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Foreword

This volume contains quotations from internationally peer-reviewed suicide research published during the semester May 2015 – October 2015; it is the fourteenth of a series produced biannually by our Institute with the aim of assisting the Commonwealth Department of Health to be constantly updated on new evidences from the scientific community.

As usual, the initial section of the volume collects a number of publications that could have particular relevance for the Australian people in terms of potential applicability. These publications are accompanied by a short comment from us, and an explanation of the motives that justify why we have considered of interest the implementation of studies’ findings in the Australian context. An introductory part provides the rationale and the methodology followed in the identification of papers.

The central part of the volume represents a selection of research articles of particular significance; their abstracts are reported in extenso, underlining our invitation to read those papers in full text: they represent a remarkable advancement of suicide research knowledge.

The last section reports all items retrievable from major electronic databases. We have catalogued them on the basis of their prevailing reference to fatal and non-fatal suicidal behaviours, with various sub-headings (e.g. epidemiology, risk factors etc). The deriving list guarantees a level of completeness superior to any individual system; it can constitute a useful tool for all those interested in a quick update of what was most recently published on the topic.

Our intent was to make suicide research more approachable to non-specialists, and in the meantime provide an opportunity for a *vademecum* of quotations credible also at the professional level. A compilation such as the one that we provide here is not easily obtainable from usual sources and can save a considerable amount of time to readers. We believe that our effort in this direction may be an appropriate interpretation of one of the technical support roles to the Government that the status of National Centre of Excellence in Suicide Prevention — which has deeply honoured our commitment — entails for us.

The significant growth of our centre, the Australian Institute for Suicide Research and Prevention, and its influential function, both nationally and internationally, in the fight against suicide, could not happen without the constant support of Queensland Health and Griffith University. We hope that our passionate dedication to the cause of suicide prevention may compensate their continuing trust in our work.

Diego De Leo, DSc

*Emeritus Professor, Australian Institute for Suicide Research and Prevention*
Acknowledgments

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We also gratefully acknowledge the contributions of the Australian Institute for Suicide Research and Prevention staff members Dr Kairi Kõlves, Ms Aoife Sheils and Mrs Wendy Iverson.
Introduction

Context

Suicide places a substantial burden on individuals, communities and society in terms of emotional, economic and health care costs. In Australia, about 2000 people die from suicide every year, a death rate well in excess of transport-related mortality. At the time of preparing this volume, the latest available statistics released by the Australian Bureau of Statistics indicated that, in 2013, 2,522 deaths by suicide were registered in Australia, representing an age-standardised rate of 10.7 per 100,000.

Despite the estimated mortality, the prevalence of suicide and self-harming behaviour in particular remains difficult to gauge due to the often secretive nature of these acts. Without a clear understanding of the scope of suicidal behaviours and the range of interventions available, the opportunity to implement effective initiatives is reduced. Further, it is important that suicide prevention policies are developed on the foundation of evidence-based empirical research, especially as the quality and validly of the available information may be misleading or inaccurate. Additionally, the social and economic impact of suicide underlines the importance of appropriate research-based prevention strategies, addressing not only significant direct costs on health system and lost productivity, but also the emotional suffering for families and communities.

The Australian Institute for Suicide Research and Prevention (AISRAP) has, through the years, gained an international reputation as one of the leading research institutions in the field of suicide prevention. The most important recognition came via the designation as a World Health Organization (WHO) Collaborating Centre in 2005. In 2008, the Commonwealth Department of Health (DoH) appointed AISRAP as the National Centre of Excellence in Suicide Prevention. This latter recognition awards not only many years of high quality research, but also of fruitful cooperation between the Institute and several different governmental agencies.

As part of this mandate, AISRAP is committed to the creation of a databank of the recent scientific literature documenting the nature and extent of suicidal and self-harming behaviour and recommended practices in preventing and responding to these behaviours. The key output for the project is a critical bi-annual review of the national and international literature outlining recent advances and promising developments in research in suicide prevention, particularly where this can help to inform national activities. This task is not aimed at providing a critique of new researches, but rather at drawing attention to investigations that may have particular relevance to the Australian context. In doing so, we are committed to a user-friendly language, in order to render research outcomes and their interpretation accessible also to a non-expert audience.
In summary, these reviews serve three primary purposes:

1. To inform future State and Commonwealth suicide prevention policies;
2. To assist in the improvement of existing initiatives, and the development of new and innovative Australian projects for the prevention of suicidal and self-harming behaviours within the context of the Living is for Everyone (LIFE) Framework (2008);
3. To provide directions for Australian research priorities in suicidology.

The review is presented in three sections. The first contains a selection of the best articles published in the last six months internationally. For each article identified by us (see the method of choosing articles described below), the original abstract is accompanied by a brief comment explaining why we thought the study was providing an important contribution to research and why we considered its possible applicability to Australia. The second section presents the abstracts of the most relevant literature — following our criteria — collected between May 2015 and October 2015; while the final section presents a list of citations of all literature published over this time-period.

**Methodology**

The literature search was conducted in four phases.

**Phase 1**

Phase one consisted of weekly searches of the academic literature performed from May 2015 to October 2015. To ensure thorough coverage of the available published research, the literature was sourced using several scientific electronic databases including: PubMed, ProQuest, Scopus, SafetyLit and Web of Science, using the following key words: suicide OR suicidal OR self-harm OR self-injury OR parasuicide.

Results from the weekly searches were downloaded and combined into one database (deleting duplicates).

Specific inclusion criteria for Phase 1 included:

- Timeliness: the article was published (either electronically or in hard-copy) between May 2015 to October 2015;
- Relevance: the article explicitly referred to fatal and/or non-fatal suicidal behaviour and related issues and/or interventions directly targeted at preventing/treating these behaviours;
- The article was written in English.

Articles about euthanasia, assisted suicide, suicide terrorist attacks, and/or book reviews, abstracts and conference presentations were excluded.

Also, articles that have been published in electronic versions (ahead of print) and therefore included in the previous volume (Volumes 1 to 13 of Suicide Research: Selected Readings) were excluded to avoid duplication.

**Phase 2**

Following an initial reading of the abstracts (retrieved in Phase 1), the list of articles was refined down to the most relevant literature. In Phase 2 articles were only included if they were published in an international, peer-reviewed journal.
In Phase 2, articles were excluded when they:

- were not particularly instructive or original
- were of a descriptive nature (e.g., a case-report)
- consisted of historical/philosophical content
- were a description of surgical reconstruction/treatment of self-inflicted injuries
- concerned biological and/or genetic interpretations of suicidal behaviour, the results of which could not be easily adoptable in the context of the LIFE Framework.

In order to minimise the potential for biased evaluations, two researchers working independently read through the full text of all articles selected to create a list of most relevant papers. This process was then duplicated by a third researcher for any articles on which consensus could not be reached.

The strength and quality of the research evidence was evaluated, based on the Critical Appraisal Skills Programme (CASP) Appraisal Tools published by the Public Health Resource Unit, England (2006). These tools, publicly available online, consist of checklists for critically appraising systematic reviews, randomized controlled trials (RCT), qualitative research, economic evaluation studies, cohort studies, diagnostic test studies and case control studies.

**Phase 3**

One of the aims of this review was to identify research that is both evidence-based and of potential relevance to the Australian context. Thus, the final stage of applied methodology focused on research conducted in countries with populations or health systems sufficiently comparable to Australia. Only articles in which the full-text was available were considered. It is important to note that failure of an article to be selected for inclusion in Phase 3 does not entail any negative judgment on its ‘objective’ quality.

Specific inclusion criteria for Phase 3 included:

- applicability to Australia
- the paper met all criteria for scientificity (i.e., the methodology was considered sound)
- the paper represented a particularly compelling addition to the literature, which would be likely to stimulate suicide prevention initiatives and research
- inevitably, an important aspect was the importance of the journal in which the paper was published (because of the high standards that have to be met in order to obtain publication in that specific journal); priority was given to papers published in high impact factor journals
- particular attention has been paid to widen the literature horizon to include socio-logical and anthropological research that may have particular relevance to the Australian context.

After a thorough reading of these articles (‘Key articles’ for the considered timeframe), a written comment was produced for each article detailing:

- methodological strengths and weaknesses (e.g., sample size, validity of measurement instruments, appropriateness of analysis performed)
• practical implications of the research results to the Australian context
• suggestions for integrating research findings within the domains of the LIFE framework suicide prevention activities.

Phase 4
In the final phase of the search procedure all articles were divided into the following classifications:
• Fatal suicidal behaviour (epidemiology, risk and protective factors, prevention, postvention and bereavement)
• Non-fatal suicidal/self-harming behaviours (epidemiology, risk and protective factors, prevention, care and support)
• Case reports include reports of fatal and non-fatal suicidal behaviours
• Miscellaneous includes all research articles that could not be classified into any other category.
Allocation to these categories was not always straightforward, and where papers spanned more than one area, consensus of the research team determined which domain the article would be placed in. Within each section of the report (i.e., Key articles, Recommended readings, Citation list) articles are presented in alphabetical order by author.

**Endnotes**

Key Articles
Asthma is a highly prevalent chronic condition worldwide, and is particularly common in younger people compared to other chronic conditions. Asthma can result in a number of symptoms that are detrimental to the quality of life of sufferers. The aim of the present systematic literature review was to analyse the existing literature on the relationship between asthma and fatal and nonfatal suicidal behaviours.

Articles were retrieved from Scopus, PubMed, ProQuest and Web of Knowledge. We searched for the terms (suicid* OR self-harm) AND (asthma* OR “bronchial hyperreactivity”) published in English-language peer-reviewed journals between 1990 and December 2014. Original research papers providing empirical evidence about the potential link between asthma and suicidal behaviours were included.

The initial search identified 746 articles. Specific limiting criteria reduced the number of articles to the 19 articles that were finally included in the systematic review.

The review found a potential link between asthma and suicide mortality, ideation and attempts across the age groups. Limitations of the review include the restriction to English-language papers published within the chosen time period, the limited number of papers involving suicide mortality, and the fact that the majority of papers originated from the USA.

Comment

**Main findings:** It is estimated that roughly 235 million people across the globe suffer from asthma. Although asthma symptoms are generally managed well, particular influences (e.g., stress, smoking, environmental triggers) can exacerbate symptoms which can subsequently impact sufferers’ overall quality of life, with some research suggesting an association between asthma and suicidal behaviours. As a result, the authors aimed to put forward a more comprehensive systematic literature review regarding the association between asthma and suicidal behaviours. The review was conducted according to the Preferred Reporting Items For Systematic Reviews And Meta-analyses (PRISMA) statement. Scopus, PubMed, Proquest and Web of Knowledge databases were utilised for the literature search using the following search terms; (suicid* OR self-harm) AND (asthma* OR “bronchial hyperreactivity”). Articles were selected based on being published in English between January 1990 and December 2014. Of the 534 articles that were retrieved, 19 were selected that presented research empirically analysing the potential association between asthma and suicidal behaviour. The term suicidal behaviour includes suicidal ideation, self-harming, suicide planning, suicide attempts, which are all non-fatal suicidal behaviours, and suicide which is defined interchangeably as “fatal suicidal behaviour”.

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**The relationship between asthma and suicidal behaviours: a systematic literature review**

Barker E, Kõlves K, De Leo D (Australia)

*European Respiratory Journal* 69, 305-310, 2014
Of the 19 studies reporting on suicidal behaviours, three examined the link between asthma and suicide mortality, 16 examined the link between asthma and non-fatal suicidal behaviours and two studies examined both associations. The majority of studies were conducted in the US, followed by the UK, Korea, Canada, Taiwan, Sweden and Denmark. A study conducted in Taiwan found significant differences in percentages of children with asthma, previous asthma and no asthma that died by suicide (11%, 8.5% and 4.3% respectively). They also concluded that certain symptoms (e.g., coughing at night, severe wheezing) were associated with higher suicide risk and that risk increased as the number of symptoms per individual increased. Research revealed that women who died by suicide more often had asthma than the general female population and that overall, asthma was associated with a significant increase in suicide for both men and women.

In relation to non-fatal suicidal behaviours, most studies reported a link between asthma and increased risk of suicidal ideation and attempts amongst youth and adults. One case-control study from Denmark reported that those receiving asthma treatments were at higher risk of a suicide attempt, particularly within the first few weeks from initial consultation with the somatic department. However, this result did not remain significant after controlling for other factors. Research conducted in the UK found that patients suffering with asthma, especially those aged 45-64 years, were at a significantly increased risk of self-harm. Other research found the association between asthma and risk of suicide attempt remained significant after controlling for the influence of lifetime major depression, sex, age, asthma treatment and race. Another study concluded that the link between asthma and increased risk of suicidal behaviours is impacted by risk-taking behaviours in young individuals such as cigarette smoking, use of marijuana and binge drinking.

Implications: This systematic review provides support for the link between asthma and fatal and non-fatal suicidal behaviours. It is particularly important for health professionals to be aware of the increased risk of suicidal behaviours amongst asthma sufferers of all ages, as well as the potential susceptibility of young people who engage in other risk-taking behaviours. This is particularly informative for the appropriate treatment of younger individuals as such risk-taking behaviours could impact on medication adherence. This review also suggests that symptom severity and timing may be an important moderating variable on the association between asthma and suicidal behaviours. It is also important for health professional treating asthma patients to be aware of the potential for increased risk of suicidal behaviours in the first couple of weeks after initial contact with treating doctors. Overall, research that examines suicide risk and the use of asthma medication is currently yielding mixed findings with no current studies investigating the different types of asthma medication used. Further research in this area is clearly needed to determine the safety of these medications. Additional research is necessary to examine whether child asthma sufferers are at a higher risk of suicidal behaviours than adult asthma sufferers, as they are more
likely to exhibit risk-taking behaviours which has been shown to exacerbate the relationship between these two variables. Lastly, research regarding risk of suicidal behaviours amongst an Australian cohort of asthma sufferers is lacking. More research in this area would be useful, particularly for the National Asthma Council Australia, which provides information regarding appropriate treatment guidelines and practical considerations (Australian Asthma Handbook) to primary care health professionals who deal with asthma sufferers\(^3\).

**Endnotes**


Risk of depression and self-harm in teenagers identifying with goth subculture: A longitudinal cohort study


Lancet Psychiatry 2, 793-800, 2015

Summary: Previous research has suggested that deliberate self-harm is associated with contemporary goth subculture in young people; however, whether this association is confounded by characteristics of young people, their families, and their circumstances is unclear. We aimed to test whether self-identification as a goth is prospectively associated with emergence of clinical depression and self-harm in early adulthood.

Methods: We used data from the Avon Longitudinal Study of Parents and Children, a UK community-based birth cohort of 14 541 pregnant women with expected delivery between April 1, 1991, and Dec 31, 1992. All children in the study were invited to attend yearly follow-up visits at the research clinic from age 7 years. At 15 years of age, participants reported the extent to which they self-identified as a goth. We assessed depressive mood and self-harm at 15 years with the Development and Wellbeing Assessment (DAWBA) questionnaire, and depression and self-harm at 18 years using the Clinical Interview Schedule-Revised. We calculated the prospective association between goth identification at 15 years and depression and self-harm at 18 years using logistic regression analyses.

Findings: Of 5357 participants who had data available for goth self-identification, 3694 individuals also had data for depression and self-harm outcomes at 18 years. 105 (6%) of 1841 adolescents who did not self-identify as goths met criteria for depression compared with 28 (18%) of 154 who identified as goths very much; for self-harm, the figures were 189 (10%) of 1841 versus 57 (37%) of 154. We noted a dose-response association with goth self-identification both for depression and for self-harm. Compared with young people who did not identify as a goth, those who somewhat identified as being a goth were 1.6 times more likely (unadjusted odds ratio [OR] 1.63, 95% CI 1.14-2.34, p<0.001), and those who very much identified as being a goth were more than three times more likely (unadjusted OR 3.67, 2.33-4.79, p<0.001) to have scores in the clinical range for depression at 18 years; findings were similar for self-harm. Associations were not attenuated after adjustment for a range of individual, family, and social confounders.

Interpretation: Our findings suggest that young people identifying with goth subculture might be at an increased risk for depression and self-harm. Although our results suggest that some peer contagion operates within the goth community, our observational findings cannot be used to claim that becoming a goth increases risk of self-harm or depression. Working with young people in the goth community to identify those at increased risk of depression and self-harm and provide support might be effective.
Comment

**Main findings:** This study used data from the Avon Longitudinal Study of Parents and Children, a United Kingdom community-based birth cohort involving 14,541 pregnant women with expected delivery between April 1, 1991 and December 31, 1992. Children from this study were invited to attend follow-up visits from the age of seven years. At 15 years, 10,962 adolescents were invited to attend the clinic; 5,515 attended and 5357 completed the survey regarding subculture identification. Participants were asked the extent to which they self-identified as a member of a social group (e.g., “goths”). Depressive mood and self-harm were then assessed using the Development and Wellbeing Assessment (DAWBA) questionnaire. At 18 years, 3,694 participants attended and depressive mood and self-harm were assessed using the Clinical Interview Schedule-Revised (CIS-R). Logistic regression analyses were used to calculate the prospective association between goth identification at 15 years and depression and self-harm at 18 years.

Results suggested that young women were more likely to identify with the goth subculture compared to young men. In addition, young women who identified with the goth subculture were more likely to have mothers with a history of depression, report being bullied at the age of eight and 10 years, and have a history of emotional and behavioural difficulties. This study observed a dose-response association between the extent to which young people self-identified as a goth at 15 years and depression and self-harm at 18 years of age. For each unit increase in affiliation with the goth subculture, risk of depression increased by 1.36. Compared with people who did not identify as a goth, those who “somewhat” self-identified as a goth were 1.6 times more likely to have scores in the clinical range of depression at 18 years, compared with people who did not self-identify as a goth (p<.001). Young people who “somewhat” identified as being a goth were 2.33 times more likely to report self-harm compared with young people who did not identify as being a goth. Young people who “very much” (n=154) identified as a goth were more than five times more likely to report self-harm. As young people increased their affiliation with the goth subculture, risk of self-harm increased by 1.52. Of all subcultures identified, young people who “very much” identified with the goth subculture were found most at risk of depression and self-harm, with 28 (18%) having scores in the clinical range of depression, and 57 (37%) reporting self-harm at 18 years of age. Exploration of other subcultures found that of young people who identified as “skaters” very much (n=341), 37 (11%) had depression, and 85 (25%) reported self-harm at 18 years of age; as “loners” (n = 47), four (9%) had depression scores in the clinical range, and 12 (26%) reported self-harm. Young people who identified as “sporty” (n=786) were the least likely to have depression (n=31) and to have self-harmed (47) at 18 years (4% and 6% respectively) compared with other subcultures.

**Implications:** Depression is widely understood to be a risk factor for suicide in young people aged 10-24 years¹. During the emotional, physiological and social developmental phase of adolescence, rates of depression have been found to increase substantially². Thus, an understanding of the specific risk factors that young people
are faced with during this high risk period is required in order to inform effective suicide prevention strategies. In adolescence, peers have been observed to be the main source for social comparison and appraisal. Findings from this study suggest that young people who self-identify as being a goth (i.e., affiliated with the contemporary goth subculture) are the most at risk of depression and self-harm. Skaters and loners also presented at increased risk, but not to the same extent as goths. It is unclear if young people who are vulnerable to depression are drawn to subcultures, such as the goth subculture, because the subculture may embrace marginalized individuals who may have mental health difficulties. Researchers have found evidence of peer contagion effects for depression and self-harm. Mechanisms (e.g., excessive reassurance seeking, negative feedback) have been identified through which contagion increases the risk of depression, but it is still unclear why peer contagion might increase the risk of self-harm. There is also evidence that self-harm is associated with particular adolescent subcultures where self-harm is a social norm within the group, (e.g., goth and “Emo” subcultures). Young people who self-harm have been found reluctant to seek formal mental health support. The findings from this study highlight the importance of engaging in suicide prevention and health promotion strategies with young people, promoting social inclusion in order to reduce at-risk young people feeling isolated or stigmatised by mainstream society. Nevertheless, future research is warranted as this study was conducted in the United Kingdom, and these results may not generalise to the Australian context. This information would be valuable in informing school and university based suicide prevention for this age group.

Endnotes

Buckley NA, Whyte IM, Dawson AH, Isbister GK (Australia)


Objective: To examine inhospital mortality and morbidity associated with self-poisoning with different drug classes over an extended period.

Design, Setting and Participants: A prospective cohort study over 26 years (1987-2012) with limited follow-up of patients presenting consecutively to a primary and tertiary referral toxicology centre covering Newcastle, Lake Macquarie and Port Stephens, Australia.

Main Outcome Measures: Hospital length of stay, types of drugs ingested, intensive care unit (ICU) admission, requirement for ventilation, inhospital deaths and rates of antidepressant drug use in Australia.

Results: Over the study period, there were 17,266 admissions of patients poisoned by 34,342 substances (16,723 drugs available only on prescription). The median length of stay was 16 hours, 12.2% of patients (2,101/17,266) were admitted to an ICU, 7.4% (1,281/17,266) were ventilated and 78 (0.45%) died in hospital. Patient demographics, social and psychiatric factors remained stable over the 26-year period, but case fatality decreased (from 0.77% [15/1955] to 0.17% [7/4060]) as did ICU admissions (19.2% [376/1955] to 6.9% [280/4060]), ventilation (13.7% [268/1955] to 4.8% [193/4060]) and LOS. The most frequently ingested substances were alcohol, benzodiazepines, paracetamol, antidepressants and antipsychotics. There was a substantial fall in some highly toxic drugs (tricyclic antidepressants, barbiturates, conventional antipsychotics and theophylline), but increases in less toxic selective serotonin reuptake inhibitors, serotonin-noradrenaline reuptake inhibitors and paracetamol. A greater than sixfold increase in community antidepressant use was accompanied by only minor changes in overall and antidepressant self-poisoning rates.

Conclusion: Over two decades, there were decreases in poisonings by many highly toxic drugs which were associated with substantial reductions in morbidity and inhospital deaths. Despite massive increases in the number of antidepressant prescriptions, neither rates of self-harm nor the proportion of antidepressant poisonings increased markedly.

Comment

Main findings: Deliberate self-harm by intentional poisoning and drug misuse is a major public health problem in Australia. Higher rates of self-injury resulting in hospitalisation and deaths are mostly observed in young people, accounting for approximately 25% of suicide deaths in Australia. Over the past thirty years, Australia has observed both an increase in the prescription of antidepressants and
changes in the use of psychotropic pharmaceuticals\textsuperscript{2,3}. Moreover, the evidence regarding the association of antidepressants with suicide rates are controversial\textsuperscript{4,5}. This prospective cohort study assessed in-hospital mortality and morbidity data over 26 years, to explore the effects of antidepressant prescribing on rates of self-poisoning, changes in prescribing and self-poisoning rates with drugs previously identified as having a higher relative toxicity (e.g., barbiturates, dothiepin, alprazolam, venlafaxine, and citalopram)\textsuperscript{6,7}, and the association between different drug classes and self-poisoning.

Data were collected from a cohort of patients presenting after self-poisoning to the Hunter Area Toxicology Service (HATS) between 1987 and 2012. Over the study period, there were 17,266 patients (10,514 female; 6,711 male; and 39 trans-gender) admitted into a primary and tertiary referral toxicology centre as a result of self-poisoning, and 11,049 individual patients. Results revealed that a high proportion of self-poisoning admissions were as a result of self-harm (88.8%, n=15,327), compared with unintentional, iatrogenic and recreational drug misuse. The median age of admitted patients was 32 years (range 14-97 years), and the female: male ratio was 1.6:1. Investigation of changes in morbidity and mortality rates over the study period, showed that the rate of admission into ICU dropped from 19.2% to 6.9%, rate of mechanical ventilation from 13.7% to 4.8%, fatality rate from 0.77% to 0.17%, and median length of stay (LOS) decreased from 20.5 hours in the first six years to about 16 hours in all subsequent five year periods. Common comorbid factors in admissions included: previous history of psychiatric illness (56.1%), previous suicide attempt (56%), history of alcohol or drug misuse (49%) and, previous admission for a psychiatric episode (37.2%). Overall, psychotropic drugs accounted for half of all drugs ingested. The most commonly ingested substances were benzodiazepines (15.9%), alcohol (15.9%), paracetamol (13.5%), antidepressants (13%), antipsychotics (9.3%), anticonvulsants (4.4%), opioids (3.6%), non-steroidal anti-inflammatory drugs (3.2%), and antihistamines (2.2%). More than half of these ingested drugs were prescription medicines (55.2%), of which 76.2% were known to be prescribed to the patient. Moreover, a change in drug ingested was observed with atypical antipsychotics and newer antidepressants replacing older drugs (e.g., tricyclic antidepressants and conventional antipsychotics). Hence, a large drop in rates for poisoning by drugs of higher toxicity was observed with newer antidepressants generally being comparatively less toxic. Additionally, although a more than six fold increase in the use of antidepressants was observed, there was only a small increase in the number of antidepressant self-poisonings. There was no evidence to support concerns that new antidepressants had a pro-suicidal effect in this population, as rates of self-poisonings were stable and features of the population were constant. Despite large increases in prescriptions for drugs to treat psychiatric illness, no positive change was observed in the number of antidepressant related self-harm rates.

**Implications:** The findings from this Australian cohort study further highlight the importance of engaging in suicide prevention strategies in the general hospital.
setting. The authors recommend that the new psychiatric drugs coming into the market should mandate a coordinated collection of timely information on self-poisoning and suicide. A limitation of this study is that many individuals who have self-poisoned do not present to hospital. Further, in cases of rapidly lethal poisoning, individuals often die outside hospital settings. In addition, as there are currently no other datasets comparable to the unique HATS database, it is difficult to determine the extent to which the results of this study represent experiences of other parts of the world. It is important that there are appropriate care strategies for patients. Post-discharge has been observed a vulnerable period for suicide, specifically for those who have a recorded psychiatric diagnosis or have experienced a psychiatric diagnosis at some point in their life. Thus, these findings highlight the need to appropriately screen, assess and patients in the general practitioner setting for both psychological distress and alcohol and other drugs use. Clinicians need to be aware of the importance of monitoring prescriptions and dosages of antidepressants and conducting self-harm/suicide risk assessments (self-harm under the influence of alcohol is considered a warning sign of high risk of suicide). Presentation to a professional health setting offers the opportunity for clinicians to inform and educate patients about the physical and psychological side effects of interacting drugs, such as antidepressants and alcohol, as well as an opportunity to encourage healthy behaviour changes.

Endnotes

Patterns and correlates of attempted suicide amongst heroin users: 11-year follow-up of the Australian treatment outcome study cohort

Darke S, Ross J, Mare C, Mills KL, Slade T, Burns L, Teesson M (Australia)

Psychiatry Research 227, 166-170, 2015

Lifetime and recent rates of attempted suicide and suicidal ideation amongst the Australian Treatment Outcome Study cohort of heroin users at 11-year follow-up were examined. The mean elapsed time since heroin initiation was 20.4 years. At 11-year follow-up, 42.2% of the cohort reported ever having made a suicide attempt, 11.1% having made a first attempt subsequent to baseline. In the year preceding 11-year follow-up, 1.6% had made an attempt, suicidal ideation was reported by 10.4%, and 42% had a current suicide plan. After controlling for other variables, past 12 month attempts, current ideation or plans were independently associated with a current diagnosis of Major Depression (odds ratios (OR) 1.67) and more extensive polydrug use (OR 1.39), while each standard deviation higher on the SF12 physical health scale (reflecting better health) was associated with reduced odds (OR 0.66). Suicide and suicidal ideation remained a significant clinical issue for heroin users, some 20 years after their heroin use commenced.

Comment

Main findings: Compared with the general population, heroin users are 14 times more likely to die from suicide and also far more likely to attempt suicide. The aim of this study was to determine the long-term rates of attempted suicide, level of suicidal ideation, and patterns and correlates of recent attempts, suicidal ideation or plans. The data were collected from the New South Wales component of the Australian Treatment Outcome Study (ATOS), a longitudinal study of heroin users, with baseline structured interviews conducted between February 2001 and August 2002. Participants were interviewed at baseline, three months, and at one, two, three and 11 years. The initial cohort consisted of 615 current heroin users, recruited from 19 randomly selected treatment centres that delivered methadone/buprenorphine maintenance treatment (MT), drug free residential rehabilitation (RR) or detoxification (DTX). A comparison group of heroin users, not currently in treatment (NT) was also recruited. The average length of time since heroin initiation was 20.4 years. Eligibility criteria at baseline was that participants were to have no treatment for heroin dependence in the preceding month, no imprisonment in the preceding month, agreed to give contact details for follow-up interviews, aged ≥ 18 years, and fluency in English.

A life-chart technique was employed, exploring significant life events as anchor points over the follow-up period. At 11-year follow-up, 431 (70.1%) participants were interviewed, 63 (10.2%) were deceased, seven (1.1%) were incarcerated, 42 (6.8%) withdrew, and 21 (3.4%) were not interviewed due to repeat cancellations. Mean age at follow-up was 40 years (SD=7.6, range 28-66 years). Participants were predominately male (64.5%), and with the main sources of income as government
benefits (64.5%), and wage/salary (27.8%). Herion had been used in the preceding year by 37.4% of the cohort, 24.8% had used in the previous month, and 9.7% reported daily use. At interview, 46.6% were currently enrolled in a drug treatment program, mostly for opioid maintenance (45.6%). Criteria for Major Depression was met by 21.9%, current Post-Traumatic Stress Disorder (PTSD) (20.6%), Anti-Social Personality Disorder (73.1%), and Borderline Personality Disorder (45.2%). Exploration of attempted suicide and suicidal ideation revealed that at 11-year follow-up, 42.2% of heroin users reported having made a suicide attempt, and 18.6% had made multiple attempts. Females were significantly more likely to have ever attempted suicide (females 52.9%, males 36.2%), and to have made multiple suicide attempts (females 23.9%, males 15.6%). Moreover, at 11-year follow-up, 11.1% of participants (females 13.5%, males 9.8%) reported a recent suicide attempt, current ideation or planning suicide. Those who reported a recent suicide attempt, current ideation or planning were more likely to live alone, to not be employed, to meet criteria for Major Depression and PTSD, to be in poorer health, and to report extensive polydrug use. Despite improvements in overall drug use, suicide remained a significant clinical issue for the cohort. A diagnosis of Major Depression increased the risk of suicide attempt by 1.68 times and each extra drug class increased risk by 1.39 times. Additionally, levels of Major Depression increased markedly from the three-year follow-up (8.5%) to the 11-year follow-up (21.9%), and overall physical health of the cohort was poorer than at three-year follow-up.

**Implications:** This Australian study provides a long-term exploration of rates of suicide attempts and ideation and correlates of recent attempts, ideation or plans, amongst a cohort of heroin users. The findings from this study may assist clinicians working in field of addiction, particularly the management of opioid dependence. Although based on self-report, previous studies on heroin users and self-reported behaviours have been demonstrated to have validity and reliability. Heroin users reported high levels of suicidal ideation and plans, and were at elevated risk of Major Depression and suicide. Further, substantial poly-substance use was observed in heroin users. This was found to be an independent correlate to suicide of suicide ideation/attempt. Although a person’s drug use may improve, the life experiences of heroin users remain difficult and physical health remained poor over an extended period of time. The researchers posit that the clinicians need to treat both a person’s physical health and comorbidity. Adopting a biopsychosocial model to recovery as part of a comprehensive chronic illness strategy remains a clinical priority for health professionals. As too, is regular screening of heroin users for suicide attempts, ideation and plans, given that suicide is likely to remain an issue for heroin users, even after 20 years after initiation of use. Future research is warranted in drug treatment centres to better understand dependence and the biopsychosocial factors that underlie the maintenance of drug abuse and dependence.
Endnotes


Training mental health professionals in suicide practice guideline adherence: Cost-effectiveness analysis alongside a randomized controlled trial


*Journal of Affective Disorders* 186, 203-210, 2015

**Background:** There is a lack of information on the cost-effectiveness of suicide prevention interventions. The current study examines the cost-effectiveness of a multifaceted structured intervention aiming to improve adherence to the national suicide practice guideline in comparison with usual implementation.

**Methods:** In the intervention condition, professionals of psychiatric departments were trained using an e-learning supported Train-the-Trainer program. Newly admitted suicidal patients were assessed as soon as their department was trained and at 3 months follow-up. The primary outcome was improvement in suicide ideation. Missing cost and effect data were imputed using multiple imputation. Cost-effectiveness planes were plotted, and cost-effectiveness acceptability curves were estimated.

**Results:** For the total group of suicidal patients (n=566), no effect of the intervention on suicide ideation or costs was found. For a subgroup of depressed suicidal patients (n=154, intervention=75, control=79), mean level of suicide ideation decreased with 2.7 extra points in the intervention condition, but this was not statistically significant. For this subgroup, the intervention may be considered cost-effective in comparison with usual implementation if society is willing to pay ≥ € 6100 per unit of effect on the suicide ideation scale extra.

**Limitations:** Considering the cost outcomes, we had almost no cases that were complete, and heavily relied on statistical techniques to impute the missing data. Also, diagnoses were not derived from structured clinical interviews.

**Conclusions:** We presented the first randomized trial (trial registration: The Netherlands Trial Register (NTR3092 www.trialregister.nl)) on cost-effectiveness of a suicide practice guideline implementation in mental health care. The intervention might be considered cost-effective for depressed suicidal patients if society is willing to make substantial investments.

**Comment**

**Main findings:** A recent study in the Netherlands evaluated the cost-effectiveness of a web-based self-help program to reduce suicide ideation, and found that €34,727 of societal costs were saved for each individual whose level of suicidal ideation significantly improved. The current randomised control study examined the cost-effectiveness of a multifaceted structured intervention aimed to improve mental health professionals adherence to Dutch practice guidelines for assessment and treatment of suicidal behaviour. In the intervention condition, professionals of psychiatric departments were trained using
an e-learning supported Train-the-Trainer (TtT-e) program. Newly admitted suicidal patients were assessed at admission (T0) and then at three-months follow-up (T1). The primary outcome was improvement in suicide ideation, which was measured using the first 19 items of the Beck Scale for Suicidal Ideation (BSS)\(^3\). Participants were eligible if they scored >0 on the BSS. Participants (n=566) with a BSSI score >0 were randomized to either the intervention or control group where no additional actions were undertaken. A sub-group analysis was conducted for participants diagnosed with a depressive disorder and with BSS>0 at baseline.

Costs incurred by patients during the study were measured from a societal perspective using an adapted version of the Trimbos questionnaire for Costs associated with Psychiatric illness (TiC-P)\(^4\). At T1, no differences were observed of the intervention on change in suicide ideation. Exploration of costs per patient revealed that average intervention costs per patient were €68 (range = €68 - €312.50). No significant differences in total costs were found between the intervention and control groups (mean difference = €1572). Although no statistically significant differences were observed between the groups, and was associated with higher costs, the intervention was found to be more effective on reduction of suicide ideation. A subgroup of participants who were both depressed and had suicide ideation (n =154), mean level of suicide ideation decreased within 2.7 extra points following intervention; however, this was not statistically significant.

