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Foreword

This volume contains quotations from internationally peer-reviewed suicide research published during the semester May 2012–October 2012; it is the eighth of a series produced biannually by our Institute with the aim of assisting the Commonwealth Department of Health and Ageing in being constantly updated on new evidences from the scientific community. Compared to previous volumes, an increased number of examined materials have to be referred. In fact, during the current semester, the number of articles scrutinised has been the highest yet, with a progression that testifies a remarkably growing interest from scholars for the field of suicide research (718 articles for the first, 757 for the second, 892 for the third, 1,121 for the fourth, 1,276 for the fifth, 1,472 for the sixth, 1,515 for the seventh and 1,735 in the present volume).

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 at reading 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 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 new 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

Director, Australian Institute for Suicide Research and Prevention
Acknowledgments

This report has been produced by the Australian Institute for Suicide Research and Prevention, WHO Collaborating Centre for Research and Training in Suicide Prevention and National Centre of Excellence in Suicide Prevention. The assistance of the Commonwealth Department of Health and Ageing in the funding of this report is gratefully acknowledged.

We also gratefully acknowledge the contribution of AISRAP staff members Dr Kairi Kõlves 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\(^1\) indicated that, in 2009, 2,132 deaths by suicide were registered in Australia, representing an age-standardized rate of 9.6 per 100,000.

Further, a study on mortality in Australia for the years 1997–2001 found that suicide was the leading cause of avoidable mortality in the 25–44 year age group, for both males (29.5%) and females (16.7%), while in the age group 15–24 suicide accounted for almost a third of deaths due to avoidable mortality\(^2\). In 2003, self-inflicted injuries were responsible for 27% of the total injury burden in Australia, leading to an estimated 49,379 years of life lost (YLL) due to premature mortality, with the greatest burdens observed in men aged 25–64\(^3\).

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. Indeed, ABS has acknowledged the difficulties in obtaining reliable data for suicides in the past few years\(^4\),\(^5\). 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 validity 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 and Ageing (DoHA) 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. The new role given to AISRAP will translate into an even deeper commitment to the cause of suicide prevention amongst community members of Australia.
As part of this initiative, AISRAP is committed to the creation of a databank of the recent scientific literature documenting the nature and extent of suicidal and self-harming behavior and recommended practices in preventing and responding to these behaviors. 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 behaviors 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 2012 and October 2012; 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 1 consisted of weekly searches of the academic literature performed from May 2012 and October 2012. 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, suicidal, self-harm, self-injury and 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 2012 and October 2012.
• 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 6 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, publically 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
Suicide Research: Selected Readings

- 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.

![Flowchart of process.](image)
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
Understanding drug-related mortality in released prisoners: A review of national coronial records

Andrews JY, Kinner SA (Australia)
BMC Public Health 12, 270, 2012

**Background:** The prisoner population is characterised by a high burden of disease and social disadvantage, and ex-prisoners are at increased risk of death following release. Much of the excess mortality can be attributed to an increased risk of unnatural death, particularly from drug overdose; however, relatively few studies have investigated the circumstances surrounding drug-related deaths among released prisoners. This study aimed to explore and compare the circumstances of death for those who died from accidental drug-related causes to those who died from all other reportable causes.

**Methods:** A nationwide search of the Australian National Coroners Information System (NCIS) was conducted to identify reportable deaths among ex-prisoners from 2000 to 2007. Using a structured coding form, NCIS records for these cases were interrogated to explore causes and circumstances of death.

**Results:** Coronial records for 388 deceased ex-prisoners were identified. Almost half of these deaths were a result of accidental drug-related causes (45%). The majority of accidental drug-related deaths occurred in a home environment, and poly-substance use at or around the time of death was common, recorded in 72% of drug-related deaths. Ex-prisoners who died of accidental drug-related causes were on average younger and less likely to be Indigenous, born in Australia, married, or living alone at or around the time of death, compared with those who died from all other reportable causes. Evidence of mental illness or self-harm was less common among accidental drug-related deaths, whereas evidence of previous drug overdose, injecting drug use, history of heroin use and history of drug withdrawal in the previous six months were more common.

**Conclusions:** Drug-related deaths are common among ex-prisoners and often occur in a home (vs. public) setting. They are often associated with use of multiple substances at or around the time of death, risky drug-use patterns, and even among this markedly disadvantaged group, extreme social disadvantage. These findings reflect the complex challenges facing prisoners upon release from custody and indicate a need to consider drug overdose within the wider framework of ex-prisoner experiences, so that preventive programmes can be appropriately structured and targeted.

