoning were documented in 16 patients. History of previous attempt was reported in three patients.

Treatment and outcomes

Majority of the self-poisoning patients (n=56, 64%) presented to hospital within 6 hours after ingestion of poison. Patients ingesting benzodiazepines, organophosphates, and toilet cleaner reached hospital earlier ($1.5 \leq \text{mean} \leq 2.7$ hours) than those ingesting analgesics (mean=7 hours, SD=7 hours). Psychological consultation was planned or taken in 28% of patients. No risk assessment for suicide was conducted or documented by the medical staff. Of the total, 49% were discharged or referred to some other hospital. No outcome was available for other patients. A follow-up visit was planned in only 24% patients.

Discussion

Main findings

This case series showed that information about risk factors and follow-up care might not be documented in about 30-96% of self-poisoning patients in Pakistan. Available information suggested that benzodiazepines and analgesics were common mechanisms followed by toilet cleaners and organophosphates. In self-poisoning patients where secondary prevention can be effective, the documentation of above information could be crucial for post-event care as well as evaluating the need of population-level interventions (Gunnell et al., 2007).

Limitations

This study has several limitations. First of all, information was based on a three-month medical chart review. It is possible that the actual care provided may not be documented. A prospective design could be more informative in terms of recording care. This study may not account for seasonal variations because of the limited duration of study. Furthermore, study findings might not be generalized to other settings where inpatient psychiatry services are available. Of note, these services are scarce in Pakistani settings (Khan, 2002; Khan and Hyder, 2006; Khan et al., 1996; Khan and Reza, 1998c), e.g., about 2 psychiatric inpatient beds are available per 100,000 population (WHO Office Islamabad et al., 2009).

Several factors might have been contributed to observed medical reporting quality of self-poisoning patients. Firstly, Pakistan is a resource-limited setting with huge patient burden at public tertiary care facilities like this study hospital (Khan and Hyder, 2006; Shahid and Hyder, 2008). Time pressures could reduce a detailed reporting on each patient. Secondly, physicians receive a limited exposure to psychiatry training while in medical school, and may not be sensitized to the importance of documenting self-poisoning details (Khan and Reza, 2000; Shahid and Hyder, 2008). A situational

analysis showed that only 87 mental health professionals were available per 100,000 population (WHO Office Islamabad et al., 2009). Thirdly, the social and legal stigma could affect medical reporting (Shahid and Hyder, 2008). Medical staff in order to prevent their patients to be pursued legally or stigmatized may be reluctant to document self-poisoning details.

The above reporting oversights may have consequences. For instance, the history of previous suicide attempts was reported in one in three patients. Work from developed countries showed that previous attempts were predictors of following attempts (Reith et al., 2004; Tidemalm et al., 2008). The usual practice in many developed countries' settings to assess the risk of future attempts in emergency care (Eddleston et al., 2008), but in Pakistan, these assessments are conducted only in hospitals with inpatient psychiatry units. As self-poisoning risk in Pakistan has doubled in the last two decades (Health Metrics Evaluation, 2012), findings suggested the need of sensitizing medical staff in Pakistan to document self-poisoning.

The discharge records showed that in most patients the medical staff did not document long term follow-up plan. A patient control study from Pakistan has reported that psychiatric disorders especially depression are important predictors of suicide (Khan et al., 2008). While the inpatient consultation can be useful, the long term follow-up can't be ignored. These needs are often complex (Eddleston et al., 2008; Kapur et al., 2005). In situations where individual support may not be possible, a standardized information packages could be made available for patients and/or family members to seek care after discharge (Hatcher et al., 2011). In our observation, this could be an interesting avenue for secondary prevention, the feasibility of which remains to be ascertained.

Lastly, from prevention perspective, access to self-harm poisons is an important consideration in the follow-up management. A significant proportion of patients used prescription drugs for self-poisoning. Several interventions have shown promising results in other settings including the reduction in the size or the dispensed quantities of commonly used self-poisoning substances (Donohoe et al., 2006; Gunnell et al., 2007). From the perspective of resource-limited settings in Pakistan, perhaps the involvement of relatives and family members of self-poisoning patients in controlling access to prescription drugs and other harmful substances might be a feasible option in secondary prevention (Khan and Reza, 1998a).

Conclusion

This study suggested that information essential for secondary prevention might be insufficiently documented in self-poisoning patients in Pakistan. One way to improve this gap could be sensitizing emergency department staff to report previous attempts, mechanisms of poisoning as well as details of any follow-up care. Considering that not all emergency departments have access to psychiatrists, information packages for patients and their care givers about possible avenues for follow-up care could be helpful in preventing future self-poisonings. Lastly, more work is needed to evaluate quality of emergency and follow-up care in self-poisoning patients in Pakistan.

Declaration of interests

None to declare

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Table 1. Patients presenting with poisoning in Federal Govt. Poly Clinic (FGPC), Islamabad (Oct-Dec, 2011)

	N	%
Age (in years)		
- 15-19 (Teenagers)	27	31.0
- 20-25 (Young adults)	32	36.8
- 26-66	28	32.2
Gender		
- Male	33	37.9
- Female	54	62.1
Time of presentation		
- 8AM-2PM	23	26.4
- 2PM-8PM	31	35.6
- 8PM-8AM	32	36.8
Poisoning type		
- Benzodiazepines	15	17.2
Alprazolam	5	5.7
- Analgesics	10	11.5
- Toilet cleaner/bleach	9	10.3
- Organophosphates	8	9.2
- Others	19	21.9
- Not reported	26	29.9
Presenting complaints		
- Headache	4	4.6
- Vomiting	28	32.2
- Dizziness	7	8.0
- Altered consciousness	19	21.8
- Abdominal pain	18	20.7
- Palpitation	1	1.1
Events leading to self-harm		
- Not reported	71	80.6
- Argument with family/someone	7	8.1
- Psychiatric illness	2	2.2
- Others	7	8.1
History of previous attempt		
- Not reported	84	96.5
- Reported and yes	3	3.5
Time elapsed since ingestion		
- ≤ 1 hrs	24	27.6
- 1-6 hrs	32	36.8
- > 6 hrs	8	9.2
- Not reported	23	26.4
Psychological consult		
- Taken/planned	24	27.6
- No/Not reported	63	72.4
Risk assessment		
- No	87	100.0
Outcome		
- Discharged/Referred	43	49.4
- No records or left against medical advice	44	50.6
Follow-up planned	21	24.1

Table 2. Substances ingested and time since ingestion at emergency department in patients of self-poisoning

	Benzodiazepine	Analgesics	Toilet Cleaner /bleach	Organophosphates
Substance type	Tablets	Tablets	Liquid (in mL)	Tablets
Dose	Not available	Not available	Not available	Not available
- N (patients)	14	9	8	4
- Mean	10.2	9.0	176.3	6.3
- Standard deviation	4.1	4.7	113.8	5.1
Time since ingestion at emergency				
- N	9	9	8	7
- Mean	2.3	7.1	2.7	1.5
- Standard deviation	1.5	7.3	3.2	0.9

Original Research

Suicide Mortality, Suicidal Ideation and Psychological Problems in Dutch Anaesthesiologists

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Abstract: Previous studies reveal an elevated suicide rate for anaesthesiologists. We sought to examine anaesthesiologist suicide mortality and its underlying explanatory factors. Two studies were conducted in order to establish the suicide mortality figures among Dutch anaesthesiologists and to investigate life events, work-related stress, psychological problems and alcohol- and drug abuse in relation to suicidal ideation. The results suggest that suicide mortality in anaesthesiologists in The Netherlands is elevated, and comparable to that in other Western countries, but small numbers prevent robust testing of this difference. Anaesthesiologists are more likely than the general population to experience sleeping problems and suicidal ideation; male anaesthesiologists are more likely to suffer from depression. The prevalence of suicide among this population may be related to a high prevalence of psychological problems, in addition to the knowledge and availability of means. Areas of suicide prevention among this group are discussed.

Keywords: Suicide, suicidal ideation, psychological problems, stress, substance abuse, anaesthesiologists, female, resident.

Introduction

Previous studies show elevated suicide mortality rates among physicians compared to the general population, particularly among female physicians (Heijden, Prins, & Bakker, 2006; Jackson, 1999; Katz, 2011; Largo-Janssen & Luijks, 2008; Sonneck & Wagner, 1996; Van Schaik, Kleijn, Van der Veldt, & Van Tilburg, 2010). Among physicians the highest suicide figures are found among anaesthesiologists (Alexander, Checkoway, Nagahama, & Domino, 2000; Carpenter, Swerdlow, & Fear, 1997; Juel, Husum, Viby-Morgensen, & Viskum, 2002; Maulen, 2010; Swanson, Roberts, & Chapman, 2003; Van Schaik et al., 2010). Anaesthesiologists correspondingly have a lower average age of death compared to the general population (Wright & Roberts, 1996) as well as compared to other physicians (Carpenter et al., 1997; Ohtonen & Alahuhta, 2002; Svardsudd, Wedel, & Gordh, 2002). Even though the reasons for this tendency remain unclear (Arrindell & Ettema, 1986), five possible explanations can be put forward. First, anaesthesiologists have the knowledge of and easy access to medication, which makes them more vulnerable (*availability of means explanation*) (Grellner, Kukuk and Glenewinkel, 2002). Second, the anaesthesiological profession is associated with elevated levels of stress (*excess of stress explanation*) (Heijden et al., 2006; Jackson, 1999; Shanafelt, 2011; Sonneck & Wagner, 1996). It has been suggested that this particularly accounts for junior anaesthesiologists (de Oliveira Jr et al., 2013; Larsson, Rosenqvist, & Holmström, 2006). Third, the selection of anaesthesiologists might favour personal characteristics that predispose to suicide risk, such as depression as an important risk factor for suicide (*personality characteristics explanation*). Fourth, life events that have a specific meaning for anaesthesiologists, such as medico-legal conflicts, conflicts within the hospital setting or conflicts with colleagues (*specific life events explanation*) could influence suicide mortality among anaesthesiologists. Lastly, female anaesthesiologists might experience more strain than their male colleagues because of the burden of combining professional roles and personal roles in partnership, motherhood c.q. housekeeping duties (*female overload explanation*). Probably these explanations interact with one another and result in multicausal determination. Although such possible explanations are difficult to study and to disentangle from one another, research into suicide mortality and

its associations can reveal insights and outline areas of prevention. So far, few authors have investigated risk factors relating to the working environment, stress factors, or specific symptoms of psychological problems of anaesthesiologists. We conducted two connected studies into the suicide problem in Dutch anaesthesiologists. The first tried to establish the suicide mortality figures among Dutch anaesthesiologists and the mean age at death, the second one investigated life events, stress, and symptoms of psychological problems in relation to suicide ideation.

Study 1: Estimating suicide mortality among Dutch anaesthesiologists

Method

Nearly all anaesthesiologists in The Netherlands are or have been a member of the Dutch Association of Anaesthesiologists (NVA) (both during their working life, from approximately age 35 onwards and after retirement). The NVA files in the period 1983-2007 were inspected for deletions from the membership list because of death. Following, senior and retired colleagues of all deceased Dutch anaesthesiologists were individually and confidentially approached by the second author to enquire after the cause of death of the deceased colleague. Informed consent was obtained.

Results

A total of 117 member-anaesthesiologists died in the period 1983-2007. For male anaesthesiologists the average age at death was 66, for female anaesthesiologists 68. The average life expectancy of Dutch university-educated men and women is 82 and 86 years, respectively (Statistics Netherlands, 2013): For male and female Dutch physicians in general this was 79 and 82 years (Largo-Janssen & Luijks, 2008) and for male and female medical specialists in their working life specifically 89 and 90 years (SPMS, 2015). For anaesthesiologists, in 97 cases the cause of death could be obtained through the colleague informants (83%). Through our informants, we learned that 7 anaesthesiologists died of suicide (7.2%): four males and 3 females. In the same period, suicide accounted for approximately 4% of all male deaths aged 35 and over and approximately 2.8% of all female deaths in the general Dutch population (Hoogenboezem & Van den Berg, 2014). Due to small numbers, these differences cannot be statistically tested; one cannot rule out that these might be due to random variation.

Discussion

Suicide mortality in anaesthesiologists in The Netherlands is high and is comparable to that in other

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Western countries (Ohtonen & Alahuhta, 2002; Svardsudd et al., 2002; Swanson et al., 2003; Wright & Roberts, 1996). Anaesthesiologists have a lower average age of death and a higher suicide mortality rate than the general population (Statistics Netherlands, 2013). Even though this study has included all working and retired anaesthesiologists in the Netherlands, for the cause of death we have relied on information provided by colleagues. It may well be that among the non-reported cases, suicides may have gone unnoticed, leading to an underrepresentation of the actual suicide mortality. Given the limitations of the study (retrospective recall and small numbers), the findings must be considered as explorative.

Study II: Suicidal ideation and psychological problems

Method

In order to examine the prevalence and nature of suicidal ideation and psychological problems among anaesthesiologists, all 1132 members of the Dutch Association of Anaesthesiologists (NVA) were sent a questionnaire. The questionnaire consisted of items related to stressful life events (see table 2), psychological problems (measured by the SCL-90), depression, suicidal ideation ("(When) have you ever seriously considered to commit suicide?", "(When) have you ever attempted suicide?"), substance abuse ("How many glasses of alcoholic beverages do you consume daily?" "Do you use marijuana, cocaine,

amphetamine, opiate derivatives?"), and events related to work (measured by the Utrecht Burnout Scale, UBOS (Schaufeli en Van Dierendonck, 2000). Informed consent was obtained and respondents were assured that all information would be made anonymous. Anaesthesiologists who retired because of age (N=20) and those on sick leave (N=2) were excluded from the analyses. Data analysis was conducted with SPSS v.17.0.

Results

A total of 839 working anaesthesiologists, of which 172 junior anaesthesiologists responded to the questionnaire. Twenty-two anaesthesiologists were excluded as they passed retirement age (N=20) or because they were on sick leave (N=2), resulting in a response rate of 74 per cent. Two thirds of the respondents were male (66.7%; N=551); the mean age was 44.3 years (SD 9.62).

One out of five respondents suffered from psychological problems. Table 1 reflects the most commonly reported problems. Male anaesthesiologists reported higher scores on depression scales compared to the general population (see table 1). Both male and female respondents reported higher scores on sleeping problems scales compared to the general population. Female anaesthesiologists reported lower levels of anxiety. Assessed by the UBOS scale, at least 4% (N=32) of the sample reported from burnout symptoms, and 12% (N=96) had developed severe symptoms that indicated a high risk for burnout in the near future.

Table 1. Average SCL-90 sum scores on Anxiety, Depression, Insufficiency and Sleeping Problems scales, compared to the general population, according to gender.

SCL-90 scale	Male anaesthesiologists ^a (N=551)	General male population (N=432) ^a	Female anaesthesiologists ^a (N=274)	General female population (N=577) ^b
Anxiety	13.0 ± 4.4	13.0 ± 4.3	13.6 ± 4.6*	14.6 ± 5.7
Depression	22.8 ± 8.5***	20.7 ± 6.3	24.1 ± 8.4	23.8 ± 8.6
Insufficiency	13.2 ± 4.7	13.2 ± 4.6	14.1 ± 5.4	14.1 ± 5.1
Sleeping problems	5.1 ± 2.4**	4.6 ± 2.4	5.6 ± 2.8*	5.2 ± 2.8

± Standard Deviation

* p < .05; ** p < .01; *** p < .001

^a Anaesthesiologists during their working life (i.e. 35-65).

^b Arrindell & Ettema, 1986.

Asked for history of depression 28% (N=237) reported a period of depression once (18%; N=151), or more than once (10%; N=84) in their lives. Less than half of these depressive episodes had been treated (46%; N=388).

One out of five respondents indicated that they had seriously considered suicide in the past

(20%; N=169); one out of ten had been treated for suicidal ideation (10%; N=84). Eight (1%) had attempted suicide. Respondents who reported strong suicidal ideations in the past year (5%; N=41) did not differ in demographics from those who did not report suicidal ideation, but were found to be more likely to suffer from anxiety, depression, feelings of

insufficiency, sleeping problems, fatigue, burn-out, depersonalisation and substance abuse. Male and female anaesthesiologists did not differ in risk of burnout or work-related problems. Junior residents report more fatigue (2.19 vs 1.67, $p < .001$) and burnout symptoms (22% vs 15%, $p < .05$) than their senior counterparts. One out of four (23%; $N=127$) male anaesthesiologists were found to consume at least three alcoholic beverages per day versus 6% ($N=17$) of all female respondents. The use of drugs is limited to 1.5% of the total sample ($N=13$) who use

cannabis or other drugs more than once a month.

Stressful life events experienced in the past two years (table 2) concerned reorganisations (41%; $N=346$), medico-legal conflicts (36%; $N=303$), conflicts between colleagues (30%; $N=253$), problems in the intimate partner relationship (27%; $N=227$) or other problems (35%; $N=241$) related to disease, work, family, or finances.

Table 2. Stressful life events among Dutch anaesthesiologists ($N=839$).

Event type	Experienced		Indicated as very troublesome
	%	N	%
Reorganisation	41.3	346	38.6
Medico-legal conflicts	36.2	303	39.1
Conflicts with colleagues	30.2	253	54.3
Problems in intimate partner relationship	27.1	227	60.3
Other, of which:	34.8	241	63.9
Disease, passing away of relative	37.3	90	71.9
Occupational problems	36.5	88	64.0
Family	24.1	58	44.8
Financial	2.1	5	60.0

Discussion

One out of five anaesthesiologists reported serious psychological problems and one out of five respondents indicated that they had experienced suicidal ideation in the past. About 5% of the sample of anaesthesiologists seriously considered suicide in the previous year and therefore should be considered at risk. These figures correspond to recent figures on suicidal ideation reported among surgeons in other European countries (Wall et al., 2014). Anaesthesiologists were more likely than the general population to experience sleeping problems and suicidal ideation; male anaesthesiologists were more likely to suffer from symptoms of depression. The prevalence of suicidal ideation among Dutch anaesthesiologists corresponds to findings reported of suicidality of Finnish anaesthesiologists (Swanson et al., 2003). The prevalence of suicide among this population may be associated to a higher prevalence of psychological problems, in addition to the knowledge and availability of means. Remarkable is the prevalence of suicides among anaesthesiologists (7%) while the number of attempted suicides is comparatively very low (1%). Anaesthesiologists may therefore have a much higher risk of dying in their first suicide attempt. In line with previous studies

(Gurman, Klein, & Weksler, 2012), we found that suicide represents a significant occupational hazard for anaesthesiologists. The results of our study correspond to previously reported elevated substance abuse rates (Garcia-Guasch, Roigé, & Padros, 2012) and suicide rates among anaesthesiologists in other Western countries (Katz, 2011; Sonneck & Wagner, 1996).

Female anaesthesiologists seem to run a greater risk for suicide compared to their male colleagues. It could be speculated that this risk might decrease now that the male-female ratio among anaesthesiologists is decreasing and, in accordance, the burden for women of combining professional roles and personal roles. In addition to the female overload explanation, possible causes for the elevated suicide rate among female anaesthesiologists may be found in the availability of means explanation. Women in the general population make more non-fatal suicide attempts than men, in large part because they prefer less violent (and hence less deadly) methods compared to men (Maulen, 2010). It is possible that the prevalence of suicide among female anaesthesiologists simply reflects a combination of the gender difference in the rate of

suicide attempts and a higher case fatality of suicide completion by anaesthesiologists compared to the general population, because they use more deadly agents.

Occupational stress specific for anaesthesiologists may contribute to depressive symptoms and suicidal ideation particularly through reorganizations in the hospital, actual or threatening medico-legal conflicts, and conflicts with colleagues when experienced as very troublesome. These events are not yet bothering residents who simply suffer more fatigue and burnout symptoms.

The strength of this study lies in its nationwide design and the invitation to all Dutch anaesthesiologists. Even though our reported studies have a high response rate, the results might have suffered from a selection effect, as not all anaesthesiologists responded to our questionnaire. Psychological problems and suicidal ideation may be of a different nature among this group. In addition, it should be noted that self-reporting about suicidality and psychological problems are subject to recall bias and denial. In addition, this study did not provide data that allowed us to test the possibility of selection effects among anaesthesiologists that cause these specialists to have personality characteristics that predispose to depression and suicidal ideation. Future research should relate personality dimensions such as neuroticism, idealism, and perfectionism to the prevalence of depression and suicidal ideation. In addition, more research is needed to understand the dynamics among this group compared to other medical professionals.