**Implications:** Training mental health professionals in evidence-based care is both necessary and expensive. This Dutch study examined the cost-effectiveness of a structured e-learning intervention that was supported by a Train-the-Trainer (TtT-e) program. As far as the researchers are aware, it is the first randomised trial to investigate the cost-effectiveness of the implementation of suicide prevention guidelines. Results found that implementation of guidelines with an e-learning supported TtT-e program is not cost-effective for suicidal patients compared to implementation as usual. This may be due to mental health professionals already having learned the guidelines and practice these on a daily basis. However, the e-learning supported TtT-e program was found clinically significant (albeit not statistical significant) for a subgroup of patients with a depressive disorder in reducing level of suicide ideation. The researchers of this study advise of limitations to this study as almost no cases were complete with data, and analyses heavily relied on statistical techniques to impute missing data. Further, diagnoses were not derived from structured clinical interviews. In addition, a period of three months is a short time span to measure any significant changes in health status. It would be useful to explore the cost-effectiveness of training mental health professionals in suicide practice guidelines within the Australian healthcare context.
Endnotes


4. van Hakkaart RL, Straten AV, Tiemens B, Donker M (2002). *Handleiding Trimbos/iMTA questionnaire for costs associated with psychiatric illness (TiC-P)*. Institute for Medical Technology Assessment (iMTA), Amsterdam.
Purpose: The objective of the study was to examine the association between 39 physical diseases and death by suicide in older adults.

Methods: Individual-level register data on all older adults aged 65 years and over living in Denmark during 1990-2009 (N = 1,849,110) were analysed. Rate ratios were calculated for 39 physical diseases while adjusting for period, age group, conjugal status, income, physical comorbidity, and psychiatric disorders.

Results: In all, 4792 older adults aged 65+ died by suicide during the follow-up of >16 million person-years. Gastrointestinal cancer was linked to a rate ratio of 2.5 (95 % CI 1.9-3.5) in men while excess suicide risk for women with brain cancer was 3.5 (95 % CI 1.1-10.8) within three years of diagnosis. Men and women diagnosed with liver diseases within three years experienced a 2.7- (95 % CI 1.7-4.2) and 4.0- (95 % CI 2.5-6.4) fold higher risk of suicide, respectively, than those not diagnosed. Elevated risks of suicide were identified for lung cancer, gastrointestinal cancer, breast cancer, genital cancer, bladder cancer, lymph node cancer, epilepsy, cerebrovascular diseases, cataract, heart diseases, chronic obstructive pulmonary disorders (COPD), gastrointestinal disease, liver disease, arthritis, osteoporosis, prostate disorders, male genital disorders, and spinal fracture when compared to persons not diagnosed within three years.

Conclusions: Multiple physical diseases were linked to increased risks of suicide in older adults. Increased attention to suicidal ideation and risk assessment might be warranted during the diagnosis and treatment of these disorders.

Comment

Main finding: Older adults account for the highest suicide rate of all age groups\(^1\). The proportion of older adults, particularly the oldest old (i.e., 80+ years) is steadily increasing around the world, increasing the absolute number of suicides. Controlled studies have observed that physical diseases (e.g., cancer and malignancy\(^2\) and chronic obstructive pulmonary disorders (COPD)\(^3\) have been linked to late life suicide. This study examined the association between 39 physical diseases and death by suicide among older adults (aged 65 years and over) living in Denmark. The entire population of older adults was observed over a 20-year period (1990-2009), using a dynamic cohort design. Rate ratios were calculated for the 39 physical diseases while adjusting for period, age group, conjugal status, income, physical comorbidity, and psychiatric disorders. Suicide was examined within two time frames: short and long-term. Short-term was defined as persons who had been recorded in the registries with a diagnosis within the last three years. Long-term considered individuals as exposed from first diagnosis onwards (i.e., ever
A total of 1,849,100 participants, 839,063 (45.4%) men and 1,010,047 (54.6%) women, aged 65+ years or over were included in the study. During the 20-year follow up period, 4792 individuals, 3021 (63%) men and 1711 (37%) women, died by suicide.

Results revealed the male suicide rate of 43.7 (95% CI 42.1-45.3) per 100,000 person-years was significantly higher than the female rate of 18.7 (p<.0002). A decline in suicide frequency was observed over time for both men and women. Men who were married or cohabiting had a lower suicide rate, 31 per 100,000 person-years, than those never married (rate: 69.9, 95% CI 61.9-78), divorced (63.3, 58.7-73.9), and widowed (84.7, 79.3-90.2). Women in a relationship had a suicide rate of 14 (12.8-15.2); lower than the rates for women never married (19.4, 15.7-23.1), divorced (28.4, 24.7-32.2), and widowed (21.2, 19.9-22.6). Persons with a greater number of co-occurring physical diseases had higher rates of suicide compared with those with no diseases. Similarly, persons with psychiatric disorders, particularly depression, were at an elevated risk for suicide. The highest risk of suicide was related to liver disease; whereby, men and women diagnosed with liver diseases within three years experienced respectively, a 2.7-fold (95 % CI 1.7-4.2) and 4.0-fold (95 % CI 2.5-6.4) higher risk of suicide, compared with those not diagnosed. Gastrointestinal cancer was linked to a rate ratio of 2.5 (95 % CI 1.9–3.5) in men, while an elevated suicide risk for women with brain cancer was 3.5 (95 % CI 1.1–10.8), within three years of diagnosis was observed. Elevated risks of suicide were also identified for lung cancer, gastrointestinal cancer, breast cancer, genital cancer, bladder cancer, lymph node cancer, epilepsy, cerebrovascular diseases, cataract, heart diseases, chronic COPD, gastrointestinal disease, liver disease, arthritis, osteoporosis, prostate disorders, male genital disorders, and spinal fracture compared to persons not diagnosed within three years. Among men, those who had been diagnosed within the last three years with lung, gastrointestinal, bone, genital, bladder, and lymph node cancers were linked to elevated suicide risk. For women, cancers of the lung, breast and genital (diagnosed ever) were associated with elevated risks of suicide. Multiple physical diseases were associated with increased risks of suicide in older adults. Additionally, the risk of suicide was shown to be particularly high in the time immediately after discharge from hospital, especially shortly after a diagnosis of cancer.

**Implications:** This large Danish population study provides a comprehensive analysis, exploring the relationship between physical diseases and death by suicide. Findings from this study indicate the need for suicide risk assessment following diagnosis and during treatment of physical disease in older adults. Older adults with psychiatric disorders (particularly depression) and a physical disease are at an elevated risk of suicide. It is important that health professionals are able to identify these psychiatric issues as they are often undetected in older adults. Identifying psychological distress and depression by screening older adults during hospital contact, exploring chronic pain and somatic symptoms, as well as providing social support during the period of diagnosis appear to be a priority. A recent review on
suicide prevention programs in Queensland, Australia, revealed that there is a lack of suicide prevention activities targeting older adults, such that there were six times more programs for young people (up to 24 years) than for older people (65+ years). Thus, the development of suicide prevention programs targeting the older population who have physical illnesses is warranted. Future research should also aim to replicate an extensive study of this size in Australia to ensure the generalisability of these findings to the Australian population.

**Endnotes**

Long-term outcomes following self-poisoning in adolescents: A population-based cohort study
Finkelstein Y, Macdonald EM, Hollands S, Hutson JR, Sivilotti MLA, Mamdani MM, Koren G, Juurlink DN (Canada)
Lancet Psychiatry 2, 532-539, 2015

**Background:** Suicide is the third most common cause of death among adolescents worldwide, and poisoning is the leading method of attempted suicide. Unlike more violent methods, survival after self-poisoning is common, providing an opportunity for secondary prevention. We determined the risk and time course of completed suicide after adolescent self-poisoning, and explored potential risk factors.

**Methods:** We did a population-based cohort study using multiple linked healthcare databases in Ontario, Canada, from Jan 1, 2001, to Dec 31, 2012. We identified all adolescents aged 10-19 years presenting to hospital after a first self-poisoning episode. Each was matched with 50 population-based reference individuals with no such history, matching on age, sex, and year of cohort entry. The primary outcome was the risk of suicide after a first self-poisoning episode. Secondary analyses explored factors associated with suicide and self-poisoning repetition.

**Findings:** We identified 20 471 adolescents discharged from hospital after a first self-poisoning episode and 1 023 487 matched reference individuals. Over a median follow-up of 7.2 years (IQR 4.2-9.7), 248 (1%) adolescents discharged after self-poisoning died, 126 (51%) of whom died by suicide. The risk of suicide at 1 year after self-poisoning was greatly increased relative to reference individuals (hazard ratio [HR] 32.1, 95% CI 23.6-43.6), corresponding to a suicide rate of 89.6 (95% CI 75.2-106.7) per 100 000 person-years over the course of follow-up. The median time from hospital discharge to suicide was 3.0 years (IQR 1.1-5.3). Factors associated with suicide included recurrent self-poisoning (adjusted HR 3.5, 95% CI 2.4-5.0), male sex (2.5, 1.8-3.6) and psychiatric care in the preceding year (1.7, 1.1-2.5). Adolescents admitted to hospital for self-poisoning were also more likely to die from accidents (5.2, 4.1-6.6) and from all causes (3.9, 2.8-5.4) during follow-up.

**Interpretation:** Self-poisoning in adolescence is a strong predictor of suicide and premature death in the ensuing decade, and identifies a high-risk group for targeted secondary prevention. Suicide risk is increased for many years after the index hospital admission, emphasising the importance of sustained prevention efforts.

**Comment**

*Main findings:* Adolescent suicide is a major global health problem, and self-poisoning is the most common method. Survival following poisoning is common, providing a pivotal point for secondary prevention intervention. However, little is known about the long-term health outcomes of this population following a first-episode of self-poisoning. This Canadian population-based cohort study exam-
ined the long-term outcomes post-discharge following a first presentation of self-poisoning to hospital in a large sample (n = 20,471) of adolescents, aged 10-19 years. Outcomes were studied over a 12 year period, from 2001 to 2012 (median follow-up 7.2 years). For each participant discharged from hospital after self-poisoning, 50 individuals from the general population (with no such history) were randomly matched on age, sex, and cohort entry data. This reference group consisted of 1,023,487 participants. Nineteen (0.1%) adolescents admitted for self-poisoning died in hospital following a first episode of self-poisoning. Most (n=12,565; 61.4%) adolescents were discharged from the emergency department (ED). Others were admitted into hospital (n=7,906; 38.6%), with most of these (n=5,221; 66%) subsequently admitted into a critical care unit. Most adolescents were female (n=15,186; 74.2%), and median age for both genders was 16 years. Risk of suicide greatly increased in adolescents discharged after a first episode of self-poisoning, compared with risk in the reference group. Results revealed that self-poisoning in adolescence is a strong predictor of suicide and premature death. Post first-episode of self-poisoning 248 (1.2%) adolescents had died, 126 (51%) of these had died by suicide. Other adolescents died as a result of accidents (n=74; 30%), natural causes (n=38; 15%), and homicide or undetermined cause (n=10; 4%). In the reference group, 1,812 (0.2%) died; 719 (40%) from accidents and 286 (16%) from suicide. Although risk attenuated over time, risk of suicide remained significantly increased for more than 10 years following the first self-poisoning episode. Most suicide deaths occurred more than three years following the first episode. Of the 126 adolescents who died from confirmed suicide, 23 (18.5%) died as a result of recurrent self-poisoning. Adolescents with an episode of self-poisoning were both more likely to die from any cause in the first year post-discharge and during the entirety of the 12 years, compared with adolescents in the reference group. Further, a repeat episode of self-poisoning was found to be the strongest predictor of eventual suicide. Other predictors of suicide included male sex and psychiatric care in the preceding year (this was presumed to reflect more severe mental illness). Diagnosed depression, alcohol dependence, rural versus urban residence, age, and socio-economic status were not independently found associated with suicide. Adolescents who were admitted to hospital following their self-poisoning episode were twice as likely to die by suicide compared with adolescents who were discharged from the emergency department. Post first-episode discharge, 3,860 (18.7%) of adolescents were admitted at least once more (median time of repetition 324 days). Almost one-third of these (1,216; 31.5%) were readmitted repeatedly. Predictors for readmission for self-poisoning included: female sex, age younger than 15 years at the first episode, an established diagnosis of depression or alcohol dependence, rural residence, and visit to psychiatrist in the preceding year.

**Implications:** The findings from this Canadian population-based study suggest that self-poisoning in adolescence (aged 10-19 years) is a strong predictor of suicide and premature death in not only the first year following a first episode of self-harm by poisoning but in the ensuing decade. More than a 30-fold increase in
risk of suicide and self-harm in the following year was observed for adolescents who presented to hospital following a first episode of self-poisoning compared with adolescents from the general community. Although targeting adolescents deemed at greater risk of suicide with early intervention appears to be a solution, identifying the adolescents who are at greater risk of suicide is a challenging task. Identifying mental health and psychosocial vulnerabilities have been observed to predict self-harm and increased suicide risk\textsuperscript{3,4}. It is suggested that suicide prevention and treatment strategies include all adolescents who present to hospital following self-poisoning, regardless of the severity of the overdose or the perception of future risk\textsuperscript{4}. Interventions with adolescents should be approached with sensitivity; rather than directly focusing on suicide thoughts and behaviours, it is recommended that clinicians explore the adolescents’ response to distress and frustration and psychosocial vulnerabilities\textsuperscript{5,6}.

Endnotes
Helping callers to the national suicide prevention lifeline who are at imminent risk of suicide: Evaluation of caller risk profiles and interventions implemented

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Suicide and Life-Threatening Behavior. Published online: 4 August 2015. doi: 10.1111/sltb.12182

Crisis lines are settings where identifying individuals at imminent risk of suicidal behavior and intervening to keep them safe are critical activities. We examined clinical characteristics of crisis callers assessed by telephone crisis helpers as being at imminent risk of suicide, and the interventions implemented with these callers. Data were derived from 491 call reports completed by 132 helpers at eight crisis centers in the National Suicide Prevention Lifeline network. Helpers actively engaged the callers in collaborating to keep themselves safe on 76.4% of calls and sent emergency services without the callers’ collaboration on 24.6% of calls. Four different profiles of imminent risk calls emerged. Caller profiles and some helper characteristics were associated with intervention type. Our findings provide a first step toward an empirical formulation of imminent risk warning signs and recommended interventions.

Comment

**Main findings:** The National Suicide Prevention Lifeline (Lifeline), is a national network of community crisis centres in the United States that responds to approximately one million callers a year, a quarter of whom are suicidal. One of the most significant decisions that a Lifeline crisis helper makes is determining if a caller is at imminent risk of suicide and in need of emergency intervention. Lifeline policy defines imminent risk as being when the helper has determined, based on information gathered, that the caller or the caller as reliable informant for another person, is likely to seriously harm or kill him/herself and/or if the caller/other person has a desire and intent to die and the capability of carrying through his/her intent. Lifeline helpers are encouraged to actively seek collaboration with callers at imminent risk, enabling callers to actively establish their own safety plan. The least invasive interventions are preferred, compared to involuntary or non-collaborative interventions (“active rescues”) which are used as a last resort. This observational study examined the clinical characteristics of 491 crisis callers who were assessed by 132 helpers as at imminent risk of suicide, as well as the interventions implemented by helpers, across eight Lifeline crisis centres. On 76.4% of calls, helpers actively engaged callers in one or more collaborative interventions. Most interventions involved less invasive procedures (e.g., collaborating on a safety plan), agreeing to receive a follow-up call, and/or agreeing to involve a third party to keep the caller safe. In collaboration procedures, emergency services were sent on 19.1% of calls, while 27.7% of calls involved active rescues. Helpers determined that on 39.1% of calls, imminent risk was reduced enough by the end of the call that rescue was not required. When an attempt was in progress (n=99), nearly half
(47.5%) had an emergency service sent without caller’s collaboration, and nearly a third (30.3%) helpers engaged callers sufficiently that they agreed for emergency services to be sent to them. No differences were observed between genders (51.1% female callers). Characteristics of imminent risk and requiring active rescues included: high levels of current suicidal desire/ideation, hopelessness and psychological pain, suicide intent with a plan and an expressed intent to die, an attempt in progress, intoxication at time of call, and low engagement with the helper. Four profiles of calls emerged significantly associated with the intervention implemented: high-risk calls with a moderate-to-high rate of engagement with the helper (Class 1); relatively low-risk calls with high engagement with the helper (Class II), moderate-to-high risk calls with a moderate amount of missing information (Class III); and, very high-risk calls with a large amount of missing information due to low engagement with the helper (Class IV). Overall, lack of engagement hampered the helpers’ ability to gather detailed information about suicide risk. Helpers found it more difficult to gather information from a caller when an attempt was in progress. Despite policy stating that helpers must assess all callers’ history of prior suicide attempts, this information was not collected on nearly 40% of calls. The number of hours per week spent answering calls was associated with imminent risk being reduced by the end and consequently rescue was not needed (2% higher odds per additional hour). Helpers’ volunteer status was found to impact on higher rates of active rescue, and lower rates of active engagement. However, volunteers were found to work significantly fewer hours per week (average 6.6 hours/week) compared to paid staff (average 28.5 hours/week), and therefore, answered fewer imminent risk calls.

Implications: The findings from this study have important implications for the provision of training and professional development in community telephone counselling and crisis services in Australia. Exploration of helper characteristics revealed that Lifeline’s policy on developing good contact and promoting active engagement with callers was supported, reducing the imminent suicide risk and emergency services involvement for many callers. Lack of engagement hampered the ability of the helper to gain detailed information about suicide risk. In addition, paid staff who work more hours per week than volunteer staff have a better ability to implement collaborative interventions and to reduce imminent risk over the course of the call. This may suggest that paid staff gain greater experience answering crisis calls which leads to a greater familiarity with and exposure to high-risk callers. Consequently, paid helpers have greater skills and confidence in handling imminent risk compared with volunteers who work fewer hours and have therefore, less experience responding to high-risk callers. A limitation of this U.S. study is that all data was based on helpers’ self-report and limited to a single point for crisis intervention. Hence, there is no way of evaluating whether helpers were correct in their assessment of the callers’ risk or whether the interventions they chose were the most appropriate. This study found that improvement is needed in reducing missing information on callers’
risk status, and in standardising intervention approaches across helpers who
answer calls on a full-time, part-time or occasional basis. It would be useful to
replicate this research in order to validate whether these findings are applicable to
the Australian context.

Endnotes
1. Gould MS, Cross W, Pisani AR, Munfakh JL, Kleinman M (2013). Impact of Applied Suicide Inter-
vention Skills Training (ASIST) on National Suicide Prevention Lifeline counsellor interventions
and suicidal caller outcomes. Suicide and Life-Threatening Behavior 43, 678-691.
Suicide Prevention Lifeline who are at imminent risk of suicide: The importance of active enga-
gement, active rescue, and collaboration between crisis and emergency suicides. Suicide and Life-
Threatening Behavior 46, 261-270.
Pharmacological interventions for self-harm in adults
Cochrane Database of Systematic Reviews. Published online: 6 July 2015. doi: 10.1002/14651858.CD011777

**Background:** Self-harm (SH; intentional self-poisoning or self-injury) is common, often repeated, and strongly associated with suicide. This is an update of a broader Cochrane review on psychosocial and pharmacological treatments for deliberate SH, first published in 1998 and previously updated in 1999. We have now divided the review into three separate reviews. This review is focused on pharmacological interventions in adults who self-harm.

**Objectives:** To identify all randomised controlled trials of pharmacological agents or natural products for SH in adults, and to conduct meta-analyses (where possible) to compare the effects of specific treatments with comparison types of treatment (e.g., placebo/alternative pharmacological treatment) for SH patients.

**Search methods:** For this update the Cochrane Depression, Anxiety and Neurosis Review Group (CCDAN) Trials Search Co-ordinator searched the CCDAN Specialised Register (September 2014). Additional searches of MEDLINE, EMBASE, PsycINFO, and CENTRAL were conducted to October 2013.

**Selection criteria:** We included randomised controlled trials comparing pharmacological treatments or natural products with placebo/alternative pharmacological treatment in individuals with a recent (within six months) episode of SH resulting in presentation to clinical services.

**Data collection and analysis:** We independently selected trials, extracted data, and appraised trial quality. For binary outcomes, we calculated odds ratios (ORs) and their 95% confidence intervals (CIs). For continuous outcomes we calculated the mean difference (MD) and 95% CI. Meta-analysis was only possible for one intervention (i.e. newer generation antidepressants) on repetition of SH at last follow-up. For this analysis, we pooled data using a random-effects model. The overall quality of evidence for the primary outcome was appraised for each intervention using the GRADE approach.

**Main results:** We included seven trials with a total of 546 patients. The largest trial included 167 participants. We found no significant treatment effect on repetition of SH for newer generation antidepressants (n = 243; k = 3; OR 0.76, 95% CI 0.42 to 1.36; GRADE: low quality of evidence), low-dose fluphenazine (n = 53; k = 1; OR 1.51, 95% CI 0.50 to 4.58; GRADE: very low quality of evidence), mood stabilisers (n = 167; k = 1; OR 0.99, 95% CI 0.33 to 2.95; GRADE: low quality of evidence), or natural products (n = 49; k = 1; OR 1.33, 95% CI 0.38 to 4.62; GRADE: low quality of evidence). A significant reduction in SH repetition was found in a single trial of the antipsychotic flupenthixol (n = 30; k = 1; OR 0.09, 95% CI 0.02 to 0.50), although the quality of evidence for this trial, according to the GRADE criteria, was very low. No data on adverse effects, other than the planned outcomes relating to suicidal behaviour, were reported.
Authors’ conclusions: Given the low or very low quality of the available evidence, and the small number of trials identified, it is not possible to make firm conclusions regarding pharmacological interventions in SH patients. More and larger trials of pharmacotherapy are required. In view of an indication of positive benefit for flupenthixol in an early small trial of low quality, these might include evaluation of newer atypical antipsychotics. Further work should include evaluation of adverse effects of pharmacological agents. Other research could include evaluation of combined pharmacotherapy and psychological treatment.

Comment

Main findings: Self-harm (SH) includes intentional self-poisoning/overdose and self-injury, and is a major problem in many countries as it is strongly linked to suicide. Drug treatments are frequently used in clinical practice, therefore it is important to assess the effectiveness of these treatments. Commonly used drug treatments are antidepressants, antipsychotics, mood stabilizers (including antiepileptics, lithium), other pharmacological agents (benzodiazepines) and natural products in the form of omega-3 fatty acids (i.e., fish oils). This systematic review aimed to assess effectiveness of pharmacological interventions for adults (age 18 and over) who presented to clinical services as a result of SH. Seven randomised controlled trials (RCTs) on pharmacological agents or natural products for SH in adults were identified, and the effects of specific treatments (e.g., placebo, or alternative pharmacological treatment) for SH patients on the primary outcome of repetition of SH and secondary outcomes of treatment adherence, depression, hopelessness, suicidal ideation, problem-solving and suicide were compared.

Five hundred and forty-six participants were included in the seven trials. They were selected based on having engaged in at least one episode of SH in the six months before the trial commenced. Across the six trials that reported on gender, the majority of participants were female (63.5%), which reflects the typical gender pattern for SH1. Results revealed no significant differences on repetition of SH between newer generation antidepressants versus placebo in three trials. Similarly, no significant differences were observed when comparing mood stabilizers versus placebo, or natural products versus placebo. A significant treatment effect was found on a comparison trial of antipsychotics versus placebo, yet a second trial comparing low-dose antipsychotics versus ultra-low dose antipsychotics revealed no significant treatment effect. Both these trials were graded as very low quality evidence due to risk bias and serious imprecision (as indicated by wide confidence intervals around effect size estimates).

Implications: Authors assessed the quality of RCTs using the GRADE approach and revealed that the quality of RCTs were generally low to very low. Five trials possessed high risk of bias in relation to at least one aspect of trial design, with weaknesses most commonly observed with respect to incomplete outcome data. Details on personnel blinding were not reported in three trials, whilst a further
two reported no information on outcome assessor blinding. Moreover, three
ever newer generation antidepressants were combined into the antidepressant com-
parison albeit being from different classes, with different mechanisms of action.
Given the low quality of the available evidence and the small number of trials
identified, it is not possible to reach a firm conclusion regarding pharmacological
interventions in SH patients. Although there was a significant effect of antipsy-
chotics (i.e., flupenthixol) on repetition of SH in one trial when compared to
placebo, this has yet to be replicated. This is highlighted within the Australian and
New Zealand Clinical Practice Guideline for the Management of Adult Deliberate
Self-Harm\(^3\) which warrants further investigation into flupenthixol as a pharma-
cological treatment for patients that SH.

Overall the drugs used for the pharmacological interventions investigated in these
trials are outdated, and thus warrants further research comparing more updated
drugs. This review compared newer generation antidepressants in three trials,
which are now relatively old drugs (i.e., mianserin, nomifensine and paroxetine).
Yet selective serotonin reuptake inhibitors (SSRIs) are now commonly used due to
the high prevalence of depression in SH patients presenting to clinical services\(^2\).
Additionally, a relatively old antipsychotic was investigated (i.e., flupenthixol), yet
more modern antipsychotics are now used in clinical practice. Future research
should aim to identify any adverse effects and include a range of outcome meas-
ures (not just SH and suicide, but also adherence, mood, attitudes to treatment –
not just SH and suicide, but also adherence, mood, attitudes to treatment –
since not all RCTs included these) as this would help assessing the effectiveness of
pharmacological treatments more holistically. This would have an impact on the
confidence in the effectiveness of pharmacology treatments, and inform the Aus-
tralian and New Zealand Clinical Practice Guideline for the Management of Adult
Deliberate Self-Harm, as it currently recognizes that there are no pharmacological
treatments suitable for SH patients. Treatment recommendations under these
guidelines are: a) organization of general hospital services to provide: emergency
department admission; a safe environment; integrated medical and psychiatric
management; risk assessment; identification of psychiatric morbidity, and adequate
follow-up; b) detection and treatment of any psychiatric disorder; c) dialectical
behaviour therapy, psychoanalytically oriented partial hospitalization or home-
based interpersonal therapy (for certain patients) to reduce repetition of SH.

**Endnotes**

across the life-cycle. *Crisis* 29, 4-10.
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*Australasian Psychiatry* 11, 150-155.
Hospital management of suicidal behaviour and subsequent mortality: A prospective cohort study
Lancet Psychiatry 2, 809-816, 2015

Background: Self-poisoning and self-injury are associated with a high risk of suicide or death from any cause but the effect of routine aspects of hospital management on mortality risk is unknown.

Methods: We did a prospective cohort study using data for adults who had self-harmed presenting to five emergency departments in the UK between 2000 and 2010. We assessed the relation between four aspects of management (psychosocial assessment, medical admission, psychiatric admission, referral for mental health follow-up) and death by suicide or any cause within 12 months of presentation.

Findings: Of 38,415 individuals presenting with self-harm, 261 (0.7%) died by suicide and 832 (2.2%) died from any cause within 12 months. Most aspects of management were associated with a higher mortality risk in unadjusted analyses. Psychiatric admission was associated with the highest risks for both suicide (hazard ratio 2.35, 95% CI 1.59-3.45) and all-cause mortality (2.35, 2.04-2.72). After adjustment for baseline variables, the hazard ratios were generally smaller, particularly for psychiatric admission. There were significant interactions by sex, age, and history of self-harm.

Interpretation: This was an observational study and so we cannot infer causation. However, our finding that clinical services seem to reserve the most intensive levels of treatment for patients at highest risk is reassuring. Aspects of routine management might be associated with a lower mortality risk but these effects vary by clinical subgroup.

Comment

Main findings: Approximately one in 25 people presenting to hospital for self-harm die by suicide within the next five years1. Few studies have assessed the association between hospital routine management following a presentation of suicide and subsequent mortality1. Using data obtained from adults who had self-harmed and presented to five emergency departments (ED) in the United Kingdom (UK) during an 11-year period (January 2000 to December 2010), the aim of this observational study was to explore death by suicide and death by any cause within 12 months of a self-harm hospital presentation. Deaths that occurred as a result of the self-harm presentation were not included. Of the 38,415 individuals, aged 16 years+, presenting with self-harm during this period, 261 (0.7%) died by suicide and 832 (2.2%) died from any cause within 12 months. Four aspects of hospital management were assessed: psychosocial assessment by a mental health professional, admission to a medical bed, referral for specialist community mental health follow-up, and admission to a psychiatric bed. The median age for individuals presenting with self-harm was 30 years. Most individuals who presented with self-harm were women (n=22,013, 57%). Self-poisoning was the most common self-harm method (n=30,784, 80%). Of these, 46% of individuals used paracetamol, 25% used an antidepressant, and 10% used benzo-
diazepines. As individuals may have used more than one substance, these categories are not necessarily mutually exclusive. The period early after admission following self-harm presentation was found to be the highest risk period for suicide. A little over half of all individuals received a psychosocial assessment (57.6%), of whom 52.3% were not referred for mental health follow-up or admitted to a psychiatric bed. While some individuals were referred for specialist mental health follow-up (26%), and a small number of individuals were admitted to a psychiatric bed (5.2%). Individuals who were referred for specialist mental health follow-up were observed more likely to have a history of previous self-harm and previous or ongoing contact with services. Within 12 months of presentation for self-harm, 261 (0.7%) of individuals died by suicide, and 832 (2.2%) died from any cause. Admission into psychiatric in-patient care and referral for specialist community mental health follow-up were both associated with highest risk of suicide. History of self-harm and previous and on-going contact with services were common in patients who received specialist follow-up or psychiatric in-patient care. An over-representation of older individuals was observed in the psychiatric admission group.

**Implications:** This study found that aspects of hospital management and admission were associated with an increased risk of death following a first episode of self-harm, and that risk of suicide is highest soon after admission. However, due to the nature of this study’s observational design, causality cannot be inferred. Other limitations were that the authors could not be certain of the nature, intensity or quality of interventions received, or whether individuals referred for specialist mental health follow-up actually received this care. Nevertheless, findings from this study are consistent with previous research that indicates that risk of suicide almost doubles for at least one year following a first presentation to hospital for self-harm\textsuperscript{1,2}. Those with recurrent self-harm are at a greater relative risk of suicide than those with single episodes of self-harm\textsuperscript{3}. However, there is limited evidence for the provision of psychosocial assessment and out-patient follow-up care for individuals who self-harm\textsuperscript{1}. In Australia, recommended psychological assessment and treatments are not currently widely available for individuals who self-harm and the interventions that are available are not known to reduce self-harm repetition\textsuperscript{3}. Thus, there is an urgent need to develop and evaluate interventions that aim to reduce a subsequent self-harm episode and suicide in the first year following a first presentation to hospital. Future research should focus on conducting randomised controlled trial studies in Australian hospital settings.

**Endnotes**

Background: People who use illicit drugs (PWUD) are known to experience high rates of suicidal behavior. While heavy alcohol use has been associated with suicide risk, its impact on the suicidal behavior of PWUD has not been well characterized. Therefore, we examined the relationship between heavy alcohol use and suicidal behavior among PWUD in Vancouver, Canada.

Methods: Data are derived from two prospective cohort studies of PWUD in Vancouver, Canada, from 2005 to 2013. Participants completed questionnaires that elicited information regarding sociodemographics, drug use patterns, and mental health problems, including suicidal behavior. We used recurrent event survival analyses to estimate the independent association between at-risk/heavy drinking (based on National Institute of Alcohol Abuse and Alcoholism [NIAAA] criteria) and risk of incident, self-reported suicide attempts.

Results: Of 1757 participants, 162 participants (9.2%) reported 227 suicide attempts over the 8-year study period, resulting in an incidence rate of 2.5 cases per 100 person-years. After adjusting for potential confounders, including intensive illicit drug use patterns, heavy alcohol use (adjusted hazard ratio [AHR]=1.97; 95% confidence interval [CI]=1.39, 2.78) was positively associated with an increased risk of suicidal behavior.

Conclusions: We observed a high burden of suicidal behavior among a community-recruited sample of PWUD. Heavy alcohol use predicted a higher risk of suicide attempt, independent of other drug use patterns. These findings demonstrate the need for evidence-based interventions to address suicide risk among PWUD, particularly those who are heavy consumers of alcohol.

Comment

Main findings: A growing body of research has identified various correlates of suicidal behaviour among people who use illicit drugs (PWUD), yet few studies have considered heavy alcohol use as a potential independent risk factor for suicidal behaviour. Despite heavy alcohol use being a well-documented independent risk factor for fatal and nonfatal suicidal behaviour among the general population, it is not known whether heavy alcohol use is also an independent risk factor for suicidal behaviour among PWUD. This prospective cohort study examined whether an independent association exists between heavy alcohol use patterns and repeated suicide attempts. Participants were recruited from two prospective cohort studies of PWUD in Vancouver, Canada, from 2005 to 2013. At baseline and semi-annually, all participants in both cohorts completed a harmonised interviewer-administered questionnaire to elicit information on an individual’s sociodemographic profile,
drug use and other behavioural patterns, including suicidal behaviour (primarily attempted suicide in the last six months). Participants also provided blood samples for human immunodeficiency virus (HIV) and hepatitis C testing, and HIV disease monitoring. Potential confound variables that are known to increase the risk of attempting suicide: age, sex, sexual orientation, Aboriginal ancestry, HIV status, homelessness, incarceration, enrolment in drug/alcohol treatment, physical or sexual victimisation, and sex work were assessed. Covariates assessed were high intensity use of non-injection crack, injectable heroin, injectable cocaine, and injectable crystal methamphetamine (all ≥ daily vs. <daily). The variable of interest was at-risk/heavy alcohol use, which was defined according to the National Institute on Alcohol Abuse and Alcoholism (NIAAA) criteria for “heavy” or “at-risk” drinking: average of > three alcoholic drinks per occasion or > seven drinks per week in the past six months for women, and an average of > four alcoholic drinks per occasion or >14 drinks in total per week in the past six months for men¹.

A total of 1757 PWUD participants enrolled and completed at least one follow-up visit between 2013 and 2015. A high rate of attempted suicide was observed. During the eight years of follow-up, 118 (6.7%) participants reported one suicide attempt, 29 (1.7%) reported two suicide attempts, 10 (0.6%) reported three suicide attempts, four (0.2%) reported four suicide attempts, and one (0.1%) reported five suicide attempts, for a total of 227 events occurring among 162 participants. The incidence rate was two and a half cases per 100 people/year (95% confidence interval [CI] = 2.1, 3.0). Persons who reported attempting suicide during follow-up compared with those who did not tended to: be younger (median age = 40 vs. 42); female (43.2% vs. 32.9%); self-identify as LGBT (20.4% vs. 12.8%); report physical or sexual victimization (29.0% vs. 21.3%); involved in sex work (21.6% vs. 13.5%); and report at-risk/heavy alcohol use (27.8% vs. 16.5%) (all p < 0.05). Heavy alcohol use predicted a higher risk of suicide attempt, independent of other drug use patterns. Compared to those who did not report at-risk/heavy alcohol use, heavy alcohol users were almost twice as likely to report attempting suicide within four years of enrolling in the study.