**Comment**

**Main findings:** Prisoners face many challenges upon release from prison, including stigmatisation, failure to obtain employment or housing, and the loss of close personal relationships. Studies in Australia have shown that prisoners have an increased risk of mortality, with the majority of deaths being caused by alcohol and drug abuse¹. However, previous Australian studies analysing risk factors for
death in released prisoners have used data linkage methods, matching correctional records with death registers. The authors of the current study note that this method means results are limited to basic demographic and criminogenic factors, limiting the ability to explore broader risk factors for mortality. To resolve this, the current study used information from the National Coroner’s Information System (NCIS), including demographic information, a police narrative, autopsy, and coronial findings, to explore the causes and circumstances of drug-related mortality among ex-prisoners in Australia. As expected, the major cause of death was accidental drug overdose (45% of the 388 ex-prisoners). The remaining 213 deaths (55%) were most frequently suicides (30%), followed by injury deaths due to external causes (12%), and deaths by chronic/infectious diseases (9%). Other characteristics of ex-prisoners prior to death were unemployment, poor health profiles, and limited utilisation of health services.

**Implications:** While suicide is a major problem within Australian prisons, research has shown that the majority (86%) of suicides by offenders occur once the person has been released, particularly within the first 2 weeks. While it is widely believed that drug deaths after release from prison are due to decreased tolerance during imprisonment, the current study showed that 55% of deaths in prisoners were from causes other than accidental drug overdoses, with suicide comprising 30% of these other causes of death. This indicates that, while it is important to offer drug and alcohol assistance to prisoners on release, these individuals should also be monitored for suicidal tendencies and behaviours. This is particularly important considering that the findings from this study underscore the fact that the majority of ex-prisoners suffered from poor health and limited health service contact. Initiatives to increase the rates of employment and improve the socioeconomic status of ex-prisoners may also aid in reducing death by suicide in this population.

**Endnotes**

Suicides associated with the 2008-10 economic recession in England: Time trend analysis
Barr B, Taylor-Robinson D, Scott-Samuel A, McKee M, Stuckler D (UK)
British Medical Journal 345, e5142, 2012

**Objective:** To determine whether English regions worst affected by the economic recession in the United Kingdom in 2008-10 have had the greatest increases in suicides.

**Design:** Time trend analysis comparing the actual number of suicides with those that would be expected if pre-recession trends had continued. Multivariate regression models quantified the association between changes in unemployment (based on claimant data) and suicides (based on data from the National Clinical Health Outcomes Database).

**Setting:** 93 English regions, based on the Nomenclature of Territorial Units Statistics level 3 groupings of local authorities at county level and groups of unitary local authorities.

**Participants:** Men and women with a record of death from suicide or injury of undetermined cause in 2000-10.

**Main Outcome Measure:** Number of excess suicides during the economic recession (2008-10).

**Results:** Between 2008 and 2010, we found 846 (95% confidence interval 818 to 877) more suicides among men than would have been expected based on historical trends, and 155 (121 to 189) more suicides among women. Historically, short term yearly fluctuations in unemployment have been associated with annual changes in suicides among men but not among women. We estimated that each 10% increase in the number of unemployed men was significantly associated with a 1.4% (0.5% to 2.3%) increase in male suicides. These findings suggest that about two fifths of the recent increase in suicides among men (increase of 329 suicides, 126 to 532) during the 2008-10 recession can be attributed to rising unemployment.

**Conclusion:** The study provides evidence linking the recent increase in suicides in England with the financial crisis that began in 2008. English regions with the largest rises in unemployment have had the largest increases in suicides, particularly among men.

**Comment**

**Main findings:** Despite a decrease in suicide rates in England since the late 1990s, rates began increasing again in 2008. While research has been conducted into the possible reasons for the decrease in suicide rates in the late 1990s, no research identifying the reason for the increase in recent years is available. Unemployment and financial difficulties are well-known risk factors for suicide, with economic crises being linked with increased suicide rates in Asia\(^1\). The current paper explored the relationship between the 2008-2010 recession and suicide rates in
England. The study compared trends of suicide rates between 2000 and 2010, including all deaths by suicide and undetermined causes in the National Clinical and Health Outcomes Database. The authors then used data from the Office for National Statistics to measure unemployment across the country. Before the economic crisis in 2008, the rate of suicide had been declining by 57 suicides per year in males and 26 suicides per year in females. It was estimated that due to the financial crisis during the 2008-2010 period, 846 more male suicides and 155 more female suicides than expected by the declining trend would occur. It was found that unemployment levels and suicide rates correlated strongly among both men and women. The short term effects of job loss during the recession were analysed, with an estimated finding that each yearly 10% increase in the number of unemployed men between 2000 and 2010 was associated with a 1.4% increase in the number of suicides. The short-term effect on women, however, was not significant. It was then estimated that around two fifths of the total excess in suicides could be attributed to the higher unemployment levels.