In summary, anaesthesiologists who make suicide attempts may be much more likely than non-physicians to die in their first attempt (Maulen, 2010). Areas of prevention of suicide among this group include restricting easy access to deadly means in episodes of depression, sleeplessness and suicidal ideation, through improved screening and supervision by experienced colleagues. Other areas include training residents and anaesthesiologists how to cope with emotional problems, the availability of quick and confidential access to psychotherapeutic assistance and, when needed, intensive counselling. In order for these prevention measures to take effect, further openness regarding both psychological and work-related problems among this group of specialists is indicated.

Author Note

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Original Research

Suicide attempts among incarcerated homicide offenders

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Abstract: The aim was to investigate the role of age, drug abuse, period of confinement, loneliness, difficulty in controlling emotions, having no friends in prison, victimization in prison, guilt over crimes, insomnia, nightmares, anxiety, depression, and mood change in predicating suicide attempts in a sample of homicidal young prisoners. Poisson regression model indicated that five variables contributed significantly to the prediction of suicide attempts. Specifically, participants reporting drug abuse, difficulty in controlling emotions, victimization in prison, nightmares, and depression were significantly more likely to report suicide attempts while incarcerated.

Keywords: Suicide Attempts; Prisoners; Pakistan; Young Offenders; Homicide

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Approximately one million people die by suicide each year worldwide (World Health Organization; WHO, 2008). Attempted suicides are believed to far exceed this number, with an estimated 10 to 25 non-lethal suicide attempts occurring for every death by suicide (Maris, 2002). Raised risk among criminal offenders has been widely reported; with rates of suicide in prisoners four to five times greater than those found in the general population (Fazel, Grann, Kling, & Hawton, 2010). Given such high rates, and with the numbers of prisoners increasing in over 70% of the countries in the world (Fazel et al., 2010), suicide in prisons is an important challenge to public health and policy. Gover (1880) argued that prisoners who could be violent towards others could also be violent to themselves (see Liebling, 1992). However, although the association between aggression, violence, and suicide risk has been extensively studied in the general population, limited research has examined the association between self- and other- directed violence in offender samples. This is an important omission as, in line with Gover's 1800 contention, research indicates that violent inmates are over-represented in the suicide statistics (Bogue & Power, 1995; Dooley, 1990). Consequently, there is need to explore the risk factors for suicidal behaviours among prisoners convicted for serious violent crimes, particularly homicide, in order to enhance our ability to intervene and prevent death by suicide.

As already indicated, an accumulating body of research indicates that people who are aggressive or violent are more likely to attempt suicide irrespective of gender and ethnic subsamples (Angst & Clayton, 1998; Borowsky, Ireland, & Resnick, 2001; Debowska, Boduszek, & Dhingra, 2015; Orpinas, Basen-Engquist, Grunbaum, & Parcel, 1995; Sosin, Koepsell, Rivara, & Mercy, 1995). Angst and Clayton (1998), for instance, followed a cohort of army recruits and noted that aggression predicted subsequent suicide, while Oquedo's (2004) study of 308 mood-disordered individuals in treatment for depression and found that aggression was a significant predictor of suicide attempt during the two-year follow-up period. A further study (Escard, Haas, & Killias, 2003) showed a very high association between suicide attempts and self-reported violent

behaviour among more than 21,000 Swiss army recruits.

A particularly high risk for self- and other-directed violent behaviour is evident in those with antisocial personality disorder (Links, Gould, & Ratnayake, 2003; Repo-Tiihonen, Halonen, Tiihonen, & Virkunen, 2002). Although the reasons for the overlap between self-directed harm and interpersonal violence are unclear, biological factors may play an important role. Disturbances in the regulation of the serotonin (5-HTT) system, for instance, may lead to higher risk via aggression and impulsivity (Bondy, Erfurth, de Jonge, Kruger, & Meyer, 2000) – traits associated with death by suicide (Conner, Cox, & Duberstein et al., 2004), particularly among younger age individuals (McGirr, Renaud, & Bureau et al., 2008). Beck (1999) has also argued that anger, hostility, and violence are expressions of the same type of cognitive distortions (e.g., egocentric bias, automatic thoughts, dichotomous thinking, catastrophizing) that account for the genesis of depression and suicidal behaviour. He proposes that loss and fear lead to distress and to a change in focus from the self to the "offender" (the person that is perceived to have caused the distress). This in turn leads to feelings of anger and the subsequent mobilisation for attack. If the focus switches to the "offender," externally directed aggression occurs; without this switch of focus, self-directed aggression is more likely. Thus, Beck proposes that the same cognitive distortions that play a prominent causative role in suicidal behaviour exert a similar effect in violence against others.

Limited research has attempted to accurately or precisely quantify risk of suicide in people who have perpetrated specific offense types. One exception to this is a study by Webb, Shaw and Stevens (2012) which used a Danish national dataset. Providing further support for the findings of small-scale studies indicating that prisoners serving sentences for violent crimes (e.g., homicide, assault and sexual offences) are over-represented in the suicide statistics (e.g., Camilleri, McArthur, & Webb, 1999; Hatty & Walker, 1986; Morrison, 1996), a marked rise in suicide risk was found with increasing levels of violence. Risk was particularly elevated for female homicidal or attempted homicidal offenders (female OR = 30.9; male OR = 12.0). Although this, and other studies, have contributed significantly to the literature by documenting an incremental rise in suicide risk with increasing levels of violence, the factors associated with this heightened risk for suicide among homicide offenders are not known, thus this represents an important gap in the

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literature.

Risk factors specific to suicide in correctional settings have been identified, such as poor adjustment to the prison situation (Libling, 1992), withdrawal from drugs or alcohol (Humber, Piper, Appleby, & Shaw, 2011), being in a single cell or in segregation (Libling, 1992), having no close or good friends living or working inside a prison (Rivlin, Hawton, Marzano, Fazel, 2013), violence or recent inmate-to-inmate conflicts (Blaauw, Winkel, & Kerkhof, 2001; Konrad, Daigle, & Daniel et al., 2007; Rivlin et al., 2013; Way, Miraglia, Sawyer, Beer, & Eddy, 2005), and lower levels of perceived social support (Fazel, Cartwright, Norman-Knott, & Hawton, 2008; Rivlin et al., 2013). Incarceration is also associated with added stress over time, such as difficulties within the institution, legal frustration, and physical and emotional breakdown. Accordingly, the suicide rate of long-term inmates seems to increase with length of stay (Frottier, Fruehwald, & Ritter et al., 2002). Those sentenced to life in prison in particular seem to be at a particularly high risk for suicide attempts (Borrill, 2002; Liebling, 2006).

An individual's vulnerability to the above factors may in turn be influenced by personal characteristics and predispositions that prisoners 'import' into the correctional setting (Rivlin et al., 2013). Among them are current and lifetime psychopathology (e.g., depression and anxiety; Rivlin, Hawton, Marzano, & Fazel, 2010), sleep disturbances (insomnia and nightmares; e.g., Agargun & Beisoglu, 2005), and substance use disorders (Esposito-Smythers, & Spirito, 2004) which are likely to influence an individual's opinion of themselves, their adaptation to the environment, and the likelihood of acting on suicidal thoughts (Brezo, Paris, Tremblay, Vitaro, & Zoccolillo et al., 2006). The importation model presumes that suicidal behaviour is more an expression of the offenders' background characteristics than the oppressive, painful, and criminogenic physical and environmental features of the prison (DeLisi, Trulson, Martquart, Drury, & Kosloski, 2010). Consistent with this contention that suicide among prisoners is largely due to their personal characteristics, Stattar and Killias (2005) found that suicide and other non-natural deaths are as frequent among non-incarcerated offenders (see also Stattar, 2003).

A recent systematic review of case-control comparison studies of suicide found that factors specific to the correctional setting and psychiatric factors contribute to suicidal behaviour. The strongest risk factors were environmental (social and physical isolation and lack of accessible resources associated with being in a single cell), psychiatric, and criminal history (being on remand, having received a

life sentence, and having a violent index offence) (Fazel et al., 2008). The extent to which these factors apply to homicidal juvenile offenders is, however, unclear, as research to date has not focused exclusively on this sub-group of offenders.

Current study

Little research has been carried examining suicide attempts among those incarcerated for homicide. The paucity of research in this area is perhaps due to the rarity of this occurrence; while both suicide and homicide are uncommon, homicide followed by later suicide is perhaps particularly rare. In light of previous research documenting an association between the perpetration of violent offences (particular homicide) and suicide, and research indicating that having received a life sentence is one of the strongest predictors of suicide (Fazel et al., 2008), the main aim of the current study was to examine the factors associated with suicide attempts in a sample of juvenile prisoners incarcerated for homicide in prisons in Khyber Pakhtunkhwa (KPK) Pakistan. More specifically, this research investigates the role of age, drug abuse, period of confinement, loneliness, difficulty in controlling emotions, having no friends in prison, victimization in prison, guilt over crimes, insomnia, nightmares, anxiety, depression, and mood change in predicating suicide attempts.

The context of this study is particularly important. Islam is considered to forbid the taking of one's life. Therefore, suicide is considered a sin and subsequently a criminal offence (Pakistan Penal Code 309 of the Criminal Procedures Act), punishable with a jail term and/or fine. Pakistan is 97% Muslim, and religious views are held strongly. Consequently, reporting and data collection on suicide is a difficult task in Pakistan. Indeed, data on suicide is not included in the annual national morbidity statistics, and, as a result, rates on suicide are neither known nor reported to the WHO (2008). Data on homicide in Pakistan is, however, collected, and the homicide rate is 7 per 100,000 people (United Nations Office on Drugs and Crime, 2010).

Method

Participants and procedure

Participants were 102 males incarcerated in prisons in Khyber Pakhtunkhwa (KPK) Pakistan for homicide. The respondents ranged in age from 13-19 years ($M = 16.75$, $SD = 1.41$). Most offenders came from rural areas (72.7%), 37.3% reported secondary education, 39.6% primary education only, 22.8% were not formally educated. Nearly eight percent (7.8%) had no parents, 47.1% had one parent only, and 45.1% reported having both parents. Forty percent reported drug abuse. The duration of imprisonment

reported by participants ranged from 1 to 60 months ($M = 8.80$; $SD = 9.64$) at the time of this study.

The short survey was administered by the lead researcher. Each participant was provided with a brief description of the study including the general area of interest, how to complete the questionnaire, and the general expected completion time. Participants completed an anonymous, self-administered, paper and pencil questionnaire, which was compiled into a booklet along with an instruction sheet and a consent form attached to the front of the booklet. Participants were assured about the confidentiality of their participation and informed that they could withdraw from the study at any time. The participation was voluntary without any form of reward.

Measures

The nature of the sample and access difficulties precluded a comprehensive assessment from being undertaken. Consequently, a brief questionnaire was created by the research team to assess factors commonly associated with suicide attempts. All items were measured on a three-point Likert scale (1 = *not true*, 2 = *somewhat true*, 3 = *true*) except drug abuse (dummy coded), age (years), period of confinement (months), and suicide attempts (frequency). *Drug abuse* was measured by "Would you consider yourself dependent on drugs?"; *Loneliness* by "I feel completely alone"; *Difficulty in controlling emotions* by "When I'm upset, I believe there is nothing I can do to make myself feel better"; *No friends in prison* by "I do not get along with other prisoners"; *Victimization in prison* by "I am bullied by other prisoners"; *Guilt over crimes* by "I feel guilty for my crimes"; *Insomnia* by "I have difficulty falling asleep, staying asleep, or wake up too early"; *Nightmares* by "I have reoccurring nightmares"; *General anxiety* by "I feel anxious or worried most of the time"; *Depression* by "I feel down or depressed"; *Mood change* by "My emotions change very quickly, and I experience intense episodes of sadness or irritability"

Suicide attempts. To assess the number of suicide attempts participants had made, they were asked, "how many serious attempts have you made to kill yourself since being incarcerated?"

Results

The frequency of suicide attempts ranged from zero to four ($M = 1.40$, $SD = 1.42$). Most offenders ($n = 42$, 41.2%) reported not having tried to die by suicide while in prison. Of those reporting a suicide attempt, 12.7% ($n = 13$) reported four attempts, 7.8% ($n = 8$) reported three attempts, 27.5% ($n = 28$) reported two attempts, and 10.8% ($n = 11$)

reported one attempt. Rates of endorsement for independent variables are reported in Table 1.

Table 1
Percentage of endorsement for independent variables

Variable	Not true	Somewhat true	True
Drug abuse	39.2%	N/A	60.8%
Loneliness	22.8%	28.7%	8.5%
Victimization in prison	37.3%	22.5%	40.2%
No friends in prison	42.2%	28.4%	29.4%
Difficulty in controlling emotions	42.6%	19.8%	37.6%
Guilt over crimes	33.3%	21.6%	45.1%
Insomnia	63.4%	26.7%	9.9%
Nightmares	44.1%	27.5%	28.4%
General anxiety	24.8%	32.7%	42.6%
Depression	19.6%	28.4%	52.0%
Mood change	26.5%	38.2%	35.3%

Poisson regression analysis was used to develop a model for predicting suicide attempts among incarcerated for homicide young males. Thirteen independent variables were included in the model: age; drug abuse; period of confinement; loneliness; difficulty in controlling emotions; no friends in prison; victimization in prison; guilt over crimes; insomnia; nightmares; general anxiety; depression and mood change. Little's MCAR test (1998) indicated that data was missing completely at random ($\chi^2 = 34.91$, $df = 35$; $p = .47$). Consequently, missing values were not problematic and regression analysis was conducted without imputation being made (only 4 cases were removed from final analysis).

Since no a priori hypotheses had been made to determine the order of entry of the independent variables, a direct method was used. The model as a whole was statistically significant (Likelihood Ratio Chi-Square = 46.96, $df = 13$, $p < .001$). Five independent variables made a significant contribution in terms of predicting suicide attempts among incarcerated for homicide young males. Participants who reported increased drug abuse, difficulty in controlling emotions, victimization in prison, having reoccurring nightmares, and increased scores on depression scale were significantly more likely to report suicide attempt while incarcerated (for details see Table 1).

Table 2
Poisson regression model predicting suicide attempts

Variable	B	SE	Exp(B)
Age	-.07	.06	.93
Drug abuse	.49	.18	1.65**
Period of confinement	.01	.01	1.01
Loneliness	.20	.12	1.22
Victimization in prison	.24	.12	1.26*
No friends in prison	.12	.12	1.12
Guilt over crimes	-.09	.12	.91
Insomnia	-.15	.12	.86
Nightmares	.28	.12	1.33*
General anxiety	-.10	.18	.90
Depression	.27	.14	1.31*
Mood change	-.04	.12	.96
Difficulty in controlling emotions	.22	.12	1.25*

Discussion

The aim of the current study was to examine the factors associated with suicide attempts in a sample of juvenile prisoners incarcerated for homicide in prisons in Khyber Pakhtunkhwa (KPK) Pakistan. Specifically, this study investigated the role of age, drug abuse, period of confinement, loneliness, difficulty in controlling emotions, having no friends in prison, victimization in prison, guilt over crimes, insomnia, nightmares, general anxiety, depression, and rapid mood change in predicating suicide attempt frequency.

Suicide attempts were associated with depression, emotion regulation difficulties, and drug abuse, which is consistent with previous research, both in prisons and in the community (Brezo et al., 2006; Morgan & Hawton, 2004; Palmer & Connelly, 2005). The current study's findings further converge with a growing body of research, indicating a relationship between sleep disturbance and suicidal thoughts and behaviour (Sabo, Reynolds, Kupfer, & Berman, 1991; Sjöström, Waern, & Hetta, 2007; Ribeiro, Pease, & Gutierrez et al., 2012). However, the relationship between sleep problems and suicide attempts was specific to nightmares and not insomnia. Victimization experiences was the strongest predictor of suicide attempt in the present

research, which is line with research indicating that a thwarted sense of belongingness is associated with the development of the most serious form of suicide ideation (Joiner, 2005; Shagufta, Boduszek, Dhingra, & Kola-Palmer, 2015). These state and trait-dependent characteristics may influence vulnerability to suicide by affecting an individual's opinion of themselves, their adaptation to the prison environment, and the chances of acting on thoughts of death by suicide (Brezo et al., 2006).

Our findings also confirm the importance of problematic relationships with other prisoners (Blaauw et al., 2001; Liebling, 1992) on suicide attempts. However, in the present research, suicide attempters were not significantly associated with anxiety, which is in contrast to previous research (Brezo et al., 2006; Goldston, Reboussin, & Daniel, 2006). The report of not having friends in prison was also not significantly associated with suicide attempt frequency in the present research. This is surprising as social isolation is arguably the strongest and most reliable predictor of suicidal ideation, attempts, and lethal suicidal behaviour among samples varying in age, nationality, and clinical severity (Joiner, Van Orden, & Witte et al., 2009). Furthermore, near lethal suicide attempts were found to be related to having fewer close or good friends both outside and inside prison in previous research (Rivlin et al., 2013). This suggests that although feelings of connectedness may be even of even greater importance to the wider population of offenders than in the community (Rivlin et al., 2013), for homicidal offenders, this may not be the case. Age was also unrelated to suicide attempts, however, this was not unexpected given the limited age range of the present sample, and research indicating that those who attempt suicide in prison are generally between the ages of 30-35 years (Konrad et al., 2007). Similarly, period of confinement was unrelated to suicide attempt, and again, this was not unexpected as violent offenders who attempt suicide have been found to do so after spending a considerably longer time in custody than they had been in the present research (often 4 or 5 years; Konrad et al., 2007).

The findings of the present research suggest that suicide attempts in Pakistani juvenile prisoners incarcerated for a particularly violent crime (i.e., homicide) should be understood in relation to both individual and environmental factors (i.e., history drug abuse, victimization experiences, emotion regulation difficulties, mental health, and sleep quality). Accordingly, both sets of variables should be incorporated into risk assessments at time of reception to prison and during incarceration in efforts to reduce the incidence of suicide attempts in young homicidal Pakistani prisoners. Such interventions

could include improved and more regular contact with mental health professionals, particularly in terms of screening for, and treating depression, as well as initiatives to improve prisoner relationships. In combination with the past literature on sleep disturbance (nightmares) and suicide, the present study also suggests sleep-focused interventions may be effective in reducing suicidal thoughts and behaviour. Assessing prisoner's sleep may be particularly important in prevention and intervention efforts, as sleep, unlike chronic risk factors, may be particularly amenable to treatment.

As with all research, the present study has a number of limitations that need to be taken into consideration when interpreting these findings. First, it is important to note that there is the potential for bias as a result of stigma and sensitivity surrounding suicide in Pakistan, and the self-report nature of the data. Although it is not possible to determine the extent to which this may have affected the results, under-reporting of suicide attempts would contribute to more conservative findings. Second, due to time limitations, we measured variables using single items. Thus, future research will need to use psychometrically validated measures of the constructs that we attempted to capture using single items. Third, the sample size was somewhat limited. It should be emphasized, however, that conducting a study of homicidal offenders is complex and very laborious and, therefore, restricted sample size is an inevitable consequence. Fourth, the retrospective, cross-sectional nature of the survey prevented us from examining the ordering of onset of suicide risk factors and suicide attempts. Finally, a number of variables associated with suicide attempts (including the components of Joiner's 2005 model) were not included within the present study due to the reasons outlined above. Consequently, further research is needed to explore how a wider range of psychological characteristics (e.g., depressive symptoms, hopelessness, self-esteem, impulsivity, aggression and hostility), life events (e.g. childhood trauma), and environmental and criminological factors (e.g., prior incarceration, extent and quality of prisoners' social networks) impact on suicide attempts within this population. In particular, research adopting the life-course importation model of inmate behaviour (DeLisi et al., 2011), to examine the interconnectedness between pre-incarceration characteristics and facility-level factors/ deprivation in relation to suicide may offer important new insights. Such an approach has proven useful in demonstrating the cascading effects of distal family adversity and proximal delinquent careers on institutional misbehaviour (see DeLisi, 2003; DeLisi et al., 2011).

Despite these limitations, the present

research contributes important information on suicide in Pakistan, an Islamic country in which data collection poses considerable challenges, and results indicate that victimization experiences in prison, drug abuse prior to incarceration, sleeping difficulties, and mental health problems may contribute to suicidal behaviour among juvenile offenders incarcerated for homicide. Thus, the present results have produced evidence for both importation and deprivation models of inmate behaviour and in doing so indicate that a life course importation model may provide a useful conceptual framework to study suicide in future research.