**Implications:** To the researchers’ knowledge, this is the first study to prospectively identify the association between heavy drinking patterns and repeated suicide attempts among people who use illicit drugs (PWUD), after extensive adjustment for intensive illicit drug use patterns. Nevertheless, further investigation is needed as it is unclear whether the trajectories of alcohol use and suicidal behaviour are heterogeneous over time. Findings from this study suggest that interventions to reduce heavy alcohol consumption among PWUD may contribute to reductions in suicidal behaviour; highlighting the importance of screening for alcohol use and offering suicide prevention and other mental health interventions to PWUD and heavy alcohol users. A major barrier, however, is that it is known that only a small proportion of problematic alcohol and drug users access such interventions since the majority never seek professional help². Results should be interpreted with caution as this study used self-report measures, and a non-randomized sample of
people who inject drugs and were human immunodeficiency virus (HIV) infected PWUD. Therefore, these findings may not be generalisable to other populations (i.e., non-injectors) in local or other settings. As past suicidal behaviour is one of the strongest risk factors for future suicidal behaviour\(^3\), further research should be conducted to examine past suicidal behaviour as a potential covariate. In recent years, around 119,000 clients have received over 180,000 treatment episodes from 795 publicly-funded alcohol and drug treatment agencies across Australia\(^4\). This indicates that there is a large sample size with which to potentially replicate this study to comprehensively explore the relationship between heavy alcohol use and suicidal behaviour among PWUD in Australia.

**Endnotes**


Objective: The incidence of suicides increases rapidly up to the age of 20 years. Despite major developmental changes, only a limited number of studies have compared characteristics of child, adolescent and young adult suicides. The aim of the current study was to compare demographic, psychosocial and psychiatric characteristics of suicides in three youngest age groups - 10-14 years, 15-19 years and 20-24 years - in Queensland, Australia, between 2002 and 2011.

Methods: The Queensland Suicide Register (QSR) contains information from a variety of sources, including: police report of death to a Coroner, post-mortem autopsy report, toxicology report and Coroner’s findings. Annual suicide rates were calculated by gender and age group. Odds Ratios (OR) with 95% confidence intervals (95% CI), Chi² test are presented.

Results: Between 2002 and 2011, there were 850 youth suicides recorded in the QSR - 43 aged 10-14 years, 295 aged 15-19 years and 512 aged 20-24 years. The proportion of males increased with age (51.2%, 69.5% and 76.6%). However, the proportion of Indigenous people decreased significantly with age (45.2%, 18.1% and 14.5%). Hanging was the most frequent suicide method for all age groups and for both genders, decreasing significantly with age for both genders. Prevalence of a diagnosed psychiatric disorder, substance use and psychiatric treatment increased with age. Evidence of untreated mental health problems was reported without significant differences between age groups. Similarly, there were no significant differences in history of previous suicide attempts and communication of suicide intent. Suicide in social group and attention to suicide in media, family conflict, school/ work-related problems and childhood trauma decreased significantly with age while relationship problems increased.

Conclusion: Suicides in early adolescence were characterised by higher prevalence of family conflicts, school related problems and suicides in social groups. Suicides in young adults had significantly higher prevalence of psychiatric disorders and were much more impacted by relationship problems. The characteristics of suicides in late adolescents fell in between the other age groups.

Comment

Main findings: Despite major developmental changes, few studies have compared characteristics of child, adolescent and young adult suicides. Thus, the aim of the current study was to compare demographic, psychosocial and psychiatric characteristics of suicides across three of the youngest age groups: 10-14 years, 15-19 years, and 20-24 years, in Queensland, Australia. Suicide statistics from 2002 to 2011 were obtained from the Queensland Suicide Register (QSR). Between this period, 850 youth suicides were recorded: 43 children/early adolescents aged 10-
14 years, 295 late adolescents aged 15-19 years, and 512 young adults aged 20-24 years. Results revealed that suicide numbers grew rapidly with age until the age of 20 years, stabilizing in the early 20s. The proportion of males increased with age: 10-14 years (51.2%), 15-19 years (69.5%) and 20-24 years (76.6%) respectively; however, the proportion of Aboriginal and Torres Strait Islander peoples decreased significantly with age, with the highest in the 10-14 years (45.2%) age group, followed by 15-19 years (18.1%), and 20-24 years (14.5%). Close to half of suicides in the youngest age group were by Aboriginal and Torres Strait Islander people, which declined to 18% in the 15-19 years group and again to 15% in the 20-24 years group. Average suicide rates were similar between genders for age group 10-14 years (1.51 per 100,000 for males and 1.54 for females); gender differences and suicide rates rose with age followed by age group 15-19 years (14.27 for males and 6.51 for females) and age group 20-24 years (27.03 for males and 8.29 for females). Between this period, a significant increase for females aged 20-24 years (IRR=1.07 95% CI 1.00-1.14) and significant decrease for males for the same group (IRR=0.94 95% CI 0.91-0.98) was observed. Hanging was the most frequent method for all three age groups and for both genders. Hanging decreased significantly with age: from 90.9% to 69.8% and 65.3% for males, and from 95.2% to 76.7% to 65.8% for females. Other suicide methods did not differ significantly between age groups. Prevalence of a diagnosed psychiatric disorder, psychiatric treatment, consultation with a mental health professional in the last three months, illicit drug use, and problematic drug use, all increased with age. A significantly higher prevalence of a diagnosed psychiatric disorder, psychiatric treatment, consultation with a mental health professional in the last three months and illicit drug use was observed in the 20-24 years age group compared with the 15-19 years age group. Prevalence of consultation with a mental health professional in the last three months was significantly lower in children 10-14 years compared with 15-19 years. Unipolar depression was the most frequent in the 15-19 years and 20-24 years age groups, with developmental disorder the most frequent in the youngest age group. Approximately one in five young people who died by suicide had made a previous suicide attempt, and more than a third had communicated intent in the previous 12 months. Suicide in social group and attention to suicide in media, family conflict, school/work-related problems and childhood trauma decreased significantly with age, while relationship problems increased. Suicide in social group and attention to suicide in media were both highest in the youngest age group, and decreased with age. Family conflict was the most frequent in age group 10-14 years and relationship problems in the age groups of 15-19 and 20-24 years. Young adults had a significantly higher prevalence of diagnosed psychiatric disorders, and were much more impacted by relationship problems.

Implications: These findings from this study reveal differences between characteristics of early adolescents, late adolescents and young adult suicides, and further validate previously known risk factors for youth suicides. Although the QSR is a comprehensive suicide mortality database, several limitations may affect the accuracy of results. Information in the QSR is gathered from various sources (e.g.,
police, Coroners, next-of-kin, autopsy reports and toxicology reports), and the accuracy of information provided depends on the quality of investigation into the possible suicide cases. Thus, some information that may have been relevant to the person’s death may be unrecorded. Due to the limited number of studies that investigate the characteristics of child, adolescent and young adult suicides, future research should aim to conduct studies comparing these age groups in order to expand the literature. It is most concerning that in the youngest age group, none of the individuals had contact with a mental health professional in relation to their condition in the last three months before their death. In addition, Aboriginal and Torres Strait Islander people comprise half of the suicides in the youngest age group. Earlier research has indicated that suicide risk is particularly high in young Aboriginal and Torres Strait Islander people. There remains a lack of understanding of mental health problems in Aboriginal and Torres Strait Islander people. We must recognise that children need access to mental health care and that gatekeeper training (e.g., teachers in a school environment) is important, as gatekeepers can assist parents in recognising issues with the child before their health declines. Overall, the findings of this study are invaluable for informing intervention strategies developed for young Australians so that populations at higher risk can be specifically targeted.

Endnotes
Does assessing suicidality frequently and repeatedly cause harm? A randomized control study

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Assessing suicidality is common in mental health practice and is fundamental to suicide research. Although necessary, there is significant concern that such assessments have unintended harmful consequences. Using a longitudinal randomized control design, the authors evaluated whether repeated and frequent assessments of suicide-related thoughts and behaviors negatively affected individuals, including those at-risk for suicide-related outcomes. Adults (N = 282), including many diagnosed with borderline personality disorder (BPD), were recruited through psychiatric outpatient clinics and from the community at large, and were randomly assigned to assessment groups. A control assessment group responded to questions regarding negative psychological experiences several times each day during a 2-week main observation phase. During the same observation period, an intensive suicide assessment group responded to the same questions, along with questions regarding suicidal behavior and ideation. Negative psychological outcomes were measured during the main observation phase (for BPD symptoms unrelated to suicide and for BPD-relevant emotions) and/or at the end of each week during the main observation phase and monthly for 6 months thereafter (for all outcomes, including suicidal ideation and behavior). Results revealed little evidence that intensive suicide assessment triggered negative outcomes, including suicidal ideation or behavior, even among people with BPD. A handful of effects did reach or approach significance, though these were temporary and nonrobust. However, given the seriousness of some outcomes, the authors recommend that researchers or clinicians who implement experience sampling methods including suicide-related items carefully consider the benefits of asking about suicide and to inform participants about possible risks.

Comment

Main findings: Assessing suicidal risk is a crucial aspect of health care in preventing suicide. Health care providers and researchers are often concerned that suicide assessments have unintended, but dangerous, consequences. This longitudinal randomised control study aimed to: 1) investigate any risks associated with assessing suicidality frequently and repeatedly; 2) examine when such effects might occur (i.e., short-term or only after a period of time; and if they do arise in short term, is this influence sustained over time?); 3) examine whether repeated suicide assessment affects some people more than others; and 4) examine a variety of effects potentially triggered by repeated suicide assessment (i.e., suicide attempts, suicidal ideation, non-suicidal self-harming behaviours). Adults participants (N=248, 67.3% female, mean age = 43.9 years), including participants diagnosed with Borderline Personality Disorder (BPD), were recruited from outpatient mental
health clinics and the community and then randomly assigned to control assessment (n=119) or an intensive suicide assessment group (n=129). Approximately 35% of participants were in therapy and/or taking psychiatric medication at screen intake. Participants completed two phases of assessment. The first phase was a main observation phase; the second phase was conducted six months later. The control assessment group responded to questions regarding negative psychological experiences several times each day during a two-week main observation phase, while the intensive suicide assessment group responded to the same questions, along with questions regarding suicidal behaviour and ideation. Negative psychological outcomes were measured during the main observation phase, (for BPD symptoms unrelated to suicide and for BPD-relevant emotions), and/or at the end of each week during the main observation phase and monthly for six months thereafter (for all outcomes, including suicidal ideation and behaviour). Results revealed little evidence that intensive suicide assessment triggered negative outcomes, including suicidal ideation or behaviour, even among people with BPD. The BPD group differed significantly from the non-BPD group on all outcomes (i.e., reporting suicide attempts, suicidal ideation, and self-harm) at all time points. Very few effects were observed across all outcomes, all time points, and all methods of assessment.

**Implications:** Findings from this study support the provision of repeated suicide risk assessment in clinical care and research. However, given the severity of consequences in approaching people with suicidal ideation and behaviours (particularly for people with BPD), a cautious approach is recommended; balancing the potential benefits against the potential costs. Although the results of this study are consistent with previous research\(^2\), it would still be beneficial to replicate these results in other high-risk populations. Despite results suggesting that there is little evidence that intensive suicide assessment has an effect on suicidal ideation or behaviour among people with BPD, these results require replication in other populations to ensure that they can be generalized to non-BPD patients (i.e., other psychiatric patients or suicidal persons). Further, a cautious approach to the research may involve monitoring patients some months after concluding intensive suicide risk assessment, ensuring continued safe and ethical practice and research.

**Endnotes**

Influences of population-level factors on suicides in older adults: A national ecological study from Australia

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Objective: The relationship between older adult suicide rates and population-level variables has been examined in a few studies. Therefore, the objective of the present study is to analyse the extent to which population-level factors are associated with suicide by older persons in Australia, from an ecological perspective.

Methods: Suicide rates for older adults aged 65 years and over were calculated for 68 observation units at Statistical Areas Level 4 in Australia for 2002-2011. The 2011 Census of Population and Housing was used for population-level variables. Analysis on standardised suicide mortality ratios and Poisson regression were performed to examine geographical and gender differences.

Results: Between 2002 and 2011, a total of 3133 suicides of persons aged 65 years and above (men: n = 2418, 77.1%) was identified with an average annual rate of 10.1 per 100 000 persons. Suicide rates in older adults vary widely between different geographical regions in Australia. The multivariate estimates of contextual factors showed that the risk of suicide was positively associated with the sex ratio (incidence risk ratio (IRR) = 1.053, 95%CI = 1.016-1.092), the proportion of those in tenant household (IRR = 1.120, 95%CI = 1.081-1.160) and Australian residents born in North-West Europe (IRR = 1.058, 95%CI 1.022-1.095). Significant gender variations were found.

Conclusions: Specific factors increasing risk of suicide for older adults on SA4 level in Australia were living in areas with a higher proportion of male population, a higher proportion of tenant household dwellers and a higher proportion of immigrants from North-West Europe. The different influences of population-level factor on suicide between older men and women indicate the need for targeted suicide prevention activities.

Comment

Main findings: While there is knowledge about individual suicide risk factors in older adults (i.e., living alone, retired, less educated, widowed, feeling hopeless, diagnosed with depression), little is known about the effect of population-level factors (i.e., ethnic, regional, national identifies, religious affiliations, political ideologies and practices, legal and fiscal systems, kinship systems, the domestic division of labour, gender and age). This study aimed to fill this knowledge gap by investigating which population-level factors predict suicide by older persons in Australia, during the years 2002-2011. Suicide data from 2002-2011 was retrieved from the Australian Bureau of Statistics (ABS). Suicide rates for older adults aged 65 years and over were calculated for 68 observation units at Statistical Areas Level 4 (SA4s) in Australia for 2002-2011. The 2011 Census of Population and Housing was used for population-level variables.
Standardised suicide mortality ratios and Poisson regression were conducted to examine geographical and gender differences. Results revealed that over the 10-year period 2002-2011, there was a total of 3133 suicides of persons aged 65+ (77.1% men), indicating an average annual rate of 10.1 (suicides per 100,000 persons). Older men aged 65+ had a higher risk of suicide at 19.5 than that of older women at 4.7 over the same period. For men aged 65+, nine SA4s had a significantly higher risk of suicide: two of these located in New South Wales, four in Queensland, and one in South Australia, Western Australia and the Northern Territory. The multivariate estimates of contextual factors showed that the risk of suicide was positively associated with the sex ratio, that is a higher proportion of men (incidence risk ratio (IRR) = 1.053, 95% CI = 1.016-1.092), the proportion of those in tenant household (IRR = 1.120, 95% CI = 1.081-1.160) and higher proportion of immigrants from North-West Europe (IRR = 1.058, 95% CI = 1.022-1.095). While it was found that older men generally shared the same overall profile of associated factors as the total sample, in older women, a higher risk of suicide was positively associated with areas with higher proportion of divorced or separated (IRR=1.136, 95% CI= 1.030–1.254), a higher proportion of immigrants from North-East Asia (IRR=1.303, 95% CI=1.136–1.496) and a higher proportion of immigrants from the Americas (IRR=1.383, 95% CI=1.237–1.545). In contrast, a lower risk of suicide for older women was associated with areas with a higher proportion of Buddhists (IRR=0.861, 95%CI=0.771–0.961) and higher population density (IRR=0.802, 95%CI=0.699–0.919).

Implications: Findings from the current study indicate a need for targeted gender and age-specific suicide prevention strategies in Australia. This study extends on previous research that has found that suicide among older adults is not solely linked with psychiatric disorders; causes are complex, multifactorial and interrelated. Suicide among Australian older adults aged 65 years was found significantly associated with population level influences, including geographical region. Consistent with other studies in English-speaking countries, housing was found to be important risk/protective factor for older adults of both sexes. The inability to afford private shelter places older adults more at risk of also suffering from social disadvantage and inequility. Future research is needed exploring the individual life events experienced by individuals (particularly men) who are limited in their housing options at an older age. Differences in patterns of suicide were observed for older men and women, respectively. Divorce and separation were found to have a significant influence on suicide in older women. In this study, this relationship was not observed for older men. This finding is contrary to previous studies that showed that divorced and separated men are particularly vulnerable to suicidal ideation and behaviours. The researchers of the study suggest that this may be due to methodological limitations as time interval from separation/divorce can not be considered and perhaps older men’s marital status could have changed some time ago.
Endnotes

What are reasons for the large gender differences in the lethality of suicidal acts? An epidemiological analysis in four European countries


Background: In Europe, men have lower rates of attempted suicide compared to women and at the same time a higher rate of completed suicides, indicating major gender differences in lethality of suicidal behaviour. The aim of this study was to analyse the extent to which these gender differences in lethality can be explained by factors such as choice of more lethal methods or lethality differences within the same suicide method or age. In addition, we explored gender differences in the intentionality of suicide attempts.

Methods: Design: Epidemiological study using a combination of self-report and official data.

Setting: Mental health care services in four European countries: Germany, Hungary, Ireland, and Portugal.

Data basis: Completed suicides derived from official statistics for each country (767 acts, 74.4% male) and assessed suicide attempts excluding habitual intentional self-harm (8,175 acts, 43.2% male). Main Outcome Measures and Data Analysis: We collected data on suicidal acts in eight regions of four European countries participating in the EU-funded “OSPI-Europe”-project (www.ospi-europe.com). We calculated method-specific lethality using the number of completed suicides per method * 100 / (number of completed suicides per method + number of attempted suicides per method). We tested gender differences in the distribution of suicidal acts for significance by using the \( \chi^2 \)-test for two-by-two tables. We assessed the effect sizes with phi coefficients (\( \phi \)). We identified predictors of lethality with a binary logistic regression analysis. Poisson regression analysis examined the contribution of choice of methods and method-specific lethality to gender differences in the lethality of suicidal acts.

Findings Main Results: Suicidal acts (fatal and non-fatal) were 3.4 times more lethal in men than in women (lethality 13.91% (regarding 4106 suicidal acts) versus 4.05% (regarding 4836 suicidal acts)), the difference being significant for the methods hanging, jumping, moving objects, sharp objects and poisoning by substances other than drugs. Median age at time of suicidal behaviour (35–44 years) did not differ between males and females. The overall gender difference in lethality of suicidal behaviour was explained by males choosing more lethal suicide methods (odds ratio (OR) = 2.03; 95% CI = 1.65 to 2.50; p < 0.000001) and additionally, but to a lesser degree, by a higher lethality of suicidal acts for males even within the same method (OR = 1.64; 95% CI = 1.32 to 2.02; p = 0.000005). Results of a regression analysis revealed neither age nor country differences were significant predictors for
gender differences in the lethality of suicidal acts. The proportion of serious suicide attempts among all non-fatal suicidal acts with known intentionality (NFSAi) was significantly higher in men (57.1%; 1,207 of 2,115 NFSAi) than in women (48.6%; 1,508 of 3,100 NFSAi) ($\chi^2 = 35.74; p <0.000001$).

**Main limitations of the study:** Due to restrictive data security regulations to ensure anonymity in Ireland, specific ages could not be provided because of the relatively low absolute numbers of suicide in the Irish intervention and control region. Therefore, analyses of the interaction between gender and age could only be conducted for three of the four countries. Attempted suicides were assessed for patients presenting to emergency departments or treated in hospitals. An unknown rate of attempted suicides remained undetected. This may have caused an overestimation of the lethality of certain methods. Moreover, the detection of attempted suicides and the registration of completed suicides might have differed across the four countries. Some suicides might be hidden and misclassified as undetermined deaths.

**Conclusions:** Men more often used highly lethal methods in suicidal behaviour, but there was also a higher method-specific lethality which together explained the large gender differences in the lethality of suicidal acts. Gender differences in the lethality of suicidal acts were fairly consistent across all four European countries examined. Males and females did not differ in age at time of suicidal behaviour. Suicide attempts by males were rated as being more serious independent of the method used, with the exceptions of attempted hanging, suggesting gender differences in intentionality associated with suicidal behaviour. These findings contribute to understanding of the spectrum of reasons for gender differences in the lethality of suicidal behaviour and should inform the development of gender specific strategies for suicide prevention.

**Comment**

**Main findings:** Large gender differences have been observed in lethality in suicidal behaviour. A lower rate of attempted suicide and a higher rate of completed suicides results in major gender differences in the lethality of the suicidal behaviour. Lethality has been found to be 4.78 times higher in males than in females\(^1\). Males more often use high risk methods (e.g., hanging, firearms, jumping from height), in contrast to females who more frequently use methods which are more often survived (e.g., self-poisoning). However, even with the same method, the outcome has been found to be more lethal for males. A number of interrelated factors are considered to impact on gender differences in lethality (e.g., age, alcohol/drugs, access to method, communicative aspects, impulsivity, intentionality). This prospective study aimed to explore the extent to which lethality is explained by gender differences in the choice of more or less lethal suicide, if gender differences exist within the suicide methods, and whether gender differences in lethality differ between countries and age groups.

Data on suicide attempts and suicide was collected from two regions in each of four European countries: Germany, Hungary, Ireland and Portugal, over a three year period. A total of 8,942 suicidal acts were explored: 767 completed suicides (8.6%)
and 8,175 attempted suicides (91.4%). Drowning, sharp objects, poisoning by other
drugs, and “other” methods were identified as low risk methods, and firearms,
hanging, jumping and moving objects comprised the high risk methods group. Males
were found three times more likely to die as a result of suicide compared to females:
suicide by males (n=571, 74.4%), suicide attempts by males (n=3,535, 43.2%). Lethal-
ity was significantly higher for males (13.9%) than for females (4.1%) (p<.00001) in
all countries. Males more often used hanging as a completed suicide method and
sharp objects as an attempted suicide method, compared to females. Females used
drug poisoning more often as both a completed suicide and an attempted suicide
method. Gender differences were not observed for firearms (63% males, 43%
females), mostly due to a small number of cases (n=45). As age increased, methods of
significantly higher lethality were used; continuously increasing from 3.4% (25-34
years) to 26.5% (75 years and over) compared to young people aged under 25 years
(1.6%). However, age was not found to contribute to gender differences. This study
found consistent major gender differences in the choice of suicide and suicide attempt
methods. Men were more likely to choose high-risk methods with significantly higher
lethality than women.

Implications: This study found that men often employed highly lethal methods,
however a higher method-specific lethality also explained the differences in the lethal-
ity of suicidal acts. Differences in the choice of suicide methods were more strongly
contributed to gender differences in the lethality of suicidal acts, rather than differ-
ences in the method-specific lethality of suicidal acts. That is, men choose their
suicide method differently to women possibly due to the factors such as technical
availability and knowledge of suicidal means, personality aspects, or preferences for
esthetic reasons. A limitation of this study is that not all countries provided specific
ages, and as a result, analyses between age and gender were only calculated for three
of the four countries. Moreover, there may have been an overestimate of lethality of
suicide methods, as only reported suicide attempts (hospital data) are used in this
study, and therefore undetected suicide attempts such as those presenting to General
Practitioners (GPs) were not included. The findings from this study are consistent
with those from an Australian study that found men are more likely to use higher
lethality of suicidal acts². Clinicians should be aware of these gender-specific differ-
ences when assessing for suicide risk and treatment follow up ensuring all issues are
being approached using problem solving or cognitive-behavioural strategies instead
of maladaptive avoidant coping strategies. Future research should further explore spe-
cific the motivational and intentional factors influencing gender specific behaviour.

Endnotes
2. Player MJ, Proudfoot J, Fogarty A, Whittle E, Spurrier M, Shand F, Christensen H, Hadzi-
e: 0128180.
Suicide in veterinarians and veterinary nurses in Australia: 2001-2012
Milner AJ, Niven H, Page K, LaMontagne AD (Australia)
Australian Veterinary Journal 93, 308-310, 2015

Background: Whether veterinarians have an elevated suicide rate compared with the general population is controversial.

Methods: Reported cases of suicide among veterinarians and veterinary nurses in Australia over the period 2001 to 2012 were investigated in a retrospective case-series study.

Results: The standardised mortality ratio of veterinarians (n=18) was 1.92 (95% CI 1.14-3.03) and that of veterinary nurses (n=7) to the general population was 1.24 (95% CI 0.80-1.85). Overdosing on drugs (pentobarbitone) was the main method of suicide in these occupations.

Conclusion: The reasons for veterinary suicides are likely to be multifactorial, including work- and life-related stressors, and individual characteristics. This research highlights the need for targeted suicide prevention and intervention for veterinarians.

Comment

Main findings: In Australia, suicide deaths of veterinarians has been indicated to be four times that of the adult population\(^1\). In contrast to the methods of suicide used in the general population, the major method used by veterinarians is poisoning by injectable barbiturates\(^1\). Previous research has been limited to Australian states (Western Australia and Victoria), and has not included other professionals involved in animal care, such as veterinary nurses. The current study is the first to report rates and method of suicide in veterinarians and veterinary nurses across Australia. Data was obtained from the National Coroners Information System (NCIS) database for the period between 2001 and 2012, giving 25 cases of veterinary surgeon and nurse suicides (18 veterinary surgeons and seven veterinary nurses). Suicide rates varied by age and were considerably higher among men (64%) than women. Compared with city/metropolitan areas, 52% of deaths occurred in rural/regional areas. The use of pentobarbiton was the most common suicide method (80%). Although the ratio of suicide in veterinarians was significantly higher than that of the general population (1.92:1), the ratio of suicide in veterinary nurses was not found significantly higher than that of the general population (1.24:1). Thus, there is insufficient evidence to conclude that suicide risk is elevated in veterinary nurses. However, the results confirm that a higher burden of suicide is observed in veterinarians.

Implications: A limitation of this study is the small sample size. In addition, there is the possibility that suicides were underreported or miscoded as other causes of death (e.g., undetermined or accidental). Nevertheless, findings of this study are...
consistent with international studies of suicide in veterinarians which indicate that veterinarians are much more likely to suicide by drug overdose than other methods\(^2\). Ready access to lethal means and knowledge and familiarity on how to use these means have been suggested as important contributory risk factors linked to choice of suicide method\(^3\). Exposure to death has been found to be an additional risk factor, with an association observed between repeated exposure to euthanasia and fearlessness of death among veterinary students\(^3\). Veterinarians who had more experience with euthanasia were found less fearful regarding the prospect of their own death\(^3\). In addition, an Australian study found that approximately one-third of this profession report poor psychological health\(^4\). Distress, anxiety and depression were more often observed in recent graduates in both genders than more experienced veterinarians, and those who worked long hours\(^4\). Occupational issues such as long working hours, poor work-life balance, and difficult client relations have also been found to be significant contributory risk factors\(^5\). Further investigation is warranted in exploring the association between performing euthanasia and levels of stress as this has important implications for how best the profession can support young graduates of veterinary science. This would help inform the development of suicide prevention programs for veterinary occupations, as there are currently no known programs or campaigns targeting this occupation.

**Endnotes**

Background: Medicinal substances have been identified as common agents of both unintentional and intentional poisoning among older people, including those with dementia. This study aims to compare the characteristics of poisoning resulting in hospitalization in older people with and without dementia and their clinical outcomes.

Methods: A retrospective cohort study involving an examination of poisoning by intent involving individuals aged 50+ years with and without dementia using linked hospitalization and mortality records during 2003-2012. Individuals who had dementia were identified from hospital diagnoses and unintentional and intentional poisoning was identified using external cause classifications. The epidemiological profile (i.e. individual and incident characteristics) of poisoning by intent and dementia status was compared, along with clinical outcomes of hospital length of stay (LOS), 28-day readmission and 30-day mortality.

Results: The hospitalization rate for unintentional and intentional poisoning for individuals with dementia was double and 1.5 times higher than the rates for individuals without dementia (69.5 and 31.6 per 100,000) and (56.4 and 32.5 per 1,000,000). The home was the most common location of poisoning. Unintentional poisoning was more likely to involve individuals residing in aged care facilities (OR 2.12; 95% CI 1.70-2.63) or health service facilities (OR 3.91; 95%CI 3.45-4.42). There were higher mortality rates and longer LOS for unintentional poisoning for individuals with dementia.

Conclusions: Clinicians need to be aware of the risks of poisoning for individuals with dementia and care is required in appropriate prescription, safe administration, and potential for self-harm with commonly used medications, such as anticholinesterase medications, antihypertensive drugs, and laxatives.

Comment

Main findings: Injury is one of the most common causes of hospitalisation for people with dementia, with poisoning as the third most common injury-related cause of hospitalisation. Medicinal substances are one of the more common agents of both unintentional and intentional poisoning among older individuals. This study compared the characteristics of poisoning resulting in hospitalisation in older people, with and without dementia, and their clinical outcomes in New South Wales (NSW), Australia, between 2003 and 2012. A retrospective analysis was conducted of poisoning of individuals aged 50 years and over, with and without dementia, using linked hospitalisation and mortality records. Individuals who had dementia were identified from hospital diagnoses, and unintentional and
intentional poisoning was identified using external cause classifications. The epidemiological profile (i.e., individual and incident characteristics) of poisoning by intent and dementia status was compared, as well as clinical outcomes of hospital length of stay (LOS), 28-day readmission and 30-day mortality.

During the ten-year period, 6,240 individuals aged 50 years and older were hospitalised after unintentionally ingesting poisonous substances, with 581 (9.3%) identified as having dementia. The 10,451 individuals aged 50 years and older hospitalised after intentionally ingesting poisonous substances included 314 (3%) with dementia. Almost two-thirds of those hospitalised for unintentional poisoning who had dementia were aged 80+ years, whereas for individuals without dementia, only 22.9% were aged 80+ years. The hospitalisation rate for unintentional and intentional poisoning for individuals with dementia was double and one and a half times higher than rates for individuals without dementia (69.5 and 31.6 per 100,000) and (56.4 and 32.5 per 100,000). Eleven percent of individuals with dementia who were hospitalised for unintentional poisoning had three or more additional comorbidities compared to the 8.7% of individuals without dementia. The three most common comorbid conditions were diabetes with or without chronic complication (55.2%), congestive heart failure (25.7%) and cerebrovascular disease (22.2%). Unintentional poisoning was more likely to involve individuals residing in aged care facilities (OR 2.12; 95% CI 1.70-2.63) or health service facilities (OR 3.91; 95% CI 3.45-4.42). There were higher mortality rates and longer LOS for unintentional poisoning for individuals with dementia. Compared to intentional poisoning, unintentional poisoning was more likely to involve males than females (OR 1.21; 95% CI 1.13-1.28), older age groups compared with individuals aged 50-59 years, individuals with dementia (OR 3.31; 95 CI% 2.88-3.82), individuals with multiple comorbidities compared to individuals with no identified comorbidities, and individuals residing in aged care facilities (OR 5.44; 95% CI4.43-6.67) or health service facilities (OR 4.56; 95 % CI 4.06-5.13) compared to at home.

Implications: Findings from this study reveal that older individuals with dementia are at a higher risk of poisoning compared to older individuals without dementia. Individuals with dementia also had a higher proportion of three or more comorbidities for both unintentional and intentional poisoning, suggesting that they are more likely to be taking multiple medications for multiple chronic conditions. Polypharmacy by people with dementia provides a greater opportunity for error and intentional harm. Moreover, the home was the most common location for poisoning for individuals with and without dementia, which appears to be a reflection of the home being where the most time is spent and where medications are readily accessible. Individuals with dementia may inadvertently confuse medication doses or find it challenging to comply with complex medication regimens2. Limitations of this study are that the severity of dementia was not recorded and that determination of poisoning intent may have been misclassified as there were 1,513 poisoning related hospitalisations that were unable to be deter-
mined. The researchers suggest that opportunities for prevention of unintentional poisoning by individuals with dementia include improving storage options (e.g., blister packs or Dosette boxes), increasing involvement of carers with medication administration; and in aged care and hospital settings, ensuring quality use of medicines and improved documentation and review regarding polypharmacy. Options to prevent intentional poisoning include careful monitoring for signs of mood disturbances, increased aggression, hallucinations, resurgence of painful memories and expression of self-harm by the individual. Overall, the findings suggest that clinicians need to be aware of the risks of poisoning for individuals with dementia, and that poisoning prevention strategies should be tailored to target individuals residing at home, and also in aged care and health care facilities.

**Endnotes**


Objective: To systematically review research on how people use the Internet for suicide-related reasons and its influence on users. This review summarises the main findings and conclusions of existing work, the nature of studies that have been conducted, their strengths and limitations, and directions for future research.

Method: An online search was conducted through PsycINFO, PubMed, Ovid MEDLINE and CINAHL databases for papers published between 1991 and 2014. Papers were included if they examined how the Internet was used for suicide-related reasons, the influence of suicide-related Internet use, and if they presented primary data, including case studies of Internet-related suicide attempts and completions.

Results: Findings of significant relationships between suicide-related search trends and rates of suicide suggest that search trends may be useful in monitoring suicide risk in a population. Studies that examine online communications between people who are suicidal can further our understanding of individuals’ suicidal experiences. While engaging in suicide-related Internet use was associated with higher levels of suicidal ideation, evidence of its influence on suicidal ideation over time was mixed. There is a lack of studies directly recruiting suicidal Internet users. Only case studies examined the influence of suicide-related Internet use on suicidal behaviours, while no studies assessed the influence of pro-suicide or suicide prevention websites. Online professional services can be useful to suicide prevention and intervention efforts, but require more work in order to demonstrate their efficacy.

Conclusions: Research has shown that individuals use the Internet to search for suicide-related information and to discuss suicide-related problems with one another. However, the causal link between suicide-related Internet use and suicidal thoughts and behaviours is still unclear. More research is needed, particularly involving direct contact with Internet users, in order to understand the impact of both informal and professionally moderated suicide-related Internet use.

Comment

Main findings: A previous systematic review investigating the influence of the Internet on self-harm and suicide in young people, found evidence of both positive influences such as online media being used as a form of support, and negative influences, such as Internet addiction, cyberbullying and the Internet being a source of information on suicide and self-harm. The aim of this systematic review was to extend upon this work by focusing specifically on suicide-related Internet use. Suicide-related Internet use was defined as use of the Internet for reasons relating to an individual’s own feelings of suicide. An online search was conducted through PsycINFO, PubMed, Ovid MEDLINE and CINAHL databases for papers published between 1991 and 2014. Papers were included if they were in
English, they examined how the Internet was used for suicide-related reasons, the influence of suicide-related Internet use, and if they presented primary data, including case studies of Internet-related suicide attempts and completions. After screening, a total of 52 papers were included in the review. No age restriction was included.