Implications: The current study supports findings from other nations that economic downturns appear to be related to increased suicide rates. Research in this area has been conducted in Asian and European countries, and consistent results of increased suicide rates indicate that further research in Australia is warranted. Identifying the risk of suicide in unemployed individuals raises the importance of policies to keep people employed, promote re-employment, and provide extra support to the unemployed. Furthermore, it appears that males are more affected by the initial experience of becoming unemployed, indicating that males may be in need of extra support around the time that they lose their employment.

Endnotes
Premature death after self-harm: A multicentre cohort study
Lancet 380, 1568–1574, 2012

Background: People who self-harm have an increased risk of premature death. The aim of this study was to investigate cause-specific premature death in individuals who self-harm, including associations with socioeconomic deprivation.

Methods: We undertook a cohort study of patients of all ages presenting to emergency departments in Oxford, Manchester, and Derby, UK, after self-poisoning or self-injury between Jan 1, 2000, and Dec 31, 2007. Postcodes of individuals’ place of residence were linked to the Index of Multiple Deprivation 2007 in England. Mortality information was supplied by the Medical Research Information Service of the National Health Service. Patients were followed up to the end of 2009. We calculated age-standardised mortality ratios (SMRs) and years of life lost (YLL), and we tested for associations with socioeconomic deprivation.

Findings: 30 950 individuals presented with self-harm and were followed up for a median of 6.0 years (IQR 3.9–7.9). 1832 (6.1%) patients died before the end of follow-up. Death was more likely in patients than in the general population (SMR 3.6, 95% CI 3.5-3.8), and occurred more in males (4.1, 3.8-4.3) than females (3.2, 2.9–3.4). Deaths due to natural causes were 2-7.5 times more frequent than was expected. For individuals who died of any cause, mean YLL was 31.4 years (95% CI 30.5-32.2) for male patients and 30.7 years (29.5-31.9) for female patients. Mean YLL for natural-cause deaths was 25.9 years (25.7–26.0) for male patients and 25.5 years (25.2-25.8) for female patients, and for external-cause deaths was 40.2 years (40.0-40.3) and 40.0 years (39.7–40.5), respectively. Disease of the circulatory (13.1% in males; 13.0% in females) and digestive (11.7% in males; 17.8% in females) systems were major contributors to YLL from natural causes. All-cause mortality increased with each quartile of socioeconomic deprivation in male patients (chi(2) trend 39.6; p < 0.0001), female patients (13.9; p = 0.0002), and both sexes combined (55.4; p < 0.0001). Socioeconomic deprivation was related to mortality in both sexes combined from natural causes (51.0; p < 0.0001) but not from external causes (0.30; p = 0.58). Alcohol problems were associated with death from digestive-system disease, drug misuse with mental and behavioural disorders, and physical health problems with circulatory-system disease.

Interpretation: Physical health and life expectancy are severely compromised in individuals who self-harm compared with the general population. In the management of self-harm, clinicians assessing patients’ psychosocial problems should also consider their physical needs.

Funding: Department of Health Policy Research Programme.

Comment

Main findings: Studies have shown an association between engagement in self-harm and premature all-cause and natural-cause mortality. Despite both self-
harm and suicide being linked to socioeconomic status, research into the relationship between socioeconomic deprivation and suicide after self-harm is extremely limited, and no studies have analysed deprivation in regards to all-cause or natural-cause mortality after self-harm. This multicentre cohort study from the UK aimed to investigate excess all-cause and cause-specific mortality and years of life lost (YLL) in individuals with a history of self-harm compared with the general population. The authors also examined associations between mortality and socioeconomic deprivation and between problems with alcohol, illicit drugs, and physical health present at the time of self-harm and death. Data were obtained for all individuals who presented with non-fatal self-harm to one general hospital emergency department in Oxford, three in Manchester, and two in Derby between 2000 and 2007. Any intentional self-poisoning or self-injury was considered self-harm, regardless of underlying motivations. Deprivation was measured by linking the participant’s residential postcode during the most recent self-harm episode to the Index of Multiple Deprivation (IMD) 2007 in England, while the Medical Research Information Service (MRIS) provided mortality data. Individuals who were not traced by the MRIS, those who were younger than 15 at the end of follow-up, and those of unknown age were excluded from the analysis, resulting in a final sample of 30,132 individuals. By the end of follow-up, 1,832 individuals had died. In 378 (20.6%) individuals, the underlying cause of death was suicide (inclusive of undetermined causes). Two hundred and forty-two (13.2%) patients died by accidents and natural causes (e.g., circulatory-system diseases and digestive-system diseases) accounted for 1,212 (66.2%) deaths. The reported number of deaths from all causes was more than three times the expected number for both sexes combined. The greatest risk of death was by accidental poisoning, while deaths by natural causes were generally two or more times higher than expected. The mean YLL for all-cause mortality was 31.4 years for male patients and 30.7 years for female patients, with the overall burden of mortality being greater in males than females. People with alcohol problems at the time of self-harm were more likely to die than those without alcohol problems. Similarly, those with physical health problems at the time of self-harm were more likely to die than people without physical health problems. While illicit drug problems were not associated with all-cause mortality, those who had mental and behavioural disorders at the time of death were more likely to have illicit drug problems than those whose death did not involve these disorders. Socioeconomic status was related to death by natural causes for both sexes combined, but socioeconomic deprivation did not increase the chance of death by external causes such as suicides or accidents.