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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 (Brenner, 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; Kruegelbach, 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 heightened 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 ($\alpha = .84$ 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 ($\alpha = .94$) 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 ($\alpha = .85$; alpha range of .66 to .94), acceptable to good test-retest reliability ($\alpha = .61$ 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 impulsivity 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

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 ($\beta = .28$, $p = .04$ 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 $\eta^2 = .096$. 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

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 premeditation, 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

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

Variable	SUD	Frq SU	No. subs	PDSQ		SCID		AUDIT	PDSQ suicide	SSI	
				Alcohol	Drug	Alcohol	Drug			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

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.

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.

Table 3**Stepwise Multiple Regression Analyses Predicting Severity of Worst Period of Suicidal Ideation**

Variable	<i>B</i>	<i>SE B</i>	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.

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

Original Research

The importance of many informants in PA studies

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Abstract: The Psychological autopsy (PA), a method for obtaining data on psychological and contextual circumstances related to suicide, includes talking to some key persons around the deceased. Most PA studies have relied on structured interviews with one or two closely related persons only, which may have seriously impaired the understanding of suicide. By exposing the divergent views that came to fore when 120 informants around 20 non-clinical suicides (no previous suicide attempts or treatment in mental health care) were interviewed in depth, we demonstrate how informants of different relationships to the deceased may not only give supplementary, but often contradictory information on reasons for suicide. Three main themes emerged from the interviews that were related to the opening/closing questions, “What are your thoughts on the circumstances that led to the suicide of X?” and “Do you believe that this suicide could have been prevented, and if you do, how?” In the opinion of the close bereaved, reasons for the suicides were due to: 1) Reasons other than mental illness; 2) Longstanding problems; and 3) Problematic relationships. The present study is part of an ongoing PA study of non-clinical suicides, at Norwegian Institute of Public Health.

Keywords: Psychological autopsy studies (PA), qualitative interviews, suicide, complex relationships in suicide, hermeneutics.

The Psychological autopsy (PA) is a method for collecting data on psychological and contextual circumstances related to suicide (Shneidman, 1993). Talking to some key persons is a major part of the method. Although many researchers regard PA as a valid method for studying relationships between risk factors and suicide (Cavanagh, Carson, Sharpe, & Lawrie, 2003), it has indeed been seriously criticized for methodological weaknesses. In their review paper, Pouliot and De Leo (2006) emphasized several of them, e.g. most PA studies being conducted under the medical model paradigm often implying a causal link between a mental disorder and suicide; the use of non-standardized and/or ill-defined instruments in the diagnostic process; the use of responses from proxies although the instruments have not been designed for this type of use. Also, there may be problems with interviewer bias as well as lack of systematic control of number of informants and type of informants or their relationship with the deceased. Further, qualities of the interviewers and time between death and interviews vary by study. It is concluded that the validity and reliability of findings emerging from the use of this method of investigation would benefit from a standardization of its application (Pouliot and De Leo, 2006). The present study is part of an ongoing Norwegian PA study of non-clinical suicides, utilizing qualitative methods of analyses of in-depth interviews. The main aim of the present article is to address a particular part of the criticism in the review paper mentioned above, namely the number of informants and their relationship to the deceased.

Also, in two recent papers entitled "The next generation of Psychological Autopsy studies" (Parts 1 and 2), Conner, Beautrais, Brent, Conwell, Phillips, and Schneider (2011, 2012) address several methodological challenges/issues of PA studies that may have significantly weakened the validity and reliability of such studies. Yet, Conner and his colleagues state that "the PA remains the only validated approach to explicate the psychological and contextual circumstances near to suicide" (Conner et al., 2011, p.595). Further, they state that PA research has made seminal contributions to the understanding of the role of mental disorders as proximal risk factors for suicide, yet suggestions for necessary improvements are made. Conner and his colleagues underscore the need for more careful selection of instruments to secure valid and reliable registration of content in PA-interviews. Based on previous reports on PA methodologies, the authors make

suggestions on interview content and procedures in PA studies. Information gathered, they espouse, should be suitable for semi structured diagnostic scales (Conner et al., 2012).

Limitations of the critique

The suggestions made by Conner and his co-authors (2011, 2012) are constrained to case-control design studies with a main goal to identify mental illness of the deceased by focusing on the immediate precursors to suicide. Regarding suggestions for the next generation of PA studies, the authors do not include qualitative analyses of in-depth interviews nor do they espouse the use of many informants reflecting different positions to the suicide victims. Information from informants, in fact, is sought in a way that ignores the potential of the informants as expert witnesses of "their" suicides, and is reductionistic by limiting the data to information suitable only for semi structured diagnostic scales, aimed at assigning psychiatric diagnoses to dead persons.

However, there are parts of the methodological weaknesses outlined by Pouliot and De Leo (2006) as well as Conner et al. (2011, 2012) that would not benefit from more standardization, but rather the opposite (Hjelmeland, Dieserud, Dyregrov, Knizek & Leenaars, 2012). Suicide is not well explained by referring to a hypothesized mental illness, neither is it well understood by interviewing one or two closely related persons only. As noted by Pouliot and De Leo (2006), ill-defined informants and other structural weaknesses highly reduce the material from where one can infer significant elements of the suicidal process. In general, we agree with Marsha Linehan (2008) that suicide research is in desperate need of development, but the development needs to be steered in another direction than "more of the same".

In their paper on how parents make sense of their sons' suicides, Owens, Lambert, Lloyd, & Donovan (2008), stated that "Psychological autopsy studies are invariably quantitative in design and their findings reinforce the medical model of suicide, emphasising the role of mental illness. They largely ignore the meanings that narrators attach to events" (p. 237). These researchers, like many others, e.g. Gavin and Rogers (2006), have called for a shift of focus away from the psychiatric explanations of suicides. However, there is a limitation associated with the use of one or two informants only, which is often the case in PA studies (Hjelmeland et al., 2012).

Utilizing qualitative analyses of in-depth interviews implies changing focus from *explaining* to *understanding* suicides (Hjelmeland & Knizek, 2010; Shneidman, 1985). Suicidal behaviour as a

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phenomenon is extremely context-dependent, the suicidal acts are seen as statements in an on-going dialogue with significant others – internal or external (Knizek & Hjelmeland, 2007; Shneidman, 1985). Of course there are pitfalls in analyses of informants' stories. As Gunn, Lester, Haines & Williams (2012) stated; psychological autopsies rely on the unreliable memories of those who knew the suicide well, which underscores the importance of interviewing many persons.

Many informants

Not only may the memory of informants be unreliable, but as close ones may actively be denying any role in the suicidal process (Lester, 2004), it is important to secure information from many informants, and to include informants who position themselves in different ways to the deceased. This may be crucial in getting the kind of information we need to be able to understand significant reasons behind suicides. Based on the assumption that suicide is an act of communication, the narratives of the informants are expected to reflect the stories behind, and to give as rich a picture of the suicide process as possible. To achieve this goal, several informants are needed to give their specific input. For the closest relatives, for example, the narratives of the suicides may be so influenced by shameful feelings that they are looking outside of the family to find explanations (blaming work, colleagues, lovers, spouses). This may be particularly true for parents of deceased youngsters. Parents' narratives may therefore be influenced by a need to restore both their own and their child's moral reputation (Owens et al., 2008). In particular, the closest informants may downplay information that reveal family conflicts and put themselves in a shameful position regarding the mental pain of the deceased. Stigma may be a central factor in this process.

Our conceptualization of suicide may be highly enriched by interviewing several informants around each case. In particular, we aim at understanding how the relation to the deceased may have influenced the statements of the informants. Just looking at different informants' "first comes to mind-explanations" of a suicide, may demonstrate how one or two of the closest informants not only will give a limited explanation, but may reveal contrasting information compared to other informants, depending on their position to the deceased. By exposing the divergent views that may come to fore when interviewing several individuals who knew the deceased well, it is our aim to demonstrate the difference between relying on one or two close informants and the gathering of information from multiple informants. The present study is part of an ongoing PA study of non-clinical

suicides, at Norwegian Institute of Public Health. The deceased have no previous history of suicide attempts or treatment in mental health care. Through a thematic analysis, the main explanations given by five to nine informants related to each of 20 suicides are presented.

Method

Procedure

Based on death certificates and forensic reports, chief municipal medical officers in all municipalities of the seven counties with the highest suicide rates in Norway in 2003, were asked to identify suitable cases of suicide. Data were collected in 2007 – 2009. The chief municipal medical officers provided the name of the general practitioner (GP) of the deceased, and asked the GPs to ensure the exclusion of cases with a history of suicide attempts and /or treatment in mental health services and to identify the name and address of next of kin. Based on this information, the chief municipal medical officer sent a letter to the next of kin. The letter provided information pertaining to the project and requested the return of a consent form to the project leader. After written consent was received, the interviewer contacted the next of kin by telephone and arranged a time and place for the interview. The informants were asked to provide suicide notes if available. After the interviews were completed, the informants were asked to provide names and addresses of other knowledgeable informants (the snow-ball method). The project leader sent a letter requesting them to participate, and the interviewer called them after a written consent was received. The procedure of recruitment was repeated until at least five informants (in one case four) had been included in each case. When the researchers used the snow-ball method they used key informants (mostly parents or partners of the deceased) to recruit other informants who had known the deceased in various contexts and in different epochs of life. These would be central persons high in the "grief hierarchy", persons who had been close to the deceased. Recruitment was stopped when no new information seemed to be presented, or the informants did not have suggestions of further relevant informants.

Sample

The sample consisted of five (four in one case) to nine (nine in one case) key informants from each of 20 suicide victims. Altogether, 120 individuals close to the deceased were interviewed. In the present study, we have focused both on the number of informants and their relation to the deceased. In most cases there were five informants (40 %), followed by six (25 %), seven (15 %) and eight (10 %), whereas two deceased (10 %) were represented by

four or nine informants. The informants included spouses/(ex-)partners (n=15); (step)parents (n=25), grown-up children (n=7), siblings (n=19), in-laws (n=5), aunts/uncles (n=2), cousins (n=2), close friends (n=37), (ex-)girl-/boyfriends (n=2). In addition, one neighbour and 5 close work colleagues were interviewed. Fifty-five (46 %) of the informants were women, and 65 (54 %) were men, ranging between 18 and 82 years of age (M=36).

The age of the deceased ranged from 18 to 62 years (M=36), and the female/male ratio was 4/16. The methods of the suicides were hanging/strangling (12), shooting (6), CO-poisoning (1), and drowning (1). Regarding employment, 11 were employees (two on sick leave), four were students, two were company owners, one had quit the job voluntarily, one was unemployed but planning studies, and one was on disability pension. Nine of the deceased were married/cohabitant, three were living by themselves after having experienced recent break up of love relationships, one was divorced several years before the suicide, five were single without a girlfriend/boyfriend and two were living by themselves but were in love relationships.

Interviews

All interviews were conducted by three researchers/clinicians with extensive experience and knowledge in the field of suicidology as well as in depth interviewing of suicide bereaved individuals (first and last author among them). All the suicides took place in the time period 2005 – 2009, and in all except one case, the interviews were conducted between 6 and 18 months after the suicide (M=8.7). In one case, the interviews took place 24-27 months after the death. Each interview lasted approximately 2.5 hours (range 1.5–3 hours). Most of the interviews were conducted in the homes of the bereaved, and some in the researchers' offices or hotels, depending on the preferences of the informants. They were audiotaped and transcribed verbatim. Brief notes about immediate impressions were written by the researchers after each interview. In order to strengthen the interrater reliability of the transcriptions, a coding system for paralinguistic expressions (e.g., pauses, laughter, crying) was used by two trained transcribers. All transcripts were controlled by the interviewers.

The interview consisted of a combination of a narrative part and follow-up questions. The narrative started with the opening question: "What are your thoughts on the circumstances that led to the suicide of X?" The informants were asked to talk freely about their own perceptions. Thus, this initial part of the interview was primarily governed by the informants, where the informants told about their own experiences of the deceased in their own words.

After the narrative part of the interview, the interviewer asked pertinent follow-up questions, based on a theme guide developed by Shneidman (1993). Topics covered by Shneidman included details of the death, personal and family history of the deceased, personality and lifestyle, emotional patterns, interpersonal issues, any significant changes in the deceased's life in the years preceding death, substance use, and their strengths and successes. Towards the end of the interviews, the informants were asked the following question (closing question): "Do you believe that this suicide could have been prevented, and if you do, how?" The analysis of the present paper is based on the informants' answers to the opening/closing questions.

After the interviews, a debrief session was held, to ensure that no informant was left in distress. Arrangement for follow-up was made when needed (one informant asked for professional assistance related to family conflicts and in two other cases, names of professionals were given in case some other persons in the families would want to see someone).

Ethical issues

The project was conducted in accordance with the The Declaration of Helsinki (2008), as well as research experiences with vulnerable individuals (Dyregrov, 2004). The project was approved by the Data Inspectorate and the Norwegian Regional Committee for Medical Research Ethics South. Informants had the right to withdraw at any time from the study. Identifying information about the deceased and the informants have been altered in the publication process in order to protect anonymity. The purpose and the procedure of the study was repeated to informants when they were contacted by telephone and prior to commencing the interview.

Data analysis

Thematic analysis was conducted, including meaning condensation and categorisation and concluding with themes (Kvale, 1996). The analysis followed the five-step phenomenologically based procedure suggested by Giorgi (1975) and later by Kvale (1996). A detailed examination of the transcriptions of the opening/closing questions in the interviews, that asked for the informants' perception of the suicide and how/if it could have been prevented was performed. The first step required that, after the interviews had been conducted, tape-recorded, and transcribed, the whole interview was read through to get a sense of the whole. Then, phrases or sentences ("meaning units") that directly pertained to the opening/closing questions were marked in the transcriptions. Third, the categories that dominated the natural meaning units were

stated as simply as possible, as these were understood by the researchers. The fourth step consisted of interrogating the meaning units and categories in terms of the specific purpose of the study. Repeated evidence of similar experiences across the interviews resulted in the identification of major themes. In the final step, the essential themes from all the interviews were linked together into descriptive statements of the core components of the phenomenon (Kvale, 1996).

The first author read, and reread in detail each interview transcript of all the interviews of 120 informants related to the 20 suicides, to make sure the sentences that were answers to the opening/closing question were correctly drawn. A post-doctoral student working on the same material agreed on the selection of the informants' answers. All the marked meaning units were translated by the first author in collaboration with a native English-speaking post-doctoral researcher who also speaks Norwegian fluently, and distributed to the research team, who could participate in the process of selecting the most informative manifestations of understanding related to the opening/closing questions. Since the present study is concerned with the identification of potential differences/similarities in the informants' understanding of the suicides, the analyses were carried out with an awareness of the relationship between the informant and the deceased. In this way, by letting the relationship between the informant and the deceased be included in our analyses of their answers to the opening/closing questions, the researchers interpreted the informants' interpretations of the deceased through the informant-deceased relationship, through a triple hermeneutics (Smith et al., 2009).

After having analysed the expressions of all the informants around each deceased ("cluster"), we compared all 20 clusters with each other, looking for common themes. This involved comparing answers from informants who shared the same position to the deceased, as well as themes across all of the interviews related to each suicide. Critical questions about the interpretations were continually asked during the data analysis. The validity of the analyses was based on triangulation on three levels (Yardley, 2008). First, by interviewing 5-9 individuals who were close to the deceased, it is assumed that we are exposed to a variety of explanations as to why the suicide happened, dependent on the relationship to the deceased. Second, through a critical examination of the selected meaning units by the researchers, attempts were made to reduce researcher/interviewer bias. Third, by presenting the total selection of meaning units related to the two core questions to the second author, the validity and

credibility of the data set was sought to be strengthened.

Importantly, applying the IPA mode of analyses, the researchers were not only looking at pieces of text (as in content analyses), but the analysis was carried out in a hermeneutic circle, going back and forth in each interview text as well as back and forth between cases (i.e. the informants around each deceased). In order to make sense of the informants' personal world, we acknowledged the influence of the researchers' own conceptions and pre-knowledge. The connectedness to the interpretative tradition was important and included both an effort to understand the participants' point of view (empathic hermeneutics) and the asking of critical questions (questioning hermeneutics) to the data. Thus, in IPA, researchers are encouraged to remain close to their informants, but also to move beyond the text to a more interpretative and psychological level (Smith et al., 2009). In these efforts, the possibility of coming closer to understanding suicidal phenomena would be greater on the basis of information from many informants, rather than from one or two.

Findings

Three superordinate themes emerged from the interviews that were related to the opening/closing questions, "What are your thoughts on the circumstances that led to the suicide of X?" and "Do you believe that this suicide could have been prevented, and if you do, how?" In the opinion of the close bereaved, reasons for the suicides were due to: 1) Reasons other than mental illness. These reasons were predominantly grouped as: 2) Longstanding problems; and 3) Problematic relationships. We will first present some variations along demography and then elaborate on the content of each theme. Of course, a basic belief of phenomenology (Husserl, 1907/1973) is that there is only one's observation of reality, not objective reality. Observations are subjective. Thus, different positions to the deceased were related to different narratives when asked to give their personal opinions or explanations on the circumstances that led to the suicide. To avoid issues of confidentiality, we offer only some excerpts of the informants.

Variations along demography

The most obvious variations connected to demography were the diverse reasons given to why the suicide had happened. There seemed to be obvious differences, depending on the deceased (young vs. old), and the relationship to the deceased. Of the 11 mothers of the young deceased, eight (73 %) saw the reason as trouble in a love relationship. However, the problems in the partner relationships

were divergent: partner mental health, broken heart, conflicts. The single most frequent reason in the problematic relationship was loss/rejection. The three other reasons were mental health problems of the deceased, such as occasionally too much alcohol, or anxiety.

Of the fathers of the young deceased (N=11), seven (64 %) stated the main reason as problematic love relationships, although at times there were additional explanations provided, such as parents' divorce and occasionally too much alcohol (partying). Two stated too much alcohol prior to the suicide as the primary reason. Other reasons were mental health problems, such as depression (one informant in one case) and perfectionism.

Spouses/ex-spouses of older deceased (N=8) offered very different explanations. The most frequent reason (N=5, 63 %) was familial, whether historical (such as divorce), and/or current (relational problems). The other three informants saw the reason related to system problems, such as the health system (N=2, 18 %), or work (N=1, 13 %). Often, the informant offered additional explanations, such as health problems (N=3, 37.5%). Other reasons given were economic problems (N=2, 18 %), and alcoholism (N=1, 13 %). Out of the eight cases, all informants offered long term reasons, not acute, like within the younger deceased cases. There was one case with no spouse; the reason offered by a family member was long term family-of-origin problems.

The mother or father of the older deceased (N=2) offered long term problems in the family-of-origin as the main reason, namely problematic relationship with parent(s).

Explanations given from siblings/cousins/uncles and aunts/partners/friends differed, and were often very different from parents or spouses. Together, there were 86 informants outside of parental figure/spouse. The reasons for the suicide were much more varied. Twenty-three (27 %) of the informants saw the reason as problematic relationship (N=9) with a partner (spouse) or parent. Other reasons were long term problems, such as divorce of parents, physical illness, economic problems, occasional alcohol problems, bad conscience, low self-esteem, mental health problems, self-destructive behavior, system problems (especially noted were health system), work-related, perfectionism and many more. Often more than one reason was pointed out. Long term problems were offered in all but three cases (85 %). Three informants saw no specific reason, one simply stated, "just ordinary problems".

Three themes emerged as central to why people kill themselves. The most frequent explanations were longstanding problems and problematic relationships.

Reasons other than mental illness

It would be a truism to state that almost all – if not all – survivors of the suicides searched for a meaning of the suicide. Yet, what is also obvious from the interview content is that people give different meanings or reasons. Often the focus was finding some other person or system responsible for the suicide. In particular, for parents of young suicides, the reason was given as partner relationship problems (e.g., spouse, boy/girlfriend). Despite the PA literature's focus to date, rarely did the informant assign the blame to the person's mental health problems.

One person, who saw the reason as the lack of support from the health and social system, stated, "for me, his suicide is a result of not getting his disability pension; they did not believe him". Yet, the majority was person-related; one stated, "...something in the relationship between X and his father was definitely not good.... It was a very cold relationship". Others stated, "The parents did not get along"; "The parents got divorced"; "He quarreled a lot at work"; "I think that he just gave up because of the family situation"; "The problems started the day he got married"; "His spouse rejected him"; "His love relationship was lost.... The break-up"; "His temper was sometimes too explosive"; "He had been drinking a lot"; and "He was always anxious". Importantly, the transcripts also do not reflect the same explanations – even within the same case. It was also not always a current one; one noted that the deceased had been abused as a child, suggesting, "That could be the reason why". In summary, these non-clinical suicides were not conceptualized as symptoms of mental illness, although some mentioned that the deceased must have been mentally ill, although no-one had noticed. Following this, it was striking how the informants were divided in their time perspective when explaining the main reasons for the suicides.