Results revealed that suicide-related Internet search trends can provide an indicator of suicide risk in a population. For example, online searches conducted within the United States for “commit suicide”, “suicide prevention” and “how to suicide” were significantly positively related to rates of suicide in the corresponding year. Moreover, search trends can also provide a potential indicator of suicide contagion. For example, online searches for “how to commit suicide”, “ways to kill yourself”, “suicide pact” and “suicide hanging” have also been found to increase following high-profile reports of suicide in Australia. However, these studies are limited in that they cannot establish a causal link between online searches and suicide deaths.

There are mixed findings regarding the influence of suicide-related Internet use on suicidal ideation over time. Evidence of the Internet’s influence on suicidal behaviour is predominantly composed of case studies, which illustrate occasions where individuals have either attempted or died by suicide after using the Internet to obtain information on suicide methods, obtain suicide methods themselves or to form online pacts with strangers. While this is concerning, the studies neglect those who engage in suicide-related Internet use but do not subsequently attempt suicide. Studies that have employed larger sample sizes and a cross-sectional design to investigate the link between suicide-related Internet use and suicidal ideation have found that people who engage in suicide related Internet use tend to report decreases in suicidal thoughts at the time surveyed compared to before first going online for suicide-related reasons. So, although those who use the Internet for suicide-related reasons are more likely to report higher levels of suicidal ideation, this is not necessarily the result of their Internet use. The literature also suggests that informal online suicide communities do not necessarily pose a risk to participants and can offer valuable support by providing users with a place to share problems and feel accepted and understood. However, it must be noted that informal online communities are unable to replace professional services in terms of promoting recovery among those who are suicidal. Online suicide forums staffed by trained volunteers were found to have positive effects. Trained volunteers were found to use significantly more strategies than laypeople in responses, particularly emotional support, empowerment, interpretation, and cognitive change inducement. Further, more frequent activity in online forums from trained volunteers and professionals may help in alleviating distress (i.e., as posting frequency increased, levels of distress decreased). Professional online-based interventions (e.g., cognitive-behavioural therapy (CBT)) specifically targeted towards reducing suicidal thoughts in young Australian secondary students, was found to significantly reduce suicidal ideation; however, the sample size in this study was small (n=21) and there was no control group.
Implications: The Internet can be a powerful resource for health professionals. The Internet has been found to be used for suicide-related reasons in a number of ways including searching for information about suicide and to discuss suicidal feelings. Investigating online suicide-related behaviours by Internet users offers researchers a non-invasive method and data is easily obtainable. However, search trends alone provide insufficient information to determine the characteristics of the Internet user and their motivations for conducting suicide-related Internet searches. Participants, as such, are not involved; therefore, we are unable to examine passive forms of suicide-related Internet use or collect information that would be useful in interpreting their findings. Future research should aim to investigate the user behaviours of those who engage in suicide-related Internet use, but do not subsequently attempt suicide in order to ensure the generalisability of these findings. Limitations notwithstanding, these findings are important as they provide an insight into the suicidal process, the suicidal experience and suicide phenomena such as online pacts by assessing the online posts of people expressing suicidal thoughts. It is important to investigate behaviours that may be related to Internet use as our society transitions into a technological inclined era where most activities can be completed on the Internet. As the causal link between suicide-related Internet use and suicidal thoughts and behaviours remains unclear; more research is warranted, particularly involving direct contact with Internet users, and the use of consistent methodologies, in order to understand the impact of both informal and professionally moderated suicide-related Internet use. Future research may help inform suicide prevention strategies, and assist early identification of those at-risk Internet users before the situation worsens. As online forums staffed by trained volunteers and professionals have been shown to offer valuable support, mental health services could consider using this model to facilitate suicide prevention services, and evaluating these services for effectiveness in reducing suicidal ideation and behaviours.

Endnote
Objective: The aim of this systematic review was to provide a picture of suicidality (suicide ideation and behaviour, both fatal and non-fatal) among migraine sufferers.

Background: Migraine is a leading cause of disability around the world. Migraine may manifest with a number of symptoms, ranging from severe headaches to neurological sensory disturbances. Co-morbid psychological conditions, such as depression, have also been linked to sufferers of chronic migraine.

Data Sources: Articles were retrieved from SCOPUS, Pubmed, Proquest and Web of Science.

Search terms: Suicid* AND migrain* in English-language peer-reviewed journals between 1 Jan 1966 and 31 Dec 2014.

Eligibility Criteria: Original research papers providing empirical evidence about the potential link between migraine and suicidal behaviours.

Results: Initial search identified 510 papers; the titles and abstracts of 360 unique results were examined for their relevance to the combination of migraine and suicidality. In total, 17 papers reporting original empirical analyses were included in this review.

Conclusions: Research has empirically documented a link between migraine and suicide ideation and behaviour, particularly concerning the subtype of migraine with aura. Overall, non-fatal suicidal behaviour among migraine sufferers has primarily been investigated, with only two studies analysing suicide mortality. In addition, majority of studies originated from the USA or Canada (n=10). Future research should thoroughly define migraine and investigate link between migraine and suicide mortality.

Comment

Main finding: Migraine is a leading cause of disability globally. Despite the relatively limited number of existing studies, research has shown an increased risk of suicidal behaviours in migraine sufferers or migraineurs. Co-morbid affective disorders, such as depression, have also been found associated with chronic migraine and suicide behaviours. A complication of migraine is its chronic development of features and symptoms. Two major subtypes of migraines have been identified: migraine with aura, which is typically characterised by headache with specific features and symptoms; and migraine without aura, which is characterised by focal neurological symptoms that may manifest before or during a migraine episode. The aim of this review was to systematically explore literature on suicidal behaviour among migraineurs, in order to provide a picture of suicidality (suicide ideation and behaviour, both fatal and non-fatal) among its sufferers. Only original research papers written in English between 1966 and 2014, providing empirical analyses
about the potential link between migraine and suicidal behaviours, were included in this systematic review (n = 17).

A number of studies showed that migraine was an independent risk factor for suicidal behaviours, even after adjusting for the presence of psychiatric conditions. However, in two studies the association did not remain after adjustment for a range of factors including psychiatric disorders. Researchers suggest that this finding may have been influenced by the fact that they were unable to distinguish between migraine with, and migraine without aura. In other studies, migraine with aura showed a stronger relationship with suicidal behaviour compared with migraine without aura. This relationship remained evident even after controlling for other variables, such as age, gender and psychiatric disorders, suggesting an independent association exists between migraineurs who suffer migraine with aura and suicidal behaviours. Migraine without aura was not found to be associated with an increased risk of suicide attempt and suicidal ideation. The findings from this systematic review suggest there is an association between migraine and suicidal ideation. Specifically, migraineurs who suffer migraine with aura appear to be at an increased risk of suicidal behaviours.

**Implications:** Despite the limited number of previous studies, this systematic review found an increased risk of suicidal behaviours in migraineurs who suffer from migraines with aura, which is further exacerbated by co-morbid affective disorders. The findings from this review would be helpful in informing suicide risk assessments when patients present to emergency department with migraine. Special attention may be directed to those who present with co-morbid affective disorders and report suffering migraine with aura. A limitation of this systematic review was the differences in methodology and study designs: as most of the studies reviewed were cross sectional, it was difficult to infer causality. There was also variability in the included studies for the classification and assessment of migraine and its subtypes (generally under the term ‘chronic daily headache’). Future studies should clearly define migraine, and further investigate the association between migraine and suicide mortality. Further research is warranted to investigate the mechanisms linking migraine and suicidal behaviours in order to assist sufferers of this disabling condition.

**Endnotes**

Suicide ideation in family carers of people with dementia
O’Dwyer ST, Moyle W, Zimmer-Gembeck M, De Leo D (Australia, USA)
Aging and Mental Health 28, 1182-1188, 2015

Objective: Two small studies have suggested that family carers of people with dementia may be a high-risk group for suicide. The objective of this study was to further explore the rate of suicidal ideation in a large sample of carers and identify psychosocial risk and protective factors.

Method: A cross-sectional survey was conducted with 566 family carers. The survey included measures of suicidality, self-efficacy, physical health, depression, anxiety, hopelessness, optimism, burden, coping strategies, and social support.

Results: Sixteen percent of carers had contemplated suicide more than once in the previous year. There were univariate differences between suicidal and non-suicidal carers on self-efficacy, social support, coping, burden, depression, anxiety, hopelessness, optimism, reasons for living, and symptoms of dementia, as well as age and income management. In a multivariate model, age, depression, and reasons for living predicted suicidal ideation. In tests for mediation, satisfaction with social support and dysfunctional coping had indirect effects on suicidal ideation via depression.

Conclusion: Family carers of people with dementia have high rates of suicidal ideation, with depression a risk factor and increasing age and reasons for living as protective factors. Depression and reasons for living should be targeted in interventions to reduce suicide risk in dementia carers.

Comment

Main finding: A survey of 120 Australian and American carers found that one in four had contemplated suicide more than once in the previous year, a rate more than eight times that of the general population. The aim of this study was to explore the rate of suicidal ideation and to examine a range of potential risk and protective factors that spanned physical, psychological, social and demographic domains in a larger and more diverse sample of carers. Participants were eligible if they could read English and identified themselves as the primary carer for a person with dementia who was still living in the community, or the primary carer for a person providing support of a person with dementia living in long-term care, or the primary carer for a person with dementia who had passed away within the previous two years. A total of 566 family carers participated (mean age = 63 years), most of whom (477) were female. Average time spent caring was six years. The cross-sectional survey included self-report measures of suicidality, self-efficacy, physical health, depression, anxiety, hopelessness, optimism, burden, coping strategies and social support.

Results revealed that one in six carers (n=91, 16%) had contemplated suicide more than once in the previous 12 months. Of those who were suicidal, approximately half (n = 46) had disclosed suicidal intentions and one-fifth of those said they were
likely to attempt suicide in the future. Age, depression and reasons for living were significant predictors of suicidal ideation. That is, as depression scores increased, so did the odds of contemplating suicide; and as reasons for living increased, the odds of contemplating suicide decreased. Dysfunctional coping and satisfaction with social support were both found to have indirect effects on suicidal ideation via depression. Younger carers were found more likely to contemplate suicide compared to older carers. However, this finding should be interpreted with caution as older adults are known to have the highest rates of suicide in developed countries and the lowest ratio of attempts to deaths. Older carers should not be overlooked in efforts to reduce suicide-related thoughts and behaviours in family carers.

**Implications:** This study provides compelling evidence of suicide risk in family carers of people with dementia. Carers were observed to have high rates of suicide ideation, with depression as a risk factor. The authors suggest designing interventions to reduce depression and increase reasons for living to reduce suicidal ideation in family carers. However, there are some limitations in this study. As the study employed a cross-sectional design, causality cannot be inferred. In addition, there was an absence of data on suicide attempts. Given the high rate of suicidal ideation identified in family carers of people with dementia in this study, the researchers of this study recommend that future research in this field, should investigate suicide attempts and deaths by suicide using a longitudinal design. Currently, there is no evidence on suicide attempts or deaths by suicide in this population. In order to clarify whether caring for a person with dementia presents an additional risk for suicide, future research should aim to examine the prevalence of suicide-related thoughts and behaviours in people caring for family members, for example, with illness or disabilities (where the demographic profile of the carers or the nature of the caring role may perhaps differ). Findings from this study could further inform carer-based organisations such as Alzheimer’s Australia, including this empirical knowledge to further inform their valuable services for carers of people with dementia.

**Endnotes**

Religion and the risk of suicide: Longitudinal study of over 1 million people

O’Reilly D, Rosato M (UK)
British Journal of Psychiatry 206, 466-470, 2015

Background: Durkheim’s seminal historical study demonstrated that religious affiliation reduces suicide risk, but it is unclear whether this protective effect persists in modern, more secular societies.

Aims: To examine suicide risk according to Christian religious affiliation and by inference to examine underlying mechanisms for suicide risk. If church attendance is important, risk should be lowest for Roman Catholics and highest for those with no religion; if religiosity is important, then ‘conservative’ Christians should fare best.

Method: A 9-year study followed 1,106,104 people aged 16-74 years at the 2001 UK census, using Cox proportional hazards models adjusted for census-based cohort attributes.

Results: In fully adjusted models analysing 1119 cases of suicide, Roman Catholics, Protestants and those professing no religion recorded similar risks. The risk associated with conservative Christians was lower than that for Catholics (HR = 0.71, 95% CI 0.52-0.97).

Conclusions: The relationship between religious affiliation and suicide established by Durkheim may not pertain in societies where suicide rates are highest at younger ages. Risks are similar for those with and without a religious affiliation, and Catholics (who traditionally are characterised by higher levels of church attendance) do not demonstrate lower risk of suicide. However, religious affiliation is a poor measure of religiosity, except for a small group of conservative Christians, although their lower risk of suicide may be attributable to factors such as lower risk behaviour and alcohol consumption.

Comment

Main findings: Previous research indicated that religious affiliation reduced suicide risk; however, due to the rise of secularisation, it is unclear why the relationship between religion and suicide still exists. This study aimed to examine suicide risk according to Christian religious affiliation and by inference, to examine the underlying mechanisms for suicide risk. If church attendance is important, risk should be lowest for Roman Catholics and highest for those with no religion; and if religiosity is important, then ‘conservative’ Christians should fare best. This large population-based record linkage study was conducted in Northern Ireland. A total of 1,106,104 people aged 16-74 years from 2001-2009 who did not live in an institutional setting were included in the analyses. Data was collected from the 2001 UK consensus and validated death records. Christian religious affiliation was categorized as: Roman Catholic (39.5%), Protestant (41.6%), Conservative Christian (6.3%) and No religion (12.6%). A total of 52,617 deaths occurred in the cohort during 8.7 years of follow-up, of which 1119 were by...
suicide or of undetermined intent. Results revealed that 74.4% of suicides were of men, and 64.8% were of people less than 45 years old. In fully adjusted models analysing 1119 cases of suicide, Roman Catholics, Protestants and those professing no religion recorded similar risks. The risk associated with conservative Christians was lower than that for Catholics (HR = 0.71, 95% CI 0.52-0.97). Additionally the risk for younger Catholics was about 20% higher than for mainstream Protestants, and only those belonging to the more conservative Christian groups recorded lower relative risks (at least up to age 55 years). Marriage was found to be protective, while living alone increased suicide risk (HR= 1.23, 95% CI 1.02–1.49). Being unemployed was associated with increased risk (HR = 1.26, 95% CI 0.96–1.66), and those with permanent illness were over three times more likely than an employed person to complete suicide (HR = 3.14, 95% CI 2.64–3.74). Further analysis showed that the relationship between religious affiliation and mortality risk varied according to age ($\chi^2$ = 25.2, p = 0.047), but not gender ($\chi^2$ = 3.72, p = 0.294).

**Implications:** This large population-based record linkage study set in Northern Ireland, where there are high levels of professed religious affiliation and church attendance, shows that those with no religious affiliation have a risk of suicide that is no higher than that of Roman Catholics, or those belonging to mainstream Protestant faiths. Further, among younger adults, the risk is highest for those who affiliate with Catholicism. These findings run counter to the perceived relationship between religion and suicide. This may be related to the increasing dissociation between religion affiliation and religious salience, especially among younger adults whom suicide rates are the highest. Strengths of this study are that an entire population from Northern Ireland was examined rather than subgroups and that cause of death was derived from validated records. This allows findings to be generalised across the country. A limitation of this study relates to the construct of affiliation and its relationship with religiosity not being available as a result of this being a census-based study. Despite the long-term decrease in affiliation to Christianity from 96% in 1911 to 61% in 2011, it remains Australia’s major religion with major denominations in Catholicism. Therefore, it would be invaluable to replicate a study of this size in Australia to explore possible relationships between affiliation to Christianity and suicide risk.

**Endnotes**
Suicidality in Australian Vietnam veterans and their partners

O'Toole BI, Orreal-Scarborough T, Johnston D, Catts SV, Outram S (Australia)

Lifetime suicidality was assessed in a cohort of 448 ageing Australian Vietnam veterans and 237 female partners during in-person structured psychiatric interviews that permitted direct comparison with age-sex matched Australian population statistics. Relative risks for suicidal ideation, planning and attempts were 7.9, 9.7 and 13.8 times higher for veterans compared with the Australian population and for partners were 6.2, 3.5 and 6.0 times higher. Odds ratios between psychiatric diagnoses and suicidality were computed using multivariate logistic regression, and suicidality severity scores were assigned from ideation, planning and attempt, and analysed using ordinal regression. PTSD, depression alcohol disorders, phobia and agoraphobia were prominent predictors of ideation, attempts and suicidal severity among veterans, while depression, PTSD, social phobia and panic disorder were prominent predictors among partners. For veterans and their partners, PTSD is a risk factor for suicidality even in the presence of other psychiatric disorders, and is stronger in Vietnam veterans than their partners.

Comment

Main findings: Previous research revealed that there is a higher risk of suicide among Australian Vietnam veterans than the general population, and that there is poorer mental health among partners of Vietnam veterans. This cohort study of Australian Vietnam war veterans and their female partners aimed to: 1) establish the prevalence of suicidality (i.e., ideation, planning, attempt) in male Australian Vietnam veterans and their female partners and compare these with the background Australian population; 2) examine the concordance between veteran and partner suicidality; 3) assess the degree of risk for suicidality associated with psychiatric disorders in veterans and partners; and 4) assess the independent contribution of post-traumatic stress disorder (PTSD) to suicidality in veterans and their partners. Two waves of veteran interviews were conducted: wave 1 between July 1990 and February 1993, an average of 21.96 years ($SD = 1.91$) after repatriation, and wave 2 between April 2005 and November 2006, an average of 36.10 years ($SD = 1.92$). This paper reports from the wave 2 assessment. Psychiatric status, including suicidality and PTSD attributable to civilian cause were assessed using the Composite International Diagnostic Interview (CID), combat-related PTSD was assessed using the Clinician-assessed PTSD Scale (CAPS). Participants were given questions about lifetime suicidality if they indicated positive responses to two screener questions. Odds ratios between psychiatric diagnoses and suicidality were computed using multivariate logistic regression, and suicidality severity scores were assigned from ideation, planning and attempt, and analysed using ordinal regression. One hundred and twenty-five deaths were found in the cohort of veterans, including eight who had died in Vietnam and 13 post-war suicides. Four hundred and fifty veterans were
interviewed, which was 51.4% of those not known to have died and 79.4% of those who could be located. Of the 426 veterans who had wives or partners, 56 (12.4%) refused consent to give contact details, leaving an eligible pool of 370 women of whom a total of 240 completed interviews, giving a response rate of 56.3% of known eligible partners or 64.9% of partners where the veteran had provided consent to contact.

The mean ages for veterans and partners were 60.4 years (SD=52) and 57.8 years (SD=5.8) respectively. The majority of veterans (73.3%) were in receipt of an Australian Department of Veterans’ Affairs (DVA) disability pension. The relative risks for suicidal ideation, planning and attempts were respectively 7.9, 9.7 and 13.8 times higher for veterans compared with the Australian population and for partners were 6.2, 3.5 and 6.0 times higher. Of the 448 veterans, 231 (51.3%) answered positively to the depression screener questions. Of these, 108 (46.8%) reported suicidal ideation (OR = 2.76, 95% CI = 2.40, 3.18) with 75 (69.4%) of these having made a plan (OR = 4.72, 95% CI = 3.50, 6.41), and 33 (30.6%) had made an attempt (OR = 2.64, 95% CI = 2.21, 3.15), of which five were unplanned. Those veterans who screened positive for the depression module, 42% gained a diagnosis of depression. Of 237 partners who completed the CIDI, 138 (58.2%) answered positively to the screener questions. Of those, 36 (26.1%) reported suicidal ideation (OR = 1.97, 95% CI = 1.72, 2.26). Of the partner ideators, 12 (33.3%) reported forming a plan (OR=9.34, 95% CI = 6.41, 13.70) and six (16.7%) attempted suicide (OR =9.70, 95% CI= 5.52, 10.75), of which two were unplanned. Depression was diagnosed in 42.8% of partners who passed the screener and to the depression module. One hundred and forty-three veterans (31.8%) had a diagnosis of PTSD arising from combat-related events in Vietnam. PTSD was significantly associated with partner suicidality score (OR=2.99, 95% CI=1.22, 7.31, p=.016) as was panic disorder (OR=8.32, 95% CI=2.42, 28.61, p<.001) and social phobia (OR=2.91, 95% CI =1.26, 8.14, p=.014).

Implications: This study found evidence of a robust association between depression and suicidality in both sexes. Further this study observed that PTSD is associated with increasing severity of suicidality, in both Vietnam veterans and their partners, providing a valuable contribution to the complex area of veteran trauma and suicidality. PTSD, depression, alcohol disorders, phobia and agoraphobia were found to be strong predictors of suicide ideation, attempts and suicidal severity among veterans, while prominent predictors in partners include depression, PTSD, social phobia and panic disorder. Strength of this study is its large sample size of non-treatment seeking Australian Vietnam veterans and the inclusion of their partners ensuring applicability to the Australian context. Hence, findings from this study can directly inform local suicide prevention strategies. The Australian Government PTSD Review Report\(^1\) has extensive recommendations on PTSD group treatments for war veterans; however, recommendations for treatments are only for war veterans and do not include their partners. Health practitioners treating veterans, or a partner of a veteran,
need to be aware of their higher risk of suicidality and particularly sensitive to the presence of PTSD. A limitation of this study is that only individuals who answered positively on screening items for depression were questioned regarding suicide. This may have potentially confounded suicidality with depression.

Endnote

Switching methods of self-harm at repeat episodes: Findings from a multicentre cohort study


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**Background:** Self-poisoning and self-injury have widely differing incidences in hospitals and in the community, which has led to confusion about the concept of self-harm. Categorising self-harm simply by a method may be clinically misleading because many hospital-attending patients switch from one method of harm to another on subsequent episodes. The study set out to determine the frequency, pattern, determinants and characteristics of method-switching in self-harm episodes presenting to the general hospital.

**Methods:** The pattern of repeated self-harm was established from over 33,000 consecutive self-harm episodes in a multicentre English cohort, categorising self-harm methods as poisoning, cutting, other injury, and combined methods.

**Results:** Over an average of 30 months of follow-up, 23% of people repeated self-harm and one-third of them switched method, often rapidly, and especially where the person was male, younger, or had self-harmed previously. Self-poisoning was far less likely than other methods to lead on to switching.

**Limitations:** Self-harm episodes that do not lead to hospital attendance are not included in these findings but people who self-harmed and went to hospital but were not admitted from the emergency department to the general hospital, or did not receive designated psychosocial assessment are included. People in the study were a mix of prevalent as well as incident cases.

**Conclusions:** Method of self-harm is fluctuating and unpredictable. Clinicians should avoid false assumptions about people’s risks or needs based simply on the method of harm.

**Comment**

**Main findings:** Categorising self-harm simply by a method may be clinically misleading because many hospital-attending patients switch from one method of harm to another on subsequent episodes. This study aimed to determine the frequency, pattern, determinants and characteristics of method-switching in self-harm episodes presenting to six general hospitals (in three cities) over five years. This study used a large consecutive cohort of hospital self-harm episodes from the Multicentre Study of Self-harm in England to investigate the poorly delineated but common phenomenon of switching of self-harm method. Self-harm was defined as intentional self-poisoning or self-injury, irrespective of motivation. Self-harm methods were categorised as poisoning, cutting, other injury, and combined methods. A total of 21,255 individuals, (12,467; 59% female) undertook 33,880 episodes of self-harm leading to hospital attendance (for 33 people, gender was unrecorded). Of these people, 4,721 (22.5%) repeated self-harm; 2,820 (n=12,467,
22.6% females; n = 8,755, 21.6% males). These accounted for 11,610 episodes due to multiple repetitions of self-harm. The average follow-up time was two and half years. During this time, 23% of people repeated self-harm and one third of these switched method, often rapidly. This was especially the case when the person was male, younger, or had self-harmed previously. Among people who repeated, self-poisoning was the method used in 78% of index episodes; cutting in 15%; combined injury and poisoning 4.6%; and other injury (severe) 1.4%. Switching was also more common when alcohol was not consumed at the index episode. Further, there was a clear relationship between method switching and history of mental health care and of previous harm: 37% of people who repeated and who reported or were recorded as receiving mental health care switched method, compared with 28% with no history. Results revealed that those who required hospital attendance as a consequence of any type of self-injury are more likely to switch method, and to do so sooner, than those who have self-poisoned. Switching method was a frequent occurrence among those who have attended because of self-cutting; but where an episode has been characterised by combined methods or non-cutting injuries, a switch was extremely likely to happen and soon after the index episode. However, each method of self-harm has about as many people switching away from it as switching towards it, so there was no clinically useful predictability to be found in the patterns. As self-poisoning was the most common method, many people who attended hospital because of self-injury, and cutting in particular, have returned to the hospital before long with an episode of self-poisoning. Importantly, switching happened quickly, regardless of the initial method of self-harm. The younger the individual was, the more likely there was a subsequent switch in method.

Implications: Few studies have investigated and monitored recurrent non-fatal self-harm in a large study population and longitudinally. Findings indicate that switching methods is a common occurrence in individuals who self-harm, especially in young males. However, results must be interpreted with caution, as the sample did not include those who did not present to the hospital following a self-harm episode. Thus, future research should aim to include those who do not present to the hospital after a self-harm episode to get a clearer picture of the switching phenomenon. Despite the extensiveness of this study, there may also have been confounding factors in this study, as the psychiatric diagnoses of the people who self-harmed was unknown, and depression, substance use and personality factors may be determinants of repetition and switching. These findings shed light onto the phenomena of switching methods in self-harm. This may inform hospital emergency department services, as a high proportion of those who self-harm are discharged without receiving adequate assessment. Findings from this study, support the United Kingdom (UK) National Institute for Health and Care Excellence (NICE) guidelines for self-harm; in that all patients who have self-harmed receive an adequate psychosocial assessment of their needs and risk before their discharge from the general hospital. It is also important to implement longer-term management for those who self-harm, as recommended by the NICE’s most recent guideline.
Endnotes


Lack of trust in the health-care system after losing a child to suicide

Crisis 36, 161-172, 2015

**Background:** Lack of trust in the health-care system after losing a child to suicide may prevent bereaved parents from seeking professional treatment when needed, thus diminishing their chances of recovery.

**Aims:** This is the first large study to aim at evaluating the incidence of lack of trust in the health-care system and associated variables in suicide-bereaved parents.

**Method:** This nationwide population-based survey included 569 parents who lost a child to suicide 2-5 years earlier and a matched comparison group of 326 non-bereaved parents. Using a study-specific questionnaire, we asked bereaved and nonbereaved parents if they trusted the health-care system and measured psychological and background variables.

**Results:** Prevalence of lack of trust in the health-care system differed between the bereaved (46.5%) and the nonbereaved parents (18.3%), giving a relative risk of 2.5 (95% CI = 2.0-3.3). After multivariable modeling, high scores of depression, living in big cities, and being single were identified as variables associated with lack of trust in suicide-bereaved parents.

**Conclusion:** Suicide-bereaved parents show lack of trust in the health-care system. We present possible effect modifiers that may be considered in professional interventions aiming at influencing suicide-bereaved parents’ level of trust.

**Comment**

**Main findings:** Suicide-bereaved parents are a vulnerable group with a high risk of adverse effects related to grief. Lack of trust in the health care system may prevent suicide-bereaved parents from seeking professional help when most needed. Research examining trust in the health-care system among suicide-bereaved individuals to date is limited. Thus, this population-based national survey study aimed to investigate the occurrence of, and variables associated with, lack of trust in the health-care system in suicide-bereaved parents. A total of 569 parents who had lost a child to suicide two to five years earlier were matched with 326 nonbereaved parents as a comparison group. The sample was matched for age, sex, place of residence, marital status, number of children, and having a child born the same year as the deceased child in the bereaved sample, at a ratio of one nonbereaved to two suicide-bereaved parents. Using a study-specific questionnaire, bereaved and nonbereaved parents were asked if they trusted the health-care system, and were measured on a number of psychological and background variables. The main outcome measure in this study was the prevalence of lack of trust in the health-care system.
Between 2004-2007, 666 bereaved and 377 nonbereaved parents returned answered questionnaires. After exclusion of individuals with psychological pre-morbidity in both groups, a total of 569 bereaved and 326 nonbereaved parents were included in this study. Results revealed that prevalence of lack of trust differed between the bereaved (47%) and the nonbereaved parents (18%), giving a relative risk (RR) of 2.5 (95% CI = 2.0-3.3). Among the bereaved, the 60 to 64 years age group reported the highest proportion of lack of trust. In the nonbereaved, a statistically significant trend (p = .042) was observed, with the highest prevalence of lack of trust found in the youngest age group (40-49 years). After multivariate modelling, high scores of depression, living in big cities and being single were identified as variables associated with lack of trust in the health-care system in bereaved parents. Bereaved parents who had attended college or university demonstrated a significantly greater lack of trust than those with a lower level of education, whereas in nonbereaved parents lack of trust was more prevalent in those with lower education (p = 0.012). Statistically significant trends were also observed in both bereaved (p < .001) and non-bereaved parents (p < .001) with lack of trust more often present in parents with higher depression scores.

**Implications:** To the best of the researchers’ knowledge, this is the first large population-based study to examine trust in the health-care system following losing a child to suicide. Findings from this study are consistent with previous research that explored attitudes and beliefs of the health-care system following loss due to suicide and found parents to be disappointed, feeling their concerns about their relatives’ suicide risk were not taken seriously by health services\(^1\) Although Sweden has a tax-founded and universally provided health-care system similar to Australia, the findings may not necessarily generalise to Australia’s culture. Thus, it would be informative to replicate a study of this size in Australia to ensure these findings are applicable to our health care system and our culture of loss and grief. It is important to acknowledge that it is difficult to implement suicide prevention strategies for people who are not willing to engage in the services provided. Therefore, it would be highly beneficial to Australia’s National Suicide Prevention Strategy\(^2\) to investigate professional interventions aimed at enhancing suicide-bereaved parents’ level of trust in the health care system.

**Endnotes**

Associations between climate variability, unemployment and suicide in Australia: A multicity study
Qi X, Hu W, Page A, Tong S (China, Australia)
BMC Psychiatry 15, 114, 2015

Background: A number of studies have examined the associations of suicide with meteorological variables (MVs) and socioeconomic status but the results are inconsistent. This study assessed whether MVs and unemployment were associated with suicide in eight Australian capital cities.

Methods: Data on suicide, population and unemployment rate (UER) between 1985 and 2005 were from the Australian Bureau of Statistics. MVs was provided by Australian Bureau of Meteorology. A generalized linear regression model with Poisson link was applied to explore the association of suicide with MVs and UER.

Results: Temperature difference (ΔT, the difference in mean temperature between current month and previous one month) was positively associated with suicide in Sydney, Melbourne, Brisbane and Hobart. There was also a significant and positive association between UER and suicide in Sydney, Melbourne, Brisbane and Perth. MVs had more significant associations with violent suicide than that of non-violent suicide. There were no consistent associations between other MVs and suicide. A significant interaction between ΔT and UER on suicide was found in Sydney, Melbourne and Brisbane, such that increased temperature amplified the magnitude of the association between UER and suicide.

Conclusions: ΔT and UER appeared to jointly influence the occurrence of suicide in Australian capital cities. This finding may have implications for developing effective suicide prevention strategies.

Comment

Main findings: Previous international research examining the effect of meteorological variables (MVs) (e.g., temperature, rainfall, humidity and sunshine) on suicide risk has shown inconsistent findings. In Australia, some studies have indicated that decreased rainfall and continued drought are associated with higher suicide risk in New South Wales (NSW)¹, while others have found that increased maximum temperature is associated with higher suicide risk over time and space in Queensland and Australia². However, each of these studies was confined to one regional area; therefore, it is difficult to generalise the findings to other Australian states as the association of climate variables and suicide may differ across regions. This study aimed to explore the pattern of suicide in Australian capital cities, and to assess the association of suicide with MVs and unemployment rate (UER) in these cities. In addition, the study explored the extent to which MVs modified the association between unemployment and suicide. Monthly MVs, including rainfall (mm), relative humidity (%), maximum and minimum temperature (Tmax and Tmin, °C), and sunshine hours (daily average of each month), were supplied by the Australian Bureau of Meteorology. Suicide data were supplied by the Australian Bureau of Statistics (ABS). The
monthly mean temperature (T-mean, °C) and temperature difference (ΔT, the difference in mean temperature between current month and previous one month, °C; above 0 °C for increase and below 0 °C for decrease) were also calculated. A series of statistical methods were applied to examine associations of MVs and UER with suicide rates.

From eight Australian capital cities, between 1985 and 2005, 28,501 suicide cases (21,999 males, 6,502 females) were included. Sydney and Melbourne had the largest number of suicide cases (16,665 for both), accounting for 58.5% of the total suicides, followed by Brisbane, Perth and Adelaide. Darwin, Hobart and Canberra had the lowest number of suicide cases (1,662 for all three cities, 5.8% of total suicides). Sydney, Melbourne and Canberra had the lowest suicide rates per 100,000, while Darwin had the highest rates per 100,000. Darwin also had the highest mean temperature, rainfall and sunshine. Hobart had the highest UER (followed by Adelaide and Brisbane), and Canberra had the lowest UER. There was a stronger association between ΔT and suicide than for other MVs. Results also revealed positive associations between ΔT and suicide in Sydney, Melbourne, Brisbane and Hobart. A higher UER rate was associated with higher suicide rate in Sydney, Melbourne, Brisbane and Perth. Additionally, there was a significant interaction found between ΔT and UER on suicide in Sydney, Melbourne and Brisbane, meaning that dramatic temperature changes over time amplified the magnitude of association between UER and suicide.

No significant effects were observed for rainfall, except an increased risk in months with less rainfall in Melbourne. MVs had more significant associations with violent suicide than that of non-violent suicide. Overall, ΔT and UER were found to jointly influence the occurrence of suicide in Australian capital cities.

**Implications:** It is important to understand how MVs are associated with suicide rates and also whether MVs have interactive effects on socioeconomic factors (e.g., unemployment) and suicide in various cities over time. The findings of this study may help public health decision makers and clinicians to improve current suicide prevention strategies. There are some limitations acknowledged by the researchers. Detailed personal information of each suicide case (e.g., mental health status before suicide) was not available. In addition, using monthly weather meteorological data may mask extreme weather conditions (e.g., short-term heat waves), which may potentially impact on the mental health of people. Future research should extend this work to rural and remote areas of Australia to consolidate these results.