Implications: In an area that is largely lacking in current research, the paper by Bergen and colleagues found that individuals who presented to emergency departments for self-harm had a greater risk of death from any cause than did the general population. The fact that many of these deaths occurred due to natural causes indicates that close attention should be paid to the physical health of individuals who self-harm, as well as to their mental health. Furthermore, findings
indicate that alcohol and drug misuse may contribute to premature mortality in individuals who self-harm, and that psychosocial assessment after a person presents for self-harm may be imperative to identify these problems. The problem of premature mortality following self-harm also seems to exist in Australia. A study by Reith et al (2004) found high rates of premature mortality in individuals hospitalised for self-harm with 228 participants (5.6%) dying during the follow up period. One hundred and twenty-two participants (2.9%) died by premature death, which included early death (64 cases: motor vehicle accidents, accidental poisoning, homicide, etc.) and suicide (58 cases). Consequently, the recommendations, such as increased attention to physical health and psychosocial assessments of people who self-harm derived from the large-scale study in UK, are also relevant in the Australian context.

Endnotes
Have mental health education programs influenced the mental health literacy of those with major depression and suicidal ideation? A comparison between 1998 and 2008 in South Australia

Chamberlain PN, Goldney RD, Taylor AW, Eckert KA (Australia)

Suicide & Life-Threatening Behavior 42, 525-540, 2012

Mental health literacy is the knowledge and beliefs about mental disorders that aid their recognition, management, or prevention and is considered to be an important determinant of help-seeking. This has relevance in suicide prevention, as depression, the clinical condition most frequently associated with suicidality, has been the target of community and professional education programs designed to enhance mental health literacy. In this study, whether such programs have influenced help-seeking attitudes and behavior in those who are depressed and suicidal was considered. The results indicate that despite intensive community education programs over the last two decades, there has been little change in those who are depressed and suicidal in terms of their attitudes toward treatment seeking and, more importantly, their treatment-seeking behavior. These results draw into question the value of current community education programs for those most vulnerable to suicidal behavior.

Comment

Main findings: Mental health literacy refers to the knowledge and beliefs about mental disorders, both in individuals experiencing mental health problems and the wider community. Improving the mental health literacy of individuals has been suggested as a potential suicide prevention approach for individuals with depression, through increasing the acknowledgment of depressive symptoms and making it more likely for these individuals to seek treatment. The current study analysed the impact of recent initiatives in Australia such as beyondblue, the Australian Government National Mental Health Strategy, and various education programs, on improving the mental health literacy and treatment-seeking behaviour of both suicidal and non-suicidal depressed persons in South Australia. Findings were compared to those of two earlier studies, in an attempt to identify which changes had occurred over the last 10 years. Data were collected from the 2008 Health Omnibus Survey of metropolitan and rural South Australians, who were at least 15 years of age. Face-to-face interviews were conducted with one person per household selected, lasting for approximately 40 minutes each. Mental health literacy and depression were both analysed using separate questionnaires. Out of the 3,034 participants in the study, 323 (10.67%) had major depression. Further, 91 (28%) of the participants with major depression (33 men and 58 women) reported suicidal ideation and 232 (72%) did not experience suicidal ideation (86 men and 146 women). The suicidal and non-suicidal depressed groups and non-depressed groups demonstrated significantly improved recognition of the problem when compared to the results from 1998. The non-suicidal, depressed
participants in 2008 were more likely to be willing to see a doctor and talk over problems with family and friends than the non-suicidal, depressed participants in 1998, and were also less likely to select the option that they “did not know”. The 2008 non-suicidal depressed group also believed that antidepressant medications were more helpful and less harmful than the 1998 participants. On the other hand, the depressed and suicidal group in 2008, perceived doctors to be less helpful than the same group did in 1998, but also considered antidepressants to be less harmful than in 1998. Surprisingly, despite the introduction of numerous awareness campaigns, no significant differences were found on a number of variables, including the differences between mental health service utilisation between 1998 and 2008 for either group, or the knowledge of available choices for help in the depressed and suicidal group.