Longstanding problems

We will next look into long term problems. In one case, informants offered "lack of safety and stability in his childhood"; "many broken relationships during childhood"; and, "his mother's troubled life" as explanations. In another case, an informant noted "...basically it started many years ago...people say that there was abuse in the family...the deceased must have experienced this". What is of note, when focusing on long term problems, how striking it was how parents and spouses in 50 % of the cases did not mention longstanding problems, such as family-of-origin conflict, but only noted current ones. Not uncommon, it seemed to be part of the family's belief system to avoid looking for reasons inside the family, and to look for explanations elsewhere (the outside),

such as the spouse. In many cases, the mother or father of young deceased males described the upbringing of the son as “terrific”, “good”, “privileged”, and that “many people loved him”. “I was perfect”, one parent said, “All was well”. However, in the same cases, other informants stated: “He probably missed the stability in his life...it was hectic”; “From the outside it looked really cool, but from the inside I believe he had been struggling really hard”; and “There was no love in the family”. And, in one case, the informant stated, “A lot is from his childhood, a lot of bad things happened in his childhood that he never dealt with”, such as “alcohol”, and “violence” (related to parents). In another case, where the family is described by parents as “wonderful”, one informant stated, “He often said he was depressed.... He was abused so much by his family”. Others stated, “Another fact was family problems, between X and his parents...it went on for years”; “The family problems wore him down”; “The family problems were more serious than expressed”. Often informants stated that the deceased had not been informative to the parents years ago and/or currently; one stated, “He usually was not very informative towards his family”, and “He kept secrets”.

Problematic relationships

The third theme that emerged was problematic relationships, mainly related to spouses/sweethearts. Often in the young deceased, the problem was with love relationships, although it could be with a parent. Loss and rejection were frequently noted. Yet, the parent, spouse, girl/boyfriend, often stated, “We had a perfect relationship” (or “wonderful”, “good”, “the best”, and so on), while other informants saw that same relationship as less than perfect; one even stated, “Now she (spouse) managed to kill him”. Often, in the partner relationship, the spouse or ex-spouse (or partner), stated that “There was never a fight”, or “We did everything together”. Yet, other informants, especially after a break-up, noted, “She found another partner”, “She got remarried”, or “She left him”. One spouse noted a “perfect” relationship (“we talked every day...we never quarreled”); yet, other informants noted alcoholism and violence in the relationship. Almost all the time, the parent or spouse saw “no reason in the relationship”; others saw it as the main reason. Indeed, as our descriptive statistics show, it was the most frequent explanation given; not unexpected from the suicidology literature. As one person stated, “This is a relationship of façade. They dissembled. All is perfect on the outside, but it was falling apart...he felt rejected by his ex-spouse...he lost everything. He had no reason to live”. Further, informants often noted that “anger”,

“shouting”, “screaming”, “abuse”, and so on, were evident; yet, efforts to intervene were not undertaken or refused. One informant, who noted the problem, stated, “I told him, you must get away from that woman.... I guess he did, he committed suicide”.

Discussion

Our findings reveal how informants with different positions to the deceased are telling different stories regarding their understanding of the suicide. Thus, the suggestions of more standardization in the use of semi structured interviews and diagnostic scales for future PA studies (Conner et al., 2011, 2012; Pouliot & De Leo, 2006) would not have captured the understanding of informants who are telling their stories in their own ways. The effect of the personal equation begins in the act of the observation – not merely in explanations. “One sees what one can best see oneself” (Jung, 1971, p. 9). Like Husserl (1973), Jung (1971), and many more, we mistrust the fact of “pure observation” or “objective observation” – a key problem in many PAs, especially if one uses one or two informants. No doubt, one sees the reasons for suicide in another person or system (the outside), but the person seeing is the seer – and, as our data show, this hampers observation. There are no pure objective facts – only diverse observations, and thus, explanations. Indeed, the human factor is even more evident in the explanation than the observation. This is not strange, only a fact of being human. By the very nature of our humanity, we share a number of commonalities and that includes the unquestionable facts of the personal equation in explanation – namely of why people kill themselves. It is the informants’ point of view, not the suicide victims’.

As discussed, and since the very early discussions, PA studies have numerous faults (Leenaars, 1999; Maris, 1981; Shneidman, 1993). One of the most serious errors – if not the most serious – is the use of only one or two informants. This is contrary to the very beginning of the efforts of getting deeper insight into the complexity of the suicidal process (Shneidman, 1993). Our study, we believe, clearly shows this flaw. There are unquestionably validity and reliability issues with the studies – we here use quantitative terminology. We believe that we have to go back to the PA roots to find a new direction for a paradigm, and we agree, for example, with Pouliot and De Leo’s (2006) current methodology that the PAs have serious weaknesses. Regardless of what that final paradigm may be, many informants must be used in PA studies. Otherwise, we will never truly understand suicide.

Our findings demonstrate clearly how proximity of the relationship to the deceased is

governing the search for a reason. The closest ones may be too close to see what was going on to make the correct interpretations and take the needed action (Lester, 2004; Owens et al., 2008). Thus, they may be the least knowledgeable individuals to interview in a PA study. Parents of young suiciders may be the least informed ones, and yet many PA studies rely on just parents as informants of their grown up children's suicides (Hjelmeland et al., 2012). Like in the study by Owens and co-workers (2008), our findings clearly demonstrate how parents (and spouses) may actively deny any responsibility for the suicidal crisis, underplay longstanding family conflicts and look for explanations outside the family.

How should a PA study be undertaken? According to Shneidman (1993, p. 194), a psychological autopsy is done "by talking to some key persons – spouse, lover, parent, grown child, friend, colleague, physician, supervisor, co-worker – who knew the decedent." Thus, right from the beginning, the PA was meant to include many informants, and taken together the information could give some understanding of the reasons for suicide. Yet, since then, most PA studies have been performed based on only one or two informants from the nearest family (Isometsä, 2001), although some researchers argue for including many informants (Clark & Horton-Deutsch, 1992). In addition to getting a more comprehensive picture of the suicidal process by including many informants, from different positions to the deceased, there is also a better chance of getting to know if the deceased had shared any distressing personal information with other than the next of kin, when they were not aware of such distress (Friedlander et al., 2012). This perspective may have important consequences for prevention, by including other than next of kin when intervening in a suicidal crisis. Suicide may be metaphorically depicted as "an intra-psychic drama on an interpersonal stage" (Leenaars, 1996), and it seems reasonable to listen to many of the players on that stage.

As Fincham, Langer, Scourfield, & Shiner (2011) state in their book (p.111): "If we contend that suicides are complex and relational to many aspects of a person's life, it is necessary to examine the multiple circumstances that are present at the time of suicide. Suicides always seem to contain multiple elements." In accordance with Fincham and co-workers (2011, p. 183), we have demonstrated that in-depth interviews with multiple informants gave stories from different positions to the deceased. Instead of regarding multiple informants as something to be cautioned (Conner et al., 2012, p. 99) because it is "resource intensive", we are in agreement with Fincham and co-workers, who have "argued the virtues of a case-based approach to suicide research, which uses rich individual-level data

and appreciates the importance of complex individual histories" (2011, p. 183). We have to acknowledge the interplay between factors, and thus, we need many informants as each informant is only telling his/her story, but together they may provide enough aspects of the suicidal process that we get a more complete picture of the whole story than by interviewing one or two persons only. However, there is no such thing as one truth (explanation) of a suicide. There might be one truth for each individual since what is perceived as true depends on which perspective one is looking at a phenomenon from (Hjelmeland & Knizek, 2010; Husserl, 1907/1973; Jung, 1971). This is the basis of a phenomenological approach to science.

On a point of epistemology, we do not mean to imply in any way, that one person's explanations (or even observations) are fact and the other person's is a myth – or that one is objective and the other is subjective. They are just different points of view. This is the personal equation. One more reason to mistrust reductionistic simple medical model derived PA studies. They only provide the medical explanation point of view – and for that matter, a very simple medical model.

In summary, by exposing the divergent views that came to fore when 120 informants around 20 non-clinical suicides (no previous suicide attempts or treatment in mental health care) were interviewed in depth, we demonstrate how informants of different relationships to the deceased may not only give supplementary, but often contradictory information on reasons for suicide. Thus, together they may provide enough aspects of the suicidal process that we get a more complete picture of the whole story than by interviewing one or two persons only.

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Original Research

Public disgrace and financial gain: Punishment of suicide in Mechelen (Belgium) 1366-1795

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Abstract: Suicide was treated as a crime in medieval Europe. However, knowledge regarding the actual penal practice of suicide by the local courts is limited. Based on the published records of the city court of Mechelen, Belgium, 1366-1795, the current study provides an overview of the punishment of suicide and other capital crimes by this city court over a 430-year period during the Middle Ages and Renaissance. The study revealed that punishment of suicide was a rare event. The findings are discussed with reference to the historical context.

Keywords: Belgium, city, crime, history, punishment, suicide

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The city Mechelen (in traditional English: *Mechlin*) is situated in the centre of the Flemish region in Belgium, and located in the middle of the axis Antwerp - Brussels. Inhabitation of the area goes far back in history and first settlements by Germanic tribes occurred during the Gallo-Roman period (Van Uytven, 1991; Verleyen & Decreton, 1987). During the Middle-Ages and Renaissance, until the French Revolution, the city was a major political, economic and cultural centre with international reputation. At the beginning of the 14th century, Mechelen with its outskirts and hamlets became a *seignior*, and in 1507, during the reign of Archduchess Margaret of Austria (1480-1530), the city became the capital of the Low Countries. By the end of 16th century the political centre had moved to Brussels; nonetheless, in 1559 the city was appointed Archdiocese of Mechelen, the seat of religious power covering a territory that in 1830 would become Belgium (Van Uytven, 1991; Verleyen & Decreton, 1987). The number of inhabitants varied from an estimated 12,000 at the beginning of the 14th century to 20,000 at the end of the 18th century.

The city court of Mechelen appears to be established in the 12th/13th century. The court consisted of the sheriff (the principal magistrate, *de schout*) representing the central power, twelve Aldermen (*de schepenen*) representing the people, a number of civil servants, clerks and officers, such as prosecutors, attorneys, and the hangman. The penal practice was originally based on the Germanic tradition. Over the centuries it evolved under the influence of the Roman law and the Canon law (Maes, 1947). In the Germanic tradition a crime was an act with harmful effects and the consequences of the act were more important than its intention. Sentences were based on the idea of retribution and deterring the culprit and took into account the degree of damage to persons, goods and the community. Judicial procedures were formal and often included a compensation for the victim's family. The raise of the Burgundian and Habsburg Empire in the 15th century and the establishment of the superior court of Burgundy (the Great Council of the Netherlands) in Mechelen in 1473 facilitated the introduction of features of Roman law in the local customs, such as "intent", "liability", "attempt", and "complicity", as well as the practice of torture (Maes, 1947).

The Great Council of the Netherlands dealt with cases against nobility and dignitaries, cases of

lese majesty, and served as final court of appeal, whereas the local court dealt with a wider range of crimes. These included major crimes, including suicide, murder and manslaughter, which led to capital punishment, as well as less serious crimes punishable by exile, physical punishment, pilgrimage or a fine. The Canon law was intertwined with civil law, and local courts, such as the court in Mechelen, dealt with cases of heresy, sacrilege or witchcraft. Some types of punishment, such as a pilgrimage, were based on the canon law and priests attended to those sentenced to death. In regards to suicide, the local court in Mechelen shared the point of view of the Canon law, i.e., that a suicide was a double murder killing both the body and the soul. In a powerful religious centre of that era, the permeation of a strict canon to condemn unacceptable for the church behaviour, was somewhat inevitable. Consequently, every suicide (and suicide attempt) was considered a case of manslaughter and treated accordingly (Maes, 1947).

As suicide affected the perpetrator and disturbed the public order, suicide cases were subject of public inquisition and a special procedure was applied (Maes, 1947). An investigation, i.e., a judicial debate between the sheriff and the curator, appointed either by the deceased's family or by the Aldermen, was conducted, and the same judicial procedure was applied to both men and women. Although in a few cases acknowledgement of mental illness led to the commutation of sentence, in general, the court neither investigated nor took into consideration the mental faculties of the deceased. Punishment of suicide included punishment of the corpse, confiscation of the deceased's property, and public disgrace. The judicial procedures regulated the retrieval, transportation and disposal of the corpse and under the threat of persecution, the body of a suicide remained at the disposal of the magistrate in charge (Maes, 1947).

After the body was found, e.g., inside the house, the corpse was dragged with a rope tied around the deceased's neck and under a hole made under the doorstep, or alternatively through a window onto the street. The corpse was placed, usually face down and head towards the horse, on a horse-drawn sleigh, or a sleigh drawn by the hangman, and dragged through the streets to the Gallows Hill. There the body was hanged from the head on a fork (*furca*, a two-pronged pole); a punishment considered more degrading than ordinary hanging. To show that a person who died by suicide did not deserve a funeral the corpse was left hanging as a bait for ravens or until it disintegrated. The sentence could stipulate how long (in terms of days, or even hours) the corpse ought to be displayed

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before being removed. The corpse could not be buried in a consecrated ground (although since 1621 the Aldermen allowed burying the corpse of a suicide in a consecrated ground as an exception; Maes, 1947). The degrading procedure of transporting the corpse and the hanging on a *furca* could be avoided by paying a financial compensation. However, only wealthy families could afford this as the price was high and even this financial commutation did not allow a burial in a consecrated ground. If the body of a suicide could not be found, the memory of the deceased was tarnished by public disgrace. In regards to the financial punishment, a practice which varied across Europe (Vandekerckhove, 2000), half of the deceased's property was confiscated by the Mechelen court and the other half was given to the surviving spouse and children (Maes, 1947). In some cases the family was allowed to buy back the confiscated goods before they were put on sale to the public (De l'Arbre, 1912; 1913).

The social and religious attitudes towards suicide, as well as the legal practice related to criminalisation of suicide across centuries in continental Europe and England have been studied extensively (Fedden, 1938; MacDonald, 1986; Minois, 2001; Murray, 1998). This study aims to present a case study illustrating criminalization of suicide over 430 years in one city in Flanders, Belgium. The analysis of the prevalence of suicide in Mechelen over 1366-1795 is based on the published records of the city court (Maes, 1947). Suicide along with manslaughter, murder, and bodily harm belonged to the category of crimes against physical integrity, which were punishable by death. Consequently, all cases of suicide were recorded by the city court along with other cases of crimes leading to capital punishment, such as crimes against property, public order and safety, counterfeit currency crimes, sexual offences, vagrancy, and religious crimes (i.e., heresy, sacrilege, and witchcraft).

Material

The descriptive analysis is based on the register of capital punishments sentenced and carried out by the court in Mechelen between 1366 and 1795 (Maes, 1947). The register was compiled in Dutch/Flemish and includes 696 cases (94% male), both locals and foreigners under the court's territorial

authority. The document contains information about the year of the case, case court number, sentenced's first name and surname, the type of sentence (17% missing information) and the type of crime (53% missing information). In the current study, the gender of the sentenced was established by a native Dutch/Flemish speaker (KA) based on the person's first name.

Results

Between 1366 and 1795 there were 25 cases of suicide registered by the court in Mechelen, 10 suicides by women and 15 by men. Suicides comprised 23% of crimes against physical integrity and 3.6% of all crimes registered by the court (Table 1)

Table 1. Crimes punishable by death in Mechelen, 1366-1795

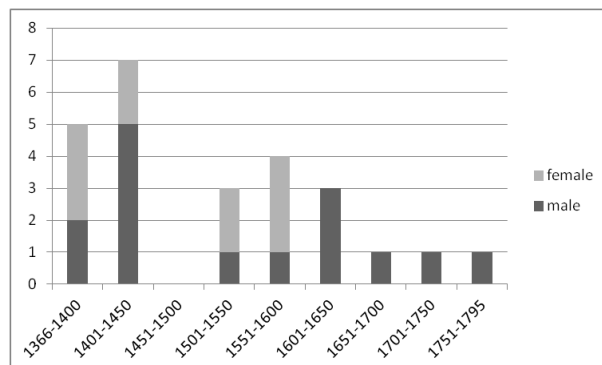
Crime category	N (%)	Male N	Female N
Crimes against physical Integrity	110 (15.8%)	96 (14.7%)	14 (40.0%)
- Murder	59 (8.5%)	55 (8.4%)	4 (11.4%)
- Manslaughter	26 (3.7%)	26 (4.0%)	0
- Suicide	25 (3.6%)	15 (2.3%)	10 (28.6%)
Crimes against property *	106 (15.2%)	100 (15.3%)	4 (11.4%)
Crimes against public order and safety	50 (7.2%)	49 (7.5%)	1 (2.6%)
- Counterfeit currency	10 (1.4%)	9 (1.4%)	1 (2.6%)
- Vagrancy	7 (1.0%)	7 (1.1%)	0
- Other	33 (4.7%)	33 (5.0%)	0
Religious crimes	43 (6.2%)	35 (5.3%)	8 (22.9%)
- Sacrilege	35 (5.0%)	31 (4.7%)	4 (11.4%)
- Heresy	4 (0.6%)	4 (0.6%)	0
- Witchcraft	4 (0.6%)	0	4 (11.4%)
Sexual offences	15 (2.2%)	15 (2.3%)	0
Unknown *	372 (53.4%)	360 (55.0%)	8 (22.9%)
Total *	696 (100%)	655 (100%)	35 (100%)

**It was not possible to determine gender in 6 cases, due to missing name or listed as for example, "unknown person". Crimes against property (n=2) and Unknown (n=4).*

Suicide accounted for 2.3% of all crimes committed by men and 28.6% of all crimes among women. However, as the type of crime was not recorded by the court in more than half of cases involving males (55%) it is not possible to compare the incidence of suicide in the context of other crimes. The data is more reliable for females (22.9%

information missing) and in their case suicide was the leading crime (28.6%), followed by religious crimes (22.9%), such as sacrilege and witchcraft, and murder (11.4%).

Twenty-two cases of suicide were punished by hanging the corpse on a fork (*furca*), one was hanged at a stake, and one was displayed on a wheel. In one case the type of punishment was not listed. There was no gender difference regarding the punishment of men and women. In general, the number of registered cases decreased over time (Figure 1); peaking (N=7) over 1401-1450 and decreasing to 1 over 1651-1700, 1701-1750, and 1750-1795. The last case of female suicide was



registered over 1594/1599 (year not specified in the court register) and the last male suicide in 1754.

Figure 1. Suicide in Mechelen, per gender, 1366-1795

Discussion

The published historical records from the archives of the city court in Mechelen provide valuable information about the legal procedures, type of punishment, and the number of suicide cases on the territory under the court's jurisdiction over the period 1366-1795. The number of suicides over the study period is relatively modest: 25 cases over 430 years, with an estimated annual suicide rate of 0.3/100,000 inhabitants, and an average of one case every 17 year. Records from other city courts in Flanders over 14th-18th century also show low numbers varying from one case per 1.3 year to one case per 35.3 years. Seven suicides were recorded in Bruges over 1374-1382, another seven over 1430-1442, and four suicide cases over 1724-1774 (Monballyu, 2000). In the 16th century four suicide cases were recorded in Dendermonde and three suicides over 1515-1621 and five over 1750-1795 in Kortrijk (Monballyu, 2000).

One of the explanations for these relatively small numbers could be leniency in applying the law in order to spare the family of a suicide from public shame (Minois, 2001; Murray, 1998). Also, the practice of financial commutation, which was economically beneficial for the city and at the same

time psychologically relieving for the family of the deceased, as it allowed to avoid the degrading transportation of the corpse and public execution, could contribute to the reported modest numbers (Maes, 1947). According to Maes (1947), financial compensation averted criminal punishment in approximately three of four initiated court cases in Mechelen; although no information regarding the prevalence of this practice specifically in the context of suicide is available. Of interest, as only the rich families could afford this compensation and the practice was considered unjust, financial commutation in cases of severe crimes was prohibited by the mid-16th century (Maes, 1947). In addition, the city court register did not include cases of suicide among clergy and nobility, social groups not immune to suicide (Murray, 1998), as these two social groups were under jurisdiction of ecclesiastic or supreme courts (Maes, 1947).