**Endnotes**


**Self-injurious thoughts and behaviors as risk factors for future suicide ideation, attempts, and death: A meta-analysis of longitudinal studies**

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**Background:** A history of self-injurious thoughts and behaviors (SITBs) is consistently cited as one of the strongest predictors of future suicidal behavior. However, stark discrepancies in the literature raise questions about the true magnitude of these associations. The objective of this study is to examine the magnitude and clinical utility of the associations between SITBs and subsequent suicide ideation, attempts, and death.

**Method:** We searched PubMed, PsycInfo, and Google Scholar for papers published through December 2014. Inclusion required that studies include at least one longitudinal analysis predicting suicide ideation, attempts, or death using any SITB variable. We identified 2179 longitudinal studies; 172 met inclusion criteria.

**Results:** The most common outcome was suicide attempt (47.80%), followed by death (40.50%) and ideation (11.60%). Median follow-up was 52 months (mean = 82.52, s.d. = 102.29). Overall prediction was weak, with weighted mean odds ratios (ORs) of 2.07 [95% confidence interval (CI) 1.76-2.43] for ideation, 2.14 (95% CI 2.00-2.30) for attempts, and 1.54 (95% CI 1.39-1.71) for death. Adjusting for publication bias further reduced estimates. Diagnostic accuracy analyses indicated acceptable specificity (86-87%) and poor sensitivity (10-26%), with areas under the curve marginally above chance (0.60-0.62). Most risk factors generated OR estimates of < 2.0 and no risk factor exceeded 4.5. Effects were consistent regardless of sample severity, sample age groups, or follow-up length.

**Conclusion:** Prior SITBs confer risk for later suicidal thoughts and behaviors. However, they only provide a marginal improvement in diagnostic accuracy above chance. Addressing gaps in study design, assessment, and underlying mechanisms may prove useful in improving prediction and prevention of suicidal thoughts and behaviors.

**Comment**

**Main findings:** Prior self-injurious thoughts and behaviours (SITBs) are often identified as some of the most robust predictors of future SITBs. The recent WHO (2014) report on suicide prevention stated that by far the strongest indicator for future suicide risk is one or more prior suicide attempts. However, there have been inconsistencies in the literature regarding the effects of SITBs (e.g., suicidal ideation, suicide plans, and non-suicidal self-injury [NSSI]). The objective of this meta-analysis of longitudinal studies was to examine the magnitude and clinical utility of the associations between SITBs and subsequent suicide ideation, attempts, and death. Longitudinal studies were examined with the purpose of determining whether prior SITBs conferred risk for later suicidal
thoughts and behaviours. Inclusion criteria constrained the study pool by requiring that eligible studies share a common core design (i.e., longitudinal) and outcome (i.e., suicidal ideation, attempts, or death). A total of 172 studies (from 1965 to 2014) were included. Results revealed suicide attempt was the most common outcome (47.8%), followed by death (40.5%) and ideation (11.6%). Median follow-up length across all studies was 52 months (mean = 82.52, SD = 102.29). While the most frequent follow-up interval was 25-60 months (21.4%). Most cases involved either self-injurious (42.6%) or clinical (38%) samples; and 19.3% involved general population samples. Death outcomes most commonly involved self-injurious samples (75.9%), followed by clinical (18.97%) and general population (5.13%) samples. Clinical samples were most common for attempt (56.52%); self-injurious (22.17%) and general population (21.3%) samples were equally represented. For ideation, general population samples were the most common (60.71%), followed by clinical (28.57%) and self-injurious (10.71%) samples. Generally, prediction was weak, with weighted mean odds ratios (ORs) of 2.07 [95% CI 1.76-2.43] for ideation, 2.14 (95% CI 2.00-2.30) for attempts, and 1.54 (95% CI 1.39-1.71) for death. These effects were consistent regardless of sample severity, sample age groups, or study follow-up lengths, although when publication bias was considered these estimates were further reduced. Moreover, there was an extremely limited ability to identify true positive cases. The effects of specific risk factor categories were examined and results revealed that prior suicide ideation was the strongest predictor of later ideation; NSSI and suicide attempt history conferred the most risk for later suicide attempts; and suicide attempt history and suicide ideation were among the strongest predictors of suicide death. This study also evaluated clinical utility of SITBs, interestingly the diagnostic accuracy when considering knowledge of SITBs offered only slight improvement above chance. NSSI (OR 4.27) was the strongest predictor for future suicide attempts; however, this did not significantly increase the predictive risk. Therefore, these findings suggest that prior SITBs are weak risk factors for future suicide ideation, attempts and death, at least within the confined methodological design which it is studied in.

**Implications:** Despite previous research suggesting that SITBs confer risk for future suicidal ideation, attempts and death, the current study found that these effects were substantially weaker than previously reported. This study included uniform studies with the same design and outcomes in their analyses, which help validate the strength of these findings. However, there were only few eligible studies, indicating that further research is needed to investigate STIBs as risk factors for future suicide ideation, attempts and deaths. A limitation of this study is that no psychiatric diagnoses were included in the analyses. Although no pronounced differences were found between sample severity groups, it cannot be ruled out that these other factors may have affected the results. Future research that examines the mechanisms underlying the relations between prior SITBs and future suicidal thoughts and behaviours would be informative. The authors suggested that viable mechanisms must account for the present pattern
of findings which includes: (1) why prior SITB are generally weak predictors of future suicidal SITB; and (2) why suicidal and non-suicidal SITBs confer statistically equivalent risk for future suicidal behaviours. These findings highlight critical gaps in study design, assessment, and the mechanisms that lead prior SITBs to confer risk for future suicidal thoughts and behaviours. Future research should aim to address these gaps in order to make significant progress in the prevention of suicidal thoughts and behaviours.

Endnotes

The aim of this study was to explore suicide attempters’ experiences of personal stigma. This qualitative study included a focus group of 7 experienced clinicians and semi-structured interviews with 8 suicide attempters. Thematic analysis of the data yielded four main themes: seriousness, care, “badness,” and avoidance. Experiences of stigma pervaded all contexts, but were most emotionally upsetting to the participants in interpersonal relationships. The findings show the importance of evaluating stigma for suicide attempters during suicide risk assessment and the need for specifically tailored interventions to combat suicide stigma at the individual level.

Comments

Main findings: Mental illness stigma has a negative impact on an individual’s well-being, their life opportunities and sense of self, that, in turn, can hamper intervention and treatment. Although mental illness stigma has attracted a good deal of research, less attention has been paid to the stigma of suicide and suicide attempts. Stigma toward suicide and suicide attempters is present even in professional medical settings, such as emergency departments, and can impact on the quality of medical care received. The reasons for examining suicide stigma separately to mental illness stigma are twofold. Firstly, suicide is not in itself a mental illness but a behavioural act; and secondly, efforts to destigmatise suicide must take care not to normalise it, which could lead to an increase in the frequency of suicidal behaviours. The aim of this qualitative study was to examine the individual level of stigma in attempted suicide. Exploratory in nature, this study aimed to describe the experiences of personal stigma faced by suicide attempters in their everyday lives and across different contexts. The study explored suicide attempters’ experiences and their perceptions of labelling, stereotyping, and discrimination in interpersonal relationships, health care settings, at work, and in the community, and the negative attitudes suicide attempters had about themselves. Researchers used the term personal stigma to refer to (a) perceived stigma, the individual’s beliefs about public attitudes to suicidal behaviour; (b) experienced stigma, the individual’s experiences of actual discrimination and prejudice; and (c) self-stigma, the person’s own internalization of public stigma, the process of accepting and applying the negative evaluations to one- self, leading to self-discrimination. The study was conducted at an outpatient clinic, which specialises in treatment of suicidal patients. Seven members of the clinical treatment team participated in a focus group on experiences of stigma reported by their clients. Eight adults (six females and two males) aged 27-55 years (mean = 46.88 years) who were being treated for suicidality and had made at least one suicide attempt were individually interviewed. The focus groups and semi-structured individual inter-
views were audio-recorded and then transcribed verbatim. Thematic analysis was used to analyse text.

Four broad themes emerged: seriousness, care, “badness” and avoidance. The seriousness theme included overgeneralized ideas about the severity of illness the attempt represented. Importantly, beliefs that suicide attempts were just “attention seeking” were stated as one of the reasons to deny mental health treatment. The care theme described care experiences that felt discriminating, which were perceived as inadequate (too limited) or as disempowering (too intrusive). Lack of care was most frequently related to treatment settings when participants perceived the doctors as “not interested” in suicide attempters, and/or only interested in “serious patients,” (i.e., patients with medical complaints). The theme of “badness” related to characteristics of “badness” attributed to a person who attempted suicide (e.g., being a potential treat to others, unreliable, a less admirable person, a burden), or to stigmatizing behaviours such as blaming and direct violence as if the person was “bad” for attempting suicide. These attitudes arose when a suicide attempt was seen as direct “emotional abuse” of another person. The theme of avoidance described complete distancing from the person who attempted suicide, and was the most frequently reported discriminatory behaviour. Avoidance varied in severity from minimising the experiences related to suicide to complete distancing from the person. Minimising occurred in both treatment settings and interpersonal relationships. Burdensomeness, a subtheme of “badness” was prominent across all contexts; but mostly reported in the contexts of interpersonal relationships and self-stigma. All themes were described as being ‘especially painful’ in interpersonal relationships.

**Implications:** The study indicated specific aspects of personal stigma in suicide attempters that have not been previously described. Participants reported feelings of burdensomeness, as well as experiencing discriminatory behaviour where others distance and ignore them. As perceived burdensomeness and thwarted belongingness are two key states considered to lead to suicidal ideation⁴, stigmatising attitudes may further perpetuate suicidal thoughts in individuals who are already at high risk of suicide. The findings suggest that the burdensomeness and avoidance domains of stigma may be especially important in assessing suicide risk in suicide attempters. The study also found that suicide stigma in interpersonal relationships was emotionally distressing and may have detrimental effects on treatment adherence. Some research has been conducted examining suicide stigma in health care professionals and the general public; however, the stigma suicide attempters face in close relationships has received limited attention to date. Further research is needed to close this gap. The findings of this study may further assist family mental health support organisations, such as the Mental Health Carers ARAFMI Australia, Mental Health Respite Carer Support and SANE Australia, in their provision of workshops, services and resources for family and friends of a person struggling with a mental illness, suicide ideation and/or following a suicide attempt.
Endnote


Social media and suicide prevention: Findings from a stakeholder survey

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**Background:** Suicide is a leading cause of death, particularly among young adults. The rapid growth of social media and its heavy use by young adults presents new challenges and opportunities for suicide prevention. Social media sites are commonly used for communicating about suicide-related behavior with others, which raises the possibility of using social media to help prevent suicide. However, the use of social media varies widely between different suicide prevention advocates. The role this type of intervention should play in a community’s overall suicide prevention strategy remains a matter of debate.

**Aim:** Explore the ways in which stakeholders use social media for suicide prevention and assess their views about the potential utility of social media as a suicide prevention tool.

**Methods:** A 12-week stakeholder consultation that involved the online administration and completion of surveys by 10 individuals who conduct research about suicide and social media, 13 organizations that use social media for suicide prevention purposes, and 64 users of social media.

**Results:** Social media was seen as a useful means of delivering a range of suicide prevention activities. Respondents reported that the key benefits of social media were the opportunity to obtain emotional support from others, to express one’s feelings, to talk to others with similar problems, and to provide help to others. The social media site believed to hold most potential for delivering suicide prevention activities was Facebook. There were concerns about potential risks of social media, but respondents felt the potential benefits outweighed the risks.

**Conclusions:** Social media was recognized by different types of stakeholders as holding potential for delivering suicide prevention activities. More research is required to establish the efficacy and safety of potential social media-based interventions and ethical standards and protocols to ensure that such interventions are delivered safely need to be developed and implemented.

**Comment**

**Main findings:** The rapid growth and influence of social media, particularly for young adults, presents new challenges and opportunities for suicide prevention. Young people are commonly using social media sites and blogs to express suicidal feelings, and occasionally to investigate suicide methods or to make suicide pacts with like-minded people1. This gives rise to the potential of utilising social media as an intervention to prevent suicide. This study examined the ways in which stakeholders use social media for suicide prevention, and assessed if social media could be harnessed to prevent suicide. A stakeholder consultation was conducted...
over 12 weeks in which three separate surveys were administered online by three different classes of respondents: individuals who conduct research about suicide and social media (n=10); organisations that use social media for the purpose of suicide prevention (n=13); and social media users (n=64). Researchers were asked about the nature of their research and their outlook on conducting research regarding suicide and social media. Organisations were asked about the purpose and nature of their organisation and the ways in which they use social media for suicide prevention purposes as well as whether they perceive this avenue for suicide prevention as an effective one. Finally, social media users were questioned about their demographic characteristics, their personal use of social media and the reasons for such use, and ways in which they have used social media to help others, and their own help-seeking offline. Respondents from each group were also asked their views on social media and suicide, the types of social media with the most potential for suicide prevention, and the risks and benefits associated with using social media as a tool for suicide prevention.

Responses were obtained from a range of countries, including Australia, the United States of America (USA), Belgium, Hong Kong, Israel, the Netherlands, the United Kingdom (UK), India, Ireland and Norway. Of the 10 researchers whom responded, the majority was primarily focused on suicide and social media. The most frequently used social media platform was Twitter, followed by Facebook and YouTube. All researchers reported that there is currently insufficient research regarding the relationship between social media and suicide and the effectiveness of social media as an intervention tool for those at risk of suicide. The most common barriers to such research involved methodological and ethical concerns. The majority of the 13 participating organisations stated that their primary focus was on suicide prevention. Twitter and Facebook were the most frequently used social media platforms for the purpose of raising awareness, and to a lesser degree, advocacy, online counselling and online peer support. All except for one organisation had a mental health professional who moderated the social media site at least once per day. When asked how beneficial they perceived their social media-based interventions to be, organisations rated it as either ‘very beneficial’ or ‘some-what beneficial’. For individual users, the most frequent social media platform was Facebook, followed by Twitter. Of the 56 users, 71% had felt suicidal at some point in their lifetime. Twenty-two of these respondents indicated using social media for a suicide-related problem, and reporting that the benefit of doing so was the ability to express feelings (91%), receive support from other people (82%), help others (73%) and talk with others that have a similar issue (73%). The majority of respondents (68%) indicated never utilising social media as a means to seek out professional mental health services. The remaining reported ‘almost never’ or ‘occasionally’. Of these, Facebook and Twitter were the most commonly used. Twenty-five percent of the total respondents indicated having a negative experience when they had used social media as a means of seeking help or expressing their emotions. Comparisons between groups found that all unanimously agreed social media is an important form of providing information and promoting
suicide prevention activities; however, opinions significantly differed in terms of the importance placed on the type of suicide prevention activities provided. Individual users believed that social media would be beneficial as a means to assess risk and provide mutual support, organisations emphasised sharing experiences and providing mutual support. Further, researchers highlighted social media’s usefulness in raising awareness and advocacy. Despite this, all respondents expressed concerns regarding potential risks that may arise from using social media as a means of suicide prevention. The most evident concern was the ability of administrators to operate interventions online in a safe and effective manner. However, all respondents believed that the perceived benefits of social media-based interventions outweighed the potential risks.

Implications: This study showed that social media was recognised by the three groups of stakeholders as a potentially a useful platform for delivering suicide prevention activities to those who are either at risk of, or bereaved by, suicide. Benefits reported include the ability for people to express their emotions in a supportive and safe environment as well as receive support from others with similar experiences. Other benefits identified by respondents were the potential for others to provide help to individuals in need of support and/or to intervene quickly if a person expresses suicidal feelings or posts a suicide note online. However, respondents raised concerns that site moderators were not sufficiently skilled to provide appropriate and effective support to at-risk persons. Despite the majority of respondents reporting that the perceived benefits outweigh the perceived risks, there is still a need for future research to ensure social media-based interventions are efficient and safe. There is a need for clear and safe protocols and evidence-based guidelines and subsequent training for these support workers. Currently in Australia, work is being done to develop such guidelines, aiming to enhance and ensure safety when delivering suicide prevention activities via the internet. Ethical standards and protocols need to be developed and implemented to ensure that such interventions are delivered safely.

Endnotes
2. Young and Well Cooperative Research Centre, Hunter Institute of Mental Health (2013). Outcomes report: National roundtable on social media, suicide prevention and young people in Australia. Young and Well Cooperative Research Centre and the Hunter Institute of Mental Health. Melbourne, Australia
Testing the anniversary reaction: Causal effects of bereavement in a nationwide follow-up study from Sweden

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European Journal of Epidemiology 30, 239-247.

Lingering grief associated with the death of a loved one has been hypothesized to precipitate acute health events among survivors on anniversary dates. We sought to study excess mortality risk in parents around the death date and birth date of a deceased child as an indication of a “bereavement effect”. We conducted a population based follow-up study using Swedish registries including links between children and parents. All biological and Swedish-born parents who experienced the death of a minor child born were observed during the period 1973-2008 (n = 48,666). An increased mortality risk was found during the week of a child’s death among mothers who lost a child aged 0-17 years (SMRR = 1.46, 95 % CI 0.98-2.17). The association was stronger among mothers who lost a child aged 1-17 years (SMRR = 1.89, 95 % CI 0.97-3.67) as compared to those who lost an infant (SMRR = 1.29, 95 % CI 0.78-2.12). Cardiovascular diseases and suicides were overrepresented as causes of death in mothers who died around the anniversary. We found no significant increase in the mortality risk around the date of child’s birth, nor any suggestion of excess mortality risk among fathers, but rather a depression of paternal death (SMRR = 0.60, 95 % CI 0.34-1.03). Our study indicates an anniversary reaction among mothers who lost a young child. These results suggest that bereavement per se could have an effect on health and mortality which should be acknowledged by public health professionals working with bereaved people.

Comment

Main findings: The death of a child is considered one of the most stressful and traumatic life events a person may encounter1. Previous research has found a higher risk of psychiatric and physical problems and disorders following the death of a child and around the anniversary of the death of a child2. Studies have found death of a young child increases parental morbidity from all causes1. Further, grief persists for the remainder of the parent’s life. Anniversaries, such as the deceased’s death date and birth date, may capture a “bereavement effect” among people who have experienced the death of a loved one. However, it is not known whether increased parental mortality risk subsequent to a child’s death reflects a true bereavement effect or whether it is caused by confounding factors (e.g., genetic or biological similarity). One method to overcome these confounds is to analyse mortality around anniversaries or other significant dates such as birthdays, which can be considered to reflect bereavement reactions to the child’s death. This study sought to examine whether there is an increased mortality risk in parents around the anniversary of a deceased child’s death and birth. Data were collected from multiple-linked Swedish registries and consisted of all children born in Sweden from 1973 to 2008, with biological linkage to parents born in Sweden. Parents who
died within 28 days after the child’s death were excluded to ensure that the mortality of members of the same family was not related to the same cause (e.g., an accident). A total of 26,087 mothers and 22,579 fathers were included (N = 48,666). Control variables found to generally influence the death risk were standardised: parent’s age, observation year, time since child’s death, mother’s age at delivery, child’s sex, child’s birth order, number of siblings, multiplicity, and main cause of child’s death. Standardised mortality ratios rates (SMRR) were estimated, which is the ratio of the parental mortality rate during the specific period referred to and the expected number of parental deaths if deaths were equally distributed over the calendar year. Mothers and fathers were analysed separately as an elevation in mortality risk around anniversary could be documented only for mothers.

Results revealed that parents who had lost a child were found to have an elevated mortality risk at the anniversary of the child’s death (mortality rate 1.26). Closer inspection revealed an anniversary effect was only found in mothers and is primarily related to the anniversary of death. Bereaved mothers had twice (2.3) the mortality rate as would be expected on the death date (if deaths were equally distributed over the calendar year). There was also an elevation in the maternal mortality rate about one to three days before and after the anniversary. There was an increased mortality risk during the week of a child’s death among mothers who lost a child aged zero to 17 years (SMRR = 1.46, 95% CI 0.98-2.17). This association was stronger among mothers who lost a child aged one to 17 years (SMRR = 1.89, 95% CI 0.97-3.67) as compared to those who lost an infant (less than one year old) (SMRR = 1.29, 95% CI 0.78-2.12), which may reflect stronger attachment between mother and child increasing with age. Moreover, there was no significant increase in the mortality risk around the date of child’s birth. Excess mortality in mothers was related to child deaths from external causes if the child died at non-infant age and with child deaths from sudden infant death syndrome (SIDS) if the child died at infant age. The authors suggest that unexpected deaths due to unnatural causes (such as SIDS or injuries) could be more traumatic for parents and thus contribute to complicated and prolonged grief, which could in turn lead to higher risk of depression and psychiatric disorders. Cardiovascular diseases and suicides were overrepresented as causes of deaths in mothers who died around an anniversary. There was no increase in the mortality risk around the date of child’s birth, nor among fathers. No evidence was found supporting an anniversary effect among fathers, but rather an attenuation of the mortality effect.

**Implications:** As far as the authors are aware, this study is the first to use large national registry data to demonstrate a higher mortality rate among mothers around anniversary dates (e.g., birth and death dates). However, a limitation of this study was that this set of data did not include information on personal and relational characteristics (i.e., medical records, information on shared social environment, health behaviours, and psychological state) which could potentially confound the results. The finding of a bereavement effect for mothers around the anniversary of a child, suggests greater distress and grief and thus more detrimental
health consequences compared to fathers. The decreased paternal mortality risk experienced by fathers around the anniversary of child’s death needs to be further explored. The authors suggest that future work should investigate the possible underlying mechanisms of the bereavement effect, such as: higher parental depression rates, deterioration of health behaviours, and onset of acute psychophysiological stress mechanisms. The findings from this study will better inform the practice of clinicians, public health professionals and resources provided by grief and bereavement support services (e.g., Australian Centre for Grief and Bereavement, Queensland Government Grief and Bereavement support services and the Standby Response Service).

Endnotes
Suicide risk after nonfatal self-harm: A national cohort study, 2000-2008

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Objective: To study the short-term risk of suicide after nonfatal deliberate self-harm and its association with coexisting mental disorders and with the method of self-harm used.

Method: We used linked Swedish national registers to design a cohort study with 34,219 individuals (59% females) who were admitted to hospital in 2000-2005 after deliberate self-harm (ICD-10-defined). They were followed for 3-9 years. The studied outcome was completed suicide; Cox regression models yielded hazard ratios (HRs) for suicide risk. Temporal patterns were plotted with Kaplan-Meier survival curves, calculated separately for each mental disorder and for the method used at the previous self-harm event.

Results: 1,182 subjects committed suicide during follow-up (670 males and 512 females). Coexisting bipolar disorder (in males, adjusted HR = 6.3; 95% confidence interval [CI], 3.8-10.3; in females, adjusted HR = 5.8; 95% CI, 3.4-9.7) and nonorganic psychotic disorder (in males, adjusted HR = 5.1; 95% CI, 3.5-7.4; in females, adjusted HR = 4.6; 95% CI, 2.8-7.7) implied the highest risk of suicide after previous self-harm. Hanging as index self-harm method was a strong predictor of later suicide in both males (adjusted HR = 5.3; 95% CI, 4.0-7.0) and females (adjusted HR = 4.5; 95% CI, 2.5-8.1). Of those with bipolar disorder who used a method other than poisoning at the index event, 20.4% had already committed suicide after 3-9 years.

Conclusion: Individuals with severe mental disorders (affective and psychotic disorders) have a poor prognosis in the first years after hospital admission due to self-harm. The risk of subsequent suicide is higher after attempts by hanging and other self-injury methods (vs self-poisoning). Aftercare for those with a self-harm episode should focus on treatment of the mental disorder present at the time of the episode.

Comment

Main findings: Non-fatal self-harm (NFSH) is one of the most frequent reasons for hospital admission and the strongest risk factor for subsequent suicide. The aim of this study was to evaluate the risk of suicide after nonfatal self-harm, focusing on the first few years after the act. It was hypothesised that suicide risk would be greater in those with coexisting severe psychiatric disorder and if methods other than poisoning had been used. This Swedish population-based nationwide cohort study used data from four longitudinal population registers. A total of 34,219 individuals aged 10 years or older, admitted into hospital due to self-harm between 2000 and 2005 (males: n = 13,879, mean age = 40.5 years, SD = 19.2; females: n = 20,340, mean age = 36 years, SD = 20.0) were included in this study.
Total follow-up time was three to nine years (mean = 5.3, SD=2.1; median = 5.3). Individuals were followed from inclusion to suicide or death by event with undermined intent, death due to causes other than suicide, first emigration or end of follow-up. The outcome variable was suicide during the entire follow-up. Three key explanatory variables were also recorded: mental disorder at baseline, method used at index event, and combinations of mental disorder and methods. Given that the subsequent risk of suicide is lower after self-poisoning than after other methods of self-harm, methods were analysed individually, but also divided into the two categories of self-poisoning and self-injury (other methods).

Of the total cohort, 1,182 suicides occurred (670 males, 512 females), and of these 75% had used a self-poisoning method and the remaining used other methods of self-harm. Differences in risk and suicide between disorders were similar in males and females. Individuals with bipolar disorder, followed by nonorganic psychotic disorder and those with moderate to severe depression had the highest rate of suicide. There were 30 suicides among males with substance use disorder coexisting with any affective disorder (n = 287; HR = 4.6; 95% CI, 3.0-7.0). Among females, there were 12 suicides in this category (n = 348; HR = 2.8; 95%CI, 1.5-5.3). Hanging was the strongest predictor of later suicide in both males and females. Bipolar disorder was found to be associated with the highest risk of suicide in the first years after self-harm in both males and females. In total, 20.4% of all males and females with bipolar disorder who used a self-injury method at the index event later died by suicide. Consistent with the literature, methods of previous self-harm were related to eventual suicide, with higher risks associated with self-injury methods than for self-poisoning.

**Implications:** The results show that despite improvements in psychiatric treatment after nonfatal deliberate self-harm, the prognosis is still poor for those with coexisting severe mental disorders, particularly within the first years after nonfatal self-harm event. This reinforces the importance of health care professionals conducting a thorough risk assessment following presentation of non-fatal deliberate self-harm. This is especially the case when assessing and treating individuals suffering from an affective and/or psychotic disorder. Findings should be interpreted with caution, however, as data collected in this study are only from those who have been admitted to inpatient care after a self-harm act and therefore might not generalise to other categories of self-harm patients. It is also difficult to estimate levels of underreporting, particularly for the prevalence of personality disorders. Nevertheless, the findings from this study are important, helping to inform responsible suicide risk assessment.

**Endnotes**

Suicide rates in five-year age-bands after the age of 60 years: The international landscape

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Aging and Mental Health. Published online: 22 June 2015. doi: 10.1080/13607863.2015.1055552

Background: There is paucity of studies examining suicide rates in narrow five-year age-bands after the age of 60 years. This study examined suicide rates in eight five-year age-bands between the age of 60 and 99 years because this will allow more precise comparison between the young old (60-79 years) and the oldest old (80+ years) age groups.

Methods: Data on the number of suicides (International Classification of Diseases - ICD-10 codes, X60-84) in each of the eight five-year age-bands between the age-bands 60-64 years and 95-99 years in both gender for as many years as possible from 2000 were ascertained from three sources: colleagues with access to national data, national statistics office websites and email contact with the national statistics offices. The population size for the corresponding years and age-bands was estimated for each country using data provided by the United Nations website.

Results: In men, suicide rates continued to increase for each of the seven five-year age-bands from 60-64 years to 90-94 years age-band, and then declined slightly for the 95-99 year age-band. In women, suicide rates continued to increase for each of the six five-year age-bands from 60-64 years to 85-89 years age-bands, and then declined slightly for the 90-94 years and 95-99 years age-bands.

Conclusions: The overall global suicide rates for each of the eight five-year age-bands are sufficiently large for them to constitute a public health concern. This is especially important given the ongoing rise in the elderly population size and the paucity of data on risk and protective factors for suicide in the five-year age-bands after the age of 60 years.

Comment

Main findings: Suicide is a major cause of death in older adults worldwide. Little is known about the overall global suicide rates in narrow five-year age-bands after the age of 60 years. The aim of this study was to examine suicide rates in eight five-year bands between the age of 60 and 99 years because this will allow more precise comparison between the young old (60-79 years) and the oldest old (80+ years). Data on the number of suicides (International Classification of Diseases - ICD-10 codes, X60-84) in each of the eight five-year age-bands between the age-bands 60-64 years and 95-99 years, for as many years as possible from 2000 onwards for men and women were obtained from three sources: colleagues with access to national data, national statistics office websites and email contact with the national statistics offices. Population size for the corresponding years and age-bands was estimated for each country using data provided by the United Nations website. The numbers of suicide in each of the five-year age-bands were summarised across countries.
(N=13) and calendar years to produce an overall global composite figure for 2000-2012. Suicide rate for each of the eight five-year age-bands was calculated by dividing the total number of suicides with the corresponding population size for each five-year age-band.

Results revealed that irrespective of the country, suicide rates are fairly consistent in the younger age bands in men and women. In men, suicide rates continued to increase for each of the seven five-year age-bands from 60-64 years through to 90-94 years age-band, then declined slightly for the 95-99 year age-band. In women, suicide rates continued to increase for each of the six five-year age-bands from 60-64 years through to 85-89 years age-bands, and then declined slightly for the 90-94 years and 95-99 years age-bands; and continued to decline in the 100+ years age bands.

**Implications:** This is the first study to estimate an overall global suicide rate for each of the eight five-year age-bands between 60-64 years and 95-99 years, providing a global snapshot of suicide rates for older adults. However, data on suicide rates in cross-national studies such as this should be viewed with caution as data were not available from all countries, data for suicides were available for only 51 countries for the four age-bands 60-64 years to 75-79 years, and for progressively fewer countries for the subsequent older five-year age-bands. Hence, the validity of the data is unclear. In addition, the legal criteria for suicide may vary between countries, some countries have poor registration facilities, and cultural and religious factors and stigma attached to suicide may lead to under-reporting of suicides. Nevertheless, the overall global suicide rates for each of the eight five-year age-bands are large enough to constitute older adult suicide as a public health concern. This is especially important given the global increase in the older adult population and the lack of data on risk and protective factors for suicide in the five-year age-bands after the age of 60 years. The authors propose three important directions for future research: 1) continue to ascertain data on suicides in the narrower five-year age-bands for 60 years+ from more countries; 2) identify the pattern of age-associated trends in suicide rates using suicide rate data for five-year age-bands in individual countries; and 3) compare and contrast suicide rates in the narrower five-year age bands after the age of 60 years between different countries, and then compare and contrast the prevalence of known risk factors and the availability of treatment between countries. Future research in this important area may assist in the creation of more effective training guidelines and manuals for suicide risk assessments and age-group targeted interventions and treatments.

**Endnotes**


An investigation of neighborhood-level social, economic and physical factors for railway suicide in Victoria, Australia

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Journal of Affective Disorders 183, 142-148, 2015

**Background:** This study investigates the associations between railway suicide and neighborhood social, economic, and physical determinants using postcode-level data. It also examines whether the associations are influenced by having high concentration of high-risk individuals in a neighborhood area.

**Methods:** Railway suicide cases from Victoria, Australia for the period of 2001-2012, their age, sex, year of death, usual residential address and suicide location were obtained from the National Coronial Information System. Univariate negative binomial regression models were used to estimate the association between railway suicide and neighborhood-level social, economic and physical factors. Variables which were significant in these univariate models were then assessed in a multivariate model, controlling for age and sex of the deceased and other known confounders.

**Results:** Findings from the multivariate analysis indicate that an elevated rate of railway suicide was strongly associated with neighborhood exposure of higher number of railway stations (IRR=1.30 95% CI=1.16-1.46). Other significant neighborhood risk factors included patronage volume (IRR=1.06, 95% CI=1.02-1.11) and train frequency (IRR=1.02, 95% CI=1.01-1.04). An increased number of video surveillance systems at railway stations and carparks was significantly associated with a modest reduction in railway suicide risk (IRR=0.93, 95% CI=0.88-0.98). These associations were independent of concentration of high-risk individuals.

**Limitations:** Railway suicide may be under-reported in Australia.

**Conclusions:** Interventions to prevent railway suicide should target vulnerable individuals residing in areas characterized by high station density, patronage volume and train frequency.

**Comment**

**Main findings:** Railway suicide is highly lethal with up to 94% of attempts being fatal\(^1\). Previous research has largely focused on the descriptive epidemiology and identification of individual risk factors to rail-related suicides and relatively few have explored the socio-environmental factors (e.g., socio economic deprivation, high unemployment, divorce)\(^2\). This study aimed to investigate the ecological associations between railway suicide and a range of neighbourhood social, economic and physical factors, and to determine whether these associations were a product of contextual effects (i.e. the impacts of area characteristics on individuals) or compositional effects (i.e., concentration of high-risk individuals). This was a retrospective study using post-code level data from Victoria, Australia. Railway suicide data were obtained from the National Coronial Information
System (NCIS). Cases were excluded if they: 1) were still under investigation at 31 October, 2014 (when the data were extracted for analysis); 2) had an unknown place of usual residence; 3) had a postcode of usual residence located outside Victoria; or 4) died after being hit by a tram. For cases included, variables such as data on age, sex, year of death, usual residential address and suicide location were extracted and used in the analysis. Univariate regression models were used to estimate the association between railway suicide and neighborhood-level social, economic and physical factors. Variables which were significant in these univariate models were then assessed in a multivariate model, controlling for age and sex of the deceased and other known confounders. During 2001-2012, 334 railway suicides in Victoria occurred and were included in this study (accounting for 70.5% of all rail-related deaths). The majority of suicides occurred in an urban area (over 90%) and on the open track (67.4%) (i.e., between a station and a road/pedestrian level crossing). Seventy per cent of suicides took place near where the deceased lived (less than five kilometers, and less than a 30 minute walk).

Univariate analyses revealed that there was a significant association between an increased risk of railway suicide and higher level of social fragmentation in a neighborhood area (IRR=1.08, 95% CI=1.04–1.12). Specifically, a higher proportion of lone persons (IRR=1.05, 95% CI=1.02–1.07), persons in rented accommodation (IRR=1.01, 95% CI=1.00–1.02), and unmarried persons (IRR=1.07, 95% CI=1.05–1.09) were a significant risk factor for railway suicide. A significant association was observed between higher proportion of unemployment and higher risk of suicide (IRR=1.05, 95% CI=1.01-1.09). Higher level of school completion was also significantly associated with an increased risk of railway suicide (IRR=0.99, 95% CI=0.98-0.99). A higher density of alcohol outlets was also found to be significantly associated with higher risk of suicide (IRR=1.01, 95% CI=1.00-1.02).

Neighbourhood context was found significantly associated with railway suicide risk after adjusting for the concentration of high-risk individuals (i.e., percentage of males and percentage of people aged between 15 and 44 years) in each postcode. Multivariate analyses revealed that an elevated rate of railway suicide was strongly associated with neighborhood exposure of higher number of railway stations (IRR=1.30 95% CI=1.16-1.46). Other significant neighborhood risk factors included patronage volume (IRR=1.05, 95% CI=1.01 -1.10) and train frequency (IRR=1.02, 95% CI=1.01-1.04).