Implications: Depression is often stigmatised due to a lack of understanding about mental illness, resulting in those suffering from this illness potentially being viewed negatively by themselves and the community. This stigmatisation can have serious negative effects on individuals suffering from depression, and their willingness to seek treatment for symptoms, including suicidality. The current study suggests that programs introduced to raise awareness about mental illness and depression may have been effective at increasing the recognition of depression as a problem in Australia in the last 10 years. Despite this, the utilisation of mental health services did not increase significantly. This indicates that the community education approach may not be effective at changing the treatment utilisation habits of individuals, and that it may be necessary to explore other, more impactful methods. The findings also highlight the fact that the mental health literacy of suicidal depressed individuals appears to have improved less than that of the non-suicidal depressed participants. This is particularly important considering that this is the group that potentially has the greatest need for help. Therefore, it is important for clinicians to provide optimal evidence-based care to this group of individuals in order to prevent suicidal behaviours.

Endnotes
Bullying victimisation and risk of self harm in early adolescence: Longitudinal cohort study
Fisher HL, Moffitt TE, Houts RM, Belsky DW, Arseneault L, Caspi A (UK, USA)
British Medical Journal. Published online: 26 April 2012. doi: 10.1136/bmj.e2683, 2012

Objectives: To test whether frequent bullying victimisation in childhood increases the likelihood of self harming in early adolescence, and to identify which bullied children are at highest risk of self harm.


Setting: England and Wales, United Kingdom.

Participants: Children assessed at 5, 7, 10, and 12 years of age.

Main outcome measures: Relative risks of children’s self harming behaviour in the six months before their 12th birthday.

Results: Self harm data were available for 2141 children. Among children aged 12 who had self harmed (2.9%; n = 62), more than half were victims of frequent bullying (56%; n = 35). Exposure to frequent bullying predicted higher rates of self harm even after children’s pre-morbid emotional and behavioural problems, low IQ, and family environmental risks were taken into account (bullying victimisation reported by mother: adjusted relative risk 1.92, 95% confidence interval 1.18 to 3.12; bullying victimisation reported by child: 2.44, 1.36 to 4.40). Victimised twins were more likely to self harm than were their non-victimised twin sibling (bullying victimisation reported by mother: 13/162 v 3/162, ratio = 4.3, 95% confidence interval 1.3 to 14.0; bullying victimisation reported by child: 12/144 v 7/144, ratio = 1.7, 0.71 to 4.1). Compared with bullied children who did not self harm, bullied children who self harmed were distinguished by a family history of attempted/completed suicide, concurrent mental health problems, and a history of physical maltreatment by an adult.

Conclusions: Prevention of non-suicidal self injury in young adolescents should focus on helping bullied children to cope more appropriately with their distress. Programmes should target children who have additional mental health problems, have a family history of attempted/completed suicide, or have been maltreated by an adult.

Comment

Main findings: Bullying in schools has received a great deal of public attention, particularly due to instances of self-harm and suicides of bullied youth that have been reported by the media. Anti-bullying legislation has been enacted in the UK and in North America, and all Australian states and territories have anti-bullying policies in place¹. Nevertheless, surprisingly little research has focused on bullying as a risk factor for suicidal behaviours and much of the existing research has failed to control for confounding variables that could lead youth both to being bullied
and to suicidal behaviours, or for bias in the same individual reporting both the self-harm and bullying behaviours. This nationally representative study found that repeated exposure to bullying increased the risk of self-harm independent of confounders, such as premorbid mental illness, and that prevalence of suicidal behaviour was similar when reported by mothers as well as the children themselves. Those who did engage in self-harm were more likely to have suffered physical maltreatment by an adult, have had a family history of suicidal behaviours, and have experienced particular mental illnesses, such as conduct disorder or depressive symptoms. The findings are strengthened by the methodology of the study. The longitudinal design enabled controlling of premorbid confounders. Furthermore, using twins as participants allowed for an examination of the effects of bullying on one sibling, despite the shared home environment, in victimisation-discordant pairs.