Unfortunately, published data on suicide in comparable jurisdictions in Flanders over the study period do not present information on the gender of suicide victims (Monballyu, 2000). Consequently, it is not possible to compare the relatively high ratio of male:female suicide found in Mechelen (1.5:1) to the incidence of male and female suicide in other regions in Flanders. Still, this number is different from the current 2.7:1 gender suicide ratio in Flanders (<https://www.zorg-en-gezondheid.be>).

The legal procedures adopted by the Mechelen court in relation to handling the deceased's body and punishment of suicide, including degradation of the corpse, refusal of burial in the consecrated ground, and confiscation of property, reflect legal practice at that time in other regions of Western Europa (Murray, 2000; Rosen, 1971; Van Hoof, 2006); although they may differ from the English legal practice (MacDonald, 1986; Seabourne & Seabourne, 2001). The "threshold ritual", i.e., removal of the corpse through a hole dug under the doorstep (or alternatively through a hole in the wall or a window) was a common practice in Flanders, Holland, France and German-speaking areas (Monballyu, 2000; Murray, 2000). Similarly, the "execution" carried out on the suicide's corpse, such as hanging (sometimes upside down to add ignominy) was a common practice in medieval France (Minois, 2001; Murray, 2000). Historians have reported differences in handling male and female suicide corpses (Minois, 2001); yet all suicides recorded over the centuries by the Mechelen court were punished in the same manner, i.e., hanging on a *furca*.

Reflecting the changing social climate and attitudes towards suicide and criminal punishment, suicide was decriminalised in Flanders in 1782 by Emperor Joseph II (Maes, 1947; Monballyu, 2000). According to the Emperor's ordinance, suicide was no

longer considered a motivated behaviour and thus a subject of criminal liability ("suicides can only be attributed to mental confusion, either continuous or temporary; it is therefore inhuman to take severe action against the corpse of the suicide"; Vandekerckhove, 2000; p. 133). The decree of Emperor Joseph II on September 2nd 1782 stated that "the penalty usually inflicted on those who kill themselves, i.e., dragging their corpse on the sledge and hanging it from the *furca*, will in the future no longer take place, but that, if someone should commit such act of frenzy, one will be required to appoint a trustee to the cadaver, who will be permitted, after a brief procedure to establish suicide, to bury the aforementioned cadaver, without any pomp, or at least to place it in the ground; always condemning however the aforementioned trustee, in his capacity, to pay the costs of the lawsuit" (Vandekerckhove, 2000; p. 134).

In contemporary academic writings, the origins of social stigma currently associated with suicide bereavement are sometimes traced back to the medieval punishment of suicide (Cvinar, 2005). Indeed, the expression "to commit" suicide might refer to a criminal act of killing oneself (Silverman, 2006). It is however noted that suicide remained an offence until 1961 in the UK. Nevertheless, based on the reported data, it appears that punishment of suicide in the Middle Ages and Renaissance was rare, and the origins of current attitudes associated with suicide should be understood within a larger historical and cultural context.

The current study was limited to the published records of the city court in Mechelen. Due to missing data it was not possible to compare punishment of suicides with other crimes. Nevertheless, the study provided a valuable insight in the penal practice of suicide by a city court. The number of cases decreased over the centuries until the official decriminalisation of suicide by the end of the 18th century.

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Qualitative Research
**Planning on Dying to Live:
A Qualitative Exploration of the Alleviation of Suicidal Distress by
Having a Suicide Plan**

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Abstract: Suicide prevention is for the most part seen in terms of reducing risk factors and increasing protective factors for suicide, and having a suicide plan is considered to fall on the side of risk. Although it seems likely that the role of a suicide plan in a person's life is more complex than this, there is to date little research exploring first-hand descriptions of suicidality in order to understand this role. The purpose of this study was to explore the therapeutic effects of having a suicide plan. Secondary, thematic analysis of data from a qualitative study aiming to understand first-hand experiences of the feeling of being suicidal was carried out. Having a suicide plan can function to reduce the immediate experience of suicidal distress through 1) providing a sense of control, and 2) relieving mental effort. Having a suicide plan provides a sense of control by: being 'able to act'; 'having an option'; and, 'having an obstacle'. Having a suicide plan relieves mental effort by: providing resolution; reducing the need to control mental urges; fixing the future, where uncertainty about the future is relieved; and, things not mattering as much. Having a suicide plan can be a protective factor against suicide as well as an indicator of risk. Our analysis suggests that an exploration of both the costs and benefits to someone of having a suicide plan would inform appropriate intervention design for people in suicidal distress.

Keywords: suicide, plan, prevention, risk.

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Introduction

More than one million people worldwide are estimated to complete suicide each year (Anderson & Jenkins, 2005), and many more will have attempted suicide or be living in suicidal distress. Suicide prevention is high on the agenda of policy makers and researchers (e.g. HHS, 2012), but despite concerted research and policy efforts, suicide remains one of the leading causes of death in many countries (ADGHA, 2000; WHO, 2012).

Much policy and research has focused on the prevention of suicide through the identification of factors that increase the risk of suicide or protect against it (Lakeman & Fitzgerald, 2008; DoH, 2012) with the aim of identifying those at high risk in order to target interventions. Factors widely considered to be suicide risk factors include mood disorders, comorbid substance use disorders, hopelessness and a history of previous suicide attempts or a history of self-harm, suicidal ideation (Gaynes et al., 2004) having a suicide plan (Greenhill & Waslick, 1997), and access to the means to carry out one's suicide plan (DoH, 2012).

Suicide risk is mitigated by what are referred to as protective factors, such as coping strategies (Marty, Segal & Coolidge, 2010; Pollock & Williams, 1998), or reasons for living (Linehan, Goodstein, Nielsen, & Chiles, 1983; Malone et al., 2000).

Suicide plans as a risk factor in suicide risk assessment

Having a suicide plan is widely considered to be a factor that increases, and/or indicates, the risk of (a completed) suicide and removal of the means to commit suicide is high on the policy agenda in the UK (DoH, 2002; 2012). Severity of suicide risk is seen as being along a continuum, ranging from suicidal ideation alone (relatively less severe) to suicidal ideation with plan (highest severity) (Gaynes et al., 2004), which is considered a significant risk factor for suicide attempts (Greenhill & Waslick, 1997). In addition to making an attempt more likely, a suicide plan, particularly one involving access to lethal means, may also increase the likelihood of the attempt being successful.

The evidence regarding a suicide plan as a risk factor for suicide is largely quantitative, retrospective examinations of risk factors for populations over time. Comparatively little attention is given in the literature to the exploration of the subjective experience of suicidal feelings (Benson,

Gibson, & Brand, 2013; Lakeman & Fitzgerald, 2008), and the ways in which suicidal feelings and experiences may be related in complex ways to the risks and benefits of having a suicide plan.

Suicide plans as a protective factor in suicide risk assessment

The idea of the *act* of suicide as a strategy to cope with a seemingly intractable situation appears frequently in literature (e.g. Crocker et al., 2006; Lakeman & Fitzgerald, 2008). However, the idea of a suicide plan being used as a coping strategy has received little academic attention. Fantasising about suicide has been conceived of as a coping strategy. In their review of qualitative suicide studies, Lakeman and Fitzgerald (2008) suggest that fantasising about or choosing the time, place and method may give a sense of having some power, an option, or escape, and thus make it easier to go on or endure their suffering.

This report aims to further elaborate these findings, and explore whether suicidal suffering itself can be alleviated by having a plan to die. We are unaware of any previous explorations of possible therapeutic benefits from having a suicide plan and how having a plan might be a way of coping with suicidal distress.

In this article we explore the effect of having a suicide plan on experiences of suicidal distress, describing and discussing the theme 'therapeutic effects of suicide plans', which emerged from our qualitative study exploring the experience of suicidal feelings. We argue that having a suicide plan should not in itself be treated as purely a negative risk factor, but also as a potential coping strategy; part of the complex interplay of feelings and thoughts experienced by a person who feels suicidal.

Method

A detailed description of the method of the study from which this secondary analysis emerged can be found in Benson, Gibson, and Brand (2013). The method is described in brief here, with the addition of details of the secondary analysis.

Stage 1: Open-question online survey

Participants were invited to anonymously write as little or as much as they liked in answer to the question 'What is it like to feel suicidal?', which was available via a link from the web page of the mental health charity, SANE. The survey was advertised through SANE's website and social media and through other voluntary and statutory organisations.

At the end of the survey, participants were asked whether they would like to be contacted for a follow-up interview by phone, email, or face-to-face;

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provided contact details and were added to a pool of participants from which to select for follow-up interviews.

Stage 2: In-depth follow-up interviews

Semi-structured interviews, focusing on the person's response to the survey question in Stage 1, further explored themes identified in Stage 1. The interviews were iterative, with analysis of earlier interviews feeding in to the design of questions in later interviews. Each theme was explored until we reached saturation (where new data fits in to categories already devised; Denzin & Lincoln, 2003, p. 266).

Data Analysis

Data collection and analysis was undertaken in accordance with the methodological principles of Grounded Theory (Glaser, 1978; Glaser, 1992; Glaser and Strauss, 2009). During the iterative collection and analysis of data frequent team meetings served as a forum for discussing themes, querying outliers, and resolving differences in interpretation. The theme 'therapeutic effects of suicidal plans' emerged from this process and (because it fell outside the scope of the study design) was selected for secondary analysis. The sub-themes were identified using the same method as in the primary analysis (described in detail in Benson, Gibson, & Brand, 2013).

Results

One hundred and twenty four people self-selected to complete the online survey in Stage 1. Of these, 21 participated in the Stage 2 interviews (face-to-face; telephone; email).

We now describe our analysis of the theme 'the therapeutic effect of having a suicide plan'.

The Reduction of Suicidal Distress by Planning to Die

"When I feel suicidal, it feels as though the process of being alive is too much of a struggle to continue with. I cannot see anything positive - my life seems like an uphill battle and I just want to escape so I can rest. [...] Strangely the most serious and premeditated plans I have made to end my life have made me feel happy and calm and resolute. I didn't care about anything anymore because it didn't matter - I'd picked a date and time and means by which to die, and because of that the bad things just didn't matter anymore. It seemed the perfect solution to everything." [Female, 35].

Making a plan to die provides a sense of a future in which one's suffering will end. In seeking this

future relief, some people describe how their experience of the present became less painful and more bearable: having a suicide plan reduced their immediate distress. This presents the possibility of a suicide plan being used as a coping strategy to alleviate or manage suicidal distress.

"The experience I've had most frequently is total desperation where I've been unable to see another way out [...] having made the decision/plan/set date, I've felt incredibly peaceful and calm." (Female, 39)

Our analysis suggests that there are two ways in which having a suicide plan can reduce suicidal distress: 1) as a taking of control; and, 2) as a relieving of mental effort. We now explore each of these in turn.

1. Taking Control. 'Taking control' consisted of three themes; 'able to act', that is, having the ability to act to change your situation; 'having an option', that is, there being the possibility for change; and finally, 'having an obstacle', where a suicide plan could be designed to prevent a preferred method of suicide.

Able to Act: From Automaton to Autonomy. One of the most striking ways of describing how it feels to be suicidal is that it is like being on autopilot: an 'automaton' whose actions are not under your own control in the usual way. People described having a suicide plan as having the ability to end their distress. This seems not simply to be a description of knowing there was an end in sight (e.g. Lakeman, 2008), though this was certainly present (e.g. "I found the planning actually made me feel calmer because I knew that things would soon be over."), but rather the realisation from having a plan to end their life that they *could* act to end their life; that this was a possibility that they could bring about through their own agency. From being an automaton and in some way 'dead already', people found that they had the autonomy, the ability, to make a change in what had seemed endless and irrevocable.

"I love the idea [...] that I can make the choice not to suffer any more." (Gender unspecified, 40)

"I feel greatly comforted when researching methodology- obviously this relates to my having a sense of control and an ability to end my pain." (Female, 61)

Having an Option: A 'Get Out of Jail Free Card'. Having an option to end their suffering is another description of having a suicide plan that

emerged from our analysis. People felt more able to cope and to get through the difficult times when they knew they had an option to end their distress.

"It has become a way of living. Ironically. It is my coping mechanism. The thought that I have a way out when it is too overwhelming allows me to go day to day. [...] It is survival." (Female, 41)

"... it's like a coping mechanism, a get out of jail free card." (Female, 38)

"There's something about having the choice - having a 'get out clause' - that makes it feel less desperate at a time where it is desperate." (Female, 39)

Creating an Obstacle. Some people talked about making a detailed plan to commit suicide that deliberately involved means or a method that would not be readily available to them, for example one participant described making a plan that would require access to a gun, which they did not have. Another participant developed an elaborate plan that involved being in a particular location on a particular day of the week, on a sunny day. Holding on to this plan as the only way that they would allow themselves to complete suicide supported people when they were feeling acutely suicidal to not make a suicide attempt.

2. Relieving Mental Effort.

"It's like wading through tar, or walking through fog every day. It is physically and mentally exhausting beyond measure." [Female, 27]

A paramount element of the feeling of being suicidal was a feeling of mental and/or physical energy depletion and exhaustion. The depletion of these resources seemed to relate, at least partly, to a feeling of being in a world that required more mental effort than the person felt they had. This mental and physical exhaustion was associated with a strong wish for rest, and this rest, seeming impossible in life, was sought through the ending of life.

"At times it felt as if there was a hole in me and all my energy was just perpetually gushing out of me, leaving me this little shell of a person." (Female, 33)

"Suicide would be the pleasure of going to sleep, rather than carrying on running, exhausted." (Male, 24)

People described the alleviation of this feeling of mental (and physical) depletion through having a suicide plan. This seemed not to relate to the future hope of rest once dead, but rather having a suicide plan provided the very sense of peace and rest in the present that respondents had hoped to achieve in the future by completing suicide. Having a suicide plan helped people in suicidal distress to feel like they could 'recharge the batteries'.

"... total desperation where I've been unable to see another way out &/or haven't felt I've got the fight to keep going through a situation that's felt endless with no chance to 'recharge the batteries' at any point. [...] having made the decision/plan/set date, I've felt incredibly peaceful and calm." (Female, 39)

We suggest that this feeling of great mental effort and depletion can be relieved by having a suicide plan in four related ways: 1) providing resolution, where having a suicide plan is felt to be a perfect solution and resolution to all problems; 2) reducing the need to control mental urges, where thinking about suicide is a giving in to an urge that it is mentally tiring to resist; 3) fixing the future, where uncertainty regarding what will happen in the future is relieved; and, 4) things not mattering as much, where worries about everyday problems just don't matter anymore once a plan has been made to die.

Providing Resolution. A suicide plan can provide a resolution to all of the problems that being alive presents. Planning to die can give people a sense that all of their problems will be resolved.

"Strangely the most serious and premeditated plans I have made to end my life have made me feel happy and calm and resolute. [...] It seemed the perfect solution to everything" (Female, 24)

Reducing the Need to Control Suicidal Urges. Sometimes *not* thinking about suicide was experienced as mentally effortful, and giving in to the thoughts about suicide could relieve the pressure of controlling this urge to think about it.

"I generally do not think about suicide for extended periods, but force myself to 'snap out of it'. Controlling this urge is mentally tiring, and ironically one of the things I would wish to escape via suicide." (Male, 24)

Fixing the Future. During difficult times people described getting through the days and keeping themselves alive by focusing on a future point at which they planned to die. In this way the knowledge of their future suicide supported them to

stay alive in the short term. Fixing the future in this way enables the person to focus on the short term because their mental energy isn't going into trying to figure out what is going to happen in the future.

"I would plan my suicide and set myself a date in the future and by doing so I could focus on that date and it kept me going in the short-term." (Female, 24)

Things Not Mattering As Much. Sometimes having a suicide plan gives respite from the worries related to remaining alive: as things become less important; they just don't matter as much anymore. This could be a relief and a feeling of the release of the burden of worrying about every single thing.

"I didn't care about anything anymore because it didn't matter - I'd picked a date and time and means by which to die, and because of that the bad things just didn't matter anymore." (Female, 24)

"I knew what I was going to do so I was no longer planning for the future, so you, no... longer... worry about the normal concerns you have over everyday life. Whether it's crossing the road or, or your diet, or what you drink, it just [...] it doesn't matter..." (Male, 29)

The Interplay between the Protective and Risk Factors of Having a Suicide Plan. The very same reasons that our analysis suggests makes the suicide plan a protective factor can also contribute to it being a risk factor.

1. Feeling in control/not in control.

"... although I've reached a level where I feel really unsafe, & it feels like physically restraining myself from heading for the cupboard with meds/rope, I don't want that 'choice' taking away." (Female, 39)

"It feels in control while also being out of control." (Female, 41)

Whilst having a detailed suicide plan supported feelings of autonomy and control, at times it made people feel less safe. Simply removing the means for someone to carry out their suicide plan can make them feel more vulnerable and less able to cope: The benefit of being physically safer in the short-term may come at the cost of being in greater suicidal distress.

"I'm not safe, but the loss of my only 'get out of jail free' card would leave me feeling even more trapped in an unbearable hole/place."

Taking [the means] away would make me physically safer, but with no end in sight I'd feel even less able to cope..." (Female, 39)

We noted that a concern to protect the means to suicide and spending time thinking about suicide could also feed feelings of disconnection from others, which may increase the risk of suicide through making the seeking of help and support less likely, as well as contributing to a core component of the feeling of being suicidal (i.e. feeling disconnected from other people; Benson, Gibson, & Brand, 2013).

2. Relieving/requiring mental effort.

Although having a suicide plan could relieve the feeling of mental effort in a number of ways, as described above, it is important to note that the suicide plan itself could become mentally effortful, potentially increasing feelings of mental (and/or physical) exhaustion.

"Eventually, they take on an obsessive quality. You find yourself thinking about little else than killing yourself, and spend a lot of time going over plans for how you are going to do it, and what impact it might have on other people." (Male, 59)

"I find myself thinking that suicide is the best option for escaping [...] life and resting. Suicide would be the pleasure of going to sleep, rather than carrying on running, exhausted. [...] I assert myself and remember that I shouldn't want to do it. I [...] force myself to 'snap out of it'. Controlling this [suicidal] urge is mentally tiring, and ironically one of the things I would wish to escape via suicide." (Male, 24)

Discussion

Our analysis indicates that having a suicide plan can reduce the experience of suicidal distress. Whilst this does not eliminate the risk of suicide, we argue that this reduction in suicidal distress can be a protective factor against suicide. Having a suicide plan helped people to cope in the present and to 'get through' life one day at a time. The meaning of a suicide plan to a person is complex and involves both risk (e.g. success of an attempt) and protective elements (e.g. reducing the immediate experience of suicidal distress).

Having a suicide plan alleviated the experience of suicidal distress in two main ways: Taking control and relieving mental effort. Taking control included the reduction of the feeling of being an 'automaton' and having a feeling of agency, in particular the agency to do something about living with suicidal distress if it becomes unbearable, as well

as having a sense of choice about whether or not to continue living with suicidal distress. Relieving mental effort included aspects of having a suicide plan that gave a person a respite from constant worrying about what will happen in the future, about everyday problems (which are perceived to require more mental energy than is available), and about whether to live or to die. Having a suicide plan was felt to provide resolution of all problems in the present and to remove uncertainty regarding the future.

An approach to suicide plans that sees them as only a risk factor for suicide is not sufficient to understand the meaning of a suicide plan to a person, or the associated complex interplay of risk factors and protective factors and risks losing much information that might be critical to choosing the most appropriate intervention/s to support that person or correctly assess their suicide risk.

Great value could be added to the decision process of choosing appropriate interventions for someone feeling suicidal if there is a balanced exploration with the suicidal person of both the costs and the benefits of their having a suicide plan. Targeting interventions to replace the perceived benefits to that person of having a suicide plan, such as supporting a sense of agency and reducing demands on or replenishing their perceived mental resource, could minimise their need for a suicide plan and so the risks associated with having a plan. Telephone or email helpline staff, whilst considering a suicide plan as an important risk factor, could also provide emotional support by openly and non-judgementally exploring what someone's suicide plan means to them.

We suggest that in discussing suicide plans with a suicidal person and in weighing up appropriate interventions, due consideration should be given to the potential risk of removing a person's means to commit suicide, which in some cases may amount to removing the person's get-out-clause, their sense of agency and control, and their ability to keep living from moment to moment.