Implications: This is the first known study to investigate railway suicide risk and its association with a number of neighbourhood socio-economic and environmental factors. The study sought to determine whether associations were a product of contextual effects or compositional effects (i.e., the concentration of high-risk individuals). Conducted in Victoria, Australia, these findings can be used to inform railway suicide prevention practices in Australia; however, railway suicides may be under-reported due to coronial delays and misclassification of suicides as other causes of death (e.g., “undetermined” or “unintentional”). Findings from this study suggest that interventions should target vulnerable individu-
als residing in areas characterised by high station density, patronage volume and train frequency to reduce the risk of railway-suicide. There is some evidence of effectiveness for interventions to reduce suicides at suicide hotspots including increasing surveillance or installing fencing along railway tracks within high-risk neighborhoods\(^3\). Findings from this study would also be helpful to organizations such as TrackSAFE Foundation\(^4\), as they aim to reduce injuries and fatalities on the rail network resulting from suicide, by improving education and awareness around railways. The TrackSAFE Foundation provides education material that is readily available to the public, directed at children, teachers, parents and rail staff.

**Endnotes**


Suicide-bereaved individuals’ attitudes toward therapists
Ward-Ciesielski EF, Wielgus MD, Jones CB (USA)
Crisis 36, 135-141, 2015

**Background:** Suicide-bereaved individuals represent an important group impacted by suicide. Understanding their experiences following the suicide of a loved one is an important research domain, despite receiving limited attention. Although suicide-bereaved individuals may benefit from mental health treatment, their attitudes toward therapy and therapists are poorly understood.

**Aims:** The present study aimed to understand the extent to which bereaved individuals’ attitudes toward therapy and therapists are impacted by whether their loved one was in therapy at the time of death.

**Method:** Suicide-bereaved individuals (N = 243) from the United States were recruited to complete an online survey about their experience with and attitudes toward therapy and therapists following the suicide of a loved one.

**Results:** Bereaved individuals whose loved one was in therapy at the time of death (N = 48, 19.8%) reported more negative and less positive attitudes toward the treating therapist than those whose loved one was not in therapy at the time of death (N = 81, 33.3%) or whose loved one was never in therapy/the deceased’s therapy status was unknown (N = 114, 46.9%).

**Conclusion:** The deceased’s involvement with a therapist appears to be an important factor impacting the experience of bereaved individuals and should be considered when attempting to engage these individuals in postvention.

**Comment**

**Main findings:** Suicide places a tremendous burden on the family members and friends left behind. Although suicide-bereaved individuals may benefit from therapy, few actually seek help. It is important to understand the unique experiences of those bereaved by suicide in order to identify barriers to treatment and to develop appropriate therapeutic approaches. This study aimed to expand upon previous research that seeks to understand the experiences of suicide-bereavement, by comparing the attitudes of suicide-bereaved individuals toward the therapist treating their loved one (in therapy at time of death vs. not in therapy at time of death). Based on past research, it was hypothesized that: 1) bereaved individuals’ attitudes toward the therapist treating their loved one would be negatively impacted by whether the loved one was in therapy at the time of death; and 2) bereaved individuals whose loved one had never been in therapy would have less negative attitudes than those whose loved one was either in therapy at the time of death or those whose loved one was no longer in therapy at the time of death. Other factors such as the bereaved individual’s relationship to the loved one, emotional closeness, and the bereaved individual’s education level were also examined.
Participants were recruited nationally via suicide survivor and bereavement support forums, blogs and social media websites (i.e., Facebook and LinkedIn). A total of 256 suicide-bereaved participants voluntarily completed the online survey (89% female; mean age = 44.69, SD = 12.96, range = 20–82 years). The mean time since the suicide death was 5.15 years (SD = 6.46 years, range = 1 month to 55 years). A self-report questionnaire was used to collect information about their experience with, and attitudes towards, therapy and therapists following the suicide of a loved one. Results revealed a significant difference in negative attitudes toward the therapist treating the loved one immediately following their death (M = 3.25, SD = 1.27) and the current negative attitudes (M = 2.92, SD = 1.21) toward the therapist (p = .002). Interestingly, there was no significant difference in positive attitudes towards the therapist treating loved one immediately following their death and the current positive attitudes toward the therapist. This suggests that while bereaved individuals’ positive attitudes toward the therapist treating their loved one do not change over time, bereaved individuals’ negative attitudes and feelings decrease over time. Moreover, bereaved individuals whose loved one was in therapy at the time of death (N = 48, 19.8%) reported more negative and less positive attitudes towards the therapist than those whose loved one was not in therapy at the time of death (N = 81, 33.3%) or whose loved one was never in therapy or the deceased’s therapy status was unknown (N = 114, 46.9%). There was no difference in general feelings toward therapy between the groups. This suggests that having a loved one in therapy prior to when they die by suicide has the most negative impact on bereaved individual’s views of the therapist, but not necessarily of therapy.

**Implications.** These findings suggest that bereaved individuals have not lost confidence in therapy overall. Moreover, bereaved individuals whose loved one had never been in therapy rated their agreement with the statements concerning feelings of security, gratefulness, and reassurance toward the therapist more highly than those whose loved one had ever been in therapy. These findings have implications for understanding suicide-bereaved individuals seeking treatment. For instance, health professionals providing postvention for bereaved individuals whose loved one was in therapy at the time of death may address feelings of blame, anger and mistrust towards therapist before moving into therapy. This would ensure the effectiveness of therapy is not impeded by feelings of resentment towards the therapist that treated their loved one. These findings can also inform nongovernment organisations such as Lifeline – as they provide postvention services and resources for suicide bereaved individuals. Nevertheless these findings should be interpreted with caution as the survey was self-response, and may be susceptible to response biases. Further, the method of recruitment was a self-selected sample who self-identified as bereaved individuals, and used online support forums. Hence, these findings cannot be generalised to those who do not seek help via forums, or do not identify as suicide-bereaved individuals. Future research should aim to investigate the extent to which holding negative attitudes towards therapists and/or therapy is a barrier to treatment in the suicide-bereaved population.
Endnotes


Recommended Readings
Panic symptoms and elevated suicidal ideation and behaviors among trauma exposed individuals: Moderating effects of post-traumatic stress disorder

Albanese BJ, Norr AM, Capron DW, Zvolensky MJ, Schmidt NB (USA)

Comprenensive Psychiatry, 61, 42-48, 2015

Panic attacks (PAs) are highly prevalent among trauma exposed individuals and have been associated with a number of adverse outcomes. Despite high suicide rates among trauma exposed individuals, research to date has not examined the potential relation between panic symptoms and suicidal ideation and behaviors among this high risk population. The current study tested the association of panic with suicidal ideation and behaviors among a large sample of trauma exposed smokers. Community participants (N=421) who reported a lifetime history of trauma exposure were assessed concurrently for current panic, suicidal ideation and behaviors, and psychiatric diagnoses. Those who met criteria for a current panic disorder diagnosis were removed from analyses to allow for the assessment of non-PD related panic in line with the recent addition of the PA specifier applicable to all DSM-5 disorders. Findings indicated that panic symptoms were significantly associated with suicidal ideation and behaviors beyond the effects of depression and number of trauma types experienced. Further, post-traumatic stress disorder (PTSD) diagnostic status significantly moderated this relationship, indicating that the relationship between panic and suicidal ideation and behaviors is potentiated among individuals with a current PTSD diagnosis. This investigation suggests that panic symptoms may be a valuable clinical target for the assessment and treatment of suicidal ideation and behaviors among trauma exposed individuals.

The effects of nonsuicidal self-injury on parenting behaviors: A longitudinal analyses of the perspective of the parent

Baetens I, Claes L, Onghena P, Grietens H, Van Leeuwen K, Pieters C, Wiersema JR, Griffith JW (Flanders)

Child and Adolescent Psychiatry and Mental Health 9, 24, 2015

Background: The present study is the first to examine predictors and consequences of nonsuicidal self-injury (NSSI) in adolescence using parent-reported data in a longitudinal design. Across three time points, we examined the reciprocal effects of parent-reported parenting behaviors as they are related to adolescents’ NSSI.

Methods: The present study is a three-wave prospective study in a large sample of community adolescents and their parents. At time 1 (age 12), the sample consisted of 1396 adolescent reports and 1438 parent reports. Time 2 (age 13) included 827 adolescent and 936 parent reports. At time 3 (age 14), 754 adolescent and 790 parent reports were obtained. Engagement in NSSI (adolescent report) was determined by an affirmative response to the item ‘Have you intentionally injured yourself (e.g. cut, burn, scratch) this year, without the intent to die?’. Parental
awareness of NSSI at age 13 and 14 was examined using a single-item screening question. Parenting behaviors were examined by the parent versions of the Parental Behavior Scale.

**Results:** Results showed that although NSSI was reported by 10% of the adolescents, only 3% of the parents were aware of the NSSI behaviors of their children. Cross-lagged analyses showed a reciprocal relationship between NSSI and parenting behaviors over time. We found a significant effect of both positive parenting and controlling parenting on the presence of NSSI at time 2. But vice versa NSSI also has an effect on parenting behaviors over time. Results showed that NSSI at time 1 has an impact on controlling parenting behaviors, namely punishment at time 2. NSSI at time 2 showed an impact on parent’s perception of positive parenting, parental rule setting, punishment and harsh punishment.

**Conclusions:** The present study examined predictors and consequences of NSSI in a longitudinal design, and emphasized the importance of examining reciprocal interactions between NSSI and parenting behaviors. Furthermore, it is the first study to examine parent-reported data in a longitudinal design and gives insight into parents’ perspectives.

**The accuracy of suicide statistics: Are true suicide deaths misclassified?**

Bakst SS, Braun T, Zucker I, Amitai Z, Shohat T (Australia, USA)

*Social Psychiatry and Psychiatric Epidemiology. Published online: 10 July 2015. doi: 10.1080/13607863.2015.1063109*

**Purpose:** Official suicide statistics often produce an inaccurate view of suicide populations, since some deaths endorsed as being of uncertain manner are in fact suicides; it is common, therefore, in suicide research, to account for these deaths. We aimed to test the hypothesis that non-suicide death categories contain a large potential reservoir of misclassified suicides.

**Methods:** Data on undetermined intent and ill-defined death causes, and official suicide deaths recorded in the district of Tel Aviv for the years 2005 and 2008 were extracted. Based on supplementary data, cases regarded as probable suicides (“suicide probable”) were then compared with official suicides (“suicide verdicts”) on a number of socio-demographic variables, and also in relation to the mechanism of death.

**Results:** Suicide rates were 42% higher than those officially reported after accounting for 75 probable suicides (erroneously certified under other cause-of-death categories). Both death classifications (“suicide probable” and “suicide verdicts”) had many similarities, significantly differing only with respect to method used. Logistic regression confirmed that the most powerful discriminator was whether the mechanism of death was considered “less active” or “more active” (p < 0.001). Indeed, deaths among the less active group were 4.9 times as likely to be classified as “suicide probable” than were deaths among the more active group.
Conclusions: Caution is needed when interpreting local area data on suicide rates, and undetermined and ill-defined deaths should be included in suicide research after excluding cases unlikely to be suicides. Improving suicide case ascertainment, using multiple sources of information, and uniform reporting practices, is advised.

Suicide ideations, suicide attempts, and completed suicide in persons with pathological gambling and their first-degree relatives

Black DW, Coryell W, Crowe R, McCormick B, Shaw M, Allen J (USA)
Suicide and Life-Threatening Behavior. Published online: 6 April 2015. doi: 10.1111/sltb.12162

We examined the relationship between suicidal ideations and attempts in 95 probands with pathological gambling (PG), 91 controls, and 1075 first-degree relatives. The results were analyzed using logistic regression with generalized estimating equations. Thirty-four PG probands (35.8%) and 4 controls (4.4%) had attempted suicide (OR = 12.12, p < .001); in 13 probands, the attempt occurred before PG onset. Lifetime suicidal ideations occurred in 60 PG probands (63.2%) and 12 controls (13.2%) (OR = 11.29, p < .001). Suicidality in PG probands is a marker of PG severity and is associated with greater psychiatric comorbidity. Offspring of PG probands had significantly higher rates of suicide attempts than control offspring.

Are there linguistic markers of suicidal writing that can predict the course of treatment? A repeated measures longitudinal analysis

Brancu M, Jobes D, Wagner BM, Greene JA, Fratto TA (USA)
Archives of Suicide Research. Published online: 28 July 2015. doi: 10.1080/13811118.2015.1040935

Objective: The purpose of this pilot study was to predict resolution of suicidal ideation and risk over the course of therapy among suicidal outpatients (N = 144) using a novel method for analyzing Self- verses Relationally-oriented qualitative written responses to the Suicide Status Form (SSF).

Methods: A content analysis software program was used to extract word counts and a repeated measures longitudinal design was implemented to assess improvement over time.

Results: Patients with primarily Relationally-focused word counts were more likely to have a quicker suicide risk resolution than those with more Self-focused word counts (6-7 sessions versus 17-18 sessions).

Conclusion: Implications of these data are discussed, including the potential for enhancing treatment outcomes using this method with individuals entering treatment.
Intensive case management for high-risk patients with first-episode psychosis: Service model and outcomes

Lancet Psychiatry 2, 29-37, 2015

Background: The first episode of psychosis is a crucial period when early intervention can alter the trajectory of the young person’s ongoing mental health and general functioning. After an investigation into completed suicides in the Early Psychosis Prevention and Intervention Centre (EPPIC) programme, the intensive case management subprogramme was developed in 2003 to provide assertive outreach to young people having a first episode of psychosis who are at high risk owing to risk to self or others, disengagement, or suboptimal recovery. We report intensive case management model development, characterise the target cohort, and report on outcomes compared with EPPIC treatment as usual.

Methods: Inclusion criteria, staff support, referral pathways, clinical review processes, models of engagement and care, and risk management protocols are described. We compared 120 consecutive referrals with 50 EPPIC treatment as usual patients (age 15-24 years) in a naturalistic stratified quasi-experimental real-world design. Key performance indicators of service use plus engagement and suicide attempts were compared between EPPIC treatment as usual and intensive case management, and psychosocial and clinical measures were compared between intensive case management referral and discharge.

Findings: Referrals were predominately unemployed males with low levels of functioning and educational attainment. They were characterised by a family history of mental illness, migration and early separation, with substantial trauma, history of violence, and forensic attention. Intensive case management improved psychopathology and psychosocial outcomes in high-risk patients and reduced risk ratings, admissions, bed days, and crisis contacts.

Interpretation: Characterisation of intensive case management patients validated the clinical research focus and identified a first episode of psychosis high-risk subgroup. In a real-world study, implementation of an intensive case management stream within a well-established first episode of psychosis service showed significant improvement in key service outcomes. Further analysis is needed to determine cost savings and effects on psychosocial outcomes. Targeting intensive case management services to high-risk patients with unmet needs should reduce the distress associated with pathways to care for patients, their families, and the community.
Comorbid depression and alcohol use disorders and prospective risk for suicide attempt in the year following inpatient hospitalization

*Journal of Affective Disorders* 187, 151-155, 2015

**Objective:** The purpose of this study is to identify predictors of nonfatal suicide attempts in veterans discharged from acute hospitalization with depression and/or alcohol use disorder (AUD) diagnoses. We hypothesized that primary depression confers similar risk for attempt whether or not it is accompanied by secondary AUD, and that a suicide attempt in the prior year would confer greatest risk of the variables studied.

**Method:** Veteran Health Administration (VHA) patients discharged from acute inpatient hospitalization in 2011 with AUD and/or non-bipolar depression diagnoses (N=22,319) were analyzed using information from the computerized record system and national database on suicidal behavior. Proportional hazard regression models estimated unadjusted and adjusted hazard ratios (AHR) and confidence intervals (95% CI) for risk of a nonfatal attempt within one year following discharge.

**Results:** As hypothesized, primary depression with secondary AUD [AHR (95% CI)=1.41 (1.04, 1.92)] and without secondary AUD [AHR (95% CI)=1.30 (1.00, 1.71)] conferred similar prospective risk for attempt (AUD without depression, reference). Although prior suicide attempt was associated with increased risk, acute care in “general psychiatry” during hospitalization [AHR (95% CI)=6.35 (3.48, 13.00)] conferred the greatest risk among the variables studied. Transfer to another inpatient setting reduced risk [AHR (95% CI)=0.53 (0.34, 0.79).

**Limitations:** Analyses were based on administrative data and did not include information on mortality.

**Conclusion:** When primary depression is severe enough to warrant inpatient hospitalization, a secondary diagnosis of AUD may not contribute additional prospective risk for nonfatal attempt. Within VHA, acute psychiatric care during hospitalization is a potential marker for increased risk for nonfatal attempt. Transfer to an additional inpatient setting may reduce risk for nonfatal attempt.
Examination of the population attributable risk of different risk factor domains for suicidal thoughts and behaviors

Bruffaerts R, Kessler RC, Demyttenaere K, Bonnewyn A, Nock MK (Belgium)
Journal of Affective Disorders 187, 66-72, 2015

**Background:** Despite the fact that suicide is an important public health problem, the etiology is still not well understood. Especially lacking is a societal-level approach that takes into account the extent to which several risk factor domains are attributable to new onset of suicidal thoughts and behaviors (STB).

**Methods:** Data stem from a cross-sectional population study of the non-institutionalized adult (18+) population from Belgium (N=2419). The third version of the Composite International Diagnostic Interview (CIDI-3.0) was administered to assess lifetime STB and risk factor domains. Multivariate approaches, expressed in population attributable risk proportions, were used to estimate the proportion of new onset cases of STB related to the occurrence of different risk factors.

**Results:** Approximately 38% of cases of suicidal ideation onset were attributable to mental disorders, 20% to chronic physical conditions, and another 13% to parental psychopathology. Suicide attempts in the general population were attributable to mental disorders (PARP=48%), but attempts among persons with suicidal ideation were unrelated to mental disorders, but rather to trauma (PARP=17%) and childhood adversities (PARP=12%).

**Limitations:** This is an explorative study using multivariate additive general models that generates specific hypotheses on the development of STB onset rather than testing specific pathways in the process of STB.

**Conclusions:** New onset STB is mostly attributable to proximal risk factors such as mental disorders. However, distal risk factors like childhood adversities or trauma also play a considerable role in the new onset of STB, especially in the transition from suicide ideation to suicide attempt.

Prevalence and correlates of suicidal thoughts and suicide attempts in people prescribed pharmaceutical opioids for chronic pain

Clinical Journal of Pain. Published online: 20 August 2015. doi: 10.1097/AJP.0000000000000283

**Objectives:** The main objectives of the paper were (1) to examine the prevalence of suicidality in a large community-based chronic pain sample taking prescribed opioids for chronic pain; and (2) to examine general and pain-specific factors that predict such ideation, and the transition from ideation to making a suicide attempt (ideation-to-action).

**Methods:** Baseline data from the Pain and Opioids IN Treatment (POINT) study with a cohort of 1514 community-based people prescribed opioids for chronic non-cancer pain across Australia.
**Results:** Past 12 month suicidal ideation was reported by 36.5% of the cohort and 16.4% had made a lifetime suicide attempt (2.5% in the last 12 mo), after the onset of their pain condition. Suicidal ideation in the past 12 months was independently associated with a past suicide attempt (AOR 4.82, 95%CI 2.43-9.56) and past 12 month depression (AOR 4.07, 95%CI 1.88-8.78). Only a lower pain-self efficacy score was independently associated with past 12 month ideation-to-action (AOR 0.98, 95%CI 0.88-0.99). Notably, only general suicide risk factors were associated with 12 month suicidal ideation; but for past-year ideation-to-action, pain specific factors also had independent associations.

**Discussion:** The study is one of the first to comprehensively examine general and pain-specific risk factors for suicidality in a large chronic pain sample in which suicidal ideation was common. A low pain self-efficacy score was the only factor independently associated past 12 month ideation-to-action.

**Medical examiner and coroner reports: Uses and limitations in the epidemiology and prevention of late-life suicide**
Cheung G, Merry S, Sundram F (New Zealand)
*International Journal of Geriatric Psychiatry* 30, 781-792, 2015

**Objective:** Late-life suicide is a growing public health concern in many parts of the world. Understanding the contributory factors to completed suicide is essential to inform the development of effective suicide risk assessment and management. The aim of this study is to synthesise the findings in studies that used coroner or medical examiner records to determine these contributory factors.

**Methods:** The databases of Scopus (from 1960), MEDLINE (from 1946) and PsychINFO (from 1806) were searched in August 2013, to identify studies that used coroner or medical examiner records for investigating the epidemiological, sociodemographic characteristics and clinical aspects of late-life suicide.

**Results:** In total, 25 studies were identified. There was a lack of standardisation of variables assessed between studies leading to incomplete datasets in some work. However, a diagnosis of depression was found in 33%, and depressive mood/symptoms in 47% of cases. About 55% had a physical health problem. Terminal illness was associated with a smaller proportion (7.1%) of the cases. Older people were more likely to have had contact with primary care rather than mental health services prior to suicide. **Conclusions:** Despite their limitations, coroner and medical examiner records provide an opportunity for examining suicide epidemiology. Targeting primary care providers where late-life depression and physical illness can be detected and treated is a potential strategy to address late-life suicide.
Characteristics of people dying by suicide after job loss, financial difficulties and other economic stressors during a period of recession (2010-2011): A review of coroners’ records


Journal of Affective Disorders 183, 98-105, 2015

**Background:** Suicide rates increase during periods of economic recession, but little is known about the characteristics of people whose deaths are related to recession, the timing of risk in relation to job loss, the nature of financial stresses and the sources of help individuals used.

**Methods:** We extracted information on social and economic circumstances, mental health and help-seeking from the coroners’ records of 286 people who died by suicide in 2010 and 2011 in four areas of England. We graded each death on a 5-point scale of ‘recession-relatedness’, measuring the extent to which recession, employment and financial problems contributed to the death.

**Results:** Financial and employment-related issues contributed substantially to 38 (13%) of the deaths and were thought to be the key contributing factor in 11 (4%). Individuals whose deaths were thought to be related to the recession were less likely to have previously self-harmed but were more likely to be employed (61% vs. 43%), have financial difficulties (76% vs. 23%) and financial dependents (55% vs. 23%). Amongst the subset of 11 people where financial/employment issues were the key contributory factor, only two (18%) had ever had contact with psychiatric services.

**Limitations:** Details on finances and employment were not systematically recorded by coroners. We found richer information was usually available for people who were living with other people.

**Conclusions:** Financial difficulties, little past psychiatric history, low levels of service contact and having financial dependents were more common in ‘recession-related’ deaths. This suggests that interventions to prevent recession-related rises in suicide should be focused on non-clinical agencies and initiatives.

Effect of social mobility in family financial situation and housing tenure on mental health conditions among south Australian adults: Results from a population health surveillance system, 2009 to 2011

Dal Grande E, Chittleborough CR, Wu J, Shi Z, Goldney RD, Taylor AW (Australia)

BMC Public Health 15, 675, 2015

**Background:** To assess the association of socioeconomic position (SEP), measured by family financial situation and housing tenure in childhood and adulthood, with mental health conditions in adulthood.

**Methods:** Representative cross-sectional population data were collected using a risk factor surveillance system in South Australia, Australia. Each month, a random sample were selected from the Electronic White Pages. Participants aged 25 years and above (n = 10429) were asked about doctor diagnosed anxiety, stress or depression, suicidal ideation, psychological distress, demographic and socioeconomic
factors using Computer Assisted Telephone Interviewing (CATI). Social mobility measures were derived from housing status and perceived financial situation during adulthood and at 10 years of age.

**Results:** The prevalence of psychological distress was 8.1 %, current diagnosed mental health condition was 14.8 % and suicidal ideation was 4.3 %. Upward mobility in family financial situation and housing tenure was experienced by 28.6 % and 19.3 %, of respondents respectively. Downward mobility was experienced by 9.4 % for housing tenure and 11.3 % for family financial situation. In the multi-variable analysis, after adjusting for age, sex, childhood family structure and adult education, downward social mobility and stable low SEP (both childhood and adulthood), in terms of both housing tenure and financial situation, were positively associated with all three mental health conditions.

**Conclusion:** People with low SEP in adulthood had poor mental health outcomes regardless of their socioeconomic circumstances in childhood. Policies to improve SEP have the potential to reduce mental health conditions in the population.

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**Alcohol-related risk of suicidal ideation, suicide attempt, and completed suicide: A meta-analysis**

Darvishi N, Farhadi M, Haghtalab T, Poorolajal J (Iran)

*PLoS One 10, e0126870*

**Background:** Several original studies have investigated the effect of alcohol use disorder (AUD) on suicidal thought and behavior, but there are serious discrepancies across the studies. Thus, a systematic assessment of the association between AUD and suicide is required.

**Methods:** We searched PubMed, Web of Science, and Scopus until February 2015. We also searched the Psycinfo web site and journals and contacted authors. We included observational (cohort, case-control, and cross-sectional) studies addressing the association between AUD and suicide. The exposure of interest was AUD. The primary outcomes were suicidal ideation, suicide attempt, and completed suicide. We assessed heterogeneity using Q-test and I² statistic. We explored publication bias using the Egger’s and Begg’s tests and funnel plot. We meta-analyzed the data with the random-effects models. For each outcome we calculated the overall odds ratio (OR) or risk ratio (RR) with 95% confidence intervals (CI).

**Results:** We included 31 out of 8548 retrieved studies, with 420,732 participants. There was a significant association between AUD and suicidal ideation (OR=1.86; 95% CI: 1.38, 2.35), suicide attempt (OR=3.13; 95% CI: 2.45, 3.81); and completed suicide (OR=2.59; 95% CI: 1.95, 3.23 and RR=1.74; 95% CI: 1.26, 2.21). There was a significant heterogeneity among the studies, but little concern to the presence of publication bias.

**Conclusions:** There is sufficient evidence that AUD significantly increases the risk of suicidal ideation, suicide attempt, and completed suicide. Therefore, AUD can be considered an important predictor of suicide and a great source of premature death.
A systematic review of physical illness, functional disability, and suicidal behaviour among older adults


Aging and Mental Health. Published online: 18 September 2015. doi: 10.1080/13607863.2015.1083945

Objectives: To conduct a systematic review of studies that examined associations between physical illness/functional disability and suicidal behaviour (including ideation, nonfatal and fatal suicidal behaviour) among individuals aged 65 and older.

Method: Articles published through November 2014 were identified through electronic searches using the ERIC, Google Scholar, PsycINFO, PubMed, and Scopus databases. Search terms used were suicid* or death wishes or deliberate self-harm. Studies about suicidal behaviour in individuals aged 65 and older with physical illness/functional disabilities were included in the review.

Results: Sixty-five articles (across 61 independent samples) met inclusion criteria. Results from 59 quantitative studies conducted in four continents suggest that suicidal behaviour is associated with functional disability and numerous specific conditions including malignant diseases, neurological disorders, pain, COPD, liver disease, male genital disorders, and arthritis/arthrosis. Six qualitative studies from three continents contextualized these findings, providing insights into the subjective experiences of suicidal individuals. Implications for interventions and future research are discussed.

Conclusion: Functional disability, as well as a number of specific physical illnesses, was shown to be associated with suicidal behaviour in older adults. We need to learn more about what at-risk, physically ill patients want, and need, to inform prevention efforts for older adults.
Google trends®: Ready for real-time suicide prevention or just a zeta-jones effect? An exploratory study

Fond G, Gaman A, Brunel L, Haffen E, Llorca PM (France)

*Psychiatry Research* 228, 913-917, 2015

Two studies have shown that increasing the consultation of the word “suicide” in the Google search engine was associated with a subsequent increase in the prevalence of suicide attempts. The main goal of this article was to explore the trends generated by a key-word search associated with suicide, depression and bipolarity in an attempt to identify general trends (disorders epidemics in the population/"real events” vs newsworthy advertisement/”media event”). Based on previous studies, the frequency of the search words “how to suicide” and “commit suicide” were analyzed for suicide, as well as “depression” (for depressive disorders) and “bipolar disorder”. Together, these analyses suggest that the search for the words “how to suicide” or “commit suicide” on the Google search engine may be a good indicator for suicide prevention policies. However, the tool is not developed enough to date to be used as a real time dynamic indicator of suicide epidemics. The frequency of the search for the word “suicide” was associated with those for “depression” but not for “bipolar disorder”, but searches for psychiatric conditions seem to be influenced by media events more than by real events in the general population.

Suicide disclosure in suicide attempt survivors: Does family reaction moderate or mediate disclosure’s effect on depression?

Frey LM, Hans JD, Cerel J (USA)

*Suicide and Life-Threatening Behavior. Published online: 29 June 2015. doi: 10.1111/sltb.12175*

Existing literature has found a link between disclosure of a stigmatized identity and improved mental health; however, research on the impact of suicide disclosure to family members is scarce. Suicide attempt survivors (n = 74) in the United States were examined to assess whether family reaction moderates or mediates the relationship between suicide disclosure and subsequent depression symptoms. Family reaction did not moderate but did mediate the relationship between disclosure and depression symptoms while controlling for time since most recent attempt. Higher rates of disclosure predicted more positive family reactions, which in turn predicted less severe depression symptoms. Findings indicate that family members can play an essential role in the recovery process after an attempt occurs, which has important implications for both researchers and clinicians who seek to decrease stigma for attempt survivors while simultaneously decreasing the likelihood of future attempts.
Attitudes of acceptability and lack of condemnation toward suicide may be predictive of post-discharge suicide attempts

Galynker I, Yaseen ZS, Briggs J, Hayashi F (USA)

BMC Psychiatry 15, 87, 2015

**Background:** Suicide attempts (SA) after psychiatric hospitalization continue to be a major cause of morbidity. Implicit measures may enhance our ability to assess suicide risk. In this context, we describe the first use of the Suicide Opinion Questionnaire (SOQ) to identify post-discharge suicide attempters.

**Methods:** Adult psychiatric inpatients admitted for suicidality (N = 91) were administered a battery of measures including the SOQ, and forty were reached and reassessed for SA at two months post-discharge. Exploratory factor analysis (EFA) on items associated with suicidality was performed to identify latent constructs. Linear discriminant analysis (LDA) was used to optimize factor combination for suicide identification. Results were compared with explicit measures of suicidality, and logistic regression was used to control for other risk factors. Finally, a simplified 9-item scale was derived from the results and its performance compared to that of the linear discriminant function.

**Results:** Twenty items differed between patients with and without SA at intake or follow-up. EFA on these identified two factors: suicide attempters indicated greater acceptability and less moral condemnation of suicide. The LDA-derived discriminant function and 9-item scale was significantly sensitive and specific for post-discharge SA.

**Conclusions:** Attitudes of acceptability and lack of condemnation toward suicide may constitute an implicit measure of suicidality that could contribute to risk assessment in a high-risk population.
Swiss prison suicides between 2000 and 2010: Can we develop new prevention strategies based on detailed knowledge of suicide methods?

Gauthier S, Reisch T, Bartsch C (Switzerland)
Crisis 36, 110-116, 2015

Background: Suicide is the leading cause of death in Swiss prisons. The Federal Statistics Office provides numbers but no further details. Previous studies worldwide have focused on identifying suicide risk factors in prisoners, but very few have looked at the methods used in relation to prevention strategies.

Aims: To obtain details of Swiss prison suicides, determine new findings in an international context, and establish prevention strategies based on the information acquired.

Method: Retrospective data analysis of prison suicides extracted from the database of all suicides investigated by Swiss institutes of legal medicine between 2000 and 2010, using a standardized assessment sheet.

Results: Out of 4,885 suicides investigated in the institutes of legal medicine in Switzerland, we identified 50 (1.02%) inmate suicides. Most were unmarried Swiss men, with a median age of 32 years. The two most common methods used were hanging and tricyclic antidepressant overdose. Two died due to self-immolation.

Conclusion: Swiss prison suicides do not differ from those in other countries regarding sociodemographic details and the most common method of hanging. Anchoring devices, even low ones, should be avoided to prevent hanging and medication intake should be monitored. As prisoners use tricyclic antidepressants to die by suicide, we recommend the general monitoring of intake.
Prevalence and effect of cyberbullying on children and young people: A scoping review of social media studies


*JAMA Pediatrics* 169, 770-777, 2015

**Importance:** Social media has had a profound effect on how children and adolescents interact. While there are many benefits to the use of social media, cyberbullying has emerged as a potential harm, raising questions regarding its influence on mental health.

**Objective:** To review existing publications that examine the health-related effects of cyberbullying via social media among children and adolescents.

**Evidence Review:** We searched 11 electronic databases from January 1, 2000, through January 17, 2012 (updated June 24, 2014). Studies were screened by 2 independent reviewers and were included if they reported primary research, described or evaluated the use of a social media tool in the context of cyberbullying, and were conducted with children or adolescents. Data were extracted by 1 reviewer and verified by a second. All studies were assessed by 2 reviewers for methodological quality using the Mixed Methods Appraisal Tool. Results were not pooled owing to heterogeneity in study objectives and outcomes; a narrative analysis is presented.

**Findings:** Thirty-six studies in 34 publications were included. Most were conducted in the United States (21 [58.3%]), sampled middle and high school populations (24 [66.7%]), and included adolescents who were 12 to 18 years of age (35 [97.2%]). The median reported prevalence of cyberbullying was 23.0% (interquartile range, 11.0%-42.6%). Five studies reported inconsistent and/or weak correlations between cyberbullying and anxiety. Ten studies found a statistically significant association between cyberbullying and report of depression. Five studies investigated self-harm or suicidality, with conflicting results. Results indicate that the most common reason for cyberbullying is relationship issues, with girls most often being the recipients. Responses to cyberbullying are most often passive, with a pervasive lack of awareness or confidence that anything can be done.

**Conclusions and Relevance:** There is a consistent relationship across studies between cyberbullying and depression among children and adolescents; however, the evidence of the effect of cyberbullying on other mental health conditions is inconsistent. This review provides important information that characterizes cyberbullying within the context of social media, including attributes of the recipients and perpetrators, reasons for and the nature of bullying behaviors, and how recipients react to and manage bullying behaviors. This information is critical to the development of effective prevention and management strategies.
Objective: Offspring of mothers with depression are a high-risk group for the development of suicide-related behavior. These offspring are therefore a priority for preventive interventions; however, pathways contributing to risk, including specific aspects of offspring psychopathology, remain unclear. The aim of this study was to examine whether offspring symptoms of major depressive disorder (MDD), generalized anxiety disorder (GAD), disruptive behavior disorder (DBD), attention-deficit/hyperactivity disorder (ADHD), and alcohol abuse independently mediate the association between maternal depression and offspring suicide-related behavior.