**Implications:** Bullying is known to cause high levels of distress among school children and the association between bullying and suicidal behaviours has also been documented in Australia. Anti-bullying programs in Australia are reported to have reduced the instance of victimisation among students, with varying degrees of success. These programs should continue to be conducted, evaluated, and revised for best provision of prevention of victimisation. Despite any reduction and the fact that the majority of bullied children do not in fact self-harm, this article highlights the need to address the potential for suicidal behaviours among those that are bullied. Teachers, guidance counsellors, health practitioners, and other gatekeepers should be kept apprised of the latest research into the risk factors for self-harm among school children, such as bullying in conjunction with poor mental health, physical abuse by an adult, and a family history of self-harm, as found in this study. Gatekeepers can then routinely screen for these risk factors. A study into the risk factors specific to the Australian context, similar to the present research, would also provide additional insight for those in the position to help these vulnerable youths.

**Endnotes**

Context: Mental disorders have been associated with increased mortality, but the evidence is primarily based on hospital admissions for psychoses. The underlying mechanisms are unclear.

Objectives: To investigate whether the risks of death associated with mental disorders diagnosed in young men are similar to those associated with admission for these disorders and to examine the role of confounding or mediating factors.

Design: Prospective cohort study in which mental disorders were assessed by psychiatric interview during a medical examination on conscription for military service at a mean age of 18.3 years and data on psychiatric hospital admissions and mortality during a mean 22.6 years of follow-up were obtained from national registers.

Setting: Sweden.


Main Outcome Measure: All-cause mortality according to diagnoses of schizophrenia, other nonaffective psychoses, bipolar or depressive disorders, neurotic and adjustment disorders, personality disorders, and alcohol-related or other substance use disorders at conscription and on hospital admission.

Results: Diagnosis of mental disorder at conscription or on hospital admission was associated with increased mortality. Age-adjusted hazard ratios according to diagnoses at conscription ranged from 1.81 (95% CI, 1.54-2.10) (depressive disorders) to 5.55 (95% CI, 1.79-17.2) (bipolar disorders). The equivalent figures according to hospital diagnoses ranged from 5.46 (95% CI, 5.06-5.89) (neurotic and adjustment disorders) to 11.2 (95% CI, 10.4-12.0) (other substance use disorders) in men born from 1951 to 1958 and increased in men born later. Adjustment for early-life socioeconomic status, body mass index, and blood pressure had little effect on these associations, but they were partially attenuated by adjustment for smoking, alcohol intake, intelligence, educational level, and late-life socioeconomic status. These associations were not primarily due to deaths from suicide.

Conclusion: The increased risk of premature death associated with mental disorder is not confined to those whose illness is severe enough for hospitalization or those with psychotic or substance use disorders.

Comment

Main findings: The presence of severe mental disorders has been linked to increased mortality by suicide, accidents and natural causes of death. The majority of research in this area has focused on individuals whose disorders were severe
enough to require hospital admission. The studies including community-based samples have largely excluded neurotic or adjustment disorders, focusing mainly on clinically diagnosed depression. The current Swedish study tested whether the risk of premature death was also found in individuals with a broad range of mental disorders (schizophrenia, other non-affective psychoses, bipolar and depressive disorders, neurotic and adjustment disorders, personality disorders, and substance use disorders), which were not severe enough for hospitalisation. The sample included a total of more than 1 million men conscripted for the military between 1969 and 1994. The all-cause mortality of individuals diagnosed with mental disorders during conscription \((n = 61,677)\) was analysed and a comparison was made between those who never received psychiatric hospitalisation during the 25-year follow up period and those who were admitted to hospital for a psychiatric illness at least once during the same time period. During the follow-up period, 15,110 men died. It was found that the men who had been diagnosed with any disorder at conscription had a significantly higher chance of death by both suicide and other causes than those without the disorder in question. The highest risk was in those men diagnosed with bipolar disorders, schizophrenia or substance use disorders (between 3.5 and 5.5 times greater than those without the particular disorder). Of the 1,087,257 men who had no history of hospital admission for mental disorders at the time of conscription, 60,333 had at least one admission during the follow-up period and 4,879 of these men died. The study found that risk of death in the population who received psychiatric hospitalisation was even greater than the risk in those with milder disorders not requiring hospitalisation. Factors increasing the risk for mortality in those with mental disorders were low intelligence at conscription, low education level, and low later-life socioeconomic status (SES). Risky alcohol intake and smoking behaviour had impacts on the association between substance use disorders and mortality but had little impact on the association between non-affective psychoses and mortality, while BMI, blood pressure, and early-life SES had little impact overall.