We hope also that our analysis will provide future directions for research in this much under-represented area. In particular, research exploring interventions to support a feeling of having sufficient mental resource to deal with everyday life, such as mindfulness practice or the restoration of mental energy through interaction with environments requiring effortless, as opposed to effortful, attention, for example natural environments (Attention Restoration Theory, Kaplan, 1995; see also Jaeggi, Berman, and Jonides, 2009).

Tentatively we note that having a suicide plan might put someone in a mental state more conducive to engagement with and support from therapy or other interventions, being a time when

they may have more mental energy, and a feeling of increased agency to affect change on themselves and their surroundings.

Limitations

In this article we explore how having a suicide plan can reduce suicidal distress. We discuss how suicide plans might thus be considered not only as risk factors, but also as protective factors against suicide. We intend to raise awareness amongst people who work with those in suicidal distress (such as mental health workers and telephone or email helpline staff, e.g. Samaritans and SANE) of the complexity of what a suicide plan can mean to someone feeling suicidal, that it does not always constitute only a risk factor, and that there is scope to explore with someone their feelings and experiences around having a suicide plan in a supportive way. We have no empirical quantitative evidence that having a suicide plan reduces the numerical risk of suicide, and we do not suggest that having a suicide plan should not be considered as a serious risk factor.

Conclusion

This paper highlights the complexity of the costs and benefits of having a suicide plan. Having a suicide plan can be an important coping strategy to support someone feeling suicidal to stay alive, as well as a serious risk factor for an imminent and more likely successful suicide.

For someone in suicidal distress dying may be seen as affording a last chance to find that which is lost; calm, wellbeing, autonomy. However, our analysis suggests that for some people having a suicide plan can reduce the immediate experience of suicidal distress by returning a sense of personal autonomy and choice, and a feeling of having enough mental energy to cope with life, and thus be a protective factor against suicide. Having a suicide plan can, in some cases, support a person to cope with their suicidal distress and so to continue choosing to live.

The protective and risk factors to a suicidal person of having a suicide plan are complex, with the very elements of the suicide plan that can be protective factors also often being risk factors. From our analysis it is clear that having a suicide plan can make people feel both more and less in control. Equally, whilst a suicide plan can reduce the demand for mental effort by removing ambivalence or the need to worry about everyday life, it can also increase the demand for mental effort by itself becoming an object of obsessive thinking.

Exploring with a suicidal person the costs and benefits to them of having a suicide plan could aid in the selection of appropriate interventions for that person, by targeting interventions to provide the

possible benefits of having a suicide plan (e.g. calm, autonomy, reduced mental resource use) but without the costs (i.e. increasing the risk of a successful suicide attempt, increased mental resource use).

Further research aimed at gaining a better understanding of how a suicide plan brings feelings of wellbeing and alleviates suicidal distress could prove critical in developing interventions that deliver the benefits, without the costs, of planning to die.

Conflicts of interest

The authors declare that they have no conflict of interest

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Essay

Self-immolation and Suicide Attacks: An Interpretive Approach to Self-destruction as a Political Act among the Young

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Abstract: This exploratory study compares the act of self-immolation in Korea and Vietnam with the acts of suicide attackers in Palestine. Both of these self-destructive behaviors are intentionally committed as a means of conveying a challenge or a message, to one's own group as well as to the powerful group against which their groups were struggling, that more should be done to overcome wrongs or injustices. Based on an analysis of suicide notes, this piece not only identifies important similarities and differences between these self-immolators and those who killed themselves for Palestinian and radical Islamic causes but also finds interesting developmental problems of those politically-motivated youth suicides, a controversial but little studied phenomenon which has had profound impacts on modern societies.

Keywords: self-immolation, suicide attack, public self-destruction, altruistic/fatalistic suicide, politically intended act

Over the last half century, in a broad range of societies, acts of suicide have played important roles in attempts by young people to have an impact on political conflicts within their countries. While these suicides have been similar in terms of the ages of the actors and the fact that they lived in societies caught up in political turmoil and disruption generally exacerbated by the outside interference of other more dominant nations, the specific nature of these suicides and the intentions of those who have killed themselves have varied in notable ways.

On April 11, 1975, for example, Kim Sang-jin, a 25-year-old Seoul National University student in Korea sliced open his abdomen using a knife in front of students and faculty gathered in a lecture hall. His suicide was not only designed to protest against an authoritarian national government but also to send a message to members in his own group they should not acquiesce in the face of an unjust, oppressive regime. He left behind the following message:

.... Look at the black wind of suppression and deception blowing. We now raise the flag of determination for a democratic society with freedom and equality, indicting the coming of the dreadful military state that will suffocate all political freedom. If this is for history, if this is the way to secure democracy for our beloved country, and if this is the means to realize social justice, I sacrifice my life without regret. I will open my eyes in the other world and watch you march with a smile. On the day of victory, I will send you fervent silent applause that will move the whole world! (Kim, Sang-jin, 1975)

Clearly, as with most if not all youthful suicides with a political purpose, this student saw the political situation under which he lived, the then dictatorial regime in Korea, as highly depressing. In contrast, he envisioned a new democratic society with freedom and equality that he hoped to promote by his ultimate sacrifice. Apparently, as seen in many other personal documents of those committing suicide during this era in Korea, there was profound hope that these kinds of acts of public self-destruction would move the society closer to a victory of the opposition forces against the dictatorial regime, which was believed to ultimately advance the cause of a new society.

To cite a similar, more recent act on the other side of the world, on March 29, 2002 Ayat al-

Akhras, an 18-year-old high school student from a Palestinian refugee camp near Bethlehem, detonated a bomb carried in her handbag outside a supermarket in Jerusalem. In addition to herself, she killed a security guard and a 17-year-old Israeli girl as well as injuring over 20 others. Had the guard not stopped her from entering the market she surely would have killed many more. In a video message she left for her family and friends, she said:

"I am going to fight instead of the sleeping Arab armies who are watching Palestinian girls fighting alone... it is an Intifada until victory" (Ayat al-Akhras, 2002; from the Sun Herald, Sydney, Australia, March 31, 2002).

For Ayat the intended message was not only to protest Israeli treatment of the Palestinians and to bring pain and suffering to Israelis but also to urge other Palestinians into action. As a young woman in a male-dominated society, she sent a challenge, even a taunt, to Palestinian males to do more in the struggle against Israel.

Both Kim Sang-jin and Ayat al-Akhras involved in suicidal behavior as a means to convey a political message and to urge others to action. Nevertheless, there is a profound difference insofar as Kim Sang-jin acted only to kill himself and Ayat al-Akhras intended also to kill as many Israelis as possible. These acts, and their similarities and their vivid differences, raise important issues not only about suicide but also about the generally critical impact of youths on societies in conflict.

In the modern era, personal self-destruction as a form of carrying political messages has become increasingly common around the globe. To cite just a few of many examples, Buddhist monks and nuns burned themselves to protest the policies of the government during the Vietnam War; Korean students and laborers have used suicides to further the causes of their respective movements; Self-starvation in Northern Ireland and Turkey has long been used as a form of protest. Suicidal acts have also been employed by the Tamil Tigers to pursue separatist aims in Sri Lanka; by the Japanese Kamikaze during the World War II; by the Al Qaeda and related groups; by Palestinians against Israel; and by Arab insurgents opposing the U.S. invasion of Iraq (Battin, 2004). More recently, the self-immolation of Mohamed Bouazizi in Tunisia that led to the ousting of President Zine El Abidine Ben Ali inspired the uprising in other parts of the Arab countries. Also, a wave of self-immolation by Tibetans continues sending moral and political messages to the Chinese government.

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Of central importance to this analysis, however, is the all-important distinction between “self-immolations” on the one hand and “suicide attacks” on the other. Self-immolations here refer to politically motivated suicides in which the actor intentionally kills himself or herself but no one else. While the term “immolate” typically suggests death by burning, the term also carries with it the broader connotation of “to kill as a sacrifice.”¹ In accordance with this broader understanding of self-immolation, the term will be used here to refer to all politically intended suicides, often by burning or other means, in which the only intended death is that of the actor. Suicide attacks, on the other hand, refer to instances in which the actor’s primary motivation is to kill others, with his or her own death as a by-product of the attack. Furthermore, I distinguish between “suicide attacks” aimed at military targets on one hand, and “terrorist suicide attacks” (or just terrorist suicides), on the other, with the latter referring to suicide attacks that are not aimed at the military, police or other recognized authorities but at ordinary citizens. As opposed to suicide attacks directed at military targets, terrorist suicide attacks are designed to spread a generalized sense of fear and horror throughout the entire population or otherwise affect the popular mood in the targeted society.

Nevertheless, both a suicide attack and a terrorist suicide involve an individual intent on killing him or herself as a result of the attack. Thus, these attacks clearly involve suicide as well as a desire to kill and maim others in the name of some collective or political cause. As suggested above, however, there is a most profound moral distinction between self-immolations on the one hand and suicide attacks on the other. I will discuss certain important yet often subtle similarities and differences between these acts in what follows. At this point in the discussion, it is sufficient to note that all three forms of politically motivated suicide represent some forms of greatly enhanced political awareness. The primary purpose of these acts is to reach out and have some measure of influence, either directly or indirectly, upon a powerful adversary – an adversary that is so powerful that other means of resistance are generally seen as ineffective or simply not available. Again, the critical difference lies in the moral distinction between the actions of self-immolators who claim only their own lives and those perpetrators of suicide attacks who intend to kill numerous others, be they innocent civilians or agents of those in power. Thus, as suggested by Biggs (2005), the suicidal attack can be viewed as “an extraordinary weapon of war,” and the

act of self-immolation as “an extreme form of protest” (p. 173).

While the number of politically inspired suicides among young people world-wide are numerically miniscule compared to the rising number of individual suicides among modern youth, nevertheless these “altruistic” acts, motivated by political or social causes, have become a widespread phenomenon around the globe, especially over the last half of the century. Unlike the individual act of self-destruction that is motivated by a personally felt crisis (e.g. a youth in despair as a result of anguish over problems in school, someone shooting oneself in the head in front of the neighbors because of one’s spouse has been unfaithful, or a youth facing public shame due to an arrest, or other such motivations), politically intended suicides are almost always especially dramatic, public acts intended to send symbolic messages geared towards a challenge of dominant values designed to stir public consciousness. Although it is rather difficult to measure the impact of such acts on socio-political change, this modern phenomenon of politically motivated suicides deserves increased attention from social scientists including suicidologists. There is a need to develop a better understanding of the forces that influence such extreme acts.

It is important to note that political suicides of youth have largely occurred in societies outside of the core of the modern industrialized world. The countries where the suicides have mostly taken place are peripheral or marginally important countries that have gotten caught up in larger global struggles and/or countries with a long history of colonialism. Thus, Korea and Vietnam were two countries, both dependent countries caught in Cold War conflicts, where political suicides were notable events, especially in the 1960’s in Vietnam and from the 1970’s throughout the 1990’s in Korea. Nowadays, in our post-Cold War era, political suicides have emerged as critical factors in societies where the forces of globalization have contended with forces of national and/or ethnic identity, especially when combined with fundamentalist forms of religious faith (Kennedy and Danks, 2001). Through the Islamic world, in particular, religious fundamentalism has provided a base upon which the practice of political suicide has been greatly nourished. In the Palestinian-Israeli struggle, on the other hand, issues of national identity and control of land have been the principle or central factors.

While the numbers of politically motivated suicides have remained small in comparison to suicides with more personal causes, the impact of political suicides by young people have been enormous both within and beyond the societies within which they have occurred, as indicated by the

¹ See the American Heritage Dictionary, 2nd College, 1982, p. 644. The term “self-immolation” came into common usage primarily as a result of the publicity given to the deaths of Buddhist monks who set themselves on fire to protest the Vietnam War (King, 2000:148)

terrorist bombings in the U.S. and Europe as well as elsewhere throughout the world. An analysis of politically-motivated suicide, therefore, especially in marginalized areas of the global system such as Palestine, needs to give careful attention to the role played by youths.

This analysis first takes a close look at political suicides in Korea in the several decades following the Korean War before greater democracy was established in the country as well as in Vietnam in the early stages of Vietnam War. Special attention is paid to the common characteristics of these suicides and especially to the intentions and meanings that the actors identified in their choice to end their lives in this way. A review of data from the cases of Korea and Vietnam will then provide a basis for a comparison and review of how these suicides, almost entirely self-immolations, are both similar to and quite different from the suicide attacks and terrorist suicides that have been so important in the Palestinian conflict and in the assaults by Islamic extremists.

It is important to note two impediments in this study. First, due to the paucity of formal documents, the analysis relies primarily on available suicide notes left by self-immolators² as well as videos and second-hand reporting of suicide attackers.³ The second impediment is the time lag between self-immolations and suicide attacks. Self-immolation acts mostly occurred in Vietnam in the 1960s and in Korea between 1970 and 2003. The suicide attacks observed in this study happened between 1996 and 2004.

As a result of having incomparable data between notes and videotapers' accounts, the considerable time gap between those two different politically-motivated acts of suicide, and the distinctively different historical, socio-political, and cultural locations, this study will be primarily exploratory. However, given the frequency and

global context of these politically-motivated suicides, this exploratory study will enhance our understanding of these acts, which are typically committed as a means of conveying a symbolic or political "message to one's own group, as well as to the powerful group against which their groups were struggling, a message that more should be done to overcome the wrongs and injustices" (Park & Lester, 2009, pp. 917-8). Thus, the aim of this study is, in essence, to identify similarities and differences between these self-immolators and those who killed themselves for Palestinian and radical Islamic causes, as well as to elucidate developmental issues involved in these public acts of suicide.

The Act of Self-Immolation

Self-immolation suicides in Korea and Vietnam occurred mostly in the period of the 1960's through the 1990's when those societies were ruled by authoritarian regimes and, in the case of Vietnam, caught in a military struggle up until the mid-1970s to determine the nature of the government. In both countries, the acts of suicide were committed by individuals who proclaimed their opposition to the prevailing governments, many traditional questions were raised about the mental states and the intentions behind these suicides. Questions were asked about whether the suicides were indeed strongly motivated protests or could they best be seen, as is typical of suicides in general, as desperate acts by disturbed individuals. Here an analysis of the suicides notes left by some of these youths, as well as of other materials dealing with their life situations, is offered as highly relevant information that helps to shed further light on the ongoing debate.

Examination of personal documents left by Korean and Vietnamese self-immolators, Park (2004) noted that little evidence to support the contention that such action is a signal of a pathological mental state of mind, an action caused by insanity, or other form of deviance, or that it is best construed as an irrational act driven by religious or political fanaticism. While some of these elements are, of course, present to some extent in some cases, especially high levels of mental anguish, nevertheless, Park's study found that these highly symbolic acts appeared to be carefully premeditated, often for long periods of time.⁴

² These suicide notes were previously analyzed by the author (Park, 2004). In addition, suicide notes from two groups of self-immolators: notes from students (n=16) and notes from laborers (n=15) were compared to identify similarities and differences between these two groups of politically-motivated suicides in Korea (Park & Lester, 2009). The study found that both notes were similar in the themes they contained. Yet, the major difference laid in the focus of the notes. For example, more abstract ideas of national identity and moral duty were conveyed in the student notes as compared to the notes from laborers, which expressed feelings of injustice in order to evoke sympathetic reactions.

³ The incomparability of data between self-immolators' notes and suicide attackers' videotaping is an important concern. In particular, the validity of videotaper's accounts is in question because the videos were typically edited by the terrorist groups that filmed them. Thus, a purposeful selection of the excerpts that was more personally relevant to the suicide attacker was carried out. Still, the author acknowledges the inherent drawback of the data source.

⁴ Nevertheless, it needs to be noted that a study comparing 33 letters left by Korean self-immolators with 33 suicide notes of a matched U.S. sample of more common suicides reported that no psychological differences were found. Notably, the study found that, among others, psychological pain, cognitive constriction, and rejection-aggression were more evident in the notes of self-immolators than common suicide notes. The major difference uncovered between these two groups of suicide notes was that ambivalence was not frequently found in the notes of self-immolators (Leenaars, et al., 2010).

Their motives for action varies, yet, it seems clear that these suicide notes left behind can be classified largely into three major, overlapping, and often complementary categories: "last/only hope," "lesser-of-two evils," and "principled obligation" notes. The last/only hope notes comprise the majority, characterized by the author's expression of vast frustration and a sense of hopelessness with the possibility of change taking place in any other way. The lesser-of-two evils notes are characterized by the author's altruistic gesture, implying that s/he does not want to die, but that s/he, nevertheless, feels compelled to act. The principled obligation notes emphasize the way in which the actor is simply unable to accept any other alternative as viable. In other words, in Asian psychological terms, it is seen as the only way out to 'save face'.

With respect to the common denominators of these politically motivated suicides, five common themes were identified: 1) Strong identification with one's cause and a noble interpretation of their roles in their respective political struggles. 2) Perception of oneself as on an altar of sacrifice for the greater good of the collectivity, as a means to larger ends, as instruments for change. 3) These individuals tended to embrace a view of their world as composed of irreconcilable moral boundaries and they saw themselves as faced with a highly dichotomized choice between actions: either to die honorably or live in humiliation. 4) These suicides tended to hear a mystical call to action, accompanied by great faith in the promise that, in time, justice would triumph if that action were pursued. 5) This action was seen as a final option, all other traditional methods of dissent having already met with failure (Park, 2004).

At first glance, at least, these acts seem to qualify as instances of what Durkheim called "altruistic suicide," resulting from a person's excessive integration into and/or identification with the life of a group. According to Durkheim (1951), people who commit altruistic suicide do so as a result of the fact that they regard the life of the group as their own authentic or most fundamental essence, due to their nearly complete immersion with their society. It is assumed that this excessive level of a self-immolator's integration into the group life may lead them to see societal turmoil or acute disruption as a challenge to their very own identity. However, Park (2004) found that in contrast to showing deference to communal values, often thought key to altruistic suicide, the suicides of the self-immolators typically involved a challenge or a message to one's own group, as well as to the powerful group against which their groups were struggling, that more need to be done to bring about a change.

One especially prominent characteristic that most of these self-immolators shared in common is

that they seemed to perceive the present situation as quite depressing and see little hope for the future. In other words, they are people who lack the ability to sustain "self-continuity" that "connects their own past, present, and future," thus, are more predisposed to suicide (Chandler et. al., 2003). Even more importantly for our purpose is the fact that this study reveals that individual continuity is strongly associated with cultural continuity. Aboriginal communities that are able to successfully preserve their cultural heritage and exercise some control over their future, for example, have significantly lower youth suicide rates than those communities that fail to recover (or preserve) their own cultural heritage and form of self government. Thus, youth whose societies are caught up in frequently violent process of societal change and who fail to sustain a viable sense of personal persistence and self-efficacy are at high risk of falling between the cracks. The socio-cultural context in which the self-immolators considered here were protesting in this most ultimate form was highly volatile and disruptive, with respect to their intended individual lives and for their societies as a whole. They lived in social contexts caught between a rapid integration into the global economic system at the same time that they were pulled by traditional values, social mores, and patriotic sentiment. It seems clear, therefore, that these self-immolators identified themselves heavily with the collectivity and saw the political turmoil around them as providing little hope for future commitments both for themselves and for other forms of working for justice.

The act of self-immolation came to be seen as a most dramatic way to change the course of events, as evinced in the note left by a Vietnamese self-immolator, Nhat Chi Mai in 1967: "I offer my body as a torch to dissipate the dark to waken love among men to give peace to Vietnam...."⁵ These self-immolators sought to send a symbolic message that for the well-being of the nation, society should restore cultural continuity, that is, to honor historical values, improve the present political condition, and build a future with democratic government. A majority of these self-immolators were quite young, and it is interesting to note that the majority of these young self-immolators (69%), were between 17 and 29 (n=71) years of age, and were born and raised in either rural areas or small towns/cities.⁶

⁵ Nhat Chi Mai (1984). "A letter to the U.S. Government" in *My Country is the Whole World: An Anthology of Women's Work on Peace and War*, p. 178.