Method: Data were used from a population-based birth cohort, the Avon Longitudinal Study of Parents and Children (ALSPAC). Three distinct classes of depression symptoms across the mothers’ first 11 years of their child’s life were identified (minimal, moderate, chronic-severe). Offspring psychopathology was assessed at age 15 years and suicide-related behavior at age 16 years. Data were analyzed using structural equation modeling.

Results: There was evidence for increased risk of suicidal ideation in offspring of mothers with chronic-severe depression symptoms in comparison to offspring of mothers with minimal symptoms (odds ratio = 3.04, 95% CI = 2.19, 4.21). This association was independently mediated by offspring MDD, GAD, and DBD symptoms. The same mechanisms were found for offspring of mothers with moderate depression symptoms over time. Results were similar for offspring suicide attempt except for additional evidence of an indirect effect through offspring ADHD symptoms.

Conclusion: Findings highlight that suicide prevention efforts in offspring of mothers with depression should not only be targeted at offspring with MDD; it is also important to consider offspring with other forms of psychopathology.
Lithium in drinking water and suicide mortality: Interplay with lithium prescriptions
Helbich M, Leitner M, Kapusta ND (Austria)
British Journal of Psychiatry 207, 64-71, 2015

**Background:** Little is known about the effects of lithium intake through drinking water on suicide. This intake originates either from natural rock and soil elution and/or accumulation of lithium-based pharmaceuticals in ground water.

**Aims:** To examine the interplay between natural lithium in drinking water, prescribed lithium-based pharmaceuticals and suicide in Austria.

**Method:** Spatial Bayesian regressions for males, females and pooled suicide mortality rates were estimated.

**Results:** Although the expected inverse association between lithium levels in drinking water and suicide mortality was confirmed for males and for total suicide rates, the relationship for females was not significant. The models do not indicate that lithium from prescriptions, assumed to accumulate in drinking water, is related to suicide risk patterns either as an individual effect or as a moderator of lithium levels in drinking water. Gender-specific differences in risk factors and local risk hot spots are confirmed.

**Conclusions:** The findings do not support the hypotheses that lithium prescriptions have measureable protective effects on suicide or that they interact with lithium in drinking water.

Childhood maltreatment and risk of suicide attempt: A nationally representative study
Hoertel N, Franco S, Wall MM, Oquendo MA, Wang S, Limosin F, Blanco C (France)
Journal of Clinical Psychiatry 76, 916-923, 2015

**Background:** Previous research suggests that various types of childhood maltreatment frequently co-occur and confer risk for attempting suicide. However, it is unknown whether the effect of childhood maltreatment on this risk occurs through diverse, specific mechanisms or through a generalized liability, independently of psychopathology. Although these competing explanations have different implications for intervention, they have never been evaluated empirically.

**Method:** Structural equation modeling was used to examine the effect of different types of childhood maltreatment (ie, sexual abuse, physical and emotional abuse and neglect) on suicide attempt risk, and on age at first suicide attempt and repeated suicide attempts among attempters. Analyses controlled for demographic characteristics and DSM-IV Axis I and Axis II disorders. Data were drawn from a nationally representative survey of US adults, the 2004-2005 National Epidemiologic Survey on Alcohol and Related Conditions (N = 34,653).

**Results:** Childhood maltreatment was associated with an increased risk for attempting suicide and an earlier age at first suicide attempt among attempters, independently of psychopathology (P <.005). These associations operated mainly
through the latent variable representing effects shared by the different types of childhood maltreatment, although sexual abuse had an additional, direct effect on the risk of suicide attempt. Childhood maltreatment types were not significantly associated with a history of multiple suicide attempts (all P values >.05).

**Conclusions:** The association between childhood maltreatment and suicide attempt operates mainly through a single broad liability, suggesting that the mechanisms underlying this dimension should be considered as an important therapeutic target for suicide prevention.

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**Professional care as an option prior to self-harm**

Idenfors H, Kullgren G, Salander Renberg E (Sweden)
*Crisis* 36, 179-186, 2015

**Background:** Deliberate self-harm (DSH) is a growing problem among young people and is a major risk factor for suicide. Young adults experiencing mental distress and suicidal ideation are reluctant to seek help, requiring new strategies to reach this group.

**Aims:** The present study explored young people's views of professional care before first contact for DSH, and factors that influenced the establishing of contact.

**Method:** Interviews with 10 young individuals, shortly after they had harmed themselves, were analyzed using qualitative content analysis.

**Results:** The participants emphasized the importance of receiving more knowledge on where to turn, having different help-seeking options, and receiving immediate help. Family and friends were vital for support and making health care contact. The quality of the professional contact was stressed. Several reasons for not communicating distress were mentioned. Two themes were identified: “A need for a more flexible, available and varied health care” and “A struggle to be independent and yet being in need of reliable support.”

**Conclusion:** These findings suggest that easy and direct access to professional help is a decisive factor for young people experiencing psychological problems and that health services must find new ways of communicating information on seeking mental health help.
Improving national data systems for surveillance of suicide-related events data and surveillance task force of the national action alliance for suicide prevention


**Background:** Describing the characteristics and patterns of suicidal behavior is an essential component in developing successful prevention efforts. The Data and Surveillance Task Force (DSTF) of the National Action Alliance for Suicide Prevention was charged with making recommendations for improving national data systems for public health surveillance of suicide-related problems, including suicidal thoughts, suicide attempts, and deaths due to suicide.

**Purpose:** Data from the national systems can be used to draw attention to the magnitude of the problem and are useful for establishing national health priorities. National data can also be used to examine differences in rates across groups (e.g. sex, racial/ethnic, and age groups) and geographic regions, and are useful in identifying patterns in the mechanism of suicide, including those that rarely occur.

**Methods:** Using evaluation criteria from the CDC, WHO, and the U.S.A.-based Safe States Alliance, the DSTF reviewed 28 national data systems for feasibility of use in the surveillance of suicidal behavior, including deaths, nonfatal attempts, and suicidal thoughts. The review criteria included attributes such as the aspects of the suicide-related spectrum (e.g. thoughts, attempts, deaths) covered by the system; how the data are collected (e.g. census, sample, survey, administrative data files, self-report, reporting by care providers); and the strengths and limitations of the survey or data system.

**Results:** The DSTF identified common strengths and challenges among the data systems based on the underlying data source (e.g. death records, healthcare provider records, population-based surveys, health insurance claims). From these findings, the DSTF proposed several recommendations for improving existing data systems, such as using standard language and definitions, adding new variables to existing surveys, expanding the geographic scope of surveys to include areas where data are not currently collected, oversampling of underrepresented groups, and improving the completeness and quality of information on death certificates.

**Conclusions:** Some of the DSTF recommendations are potentially achievable in the short term (< 1-3 years) within existing data systems, whereas others involve more extensive changes and will require longer-term efforts (4-10 years). Implementing these recommendations would assist in the development of a national coordinated program of fatal and nonfatal suicide surveillance to facilitate evidence-based action to reduce the incidence of suicide and suicidal behavior in all populations.
Objective: Adverse childhood experiences are well-recognized risk factors for a variety of mental health issues, including depression, suicide attempts and non-suicidal self-injury. However, less is known about whether childhood adversity, in the form of low parental care, overprotection and abuse, is associated with suicide attempt and non-suicidal self-injury within a sample of depressed adults.

Method: The sample of outpatients (n = 372) was drawn from two randomized depression trials. Childhood adversity variables, depression severity, age of first depressive episode (major depression episode onset), lifetime suicide attempt and non-suicidal self-injury were recorded at baseline. The association between variables and outcome measures was examined using partial correlations, univariate and multivariate logistic regressions.

Results: Low maternal care was significantly associated with suicide attempt; low paternal care was associated with non-suicidal self-injury; overprotection was not associated with either outcome. Other risk factors for suicide attempt were major depression episode onset and baseline depression severity. Major depression episode onset was also a risk factor for non-suicidal self-injury. Abuse, regardless of how it was measured, was not significantly associated with either behaviour after adjusting for its correlations with low maternal or paternal care.

Conclusion: In this sample of depressed adults, the quality of ongoing, intra-familial relationships, as measured by levels of parental care, had a greater impact on suicide attempt and non-suicidal self-injury than abuse. As the findings were not a priori hypotheses, they require replication. Although the cross-sectional study design limits causal determination, the findings suggest different childhood risk factors for suicide attempt and non-suicidal self-injury and underscore the impact of low parental care on these two behaviours. These findings signal to clinicians the importance of asking specifically about suicide attempts, and non-suicidal self-injury, as well as levels of parental care in childhood. When endorsed, low parental care may be considered an important factor in contextualizing a patient’s depression and potential risk for suicide and non-suicidal self-injury.
Identifying risk of deliberate self-harm through longitudinal monitoring of psychological distress in an inpatient psychiatric population

Kashyap S, Hooke GR, Page AC (Australia)

BMC Psychiatry 15, 81, 2015

**Background:** While cross-sectional correlates of deliberate self-harm, such as psychological distress, have been identified; it is still difficult to predict which individuals experiencing distress will engage in deliberate self-harm, and when this may occur. Therefore, this study aimed to explore the ability of longitudinal measurements of psychological distress to predict deliberate self-harm in a psychiatric population.

**Method:** Participants (N = 933; age range 14-93 (M = 38.95, SD = 14.64; 70% female) were monitored daily in terms of suicidal ideation, depression, anxiety, worthlessness and perceptions of not coping. Latent Growth Curve Analysis was used to check if groups of inpatients reporting suicidal ideation, who shared early change in measures of psychological distress, existed. Logistic regression tested whether different groups were at higher (or lower) risks of deliberate self-harm.

**Results:** Four groups were found. Of these, Non-Responders (high symptoms, remaining high) were more likely to engage in deliberate self-harm than patients with high, medium and low symptoms which improved over one week. Group membership was a greater predictor of deliberate self-harm than initial distress scores. Females and patients with personality disorders were significantly more likely to be Non-Responders.

**Conclusions:** Continuous monitoring and subsequent grouping of inpatients according to their early change in psychological distress provides a novel and practical approach to risk management. A lack of early improvement in psychological distress may indicate a higher risk of deliberate self-harm.

Behavioral and emotional responses to interpersonal stress: A comparison of adolescents engaged in non-suicidal self-injury to adolescent suicide attempters

Kim KL, Cushman GK, Weissman AB, Puzia ME, Wegbreit E, Tone EB, Spirito A, Dickstein DP (USA)

Psychiatry Research 228, 899-906, 2015

Prominent theoretical models and existing data implicate interpersonal factors in the development and maintenance of suicidal behavior and non-suicidal self-injury (NSSI). However, no known study has yet used computerized behavioral tasks to objectively assess responses to interpersonal conflict/collaboration among teens engaged in NSSI or having made a suicide attempt. The current study, therefore, compared interpersonal functioning indexed by the Prisoner's Dilemma (PD) task among three mutually exclusive groups, adolescents (ages 13-17): engaged in NSSI only without history of a suicide attempt (n=26); who made a suicide attempt
without history of NSSI (n=26); and typically developing controls (n=26). Participants also completed the Interpersonal Sensitivity Measure to assess their general sensitivity to awareness of others’ behaviors and feelings. No significant between-group differences were found in PD task performance; however, compared to typically developing control participants and those who had made a suicide attempt, the NSSI group reported significantly more stress during the task. Additionally, NSSI participants rated themselves as more interpersonally sensitive compared to both attempters and typically developing controls. Given the lack of knowledge about whether these groups either differentially activate the same circuitry during stressful interpersonal interactions or instead rely on alternative, compensatory circuits, future work using event-related functional magnetic resonance imaging is warranted.

Celebrity suicide on the railway network: Can one case trigger international effects?
Koburger N, Mergl R, Rummel-Kluge C, Ibelschäuser A, Meise U, Postuvan V, Roskar S, Szekely A, Ditta Tóth M, van der Feltz-Cornelis C, Hegerl U (Germany, Austria, Hungary, the Netherlands, Slovenia)
Journal of Affective Disorders 185, 38-46, 2015

Background: After the railway suicide of the German national goalkeeper Robert Enke in 2009, a significant increase of railway suicides was observed nationally. This study analyses whether this incident also triggered copycat effects in other European countries. Additionally, media coverage proxied by Google Trends and long-term changes taking into account general changes in suicide rates and kilometres driven by trains were examined.

Methods: The numbers of railway suicides before and after Enke’s suicide were analysed for short and long-term periods (2 weeks and 2 years post-event) across five European countries. Incidence ratios and resulting percentage changes were computed.

Results: Similar to Germany, there were significant short and long-term effects for the combined data of the four other countries (increase of 93.9%; p=0.004 and 16.7%; p=0.003). There was no indication that long-term effects are a mere reflection of an overall increase in suicide frequencies or due to increased numbers of kilometres driven by trains. Analyses on country level revealed heterogeneous results.

Limitations: Due to incomplete data, analyses regarding age and gender were not performed. Media coverage was only proxied by a Google Trends analysis. The study includes a small sample of European countries.

Conclusions: Enke’s suicide in 2009 was followed by increasing train suicide numbers in Europe. Although this incident may have reinforced an existing European trend of growing railway suicides, an international copycat effect and/or an increased overall awareness about this particular suicide method appears to be one likely explanation for the changes.
Metasynthesis of youth suicidal behaviours: Perspectives of youth, parents, and health care professionals
Lachal J, Orri M, Sibeoni J, Moro MR, Revah-Levy A (France)
PLoS One 10, e0127359

Background: Youth suicide is a major public health issue throughout the world. Numerous theoretical models have been proposed to improve our understanding of suicidal behaviours, but medical science has struggled to integrate all the complex aspects of this question. The aim of this review is to synthesise the views of suicidal adolescents and young adults, their parents, and their healthcare professionals on the topics of suicidal behaviour and management of those who have attempted suicide, in order to propose new pathways of care, closer to the issues and expectations of each group.

Methods and Findings: This systematic review of qualitative studies — Medline, PsycInfo, Embase, CINAHL, and SSCI from 1990 to 2014 — concerning suicide attempts by young people used thematic synthesis to develop categories inductively from the themes identified in the studies. The synthesis included 44 studies from 16 countries: 31 interviewed the youth, 7 their parents, and 6 the healthcare professionals. The results are organised around three superordinate themes: the individual experience, that is, the individual burden and suffering related to suicide attempts in all three groups; the relational experience, which describes the importance of relationships with others at all stages of the process of suicidal behaviour; and the social and cultural experience, or how the group and society accept or reject young people in distress and their families and how that affects the suicidal process and its management. Conclusion: The violence of the message of a suicidal act and the fears associated with death lead to incomprehension and interfere with the capacity for empathy of both family members and professionals. The issue in treatment is to be able to witness this violence so that the patient feels understood and heard, and thus to limit recurrences.
Associations of school connectedness with adolescent suicidality: Gender differences and the role of risk of depression

Langille DB, Asbridge M, Cragg A, Rasic D (Canada)

*Canadian Journal of Psychiatry* 60, 258-267

Previous studies have not examined associations of school connectedness with adolescent suicidal behaviours stratified by gender, while including a measure of depression. We analyzed survey data to determine whether there are independent protective associations of higher school connectedness with suicidal behaviours in Canadian adolescents, while controlling for potential confounders, including risk of depression; and whether such associations differ by gender. Using data from a stratified cluster sample of randomly selected classes of students in schools in 3 of Canada’s Atlantic provinces, we used multiple logistic regression to examine whether associations of risk of depression, measured using the 12-item Center for Epidemiologic Studies-Depression scale, lessened protective associations of higher school connectedness with suicidal behaviours in grades 10 and 12 students, while stratifying by gender. After adjusting for risk of depression, higher school connectedness was independently associated with decreased suicidal ideation in both genders and with suicidal attempt in females. In males, higher connectedness was no longer protective for suicide attempt when risk of depression was included in the model. School connectedness, which is felt to have positive influences on many types of adolescent behaviour, appears to also be both directly and indirectly protective for suicidality. These effects may occur through different pathways in females and males. Given the protection it offers both genders, including those at risk and not at risk of depression, increasing school connectedness should be considered as a universal adolescent mental health strategy. Studies that examine school connectedness should include analyses that examine potential differences between males and females.

Recurrence of suicide attempt in adolescents lost to contact early by clinicians: The 10-year repeaters cohort of French adolescents

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*Journal of Adolescence* 43, 111-118, 2015

Losing contact with adult suicide attempters in the year after the suicide attempt (SA) increases the risk of recurrence. The situation with adolescents is unknown. We aimed to determine whether being lost to contact early (LCE) by clinicians is a risk factor of long-term SA recurrence among adolescents and the associated factors. Data were collected 10 years after an index SA and a Cox model was used for analysis. Among the 249 SA patients included, 59 (24%) were LCE, the most important risk factor of SA recurrence up to 10 years (hazard ratio [. HR] = 2.8 [95% confidence interval (95% CI) 1.4-5.5]; p = .016). Risk factors of being LCE were female sex (odds ratio [. OR] = 2.9 [95% CI 1.1-8.2]; p = .009), a psychiatric comorbiditry (OR = 2.2 [1.1-4.3]; p = .023) and no family history of suicide (OR = 2.1 [1.1-4.3]; p = .047). These results support the development of preventive actions early after an SA in an adolescent to maintain contact and care.
Parental separation in childhood, social capital, and suicide thoughts and suicide attempts: A population-based study

Lindstrom M, Rosvall M (Sweden)
Psychiatry Research 229, 206-213, 2015

Studies of the association between parental separation in childhood and suicide thoughts and attempts are scarce. The aim of this study is to investigate associations between parental separation/divorce during childhood, and ever having had suicide thoughts and ever having made suicide attempt, adjusting for social capital and other covariates. In 2012 a cross-sectional public health survey was conducted in Scania, southern Sweden, with a postal questionnaire with 28,029 participants aged 18-80. Associations between parental separation/divorce during childhood and ever having considered suicide or having made suicide attempt were analysed by logistic regression. Overall, 12.1% of the men and 15.5% of the women had experienced suicide thoughts, and 3.2% of the men and 5.3% of the women had ever tried committing suicide. Among men, 20.4% had experienced parental separation/divorce in childhood until age 18, and among women 22.3%. Parental separation/divorce in childhood was with few exceptions significantly associated with ever having had suicide thoughts with the highest odds ratios for those who had experienced parental separation during ages 0-4 years. Parental separation/divorce in childhood was significantly associated with suicide attempts among men who had experienced parental separation/divorce at ages 0-4 and 15-18, and among women at any age 0-18.

Exposure to, and searching for, information about suicide and self-harm on the internet: Prevalence and predictors in a population based cohort of young adults

Journal of Affective Disorders 185, 239-245, 2015

Background: There is concern over the potential impact of the Internet on self-harm and suicidal behaviour, particularly in young people. However, little is known about the prevalence and patterns of suicide/self-harm related Internet use in the general population.

Methods: Cross sectional study of 3946 of the 8525 participants in the Avon Longitudinal Study of Parents and Children (ALSPAC) who were sent a self-report questionnaire including questions on suicide/self-harm related Internet use and self-harm history at age 21 years.

Results: Suicide/self-harm related Internet use was reported by 22.5% (886/3946) of participants; 11.9% (470/3946) had come across sites/chatrooms discussing self-harm or suicide, 8.2% (323/3946) had searched for information about self-harm, 7.5% (296/3946) had searched for information about suicide and 9.1% (357/3946)
had used the Internet to discuss self-harm or suicidal feelings. Suicide/self-harm related Internet use was particularly prevalent amongst those who had harmed with suicidal intent (70%, 174/248), and was strongly associated with the presence of suicidal thoughts, suicidal plans, and history of self-harm. Sites offering help, advice, or support were accessed by a larger proportion of the sample (8.2%, 323/3946) than sites offering information on how to hurt or kill yourself (3.1%, 123/3946). Most individuals (81%) who had accessed these potentially harmful sites had also accessed help sites.

Limitations: (i) There were differences between questionnaire responders and non-responders which could lead to selection bias and (ii) the data were cross-sectional, and we cannot conclude that associations are causal.

Conclusions: Suicide/self-harm related Internet use is common amongst young adults, particularly amongst those with suicidal thoughts and behaviour. Both harmful and helpful sites were accessed, highlighting that the Internet presents potential risks but also offers opportunities for suicide prevention.

High alcohol use a strong and significant risk factor for repetitive self-harm in female and male youth: A prospective cohort study

Martiniuk AL, Chen HY, Glozier N, Patton G, Senserrick T, Williamson A, Woodward M, Ivers R (USA)


Background: Deliberate self-harm (DSH) is reported by between 5 and 17% of youth aged 14-25 years. Current management measures focus on repetition prevention in high-risk groups. Objectives: To examine risk factors and predictors of DSH and DSH repetition in a community sample, by gender.

Methods: A prospective cohort of 20,822 young adults (aged 17-24 years) was recruited when obtaining their driving license. A random sample of 5000 was approached for follow-up 12-18 months; 2991 (60%) responded and formed the cohort for this analysis. Patterns of self-harm, using a modified Beck Suicide Inventory, were investigated with logistic regression.

Results: DSH was reported by 4.1% (123/2991) at baseline. Over the following 12 months, 3.0% (90/2991) reported new instances of DSH which included 20% (25) respondents who had engaged in DSH at baseline. Psychological distress was a risk factor for engaging in DSH in the past 12 months, OR 3.55 (95% CI 2.06-6.14). Although several clinical risk factors differed between genders, high alcohol use, OR 23.6 (95% CI 3.64-153) and psychological distress, OR 4.97 (95% CI 1.08-22.9) were significant risk factors for repeat DSH in both males and females.

Conclusion: In this community cohort, 1 in 25 youth had self-harmed in the year prior; of these, 4 in 5 did not repeat DSH over the following year. High alcohol use stands out as a strong risk factor for DSH repetition. Assessing alcohol use may help clinicians identify those who are at greatest risk for repetitive self-harm.
Quality and predictors of adolescents’ first aid intentions and actions towards a peer with a mental health problem

Mason RJ, Hart LM, Rossetto A, Jorm AF (Australia)
Psychiatry Research 228, 31-38, 2015

While peers are a common source of informal help for young people with a mental health problem, evidence suggests that the help they provide is inadequate. By examining predictors of the quality of mental health first aid provided by adolescents to their peers, future interventions can be targeted to adolescents most at risk of providing poor help. Students (n=518) from Australian secondary schools were presented with two vignettes, depicting persons experiencing depression with suicidal thoughts, and social phobia. Participants were asked what they thought was wrong with the person, and how they would help them. Stigma towards the person was also assessed. Additionally, participants were asked if they had recently helped anyone in their own lives with a mental health problem, and, if so, what they did. The overall quality of help reported in response to the vignettes or an actual person was low; a particular inadequacy was the low rate of engaging the help of an adult. Being female, and believing that the person is sick rather than weak, consistently predicted better help-giving.

Mortality of subjects with mood disorders in the Lundby community cohort: A follow-up over 50 years

Mattisson C, Bogren M, Brådvik L, Horstmann V (Sweden)

Aims: To compare causes of death and mortality among subjects with and without mood disorder in the Lundby Cohort and to analyse additional mental disorders as risk factors for mortality in subjects with mood disorders.

Background: The Lundby study is a longitudinal study that investigated mental health in an unselected population. The study commenced in 1947; the population was further investigated in 1957, 1972, and 1997.

Methods: Experienced psychiatrists performed semi-structured diagnostic interviews, and best estimate consensus diagnoses of mental disorders were assessed at each field investigation. Subjects with mood disorder (n=508, 195 males, 313 females) were identified until 1997. Causes and dates of death between 1947 and 2011 were obtained from the Swedish cause of death register and were compared between subjects diagnosed with mood disorder and other participants. Mortality was compared between those with mood disorders and the remaining cohort with Cox regression analyses. Other mental disorders were considered as risk factors for death for subjects with mood disorders.

Results: The hazard ratio for mortality in mood disorders was HR=1.18. However, the mortality was elevated only for males, HR=1.5. Comorbid anxiety disorders, organic disorders, dementia and psychotic disorders were significant risk factors.
for death. A total of 6.3% of the participants with mood disorder and 1.2% of the remaining participants committed suicide.

**Conclusions:** As expected, the suicide rate was higher among participants with mood disorders. Only males with mood disorders had elevated mortality. The impact on mortality from other mental disorders seems to vary between the genders.

**Prevalence and correlates of past 12-month suicide attempt among adults with past-year suicidal ideation in the United States**

McKeon R, Gfroerer J, Compton WM, Han B (USA)
*Journal of Clinical Psychiatry* 76, 295-302, 2015

**Objective:** To examine the prevalence and correlates of attempting suicide in the past 12 months among adults with past-year suicidal ideation in the United States.

**Method:** Data were from 229,600 persons aged 18 years or older who participated in the 2008-2012 National Survey on Drug Use and Health. Among them, 12,300 reported having past-year suicidal ideation, and over 2,000 of those reported attempting suicide within the past 12 months prior to survey interview. Descriptive analyses and pooled and stratified (by suicide plan and major depressive episode [MDE]) multivariate logistic regression models were applied. Major depressive episode was based on assessments of individual diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV).

**Results:** Among persons aged 18 years or older in the United States, 3.8% reported having suicidal ideation in the past 12 months. Among past-year suicidal ideators, 13.2% attempted suicide in the past 12 months. The prevalence of past 12-month suicide attempt among past-year ideators with MDE was higher than among those without MDE (14.1% vs 12.0%). Past 12-month suicide attempt was more common among ideators with a suicide plan than among ideators without a plan (37.0% vs 3.7%). However, the prevalence of suicide attempt was higher among ideators with a plan but without MDE than among ideators with a plan and MDE (42.1% vs 32.9%). Compared with ideators without a plan, ideators with a plan had a higher (adjusted odds ratio [AOR] = 2.2; 95% confidence interval [CI], 1.47-3.45) suicide attempt risk among those without MDE (AOR = 22.4; 95% CI,16.55-30.27) than among those with MDE (AOR = 10.7; 95% CI, 7.91-14.49).

**Conclusions:** Among adult suicidal ideators, factors associated with their progression from ideation to suicide attempt may vary by their suicide plan and major depression status. Focusing attention on high-risk subgroups may be warranted.
The interrelations between internalized homophobia, depressive symptoms, and suicidal ideation among Australian gay men, lesbians, and bisexual women

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*Journal of Homosexuality. Published online: 21 August 2015. doi: 10.1080/00918369.2015.1083779*

Internalized homophobia has been linked to depression among gay men, lesbians and bisexuals. Relatively little research has investigated the link between internalized homophobia and suicidal thoughts and behaviors. The current research investigated the interrelations among internalized homophobia, depressive symptoms, and suicidal ideation by testing additive, mediation, and moderation models. Self-identified Australian gay men (n = 360), lesbians (n = 444), and bisexual women (n = 114) completed the Internalized Homophobia Scale, the Center for Epidemiological Studies Depression Scale, and the suicide subscale of the General Health Questionnaire. Results supported the additive and partial mediation models for gay men and the mediation and moderation models for lesbians. None of the models were supported for bisexual women. The findings imply that clinicians should focus on reducing internalized homophobia and depressive symptoms among gay men and lesbians, and depressive symptoms among bisexual women, in order to reduce suicidal ideation.

Intrinsic religiosity, resilience, quality of life, and suicide risk in depressed inpatients

Mosqueiro BP, Da Rocha NS, Fleck MP (Brazil)
*Journal of Affective Disorders 179, 128-133, 2015*

**Background:** Religiosity is inversely related to depression and is directly associated with positive psychological outcomes. Nonetheless, there is no consensus on whether or how religiosity could impact and protect against depression. The present study evaluated the association between intrinsic religiosity and resilient psychological characteristics in depressed inpatients.

**Methods:** A sample of 143 depressed patients was prospectively evaluated in an inpatient psychiatric treatment in South Brazil. High Intrinsic Religiosity (HIR) and Low Intrinsic Religiosity (LIR) patients were compared across socio-demographic information, clinical measures, religiosity, resilience and quality of life. A linear regression model was used to evaluate the association between intrinsic religiosity and resilience, and the Cohen d test was utilized to assess effect sizes.

**Results:** At admission, HIR patients showed higher HAM-D (p=0.05), BPRS (p=0.02), GAF (p=0.02), and CGI (p=0.03) scores, lower educational levels (p=0.04), higher social support (p=0.05), and fewer previous suicide attempts (p=0.05). At discharge, HIR patients showed higher quality of life (p=0.001) and higher resilience (p=0.000), with a large effect size difference between groups (1.02). Based on a linear regression model (adjusted r=0.19, p=0.000), intrinsic religiosity was associated with resilience, controlling for covariates.
Conclusion: In a sample of depressed inpatients, intrinsic religiosity was found to be associated with resilience, quality of life, and fewer previous suicide attempts. These findings support the relevance of religiosity assessments in mental health practice and support the hypothesis that resilient psychological characteristics may mediate the positive effects of intrinsic religiosity in depression.

Ketamine for rapid reduction of suicidal ideation: A randomized controlled trial
Psychological Medicine 45, 3571-3580, 2015

Background: Suicide is a devastating public health problem and very few biological treatments have been found to be effective for quickly reducing the intensity of suicidal ideation (SI). We have previously shown that a single dose of ketamine, a glutamate N-methyl-d-aspartate (NMDA) receptor antagonist, is associated with a rapid reduction in depressive symptom severity and SI in patients with treatment-resistant depression.

Method: We conducted a randomized, controlled trial of ketamine in patients with mood and anxiety spectrum disorders who presented with clinically significant SI (n=24). Patients received a single infusion of ketamine or midazolam (as an active placebo) in addition to standard of care. SI measured using the Beck Scale for Suicidal Ideation (BSI) 24 h post-treatment represented the primary outcome. Secondary outcomes included the Montgomery-Asberg Depression Rating Scale - Suicidal Ideation (MADRS-SI) score at 24 h and additional measures beyond the 24-h time-point.

Results: The intervention was well tolerated and no dropouts occurred during the primary 7-day assessment period. BSI score was not different between the treatment groups at 24 h (p=0.32); however, a significant difference emerged at 48 h (p=0.047). MADRS-SI score was lower in the ketamine group compared to midazolam group at 24 h (p=0.05). The treatment effect was no longer significant at the end of the 7-day assessment period.

Conclusions: The current findings provide initial support for the safety and tolerability of ketamine as an intervention for SI in patients who are at elevated risk for suicidal behavior. Larger, well-powered studies are warranted.
Celebrity suicides and their differential influence on suicides in the general population: A national population-based study in Korea
Psychiatry Investigation 12, 204-211, 2015

Objective: Although evidence suggests that there is an increase in suicide rates in the general population following celebrity suicide, the rates are heterogeneous across celebrities and countries. It is unclear which is the more vulnerable population according to the effect sizes of celebrity suicides to general population.

Methods: All suicide victims in the general population verified by the Korea National Statistical Office and suicides of celebrity in South Korea were included for 7 years from 2005 to 2011. Effect sizes were estimated by comparing rates of suicide in the population one month before and after each celebrity suicide. The associations between suicide victims and celebrities were examined.

Results: Among 94,845 suicide victims, 17,209 completed suicide within one month after 13 celebrity suicides. Multivariate logistic regression analyses revealed that suicide victims who died after celebrity suicide were significantly likely to be of age 20-39, female, and to die by hanging. These qualities were more strongly associated among those who followed celebrity suicide with intermediate and high effect sizes than lower. Younger suicide victims were significantly associated with higher effect size, female gender, white collar employment, unmarried status, higher education, death by hanging, and night-time death. Characteristics of celebrities were significantly associated with those of general population in hanging method and gender.

Conclusion: Individuals who commit suicide after a celebrity suicide are likely to be younger, female, and prefer hanging as method of suicide, which are more strongly associated in higher effect sizes of celebrity suicide.

Suicide in late-life depression with and without comorbid anxiety disorders
Oude Voshaar RC, van der Veen DC, Hunt I, Kapur N (UK)
International Journal of Geriatric Psychiatry. Published online: 11 June 2015. doi: 10.1002/gps.4304

Objective: Comorbid anxiety in depression increases the risk of suicidal ideation and behavior, although data on death by suicide are scarce. We compared characteristics of depressed elderly patients with and without anxiety disorders who died by suicide.

Methods: From a 16-year clinical survey of all suicides in the UK (n=25,128), we identified 1909 cases aged ≥60 years with a primary diagnosis of depression and no comorbidity other than anxiety disorders. Clinical characteristics of cases with (n=333, 17.4%) and without (n=1576) comorbid anxiety disorders were compared by logistic regression adjusted for demographic differences.

Results: Compared with cases without comorbid anxiety disorders, cases with comorbid anxiety disorders were more likely to have a duration of illness over 1
year (OR1-5 years = 1.4 [95% CI: 1.0-1.9], p = 0.061; OR≥5 years = 1.4 [95% CI: 1.6-2.8], p < 0.001), were more frequently prescribed psychotropic drugs other than antidepressants, lithium, and antipsychotics (OR= 2.1 [95% CI: 1.6-2.7], p < 0.001) and were more distressed during their last contact with services (OR= 1.3 [95% CI: 1.0-1.7], p = 0.037). In contrast, clinicians estimated the immediate and long-term suicidal risks lower in those with comorbid anxiety disorders (OR= 0.6 [95% CI: 0.3-0.9], p = 0.011 and OR= 0.7 [95% CI: 0.6-1.0], p = 0.028, respectively).

Conclusion: Among depressed suicide cases, a comorbid anxiety disorder was identified in one out of six cases and associated with a higher prevalence of several suicide risk factors. This is important, as the detection of anxiety disorders comorbid to depression seems rather low and even when recognized clinicians rated such individuals as at low suicide risk.

Switching methods of self-harm at repeat episodes: Findings from a multicentre cohort study


Journal of Affective Disorders 180, 44-51, 2015

Background: Self-poisoning and self-injury have widely differing incidences in hospitals and in the community, which has led to confusion about the concept of self-harm. Categorising self-harm simply by a method may be clinically misleading because many hospital-attending patients switch from one method of harm to another on subsequent episodes. The study set out to determine the frequency, pattern, determinants and characteristics of method-switching in self-harm episodes presenting to the general hospital.

Methods: The pattern of repeated self-harm was established from over 33,000 consecutive self-harm episodes in a multicentre English cohort, categorising self-harm methods as poisoning, cutting, other injury, and combined methods.

Results: Over an average of 30 months of follow-up, 23% of people repeated self-harm and one-third of them switched method, often rapidly, and especially where the person was male, younger, or had self-harmed previously. Self-poisoning was far less likely than other methods to lead on to switching. Limitations: Self-harm episodes that do not lead to hospital attendance are not included in these findings but people who self-harmed and went to hospital but were not admitted from the emergency department to the general hospital, or did not receive designated psychosocial assessment are included. People in the study were a mix of prevalent as well as incident cases.