**Implications:** Premature mortality is a major problem in Australia, with the Australian Bureau of Statistics estimating that the total burden of disease in 2003, including premature mortality, was the loss of over 2.6 million years of “healthy life”\(^2\). The three major causes of this overall burden were cancer, cardiovascular disease, and mental disorders\(^2\). When broken down into specific causes of health loss, suicide and self-inflicted injuries were the eighth leading cause of health loss in males, while the leading causes in females were anxiety and depression\(^2\). The results from the current study support previous findings suggesting that mental illness may play a significant role in premature mortality by all causes of death, including cancer, cardiovascular disease, and suicide. Consequently, the results of this study show the importance of increasing the medical attention given to both the mental and physical health of individuals with mental disorders to decrease the prevalence of premature death.

The current study improved on past research in a number of ways. Firstly, it used a large sample size of over 1 million men to assess all-cause morbidity over
the long term (follow up period of 25-years). Furthermore, the availability of information on BMI, blood pressure, SES, smoking habits, and alcohol use, made it possible to assess the degree to which these factors could explain the link between mental disorders and mortality. While previous studies have shown that risk of death is increased in individuals with severe disorders requiring hospitalisation, this study included individuals with milder disorders not requiring hospitalisation, finding that the increased risk may not be limited to individuals with severe mental disorders.

Endnotes

   
The use of the Internet by people who die by suicide in England: A cross sectional study
Gunnell D, Bennewith O, Kapur N, Simkin S, Cooper J, Hawton K (UK)
Journal of Affective Disorders 141, 480-483, 2012

Background: There is widespread concern regarding the possible influence of the Internet on suicidal behaviour. The aim of this study was to estimate the prevalence and characteristics of Internet-related suicide in England.

Methods: Cross sectional study based on detailed review of the inquest reports of suicides occurring in the areas served by 12 Coroners in England. Evidence of Internet use in relation to the suicide was sought for each death.

Results: Altogether inquest reports for 593 suicides (all methods) in 2005 and 166 suicides using specific methods in 2006–7 were assessed. There was evidence of a direct Internet contribution in nine (1.5% 95%CI 0.7 to 2.9%) of the 593 suicides in 2005. In seven (77.8%) of the cases the individuals had used the Internet to research the methods of suicide they used. Five (55.6%) individuals had used ‘unusual’ high-lethality methods, whereas such methods were only used in 1.7% of all suicides (p < 0.001). There was evidence of Internet involvement in 2.4% (0.7% to 6.1%) of the suicides in 2006–2007. None of the Internet-related suicides appeared to occur as part of a suicide pact.

Limitations: The contribution of the Internet to suicide rates may be under-estimated in this analysis as Coroners are unlikely to comprehensively pursue the possibility of Internet involvement in all the deaths they investigate.

Conclusions: Easy access to information about suicide methods and pro-suicide web sites on the Internet appears to contribute to a small but significant proportion of suicides. A key impact of the Internet appears to be in relation to information concerning suicide methods.

Comment

Main findings: The Internet has begun to be harnessed for activities aimed at preventing suicide and for support services for those experiencing suicidal behaviours, including online cognitive behavioural therapy, support forums, and enhanced possibilities for communication between mental health professionals and patients. Nevertheless, there is a contemporaneous concern that the internet is being used to promote and facilitate suicide with sites containing graphic details about suicide and information about means, as well as forums encouraging people to take their lives. Despite this, there is a paucity of evidence that the Internet poses a risk for suicide, notwithstanding certain individual, well-publicised cases. The present article is the first study to directly investigate the extent to which the Internet has played a contributory role in completed suicides.

Although the Internet was not found to play a role in a large proportion of suicides over the study period, suicides in which the Internet was implicated did vary in important ways, with a greater proportion of unusual methods, which also
tended to be more lethal in nature and thus more likely to lead to the completion of the suicide.

**Implications:** Three of the nine suicides that were associated with use of the Internet had charcoal burning as the means. While charcoal burning is a common method of suicide in Hong Kong, and increasingly so also in Taiwan, it is extremely rare elsewhere in the world. The fact that the Internet was involved in the transfer of this method across the globe suggests that it is important to work together with Internet service providers to restrict the sharing of information about potentially fatal suicide methods. Furthermore, one of the individuals who used charcoal burning also accessed a journal article on the topic (cited in a Wikipedia entry). This implies the need for academics to be also mindful of the possible ramifications of publishing about suicide methods, especially highly lethal ones, when such articles are readily online or in print. Research has shown that use of a particular method can increase when it is written about in newspapers\(^1\) and also when it is featured in fictional film or television programs\(^2\). The Australian federal government’s Mindframe National Media Initiative recommends that information about where to seek help (e.g., 24-hour crisis lines) be included in any media reporting on suicide\(^3\). Academics could also consider having some online information included in their publications. While according to the Suicide Related Materials Offences Act 2005\(^4\), it is already illegal to use the internet to promote or incite suicide in Australia\(^5\), collaboration with online information sites widely accessed from Australia, such as Wikipedia, to ensure that information about different means does not appear in great detail on their pages and that crisis line information does appear on suicide-related pages would also help to minimise any potential negative effects of the internet on suicidal behaviours.