⁶ Among the young self-immolators in South Korea, 49% were students; 38% were laborers; 8% were social activists; and 4% were unemployed. Also, a far more males (89%) than females (11%) were involved in the act of self-immolation. Self-immolation by fire was the majority (70%) followed by jumping from high places (17%), by knife (7%) and poisoning or hanging (6%). Majority of

Of course, most of these acts took place in the capital city of South Korea, Seoul. It even appear safe to assume that the transition from the rural area of one's childhood to cosmopolitan Seoul was one factor that contributed to these young self-immolators experience of such disruption or turmoil in their personal life-course. It could well be that they had difficulty adapting to more individualistic (especially more Westernized) values as opposed to the traditional collectivistic values with which they grew up - assuming that traditional values tend to prevail more in rural areas. Yet, there are many factors that may impose disruptions and threaten their personal identity in their life-course transitions. Whatever disruptions one may experience, if one is not able to maintain adequately stable personal and cultural persistence, one can be at a high risk of suicide.

The suicide note left by Lee, Yung-il, a 27-year-old laborer who grew up in rural community and moved to Seoul to find a job, illustrates, although indirectly, how when one's present becomes radically disconnected from one's past, it is sometimes difficult to make a commitment to the future:

Mother,

Why is it so hard to live? This world is so hard on people. It becomes oppressive. It is cruel on those who wriggle out to live and who have to lead a difficult life. These thoughts are not stemming from my despair. They came to me without a doubt while I struggled to lead an honest and modest life in this society.

This society turns those who want to lead a kind and honest life into ones that are malicious and exasperated.

I don't understand why it is an offense to point out the wrong in a mistaken course.

Father,

I feel ashamed of myself that I did not lead a more upright life. I am even more ashamed to you, father, because you have done your best to live a decent life even if you own very little.

Mother, I miss old days.

I am longing for the world that guarantees a human touch even though we might have less food and fewer clothes. What matters is not what we eat and how much we have. The true matter lies in whether or not we live in a society with justice, with unity, and with humane life. I resent that I have not been able to live in such a society. But, I have no regret.

I only regret that I have lived in this filthy,

disgraceful world. I curse those who made the world as it is.

Finally, please forgive my breach of duty to you. (Lee, Yung-il 1990).

Another suicide note below implies that the actor's life has also been egregiously disrupted by the larger political/social situation. Park Rae-chun was a 24-year-old college student who immolated himself by fire in Seoul in 1988. It seems that he was personally disturbed by the prevailing individualistic values of cosmopolitan Seoul, which might lead him to conclude that no commitment to the future would be possible without social change.

...I had planned to return home. This year, I intended to quit school, go back to you, and attain my hometown goals. But the people in this terribly tarnished world have made me change my plans. Why? People pursue only their own self-interest. The older and younger generations are at the same game. They don't even dream that the tragedy of our generation might be passed down to the next one....

Mom and Dad,

We must destroy the military dictatorship of this era. Also, it is impossible to reunify our country unless we drive out the American Imperialists....

Mom and dad, this hard-hearted decision doesn't even let me cry. Bye, mom and dad.

Your undutiful last son (Park, Rae-chun 1988).

Here the rural-urban distinction appears especially clear, where the young person is responding to the decadence, political and otherwise, of the capital city.

A Comparison with Suicide Attacks

Of central concern to this analysis is the extent to which self-immolators in Korea and Vietnam share things in common with those committing suicide attacks in Palestine and Israel as part of that conflict, in other countries in the Middle East and elsewhere in behalf of what is claimed to be Islamic fundamentalism and/or Arab nationalism. The issues at here are certainly highly complex and controversial, especially in light of the rich ethnic and political diversity of those who execute suicide attacks. The well educated, thoroughly self-prepared and seemingly mature and somewhat westernized men who carried out the aircraft hijackings on September 11, 2001 contrast sharply with the naïve and apparently manipulated teenagers who sometimes have acted as suicide bombers attacking Israel. Even young Palestinian women motivated by

self-immolating acts (79%) in Korea took place between 1984 and 1993.

what they see as brutalities of the Israeli occupation have abruptly stepped out of what appear to have been normal lives to become suicide bombers. Others fitting none of these patterns illustrate the great variety among those who have strapped explosives to their bodies and attempted to kill in the name of what they see as justice or freedom. Any analysis in this realm is made more controversial because so much of the public discourse in the West over Palestinian and Islamic suicide bombers seldom gets beyond the portrayal of such bombers simply as murderers consumed by hatred for all that is modern, and what democratic societies represent. Unfortunately, it appears that in this discourse there is a reluctance to look more deeply into issues of motivation, intent and the social context for fear that such analyses will suggest sympathy with acts that are viewed as immoral and even evil. In this analysis an attempt will be made to step away from understandable moral judgments about the wrongness of suicide bombings and to gain a better understanding of the personal and social contexts from which the suicide bombing emerge and the intentions of the bombers who carry out these acts.

Most certainly there are notable differences between suicide bombers and the self-immolators. It is also important to note that there have been far larger numbers of suicide attackers than self-immolators, especially more recently. Yet, any thoroughgoing analysis is challenged by the scarcity of available information. Many of the suicide attackers remain obscure in important ways. Many either did not leave any notes or other messages which state their reasons or intentions tied to their acts, or their testimonies have been suppressed so as not to seem to provide recognition for what they did.

Suicide attackers have often played more central roles in the struggles in the name of which they carry out their acts than was the case with the self-immolators in Korea and Vietnam. For some of the Islamic fundamentalist groups, and the Palestinian *intifada* as well, suicides attacks have been one of the primary weapons used in the ongoing struggles. Conversely, for the self-immolators, suicides were individual events that took place while larger struggles were taking place. Suicide attacks are fundamentally much more of a social event, requiring, in fact, the extensive involvement of others. With self-immolations, on the other hand, while others might have been involved as supportive witnesses or even in some more active role, the act itself was entirely dependent on the person committing suicide. As noted, in many of the Palestinian suicide attacks, the act was planned, the explosives prepared, the attacker recruited and trained, and then stage managed until close to the event itself. The roles played by such organizers, as distinct from the bomber, are difficult to

evaluate on a moral level. Naturally, there are those who seek to portray these organizers as manipulating especially gullible youths to take part on the basis of nationalist and/or religious appeals, shame or pride, and even financial inducements.

It is not the purpose of this analysis to resolve these controversial disputes that surround the acts of suicide bombers and terrorist suicides; much less to does this work represent any attempt at a comprehensive analysis of suicide bombings. Others have done impressive work at forging new beginnings at such a task.⁷ The task here is much more modest examining the extent to which - if any - common patterns and themes can be found among the self-immolators, on one hand, especially in light of studies by Chandler and others (2003), and suicide bombers on the other.

It is important to note that the primary purpose of both of these acts is to reach out to and influence, either directly and indirectly, a powerful adversary. Yet, with the self-immolators, there is no attempt to bring death or harm to the adversary. The aim is to carry a moral or symbolic message either to the adversary or to others also in opposition. The symbolic message imbedded in the acts of self-immolators plays dual political roles: one message is aimed to shake up the consciousness of their peers in movements opposing established power, and the other is to convey moral messages to their political adversaries. An implicit message in these acts is the assumption or belief that people in power also share some of the same moral code. The key is that the act of self-immolation is intended to stand as the most powerful statement possible of the importance the victim attached to the issues at hand. The 'costs' that the adversary is left to carry relate to values and political symbols, often ones that the person committing suicide seems to assume the adversary holds as important. In a real sense, the intent is either to challenge values or to bring shame to the adversary as a way of forcing change.

No such commonality of values seems implied in the actions of modern suicide attackers.

⁷ A recent research of Adam Lankford (2013) looked into the mind of suicide attackers, which also brought about many commentaries about his work (see *Behavioral and Brain Sciences* (2014) 37, 351-393). Following are, among others, a few books that offer data on historical backgrounds of suicide terrorism and/or results of interviews of captured suicide terrorists or their families are available : A. Merari (2010) *Driven to Death*, Oxford University Press; A. M. Oliver & P. F. Steinberg (2005) *The Road to Martyrs' Square: A Journey into the World of the Suicide Bomber*, Oxford University Press; C. Reuter (2004) *My Life Is a Weapon: A Modern History of Suicide Bombing*, translated by H. Ragg-Kirkby, Princeton University Press; J. M. Davis (2003) *Martyrs: Innocence, Vengeance, and Despair in the Middle East*, Palgrave Macmillan; B. Victor (2003). *Army of roses: Inside the world of Palestinian women suicide bombers*. Rodale.

For them the act of suicide attempts to impose such horrendous costs on the adversary that change will be facilitated as a result. Clearly, the act of suicide attack that directly aims to kill others is intended to carry a political message, but the primary aim is to “strike fear into” both those in power and others in their societies who observe or learn of their actions (Taylor and Ryan, 1988). The people in power they challenge, and many, if not most, of their constituents are seen as part of systems of evil and oppression that should be terminated, or forced to withdraw, instead of being persuaded to change by a symbolic act.

Other issues examined here include the question of the mental stability or mental illness of suicide attackers, the importance of certain singularly traumatic events in the personal lives of suicide bombers that influenced the choices that they made. The role of broader disruptions at the societal level is also examined in so far as it clearly affected the life paths of young people as suggested by the work of Chandler and others concerning societies from which the suicide bombers have emerged.

This analysis will rely on a review of news articles and other reports concerning suicide bombers that have appeared in the international press over the period of 1996-2004. While the data provide only a partial picture of the suicide bombers, the aim here is to build a basis upon which more thorough analyses can be done in the future.

It is of course important to stay aware of the uncertain links that exist between larger social forces and individual intentions and actions. The overwhelming majority of youths in Palestine and many other societies, just as was the case in Korea and Vietnam, have been subjected to personal and societal disruptions but have not been moved to commit suicide. Suicide has become a choice for only a very small minority. However, since this minority has become one of the most disruptive forces in modern times, careful study, if even necessarily partial, is required as a basis for successfully addressing the issue.

Theories about Suicide Attackers

As Chandler et. al. argue, young people are disproportionately vulnerable to the disruptions that occur both in their personal lives and at broader socio-cultural levels. In general, those who carry out politically motivated suicides tend to be young. It has been found that the mean age of the Korean self-immolators for the period of 1970 to 2003 was 25,⁸

and Merari's study (1990, 2004)⁹ based on samples of suicide attackers indicated that the mean age of the Lebanese suicide attackers was 21, for Palestinian suicide attackers for the early period of 1933-1938 was 22, and for the current Intifada, 2000-present, 22 as well (Lester, Yang, & Lindsay, 2004, p. 285). Pape (2005, p. 208) found that the mean age of suicide attackers in Sri Lanka were at about 22, al Queda at about 27, PKK at about 24 and Chechen rebels at 30 years.

Many early commentaries about suicide attackers found little evidence that these people suffer from mental disorders and no risk factors such as an affective disorders, alcohol and/or drug abuse, childhood loss or even recent stress were found (Merari, 1990; Gordon, 2002; Ganor, 2000; Israeli, 1997; Post, 2004; Pape, 2005). Yet, there have been numerous attempts to explain the phenomenon of political suicides in psychological and psychiatric terms. For example, DeMause (2002) argues that the root causes of suicide attacks do not lie in external factors, such as American foreign policy, but in the way these individuals were raised in “extremely abusive families.” He cites the violence, cruelty and sexual exploitation of children in Islamic societies that stem from “the terror-filled homes” in which “the father[s] rarely visits” and the children are brought up by their oppressed mothers who inflict their own pain onto their children (Lester, Yang, & Lindsay, 2004). The claim is even made that Islamic suicide bombers are “products of a misogynist” (DeMause, 2002, p. 340) or the result of defective child rearing by devalued, abused, and traumatized young mothers (Kobrin, 2010). Lachkar (2002) as well links Islamic child rearing practices to the development of a borderline personality disorder that ultimately lead to suicide bombing. Borderline personality types, according to Lachkar, “are dominated by shame/blame defenses, have defective bonding and dependency needs, are extremely envious, and will retaliate at any cost.” Individuals afflicted with this type of disorder are characterized as highly impulsive, having faulty judgments of reality, and suffering “from profound fears of abandonment and annihilation, as well as persecutory anxieties” (Lachkar, 2002, p. 352).

Lachkar argues that boys raised in Islamic societies, what she refers to as “orphan,” “fatherless” cultures, can easily form an intense identification with charismatic leaders who play upon society's “mythological fantasies” and offer models of ways that people can act out their repressed anger and aggression. Thus, Lachkar contends that the suicide bombers are “symbols of an entire repressed society that repudiates women and any semblance of

⁸ About 80 percent of self-immolations took place between 1984 and 1993: 81% of them was young people (17-29).

⁹ Merari (2010) reported in his recent in-depth analysis of fifteen Palestinian would-be suicide bombers that mean age was 19.5, and that all were single (p. 109).

freedom, which is felt to be a national threat" (2002: 357-9). A similar type of claim has been offered by another study (Lester, Yang, & Lindsay, 2004) in which it is suggested that suicide bombers may share personality traits with the general population of suicidal people. They cite Kansi and McVeigh to illustrate the supposedly common characteristics of terrorists and suicide bombers, primarily an "authoritarian personality," and then go so far to argue that "Islamic child-rearing practices facilitate the development of the authoritarian personality" (p. 29). A recent study by Merari (2010) reported that 40% of fifteen Palestinian would-be suicide bombers manifested suicidal tendencies, as well as 60% exhibited a dependent-avoidant personality. This individual pathology of suicide terrorism is further characterized by Adam Lankford (2013, 2014), arguing that suicide attackers not only fit the profile of common suicidal individuals but also share comparable traits of suicide-murderers, thus implying they are driven to act by their pathological mental conditions.¹⁰

There are reasons to be cautious, however, about accepting views that link suicide attacks to supposed defects in Islamic society or to individual pathology. These critics make no mention of the reality that majority of people said to possess an authoritarian personality, or suffer from suicidality, do not commit suicide attacks. Studies on this sort do not seem to notice that suicide becomes a choice for only a very small minority and those who make this choice are mostly ordinary folks in extraordinary groups (Colvard, 2002).

More generally, all of these studies, which are not based on much actual comparative data, as poignantly indicated by Lester (2014), seem to ignore the possibility that suicide attacks can perhaps more reasonably be seen to emerge from the structural realities of disrupted societies and from troubled political and historical contexts. There is also no apparent attempt to consider other societies in which political suicides have become important phenomena. One would need to ask, therefore, if the source of conflict in Islamic societies were a result of the absence of the father, has this led to self-immolation

and hunger strikes arising out of political conflict in other cultures carried until death? Unfortunately the arguments of DeMause, Kobrin, Ltachkar, and quite a few others tend towards a linking of Islamic culture with a tendency towards terrorist violence. The emphasis on pathologies or other psychodynamic predispositions, be they characterized in an individualized way or portrayed as endemic to Islamic society, offers little interpretive means to better understand the dramatically elevated politically inspired suicides in particular times and particular places.

Nevertheless, it is beyond the scope of this paper to critique these claims about the pathological bases of political suicides. Rather the purpose here is to propose that alternative approaches might prove more promising. My premise is that to understand the behavior of suicide attacks, one of the most disruptive forces of modern times, we need to closely examine the psychology of group processes rather than at individual psychopathology, given that "suicide attacks are a group phenomenon (Atran, 2014, p. 363). This analysis thus follows the work of Colvard (2002), for example, who points out that terrorist groups are "embedded within a network of psychological and ideological legitimacy, which gives them both material and moral support" (p. 359). As Post, et al, (2009) indicated, "...the group and social processes that consolidate that collective identity play a crucial role both in leading Muslim youth onto the path of terrorism and in reframing suicide as martyrdom" (p.19).¹¹ Thus, it is suggested here that the more appropriate focus would be on the socio-political contexts and on how community or social situations of these individual suicides might well be seen as causes too serious to ignore.

This analysis of suicide attacks rests on a data base of 106 individuals – including not only those who carried out their intended attacks but also some whose attempts did not succeed – from 1996 to 2004 who were identified in a scan of an archive containing all news articles published in the *New York Times* during this period.¹² These *New York Times* articles provide a highly diverse sample of individual instances and types of suicide attacks.¹³ While these reports

¹⁰ Notably, suicide and homicide are seen as different manifestations of the same phenomenon (Wu, 2003). "In a homicide, the violence is turned outward toward others, whereas in a suicide, the violence is turned inward to oneself" (He et al., 2003, p. 37). According to the model of suicide and homicide proposed by Unnithan and Whitt (1992) and Unnithan et al. (1994), which incorporate attribution theory into the thesis of frustration-aggression of Henry and Short (1954), individual and groups whom are depressed and feel helpless will choose suicide when they attribute the cause of their problems to themselves. Other individuals and groups will opt for homicide if they then to attribute the cause of their problems to others and to the extent that they feel angry as opposed to depressed (He et al., 2003, p. 40).

¹¹ Pape (2005) also argues that "suicide terrorist organizations are not socially isolated groups with socially unacceptable goals, but [they] go to great lengths to embed themselves in their surrounding communities and to pursue socially acceptable political objectives" (p. 197).

¹² The aircraft hijackers on September 11, 2001 were excluded from the sample. Robert Pape (2005) gathered the much extensive data of total 462 suicide attackers for the period, 1980--2003 and presented an interesting demographic profile of them.

¹³ The term 'sample' is used not to imply statistical sampling, but to emphasize its character particularly due to its being drawn in a

vary greatly in the amount of detail they provide about the backgrounds and motivations of the suicide attackers, they at least represent an adequate basis for a preliminary analysis.

These news reports, like many scholarly commentaries on such cases suggest that these suicides were, in fact, quite ordinary folks, far from being hardened, core members of terrorist organizations (Colvard, 2002, p. 359; Pape, 2005, pp. 199-216). Often, they appear to be victim in some sense as well as perpetrator. The typical pattern seems to be that the individuals in question became more or less caught up in the complex and disruptive political struggles of the communities and societies in which they lived.

Yet, a review of the stories of these suicide attackers also yields pictures, highly unique pictures that vary in important ways from the more typical portrayals. For example, many commentators assume that there has been an extensive indoctrination of suicide attackers by radical political, military, or religious leaders. This is related to the major difference between the act of self-immolation and the act of a suicide attack – much of which lies in the orchestration of the event: self-immolation is essentially an individualistic act, while a suicide attack is typically an organizational phenomenon (Biggs, 2003, p.191). Still, it seems questionable to claim that the suicide attackers go through anything close to a complete “brainwashing” process that involves a coercive change of a whole range of attitudes, opinions and beliefs - a total replacement of thinking and behavioral patterns with new ones. According to Merari (1990), the indoctrination process is usually short, and it may “serve as an ancillary actor by strengthening already-existing convictions and behavior tendencies and by adding an element of personal commitment to the persuader to carry out the mission” (p. 200). Violent groups could not survive without some ideological or cultural legitimacy in the communities from which they emerge and in which they continue to operate. Hage (2003) noted that surveys conducted in April 2001 in the Gaza Strip indicated that over 70 percent of adolescents (aged 9-16) reported that they wanted to be martyrs. Clearly, especially in this context, the weight of cultural influence bears heavily on a young person’s choice of self-destruction for a collective cause.¹⁴ As is

non-arbitrary manner from reports over a defined time period in the *New York Times*.

¹⁴ In addition, the fact that there are several radical movement groups competing with each other over the definition of their societal problems to gain legitimacy for their political struggle is a clear sign of cultural force at work. The leaders of these groups work up for interpretations of historical and social processes, and ultimately decide the direction of a movement for entire society. A new generation of young people, as Mannheim noted (19512), is

especially evident in the Palestinian context, the phenomenon of suicide attack by young people is a social fact, the product of socio-cultural conditions that cannot be explained in terms of individual psychological aberration.

Common Denominators

A review of bits and pieces of information about the suicide bombers reported in the news articles slowly led me to find remarkable similarities between the mindset of suicide attackers and that of self-immolators. There are five central themes that emerge from the data set: 1) call to action: a strong sense of mission ; 2) idealistic motivation; 3) disruptive changes in their lives; 4) shift of identity; and 5) suicide as a final option.

First, these suicide attackers, similar to self-immolators, seem to feel a sense of calling – a calling either from God or from history – to carry out or bear witness to a political message. Many of these suicide attackers report having heard a call, which provides meanings for their action. Many were convinced that they were called to play symbolic roles of great importance as agents of historical mission, if not a mission directly from Allah. Nasra Hassan (2001) reported on the striking story of a young Palestinian man who planned and attempted to execute a suicide bombing with two other bombers, but the bombs failed to go off. They instead fired guns wildly at Israeli passengers in a bus. In a shootout with Israeli security forces two of the young men died, and the third who was interviewed by Hassan was struck by a bullet in the head. Laying comatose for two months in Israeli hospitals he was pronounced brain-dead and sent back home to his family in Gaza Strip to die. Miraculously, however, he recovered, and five years later he responded the following question: “What is the attraction of martyrdom?”