Conclusions: Method of self-harm is fluctuating and unpredictable. Clinicians should avoid false assumptions about people’s risks or needs based simply on the method of harm.
**Barriers and facilitators of suicide risk assessment in emergency departments: A qualitative study of provider perspectives**

Petrik ML, Gutierrez PM, Berlin JS, Saunders SM (USA)

*General Hospital Psychiatry. Published online: 30 June 2015. doi:10.1016/j.genhosppsych.2015.06.018*

**Objective:** To understand emergency department (ED) providers’ perspectives regarding the barriers and facilitators of suicide risk assessment and to use these perspectives to inform recommendations for best practices in ED suicide risk assessment.

**Methods:** Ninety-two ED providers from two hospital systems in a Midwestern state responded to open-ended questions via an online survey that assessed their perspectives on the barriers and facilitators to assess suicide risk as well as their preferred assessment methods. Responses were analyzed using an inductive thematic analysis approach.

**Results:** Qualitative analysis yielded six themes that impact suicide risk assessment. Time, privacy, collaboration and consultation with other professionals and integration of a standard screening protocol in routine care exemplified environmental and systemic themes. Patient engagement/participation in assessment and providers’ approach to communicating with patients and other providers also impacted the effectiveness of suicide risk assessment efforts.

**Conclusion:** The findings inform feasible suicide risk assessment practices in EDs. Appropriately utilizing a collaborative, multidisciplinary approach to assess suicide-related concerns appears to be a promising approach to ameliorate the burden placed on ED providers and facilitate optimal patient care. Recommendations for clinical care, education, quality improvement and research are offered.

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**The opinions of GP’s patients about suicide, assisted suicide, euthanasia, and suicide prevention: An Italian survey**

Poma SZ, Vicentini S, Siviero F, Grossi A, Toniolo E, Baldo V, De Leo D (Italy, Australia)

*Suicide and Life-Threatening Behavior 45, 391-398, 2015*

A survey about opinions on end-of-life issues of a population represented by 1,171 people in the waiting room of general practitioners’ surgeries was conducted in a province of northern Italy. Most subjects did not consider suicide as a reasonable option even in cases of a serious and incurable disease. Moreover, subjects did not consider euthanasia as a possible option either; however, they did express an opposite attitude when considering euthanasia in a third-person perspective. People with a personal history of suicidal behavior appear to present as a different population, overall expressing more open attitudes.
Out of the blue: Untangling the association between impulsivity and planning in self-harm.

Rawlings J, Shevlin M, Corcoran R, Morriss R, Taylor PJ (UK)
Journal of Affective Disorders 184, 29-35, 2015

Background: Planned and unplanned acts of self-harm may have distinct clinical and psychological correlates. Trait impulsivity is one factor that might be expected to determine whether self-harm is planned. Research so far has focussed on suicide attempts and little is known about how individuals engaging in planned and unplanned acts of self-harm differ. The aim of the current study was to examine how individuals who report planned self-harm, unplanned self-harm, and no self-harm differ in terms of impulsivity and affective symptoms (depression, anxiety, and activated mood).

Method: An online survey of University students (n=1350) was undertaken including measures of impulsivity, affective symptoms and self-harm. Analyses made use of a multinomial logistic regression model with affective and cognitive forms of impulsivity estimated as latent variables.

Results: Trait affective impulsivity, but not cognitive, was a general risk factor for whether self-harm occurred. There was no evidence of differences between planned and unplanned self-harm. Affective symptoms of depression and anxiety mediated the relationship between affective impulsivity and self-harm.

Limitations: The study was cross-sectional, relied on a student sample which may not generalise to other populations.

Conclusions: Trait affective impulsivity is associated with self-harm but it appears to be mediated by depression and anxiety symptoms. The exact relationships between trait affective impulsivity, depression, anxiety and self-harm require further longitudinal research in clinical populations but might lead to improved risk assessment and new therapeutic approaches to self-harm.
Perceptions of paramedics and emergency staff about the care they provide to people who self-harm: Constructivist metasynthesis of the qualitative literature
Rees N, Rapport F, Snooks H (UK)

Objective: Presentations of self-harm to paramedic and emergency staff are increasing, and despite being the first professionals encountered, patients who self-harm report the quality of care and attitudes from these staff are unsatisfactory. Understanding this care may provide opportunities to improve services. The aim of this study is to enhance knowledge building and theory generation in order to develop practice and policy through a metasynthesis of qualitative research relating to perceptions of paramedic and emergency care for people who self-harm.

Methods: The metasynthesis draws on Evolved Grounded Theory Methodology (EGTM). A search was undertaken of CINAHL®, MEDLINE®, OVID® and Psych INFO®, and grey literature. Subject headings of ‘self-harm’ were used alongside key words ‘suicide’, ‘paramedic’ ‘emergency’, ‘overdose’, ‘pre-hospital’ mental health, ambulance, perceptions of care, emergency.

Results: A total of 1103 papers were retrieved; 12 were finally included. No papers investigated paramedic care for self-harm. The following metaphors emerged: (a) frustration, futility and legitimacy of care; (b) first contact in the pre-hospital environment: talking, immediate and lasting implications of the moral agent; (c) decision making in self-harm: balancing legislation, risk and autonomy; (d) paramedics’ perceptions: harnessing professionalism and opportunities to contribute to the care of self-harm.

Conclusion: Paramedics are often the first health professional contact following self-harm, yet limited qualitative literature has explored this encounter. Metaphors revealed in this paper highlight challenges in decision making and legislation, also opportunities to improve care through professionalization and tailored education.

Risk of suicide among US military service members following Operation Enduring Freedom or Operation IRAQI Freedom deployment and separation from the US military.
Reger MA, Smolenski DJ, Skopp NA, Metzger-Abamukang MJ, Kang HK, Bullman TA, Perdue S, Gahm GA (USA)
JAMA Psychiatry 72, 561-569, 2015

Importance: A pressing question in military suicide prevention research is whether deployment in support of Operation Enduring Freedom or Operation Iraqi Freedom relates to suicide risk. Prior smaller studies report differing results and often have not included suicides that occurred after separation from military service.

Objective: To examine the association between deployment and suicide among all 3.9 million US military personnel who served during Operation Enduring Freedom or Operation Iraqi Freedom, including suicides that occurred after separation.
**Design, Setting, and Participants:** This retrospective cohort design used administrative data to identify dates of deployment for all service members (October 7, 2001, to December 31, 2007) and suicide data (October 7, 2001, to December 31, 2009) to estimate rates of suicide-specific mortality. Hazard ratios were estimated from time-dependent Cox proportional hazards regression models to compare deployed service members with those who did not deploy.

**Main outcomes and Measures:** Suicide mortality from the Department of Defense Medical Mortality Registry and the National Death Index.

**Results:** Deployment was not associated with the rate of suicide (hazard ratio, 0.96; 99% CI, 0.87-1.05). There was an increased rate of suicide associated with separation from military service (hazard ratio, 1.63; 99% CI, 1.50-1.77), regardless of whether service members had deployed or not. Rates of suicide were also elevated for service members who separated with less than 4 years of military service or who did not separate with an honorable discharge.

**Conclusions and Relevance:** Findings do not support an association between deployment and suicide mortality in this cohort. Early military separation (<4 years) and discharge that is not honorable were suicide risk factors.

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**Clarifying the relationship of parental bonding to suicide ideation and attempts**

Saffer BY, Glenn CR, Klonsky ED (Canada, USA) *Suicide and Life-Threatening Behavior 45, 518-528, 2015*

Suicide and suicidal behavior are major public health problems, especially among adolescents and young adults. Previous research has established links between parental bonding and suicidality; however, it remains unclear whether parental bonding is associated with suicide ideation, the progression from suicide ideation to suicide attempts, or both. This study examined the relation of parental bonding to suicide ideation and suicide attempts in adolescents from two settings: (1) acute psychiatric care (n=172) and (2) high school (n=426). All participants were administered validated measures of parental bonding, suicide ideation, and suicide attempts, as well as emotion dysregulation, loneliness, and self-worth. In the psychiatric sample, lower parental care significantly differentiated adolescents with a history of suicide attempts from those with suicide ideation only or without histories of suicidality. This pattern remained even after controlling for other known correlates of suicidality (i.e. emotional dysregulation, loneliness, and low self-worth). Similar effects were found in the community sample, although these findings failed to reach statistical significance. In both samples, parental overprotection was not associated with suicide ideation or suicide attempts. Results suggest that parental care may be an important risk factor for youth suicidal behavior and may help differentiate suicide attempters from suicide ideators.
Epidemiology, neurobiology and pharmacological interventions related to suicide deaths and suicide attempts in bipolar disorder: Part I of a report of the international society for bipolar disorders task force on suicide in bipolar disorder

Schaffer A, Isometsa ET, Tondo L, Moreno DH, Sinyor M, Kessing LV, Weizman A, Azorin JM, Ha K, Reis C, Cassidy F, Goldstein T, Rihmer Z, Beautrais A, Chou YH, Diazgranados N, Levitt AJ, Zarate CA, Jr. Yatham L (USA, Canada, Finland, Brazil, Denmark, Israel, France, Korea, Hungary, Taiwan)

*Australian and New Zealand Journal of Psychiatry* 49, 785-802, 2015

**Objectives:** Bipolar disorder is associated with elevated risk of suicide attempts and deaths. Key aims of the International Society for Bipolar Disorders Task Force on Suicide included examining the extant literature on epidemiology, neurobiology and pharmacotherapy related to suicide attempts and deaths in bipolar disorder.

**Methods:** Systematic review of studies from 1 January 1980 to 30 May 2014 examining suicide attempts or deaths in bipolar disorder, with a specific focus on the incidence and characterization of suicide attempts and deaths, genetic and non-genetic biological studies and pharmacotherapy studies specific to bipolar disorder. We conducted pooled, weighted analyses of suicide rates.

**Results:** The pooled suicide rate in bipolar disorder is 164 per 100,000 person-years (95% confidence interval = [5, 324]). Sex-specific data on suicide rates identified a 1.7:1 ratio in men compared to women. People with bipolar disorder account for 3.4-14% of all suicide deaths, with self-poisoning and hanging being the most common methods. Epidemiological studies report that 23-26% of people with bipolar disorder attempt suicide, with higher rates in clinical samples. There are numerous genetic associations with suicide attempts and deaths in bipolar disorder, but few replication studies. Data on treatment with lithium or anticonvulsants are strongly suggestive for prevention of suicide attempts and deaths, but additional data are required before relative anti-suicide effects can be confirmed. There were limited data on potential anti-suicide effects of treatment with antipsychotics or antidepressants.

**Conclusion:** This analysis identified a lower estimated suicide rate in bipolar disorder than what was previously published. Understanding the overall risk of suicide deaths and attempts, and the most common methods, are important building blocks to greater awareness and improved interventions for suicide prevention in bipolar disorder. Replication of genetic findings and stronger prospective data on treatment options are required before more decisive conclusions can be made regarding the neurobiology and specific treatment of suicide risk in bipolar disorder.
We describe initial pilot findings from a novel school-based approach to reduce youth depression and suicidality, the Empowering a Multimodal Pathway Towards Healthy Youth (EMPATHY) program. Here we present the findings from the pilot cohort of 3,244 youth aged 11-18 (Grades 6-12). They were screened for depression, suicidality, anxiety, use of drugs, alcohol, or tobacco (DAT), quality-of-life, and self-esteem. Additionally, all students in Grades 7 and 8 (mean ages 12.3 and 13.3 respectively) also received an 8-session cognitive-behavioural therapy (CBT) based program designed to increase resiliency to depression. Following screening there were rapid interventions for the 125 students (3.9%) who were identified as being actively suicidal, as well as for another 378 students (11.7%) who were felt to be at higher-risk of self-harm based on a combination of scores from all the scales. The intervention consisted of an interview with the student and their family followed by offering a guided internet-based CBT program. Results from the 2,790 students who completed scales at both baseline and 12-week follow-up showed significant decreases in depression and suicidality. Importantly, there was a marked decrease in the number of students who were actively suicidal (from n=125 at baseline to n=30 at 12-weeks). Of the 503 students offered the CBT program 163 (32%) took part, and this group had significantly lower depression scores compared to those who didn’t take part. There were no improvements in self-esteem, quality-of-life, or the number of students using DAT. Only 60 students (2% of total screened) required external referral during the 24-weeks following study initiation. These results suggest that a multimodal school-based program may provide an effective and pragmatic approach to help reduce youth depression and suicidality. Further research is required to determine longer-term efficacy, reproducibility, and key program elements.
Information-seeking on the internet
Singaravelu V, Stewart A, Adams J, Simkin S, Hawton K (UK)
*Crisis*, 36, 211-219, 2015

*Background:* The Internet is used by young people at risk of self-harm to communicate, find information, and obtain support.

*Aims:* We aimed to identify and analyze websites potentially accessed by these young people.

*Method:* Six search terms, relating to self-harm/suicide and depression, were input into four search engines. Websites were analyzed for access, content/purpose, and tone.

*Results:* In all, 314 websites were included in the analysis. Most could be accessed without restriction. Sites accessed by self-harm/suicide search terms were mostly positive or preventive in tone, whereas sites accessed by the term ways to kill yourself tended to have a negative tone. Information about self-harm methods was common with specific advice on how to self-harm in 15.8% of sites, encouragement of self-harm in 7.0%, and evocative images of self-harm/suicide in 20.7%. Advice on how to get help was given in 56.1% of sites.

*Conclusion:* Websites relating to suicide or self-harm are easily accessed. Many sites are potentially helpful. However, a significant proportion of sites are potentially harmful through normalizing or encouraging self-harm. Enquiry regarding Internet use should be routinely included while assessing young people at risk.

Suicidal ideation in depressed postpartum women: Associations with childhood trauma, sleep disturbance and anxiety
Sit D, Luther J, Buysse D, Dills JL, Eng H, Okun M, Wisniewski S, Wisner KL (USA)
*Journal of Psychiatric Research,* 66-67, 95-104

*Background:* Suicide is one of the leading causes of death in postpartum women. Identifying modifiable factors related to suicide risk in mothers after delivery is a public health priority. Our study aim was to examine associations between suicidal ideation (SI) and plausible risk factors (experience of abuse in childhood or as an adult, sleep disturbance, and anxiety symptoms) in depressed postpartum women.

*Methods:* This secondary analysis included 628 depressed mothers at 4-6 weeks postpartum. Diagnosis was confirmed with the Structured Clinical Interview for DSM-IV. We examined SI from responses to the Edinburgh Postnatal Depression Scale-EPDS item 10; depression levels on the Structured Interview Guide for the Hamilton Depression Rating Scale, Atypical Depression Symptoms (SIGH-ADS); plus sleep disturbance and anxiety levels with subscales from the EPDS and SIGH-ADS items on sleep and anxiety symptoms.

*Results:* Of the depressed mothers, 496 (79%) ‘never’ had thoughts of self-harm; 98 (15.6%) ‘hardly ever’; and 34 (5.4%) ‘sometimes’ or ‘quite often’. Logistic regression models indicated that having frequent thoughts of self-harm was related to childhood physical abuse (odds ratio-OR = 1.68, 95% CI = 1.00, 2.81); in mothers without childhood physical abuse, having frequent self-harm thoughts was related
to sleep disturbance (OR = 1.15, 95% CI = 1.02, 1.29) and anxiety symptoms (OR = 1.11, 95% CI = 1.01, 1.23).

**Discussion**: Because women with postpartum depression can present with frequent thoughts of self-harm and a high level of clinical complexity, conducting a detailed safety assessment, that includes evaluation of childhood abuse history and current symptoms of sleep disturbance and anxiety, is a key component in the management of depressed mothers.

**Mortality associated with lithium and valproate treatment of US veterans health administration patients with mental disorders**

*British Journal of Psychiatry* 207, 55-63, 2015

**Background**: The mood stabilisers lithium and valproate might plausibly have differing associations with mortality because of differing effects on mental health and various physiological indicators.  

**Aims**: To assess associations between lithium, valproate and non-suicide mortality.

**Method**: Intention-to-treat, propensity score-matched cohort study.

**Results**: Lithium was associated with significantly reduced non-suicide mortality in the intent-to-treat cohort over 0-90 days (hazard ratio (HR)=0.67, 95% CI 0.51-0.87) but not longer. In secondary analyses, a sizeable reduction in mortality was observed during active treatment with lithium across all time periods studied (for example 365-day HR= 0.62, 95% CI 0.45-0.84), but significantly increased risks were observed among patients discontinuing lithium by 180 days (HR= 1.54, 95% CI 1.01-2.37).

**Conclusions**: Patients initiating lithium had lower non-suicide mortality over 0-90 days than patients initiating valproate and consistently lower non-suicide mortality among patients maintaining treatment, but elevated risk among patients discontinuing treatment by 180 days. Although residual confounding or selection effects cannot be excluded, this study suggests potential benefits to enhancing lithium treatment persistence and the monitoring of patients discontinuing lithium. There is a need for further research.
Culture and suicide acceptability: A cross-national, multilevel analysis

Stack S, Kposowa AJ (USA)
Sociological Quarterly. Published online: 6 August 2015. doi: 10.1111/tsq.12109

Cultural perspectives on suicidality have been largely marked by work explaining variability in suicide acceptability in the United States using structural variables including marital status and demographics, and limited symbolic or values orientations such as feminism, political liberalism, and civil liberties. The present article applies recent developments in comparative cultural sociology to the problem of suicidality. The central hypothesis is that cultural approval of suicide is related to a general cultural axis of nations (self-expressionism) encompassing several values orientations such as tolerance and post-materialism. Data are from Wave 4 of the World Values Surveys and refer to 53,275 individuals nested in 56 nations. Controls are incorporated from previous studies and include structural and demographic constructs. A hierarchical linear regression model determined that the degree of individual-level adherence to the values of self-expressionism predicted suicide acceptability (SA), independent of controls including ones interpretable from Durkheimian perspectives. Furthermore, persons high in individual-level self-expressionism nested in like-minded nations were relatively high in SA. The analysis of the subject is expanded to 56 nations representing all major culture zones and varied levels of economic/political development. It determined that SA is shaped by a new, broad cultural construct, self-expressionism whose impact is independent of Durkheimian familial and religious integration.

Recency of divorce, depression, and suicide risk

Stack S, Scourfield J (USA, UK)

Previous individual-level research on the association between the status of divorce and suicide risk has been marked by two recurrent limitations: (a) it is not clear if the timing of divorce (recent vs. distal) affects risk of completed suicides and (b) it is not clear if the association between divorce and suicide completions will withstand controls for a series of risk and protective factors including psychiatric morbidity. The present study addresses these two gaps in the literature. Data are from the National Mortality Follow Back Survey and refer to 13,897 deaths including 1,169 suicides. A model is estimated that controls for major alternative predictors of suicide completions including psychiatric predictors (depression scale) and sociological risk and protective factors (job loss, job demotion, and religiosity). The results of a multivariate logistic regression analysis determined that, controlling for the psychiatric, social, and economic predictors of suicide completions, recent divorce increases the odds of death by suicide 1.6 times, compared with 1.3 times for distal divorce. The study provides the first systematic, U.S.-based results that show that the timing of divorce influences risk of completed suicides independent of depression.
Background: There is a paucity of studies on the role of early risk factors for the choice of methods for violent suicide attempts. Adolescent risk factors for the choice of violent or non-violent methods for suicide attempts and the risk of subsequent suicide were studied using a longitudinal design.

Methods: A national Swedish cohort of 48,834 18-20-year-old young men conscripted for military service from 1969 to 1970 was followed through official registers during a 37-year period. Two questionnaires concerning their psychosocial background were answered by each conscript. Cox proportional hazard regression analyses were used to estimate the risk for different methods of attempted suicide and later suicide.

Results: A total of 1195 (2.4 %) men had made a suicide attempt and of these, 133 (11.1 %) committed suicide later. The number of suicide victims among the non-attempters was 482 (1 %). Half of the suicides occurred during the same year as the attempt. Suicide victims had earlier onset of suicidal behaviour and had more often used hanging as a method of attempted suicide than those who did not later commit suicide. The early risk factors for both violent and non-violent methods of suicide attempt were quite similar.

Conclusion: Violent suicide attempts, especially by hanging, are associated with a clearly elevated suicide risk in men and require special clinical and public health attention. The early risk factors related to the choice of either a violent or a non-violent suicide attempt method are interlinked and circumstantial factors temporally close to the suicide attempt, such as access to a specific method, may partly explain the choice of method.
Suicide, statistics and the coroner: A comparative study of death investigations

Tait G, Carpenter B (Australia)
Journal of Sociology 51, 553-565, 2014

Australia has a significantly higher suicide rate than England. Rather than accepting that this ‘statistical fact’ is a direct reflection of some positivist truth, this article begins with the premise that how suicide is counted depends upon what counts as suicide. This study involves semi-structured interviews with coroners both in Australia and England, as well as observations at inquests. Important differences between the two coronial systems include: first, quite different logics of operation; second, the burden of proof for reaching a finding of suicide is significantly higher in England; and, third, the presence of family members at English inquests results in far greater pressure being brought to bear upon coroners. These combined factors result in a reduced likelihood of English coroners reaching a finding of suicide. The conclusions are twofold. First, this research supports existing criticisms of comparative suicide statistics. Second, this research adds theoretical weight to criticisms of positivist analyses of social phenomena.

Demoralization: A systematic review on its clinical characterization

Tecuta L, Tomba E, Grandi S, Fava GA (Italy)
Psychological Medicine 45, 673-691, 2015

Background: Demoralization has been described as a psychological state characterized by helplessness, hopelessness, a sense of failure and the inability to cope.

Methods: We conducted a systematic review with qualitative data analysis following PRISMA criteria with the following aims: to review validated assessment instruments of the demoralization syndrome, report main findings regarding demoralization as measured by validated instruments that emerge in the literature, compare and report evidence for the clinical utility of the identified instruments. Utilizing the key word ‘demoralization’ in PubMed and PsycINFO databases, an electronic search was performed, supplemented by Web of Science and manual searches. Study selection criteria included the assessment of medical patients and use of instruments validated to assess demoralization. Seventy-four studies were selected.

Results: Four instruments emerged in the literature. Main findings concern prevalence rates of demoralization, evidence of discriminant validity from major depression, factors associated with demoralization and evidence of clinical utility. The instruments vary in their definition, the populations they aim to assess, prevalence rates they estimate and their ability to discriminate between different conditions. Nonetheless, demoralization appears to be a distinctive psychological
state characterized by helplessness, hopelessness, giving up and subjective incompetence. It is not limited to life-threatening diseases such as cancer, but may occur in any type of clinical situation. It is associated with stress and adverse health outcomes.

Conclusions: Studies addressing the incremental value of demoralization in psychiatry and psychology are needed. However, demoralization appears to entail specific clinical features and may be a distinct condition from major depression.

Determining the effects of films with suicidal content: A laboratory experiment
Till B, Strauss M, Sonneck G, Niederkrotenthaler T (Austria)
British Journal of Psychiatry 207, 72-78, 2015

Background: Media stories on suicide can increase suicidal ideation, but little is known about variations in media effects with regard to audience vulnerability and story contents.

Aims: We investigated the impact of three drama films with suicidal content that varied with regard to the final outcome (suicide completion, mastery of crisis and death by natural causes) and tested the moderating effect of baseline suicidality of the participants on the effects.

Method: Within a laboratory setting, we randomly assigned 95 adults to three film groups. We used questionnaires to analyse the effects of the films on mood, depression, life satisfaction, self-worth, assumed benevolence of the world and suicidality, as well as identification with the protagonist. We stratified the sample into participants with suicidal tendencies above and below the sample median.

Results: The film that ended with the protagonist’s suicide led to a deterioration of mood particularly in individuals with baseline suicidality below the median, who also experienced an increase in self-worth. Participants with stronger suicidal tendencies experienced a rise in suicidality that depended on their level of identification with the protagonist. The film featuring the main character positively coping with his crisis increased life satisfaction particularly among participants with higher suicidal tendencies.

Conclusions: The effects of suicide-related media material seem to vary with individual vulnerability and with type of media portrayal. Individuals with lower vulnerability experience more emotional reactions when exposed to a film culminating in suicide, but individuals with higher vulnerability experience a rise in suicidal tendencies particularly if they identify with the protagonist who died by suicide. In contrast, portrayals of individual mastery of crisis may have beneficial effects in more vulnerable individuals.
Lithium is associated with decrease in all-cause and suicide mortality in high-risk bipolar patients: A nationwide registry-based prospective cohort study


*Journal of Affective Disorders* 183, 159-165, 2015

**Background:** Mortality rates, in particular due to suicide, are especially high in bipolar patients. This nationwide, registry-based study analyses the associations of medication use with hospitalization due to attempted suicides, deaths from suicide, and overall mortality across different psychotropic agents in bipolar patients.

**Method:** Altogether 826 bipolar patients hospitalized in Finland between 1996-2003 because of a suicide attempt were followed-up for a mean of 3.5 years. The relative risk of suicide attempts leading to hospitalization, completed suicide, and overall mortality during lithium vs. no-lithium, antipsychotic vs. no-antipsychotic, valproic acid vs. no-valproic acid, antidepressant vs. no-antidepressant and benzodiazepine vs. no-benzodiazepine treatment was measured.

**Results:** The use of valproic acid (RR=1.53, 95% CI: 1.26-1.85, p<0.001), antidepressants (RR=1.49, 95% CI: 1.23-1.8, p<0.001) and benzodiazepines (RR=1.49, 95% CI: 1.23-1.80, p<0.001) was associated with increased risk of attempted suicide. Lithium was associated with a (non-significantly) lower risk of suicide attempts, and with significantly decreased suicide mortality in univariate (RR=0.39, 95% CI: 0.17-0.93, p=0.03), Cox (HR=0.37, 95% CI: 0.16-0.88, p=0.02) and marginal structural models (HR=0.31, 95% CI: 0.12-0.79, p=0.02). Moreover, lithium was related to decreased all-cause mortality by 49% (marginal structural models).

**Limitations:** Only high-risk bipolar patients hospitalized after a suicide attempt were studied. Diagnosis was not based on standardized diagnostic interviews; treatment regimens were uncontrolled.

**Conclusions:** Maintenance therapy with lithium, but not with other medications, is linked to decreased suicide and all-cause mortality in high-risk bipolar patients. Lithium should be considered for suicide prevention in high-risk bipolar patients.

Suicidal behavior in relatives or associates moderates the strength of common risk factors for suicide

Tong Y, Phillips MR, Duberstein P, Zhan W (China, USA)

*Suicide and Life-Threatening Behavior* 45, 505-517, 2015

The prevalence and odds ratios of different suicide risk factors were compared in three pairs of decedents: 80 suicides and 25 injury decedents with blood relatives with suicidal behavior history (biologically exposed); 259 suicides and 126 injury decedents with unrelated acquaintances with suicidal behavior history (socially exposed); and 471 suicides and 523 injury decedents with neither relatives nor acquaintances with suicidal behavior history (unexposed). Negative life events
and high psychological stress were more common in socially exposed suicides than in other suicides. The adjusted odds ratios of most established suicide risk factors were higher in unexposed decedents than in biologically or socially exposed decedents, suggesting that the predictive value of established risk factors wanes in individuals who have been exposed to suicidal behavior in family or friends.

**Association between social integration and suicide among women in the United States**

Tsai AC, Lucas M, Kawachi I (USA, Canada)

*JAMA Psychiatry* 72, 987-993, 2015

**Importance:** Suicide is one of the top 10 leading causes of mortality among middle-aged women. Most work in the field emphasizes the psychiatric, psychological, or biological determinants of suicide.

**Objective:** To estimate the association between social integration and suicide.

**Design, Setting, and Participants:** We used data from the Nurses’ Health Study, an ongoing nationwide prospective cohort study of nurses in the United States. Beginning in 1992, a population-based sample of 72607 nurses 46 to 71 years of age were surveyed about their social relationships. The vital status of study participants was ascertained through June 1, 2010. Exposures: Social integration was measured with a 7-item index that included marital status, social network size, frequency of contact with social ties, and participation in religious or other social groups.

**Main Outcomes and Measures:** The primary outcome of interest was suicide, defined as deaths classified using the codes from the International Classification of Diseases, Eighth Revision.

**Results:** During more than 1.2 million person-years of follow-up (1992-2010), there were 43 suicide events. The incidence of suicide decreased with increasing social integration. In a multivariable Cox proportional hazards regression model, the relative hazard of suicide was lowest among participants in the highest category of social integration (adjusted hazard ratio, 0.23 [95% CI, 0.09-0.58]) and second-highest category of social integration (adjusted hazard ratio, 0.26 [95% CI, 0.09-0.74]). Increasing or consistently high levels of social integration were associated with a lower risk of suicide. These findings were robust to sensitivity analyses that accounted for poor mental health and serious physical illness.

**Conclusions and Relevance:** Women who were socially well integrated had a more than 3-fold lower risk for suicide over 18 years of follow-up.
Role of depression severity and impulsivity in the relationship between hopelessness and suicidal ideation in patients with major depressive disorder
Wang YY, Jiang NZ, Cheung EFC, Sun HW, Chan RC (China)
Journal of Affective Disorders 183, 83-89, 2015

**Background:** Hopelessness, depression and impulsivity all contribute to the development of suicidal ideation in patients with major depressive disorder, but the pathway of these factors to suicidal ideation is not clear. This study examined the mediating effect of depression severity on the relationship between hopelessness and suicidal ideation and explored how this mediating effect was moderated by impulsivity. **Methods:** A total of 162 patients with major depressive disorder (MDD) completed a structured clinical diagnostic interview and a battery of scales assessing depression severity, hopelessness, suicidal ideation, and impulsivity. Regression analyses with bootstrapping methods were used to examine the mediating and moderating effects of various risk factors. **Results:** Mediation analysis revealed a significant indirect effect of hopelessness on suicidal ideation, and the effect was fully mediated through depression severity. On moderation analysis, the moderating effects of the relationship between depression severity and suicidal ideation were significant in both the medium and high impulsivity groups. **Limitations:** The present study was limited by the assessment of trait impulsivity and observer-rated depression severity, which might not fully reflect momentary impulsivity and feeling of depression when suicidal ideation occurs. **Conclusion:** Depression severity plays a mediator role in the relationship between hopelessness and suicidal ideation and this mechanism is contingent on the levels of impulsivity. MDD patients with higher impulsivity appear to be more likely to have suicidal ideations even when they are less depressed. These findings highlight the importance of impulsivity assessment and alleviation of depressive symptoms to prevent suicidality in patients with MDD.

Explaining the income and suicidality relationship: Income rank is more strongly associated with suicidal thoughts and attempts than income
Wetherall K, Daly M, Robb KA, Wood AM, O'Connor RC (UK)
Social Psychiatry and Psychiatric Epidemiology 50, 929-937, 2015

**Purpose:** Low income is an established risk factor for suicidal thoughts and attempts. This study aims to explore income within a social rank perspective, proposing that the relationship between income and suicidality is accounted for by the rank of that income within comparison groups. **Methods:** Participants (N = 5779) took part in the Adult Psychiatric Morbidity Survey across England. An income rank variable was created by ranking each individual’s income within four comparison groups (sex by education, education
by region, sex by region, and sex by education by region). Along with absolute income and demographic covariates, these variables were tested for associations with suicidal thoughts and attempts, both across the lifetime and in the past year.

**Results:** Absolute income was associated with suicidal thoughts and attempts, both across the lifetime and in the past year. However, when income rank within the four comparison groups was regressed on lifetime suicidal thoughts and attempts, only income rank remained significant and therefore accounted for this relationship. A similar result was found for suicidal thoughts within the past year although the pattern was less clear for suicide attempts in the past year.

**Conclusions:** Social position, rather than absolute income, may be more important in understanding suicidal thoughts and attempts. This suggests that it may be psychosocial rather than material factors that explain the relationship between income and suicidal outcomes.

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**Functional impairment due to bereavement after the death of adolescent or young adult offspring in a national population study of 1,051,515 parents**

Wilcox HC, Mittendorfer-Rutz E, Kjeldgard L, Alexanderson K, Runeson B (USA)

*Social Psychiatry and Psychiatric Epidemiology* 50, 1249-1256, 2015

**Purpose:** This study addresses the burden of grief after the death of an adolescent or young adult offspring. Parental bereavement following the death of an adolescent or young adult offspring is associated with considerable psychiatric and somatic impairment. Our aim is to fill a research gap by examining offspring death due to suicide, accidents, or natural causes in relation to risk of parental sickness absence with psychiatric or somatic disorders.

**Methods:** This whole population-based prospective study included mothers and fathers of all offspring aged 16-24 years in Sweden on December 31, 2004 (n=1,051,515). This study had no loss to follow-up and exposure, confounders, and the outcome were recorded independently of each other. Cox survival analysis was used to model time to sickness absence exceeding 30 days, adjusting for parental demographic characteristics, previous parental sickness absence and disability pension, and inpatient and outpatient psychiatric and somatic healthcare prior to offspring death in 2001-2004. This large study population provided satisfactory statistical power for stratification by parents’ sex and adolescent and young adults’ cause of death.

**Results:** Mothers and fathers of offspring suicide and accident decedents both had over tenfold higher risk for psychiatric sickness absence exceeding 30 days as compared to parents of live offspring. Fathers of suicide decedents were at 40% higher risk for somatic sickness absence.

**Conclusions:** This is the largest study to date of parents who survived their offspring’s death and the first study of work-related outcomes in bereaved parents. This study uses a broad metric of work-related functional impairment, sickness absence, for capturing the burden of sudden offspring death.
Background: Research shows the elevated risk of suicide associated with current or recent inpatient psychiatric hospitalization. However, it is unclear whether this applies in the area of post-communist Central and Eastern Europe where mental health care has not been deinstitutionalized yet. The present study aims to examine the rates of suicides among psychiatric patients during and shortly after discharge from inpatient hospitalization in the Czech Republic.

Methods: All inpatient psychiatric hospitalizations and all suicides committed between 2008 and 2012 have been merged on an individual data basis. The time horizon between the admission and two months after the discharge from inpatient psychiatric facility was utilized and multiple logistic regression was performed to calculate the odds of committing suicide.

Results: A total of 137,290 inpatients were hospitalized in Czech psychiatric facilities between 2008 and 2012, and 402 of the inpatients committed suicide during the hospitalization or within the 2 months after the discharge. Highly elevated risks of suicides were found to be associated with being a male, having a history of multiple hospitalizations, and having a diagnosis of affective, anxiety, or personality disorder.

Limitations: Limitations are related to the design of the study, and its reliance on routinely collected data. Also, it was not possible to assess the odds of suicide associated with inpatient psychiatric hospitalization against the odds of suicide in general population.

Conclusions: During psychiatric treatment and recovery, suicidal behavior and ideation is increased. In psychiatry, hospitalization may be a risky period for suicide behavior. Suicide rates during and soon after the psychiatric hospitalization identified in this study from Central and Eastern Europe are similar to the findings from Western Europe. Preventive strategies should be tailored accordingly.
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