“The power of the spirit pulls us upward, while the power of material things pulls us downward.... Someone bent on martyrdom becomes immune to the material pull. Our planner asked, ‘What if the operation fails?’ We told him, ‘In any case, we get to meet the Prophet and his companions, inshallah.’ We were floating, swimming, in the feeling that we were about to enter eternity. We had no doubts. We made an oath on the Koran, in the presence of Allah – a pledge not to waver. This jihad pledge is called bayt al ridwan, after the garden in Paradise that is reserved for the prophets and the martyrs. I know that there are other ways to do jihad. But this one

largely susceptible to these cultural and/or ideological definitions of their time. Mia Bloom (2005, 2006) describes how terrorist groups compete with one another to gain support and status in their respective communities.

is sweet-the sweetest. All martyrdom operations, if done for Allah's sake, hurt less than a gnat's bite!" (Hassan, 2001, p. 37).

This man was clearly convinced that he was being used as a messenger of Allah. In fact, he begged for this role because he "wanted to do an operation that would incite others to do the same" (Hassan, 2001, p. 36). These suicide attackers see themselves as an instrument for a higher purpose and they are utterly convinced of the sureness of the eternal reward that awaits them as a result of their action (Ganor, 2000). They view themselves as a means to a larger end, as an agent of God's (or historic) mission. They see themselves as on an altar to be sacrificed for the greater good of their community. A strong sense of mission and a noble interpretation of that mission are most pronounced. This sense of mission is accompanied by a crystal clear idea of who the enemy is - and this translates into a concrete path of action. It is this strongly shared sense of mission that has given rise to youthful suicides in contemporary Palestine. While some may see the promise of divine rewards after death as the most prominent incentive for their action, this action is also based on a profound, shared sense of mission having been created by an entire youthful generation in Palestine, especially in the refugee camps. This shared sense of mission is a profoundly normative force, for which religion provides a cushion of legitimacy and an inducement to action by explaining what happens after death. Although self-destruction is strictly forbidden in Islam, in the socio-political contexts in which people define a war, the act of suicide bombing is understood, not as suicide but as being killed by the enemy in *jiḥād*.¹⁵ The warrior who is killed by an enemy in war is guaranteed entry into paradise. The religious beliefs that serve to account for the willingness of Palestinian youth to die for their community cause has, of course, been cultivated by the member of radical movement organizations. In addition to the role of religious beliefs, however, the suicide attacker is also clearly acting to avenge wrong that have been inflicted on his or her community. Irrespective of the extent to which their motivations are religiously inspired, it is these radical Palestinian groups that put rumbling discontents about socio-political conditions into action, pinpoint the key issues of the time, work up and articulate responses, and ultimately decide the direction of the movement and, in fact, the direction of Palestinian society.

This is because young people grow up seeing their fathers shamed and humiliated by Israelis in the

occupied territories and experience close at hand the devaluation of their own identity. Thus, they are highly susceptible to the ideological (or religious)¹⁶ frames of thought and patterns of action promoted by radical wings of Palestinian political organizations. Moreover, the desperateness of the Palestinian situation, from the Palestinian perspective, the lack of a sense of hope for the future, the highly oppressive social environment, etc., in this context, the prospect of attaining honor, the highest cultural value in many societies including Palestine, can become a most meaningful prize for which one begs for the privilege of trading his or her life. A Hamas leader told Hassan (2001, p. 39): "Our biggest problem is the hordes of young men who beat on our doors, clamoring to be sent. It is difficult to select only a few. Those whom we turn away return again and again, pestering us, pleading to be accepted."

Another striking common denominator revealed in the personal documents of self-immolators is a wide ranging idealistic manifesto. It appears that this is also a common characteristic for suicide attackers. They seem to possess high aspirations to change the world for the sake of their high ideals - whether religious or political or most commonly, both, one and the same. Numerous religious and secular groups have used suicide acts as a tactic against their own government or against foreign powers seeking to dominate their territory. Although they are motivated by different ideals, one common thread is that they long for truer and purer (more humane) way of life.¹⁷ Their deaths are a response to what they see as corrupt governments as well as Western influence. They see their world as contaminated by injustice and corruption. They imagine that if they drive Western influence from their community and overthrow corrupt governments, a new world will spring forth. Liberation, justice, and equality will arrive. Bringing this about is seen as a moral obligation. Most of them seem to believe that their struggle will ultimately be successful because they are righteous and God (or history) is on their side.

The third central theme which emerged from the data base is that many of the suicide attackers and self-immolators were at one point in their lives

¹⁶ It needs to be noted that there are secular groups that use this tactic of suicide bombing motivated by nationalism. Thus, it is unwise to associate this method of bombing solely with Islamic fanaticism.

¹⁷ Al-Qa'ida is a multinational group transcending territorial borders. The organization seems different from other groups in many respects. Yet, its goal is similarly shared with other groups, that is, to overthrow all corrupt Muslim governments, to root out all Western influence, unite all Muslims, and establish a "true" Muslim government (Salib, 2003, p. 475).

¹⁵ Hassan (2001) observed that the word "suicide" was not allowed to be spoken when talking to the potential suicide attackers. They preferred the term "sacred explosions."

transformed or had an intense and especially rapid increase in political awareness due to certain critical events that were happening around them. Nolan (1996) reported that most of the suicide attackers in Palestine were from refugee camps, usually in the Gaza Strip or the West Bank, and saw that many of their family members, relatives, or friends were abused by Israelis.¹⁸ According to Nolan, many of these bombers "had been held in Israel jails without charge for months at a time," and "arrests and beatings were their main, perhaps only, experience of Israel." Bennet (2002) reports critical details of the life of Arien Ahmed, a 20-year-old Palestinian female student of business administration who was sent to an Israeli town wearing an explosive backpack. She turned back from her mission and was captured by the Israelis. Her father died when she was six, and her mother remarried but left her with other family members. She fell in love with a leader of a terrorist group and became engaged to get married, but he soon died in a confrontation with Israeli forces. Within a month of his death, Israeli forces invaded Bethlehem. According to Bennet, Arien "was often glued to the television, following the Israeli offensive." From even this brief biographical account of Arien Ahmed, it seems clear that the death of her fiancé had a profound impact on her own personal militancy. She may have dreamed of forming a family some day, but her love was taken away by Israeli fire. Arien's situation on both personal and societal levels provided little hope on which she might make future commitments to family and anything resembling a normal life. "So I lost all my future" she declared. Her case is a good example of an ordinary person caught up in political turmoil and lacking the ability to sustain a sense of self-continuity that connected her past, present, and future.

Arien's companion, Issa Badir, was the son of a lawyer educated in Wisconsin and he was just only 16 when he died. Issa too, according to his brother, "had been upset by watching images of Israeli military operations on television." It is noteworthy that he was "most passionate about swimming." For Issa, however, the sociopolitical structure in which he lived was too disruptive to maintain an enduring attachment to what he cared about most in life. He

was thus unable to construct "a coherent and continuous sense of personal identity," and was forced to directly respond to conditions that he had little or no ability to control (Chandler, et. al. 2003, p. 55).

As suggested above, there is a great deal of common ground between the suicide attackers of Palestine and self-immolators in Korea. What follows is part of a letter written by Kim Se-jin, a 21-year-old Korean student who self-immolated by fire in 1986. It illustrates how the political turmoil determined the development of his political consciousness.

Since entering college, I have grappled with the issue of humanity and my view of the world. Watching the scenes in which my friends and senior students on campus were dragged away by police, after being beaten, I languished over our nation's problems and history. These tormenting thoughts used to keep me awake at night. At last, I came to the realization that the American Imperialists and their proxy, the military fascist regime, are the ringleaders of poverty in this land. They are behind the aching division of our peninsula, and they are the prime oppressors of our freedom. They are the ones who suppress us, who make this land a military base aimed at the Soviet Union, and who colonize this nation....

Most of not all of the self-immolators in Korea, as revealed in their personal documents cited above, at some points in their lives experienced a great awakening and transformation at the hand of historical and political events. In a similar fashion, suicide attackers seem to have experienced, at some point, a radical change in the state of their political consciousness which may make it difficult for them to maintain self-continuity short of this drastic act. Becoming politically aware in this sense can entail a most radical shift in one's identity – from an ordinary person to someone who can contribute to social change that, at least so it is thought, results in a benefit to the community. This new awakened sense of self resulting from this radicalized political consciousness can be compared with religious conversion, especially with respect to the suddenness in which the truth is revealed.

Of central interest for our purposes, therefore, the question: How might a politically conscious individual maintain a sense of self-continuity despite such a significant shift in identity? I will respond to this question in the section that follows. Here, however, it is important to note that everyone to some extent, makes investments in one's identity and that this always has ramifications. Harrison (2003) suggests that "investing" entails "the

¹⁸ Noting that Palestinian suicide bombers have a relative or close friend killed, wounded or jailed by the Israelis, Kushner (1996) suspects that they may have experienced feelings of hopelessness and anger as well as "some long standing personal frustration, such as the shame they suffered at the hands of friends who chastised them for not throwing stones at the Israeli troops during the *intifada* (p. 332). Salib (2003) also suspects anger and sense of hopelessness in the mind of suicide attackers, but he surmises that they may suffer from shared delusional beliefs, what he refers to *folie a plusieurs*, a psychiatric disorder. Rosenberger (2003) carry this line of argument even further asserting that the suicide bombers may have not only delusions but also paranoia in keeping their personal despair at bay.

things we do, not just for immediate advantage but for long-term expected gain, because they contribute to our sense of self and promote the identity we wish to sustain" (p. 12). It is because "our identity is concerned with how we are expected to live, but not exclusively; it may also define how we should die" (p. 11). Harrison also notes that "people will do many thing to protect the value of their identity; they will even die for it." Thus, for this researcher the logic that drives voluntary acts of self-destruction is such that:

Each person who choose the death of the self does so because at the given moment death will enhance her most valuable asset, the identity that she has selected and invested in through her life, but living on will damage it irreparably. The moment is such that by choosing life she must abandon this identity. (Harrison, 2003, p. 12).

Clearly, the martyr's identity is heavily invested in an image that is rendered more valuable by death. The conflictive, oppressive socio-political context in which children have difficulty finding "a creative, life-loving identity capable of sustaining enduring attachments to other human beings" increases dramatically in the context where so many young people freely choose "the identity of a warrior martyr" (Harrison, 2003, p. 12).¹⁹

Finally, although the martyr's identity is affirmed by voluntary self-destruction, this does not mean that they want to die. On the contrary, as in the case of the self-immolators, they prefer living to death, as testified to by many of their accounts. As revealed in self-immolator's notes, even though they make a claim that they are prepared to die for what they believe to be the greater good of their community, if they felt a genuine or satisfactory choice were available many would choose to live. Voluntary self-destruction is chosen as a last option only when it is felt that there is no other alternative means of struggle left. As most Palestinians see it, the earlier protests in the street during the first *intifada* did not work. According to Dr. Sarraj, an Arab psychiatrist, Palestinian children growing up seeing the humiliation of their fathers by Israeli

soldiers "no longer admired a father who could not protect them" (Silver, 2001) and, therefore, sought an alternative, that is, to volunteer for suicide mission. As one Hamas leader put it, "If we had weapons like the Israelis, we would kill them in a way that is acceptable to Americans" (Bennet, 2002). It is not that they desire to die, but that they perceive that it is necessary for them to act this way in this situation, especially insofar as it results in a symbolic message. The sponsors and facilitators of suicide attacks voice related sentiments. The message is intended for both members of their own community and their powerful adversaries, but especially the former. Salsh Othman, mentioned above, now known as the "live martyr," said in an interview, "I wanted to do an operation that would incite others to do the same." Another young bomber, Muhammad Abu Hashem declared in a video testament: "This is my free decision, and I urge all of you to follow me." (Hassan, 2001, p. 41). Clearly, these so-called "martyrs" believe that their deaths will inspire others to act, or at least bring people together to discuss the meaning of events, and ultimately help achieve community ideals for which their deaths will be memorialized and celebrated.

In the case of Arien Ahmed, who backed out of her mission before it was too late, as reported by Bennet (2002), she hoped to make a new life in Jordan. The reason why she did not want to go back to her own community was because "they will refuse me" as a coward. Asked who would refuse her, she replied, "my nation." At one point she even persuaded her fiancé to drop out, but his response was, "It's too late." This would entail "the loss of one's face in Asian societies," in other words, shame would jeopardize one's meaningful, reciprocal relationships with others in the community. In fact, once a suicide attacker embarks on his or her course, in order to avoid the devaluation of one's identity and status in the community, death is almost always affirmed and martyrdom is achieved (Harrison, 2003).

Conclusion/Discussions

This paper has attempted to compare the act of self-immolation, primarily in Korea, with the acts of suicide attackers, primarily in Palestine. Both manifestations represent politically inspired suicides that are committed as a means of conveying a symbolic message, to urge others to action, and to stimulate political change. I have struggled to better understand why and how this self-destruction has occurred and continues to occur, insofar as it is often seen as the necessary course of political and religious action. Given the fact that only a miniscule number of young people choose to kill themselves for a political cause, I have attempted to better understand the logic that inspired their acts.

¹⁹ Volkan (2002) argues that although suicide bombers are not necessarily psychotic they tend to exhibit shaky self-esteem. He suggests that the voluntary act of suicide bombing "brings self-esteem and attention to the larger-group identity." The youth suicide bombers must have experienced which humiliated them repeatedly "and interfered with adaptive identification with their parents because their parents are humiliated as well" (p. 474). Therefore, potential suicide bombers are those whose personal identities were disturbed and who are seeking external element to internalize so as to stabilize their internal world. Volkan's argument is similar to the one put forth in the text, but his focus still lies largely in identifying individual pathological traits.

One of the nagging problems of studying the phenomenon of political suicide is scarcity of primary information. While this analysis of the act of self-immolation is based on personal documents of Korean and Vietnamese suicides, the data on suicide attacks come mostly from the *New York Times* news articles, commentaries and other reports. For this reason, I present the analysis as only a preliminary one that will hopefully provide a ground upon which more thorough analyses can be based.

Both acts under examination here involve a concrete premeditated individual intention to kill oneself for some collective causes. The critical difference, of course, is that the act of self-immolation claims only the life of the actor, while suicide attacks are intended to kill numerous others, be they innocent civilians or agents of those in power. Thus, while it is important to review the similarities that exist, we must not lose sight of the fact that the suicide attack must be seen as a weapon of war and the act of self-immolation as a form of protest.

The act of self-immolation in Korea and Vietnam emerged as a product of the brutal role played by these nations in the geopolitical context of the Cold War. These days we see politically motivated suicides emerging in societies where the forces of globalization have contended with forces of religion and national identity. For example, religious fundamentalism in the Islamic world and the issue of national identity in the Palestinian-Israeli conflict have provided a base out of which youthful political suicides have emerged. Globalization (often perceived as Westernization) is viewed as a disruptive force to their way of life and a new tool for the domination of their own world (Mazrui, et al., 2006; Schaebler & Stenborg, 2004). As Chandler et. al. noted (2003), the disruptions that young people experience in their personal lives can contribute to elevated suicide rates (p. 114). Youths growing up in severely disrupted societies find themselves in social contexts in which they feel forced to respond to conditions over which they have little control. This condition, not unlike what Durkheim called anomie, can become a precipitating factor, in many cases, of young people choosing a violent death for a political purpose.

This rash of political suicides among the young represents acts of resistance that are attuned to the specific issues that confront their society and as responses to an overwhelming disequilibrium that has accumulated throughout the recent history of their communities and societies. In many cases, these political suicides see themselves as defending their community from the violent incursion of Western values that seeks to destroy their cherished way of life. The perception that globalization is a form of Western conspiracy seeking to dominate their

societies is highly controversial, but, at least, in the minds of these political suicides Western hegemony seeks to exploit if not annihilate and it is seen as the principal enemy. Of course, perceptions and grievances as well as concerns for the future are widely shared by the members of younger generations. This shared sentiment or grievance is what Stern (2003) calls "a kind of virus" that is contagious to certain vulnerable personality types, such as men who are mentally immature, unemployed, without girlfriends, have no means to enjoy life and an absence of meaning in life. A study by Robert Pape (2005), based on demographic profiles of 232 Arab suicide attackers, reports contradictory findings. According to the report, those suicide attackers were, in general, well-educated, employed, and coming from both secular and religious backgrounds. They were, in fact, politically conscious normal citizens "who might join a grassroots movement more than they do wayward adolescents or religious fanatics" (p. 216).

While we cannot totally discount possibilities of certain individual predispositions as risk factors in these suicides, the individual pathological approach nevertheless fall short of providing adequate explanations for this complex phenomenon due to its failure to account for the cultural and ideological solidarity that legitimizes the act and lends it both moral and material support. To put this differently, these acts of political suicide represent actions that to some extent reflect a shared or collective community conscience. While an attacker may well not have a job or a girlfriend, this does not mean that he is seen as a loser by the people.

Rather, this willingness to engage in political suicides is awakened by personal political experiences or events that have touched the actors' lives. Among many available case histories of suicide bombers, Hanadi Jaradat, 29, a Palestinian trainee lawyer's life history could be a clear illustration of such personal experience. She was the sixth female suicide bomber during the second *intifada*, who carried out a suicide attack in Haifa in 2003. According to her friends, Jaradat was ambitious and determined to achieve personal success in her chosen profession. But, the death of two family members: her brother and cousin by Israeli forces in the year she graduated from her law school appear to have profoundly affected her (Figheh, 2003). It seems evident that her consciousness was shaken by this direct personal experience with Palestinian-Israeli conflict; otherwise she would remain distanced from the political conflict.

Such political consciousness becomes a form of personal identity which, in turn, leads to a questioning of the conventional understanding of the self. In fact, given the context in which a violent

political act is socially legitimized by one's own community, political identity is in some sense a chosen one for many young people who, through suicide, become precisely what they most want to be. One's new identity, once having embarked on a course towards martyrdom, revolves around a new set of social relationships and meanings, and this new identity is finalized at the moment of death.

In politically convulsive climate, young people sometimes accept most radical definitions of personal directions. Young people, who have difficulty maintaining individually defined personal directions due to socio-political disruptions, are especially susceptible to the failure to maintain an adequate "self-continuity warranting strategy," thus having difficulty constructing "a coherent and continuous sense of personal identity" (Chandler et al., 2003). Thus, they become susceptible to the martyr's call, more culturally valued identities that demand the taking of one's life.

While both self-immolation and suicide attacks are an intentional act of killing oneself for a collective cause, there are important differences. The major difference lies in the way the act is carried out. The act of self-immolation is largely individual; while suicide attacks are closely linked to the organizational orchestration. The extent to which organizers are involved in manipulating the suicide attacker is highly controversial. Merari (1990), who questions claims that the decisions of the suicide attackers are controlled by others, argues that the indoctrination process is relatively short and functions only to reinforce already-existing convictions and personal commitment in carrying out the act. The other important difference, of course, lies in the fact that the self-immolator is the only direct victim; whereas suicide attackers include "other more symbolic targets" (Taylor and Ryan, 1988, p. 98). Yet, the primary purpose of both of these acts is to carry a symbolic message to a powerful adversary.

An implicit message in the act of self-immolation is the assumption that people in power, the targets of the suicides, share some of the same normative code as the suicide. The intent is either to challenge values or to bring shame to the adversary as a way of forcing change. No such commonality of moral code is implied in the actions of the suicide attacker. For the suicide attacker, the people in power and their constituents are part of an evil system and one of oppression that should be terminated, or forced to withdraw, instead of being persuaded to change as the result of a symbolic act.

It seems evident that the forces of globalization and their impact on religious and national identities have exacerbated the tendency towards the political suicide of youth in many parts of the world. Youth suicides see a volatile, oppressive

political climate as providing little opportunity for them to pursue their intended lives. If other meaningful choices were to be available to Palestinian youth, the kinds of options that are now available to young people in Korea, for example, their identity formation would take a different course. As seen in the case of Issa who chose to abandon his passion to pursue swimming, even though he came from a well-to-do family, these young people's intended lives were disrupted by the conflictive, volatile political setting. In this socio-political context of having very limited paths for developing their own self, the meaning resulting from the network of social relationships in their communities could appear more salient than the few, and very uncertain, personal life choices left for them.

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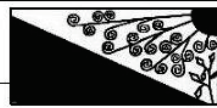
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- Improving understanding of risk and protective factors;
- Sharing experience and knowledge on suicide prevention;
- Disseminating best practices on management and treatment of the suicidal patients.

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