**Endnotes**
Impact of national policy initiatives on fatal and non-fatal self-harm after psychiatric hospital discharge: Time series analysis

Gunnell D, Metcalfe C, While D, Hawton K, Ho D, Appleby L, Kapur N (UK)
British Journal of Psychiatry 201, 233-238, 2012

Background: Risk of self-harm and suicide is greatly increased in the period after discharge from psychiatric in-patient care.

Aims: To investigate the impact on suicide of a series of policy initiatives to enhance care in the immediate post-discharge period.

Method: A time series analysis was based on 1997–2007 data from the National Confidential Inquiry into Suicide and from Hospital Episode Statistics for England.

Results: There was no evidence of a reduced risk of suicide in the first 12 weeks following discharge in 2003–2007 compared with 1997–2002. In contrast, the relative risk of non-fatal self-harm in the 12 weeks after discharge declined. The risk ratio for self-harm (2003–2007 v. 1997–2002) at 0–1 week post-discharge was 0.86 (95% CI 0.80–0.92) and at 2-4 weeks it was 0.89 (95% CI 0.85-0.94).

Conclusions: These findings provide some support for the impact of recent policy changes on the risk of non-fatal self-harm in the immediate period after discharge from psychiatric in-patient care.

Comment

Main findings: In England, approximately 5% of all suicides occur among individuals within 6 months of discharge from psychiatric in-patient care. Similarly, within 12 months of discharge, 6% of all psychiatric hospital patients are admitted for an episode of self-harm. To address these heightened risks fatal and non-fatal suicidal behaviours, England has implemented a range of initiatives related to the discharge of psychiatric in-patients in 2002 and 2003. Specifically, those with serious mental illness or a history of self-harm within the previous 3 months should be followed up within 7 days of discharge. Those considered being at high risk of suicide upon admission should be followed up with 48 hours.

Comparing the period 2003–2007 with 1997–2002, the present study found that there was a 14% reduction in the risk of self-harm in the first week following discharge, and slightly smaller risk reduction in subsequent weeks. There was potentially a reduction in completed suicides 2-4 weeks post-discharge, but it could not be confirmed with statistical certainty.

This is the first study to specifically evaluate the potential effect of policy initiatives on the risk for suicidal behaviours post-discharge, and it is strengthened by the fact that analyses were carried out using national data. There are, nevertheless, certain limitations to this study, which are recognised by the authors. For example, there was no analysis of whether or not the follow-up initiatives had been implemented as recommended in hospitals across England, but it is understood that the 7-day follow-up has been widely adopted. In terms of cases of self-
harm, this study only takes into account those required hospitalisation, which make up only around one-half of all cases of self-harm presenting at hospitals in England, and an even smaller proportion of instances of self-harm overall. In fact, only a minority of people who self-harm make any contact with any clinical services. England also recently implemented changes to hospital admission policies, which may account for the drop in self-harm admissions. Finally, the temporal association between the observed decline in self-harming behaviours and the policy initiatives does not imply a causal effect.

**Implications:**

Follow-up post-psychiatric admission discharge is widely understood to be important, given the high risk for suicide and self-harm in the initial release period. Previous research has found that the implementation of the 7-day follow-up initiative in England was associated with a reduction in suicide rates. The present findings lend additional support to the notion that such initiatives are effective in reducing suicidal behaviours among those who have been hospitalised for previous suicidality. In Australia, whether or not a 7-day follow-up takes place is a state-level decision; it is in force in Queensland, for example. The effectiveness of follow-up requirements requires more rigorous testing, however. The ecological design of the present and similar studies provides no proof that follow-up has in itself brought about a reduction in suicidal behaviours. Further studies employing randomised trials can better help reach an understanding of how follow-ups reduce the risk of suicidality.

**Endnotes**


Contributors to suicidality in rural communities: Beyond the effects of depression

BMC Psychiatry 12, 105, 2012

Background: Rural populations experience a higher suicide rate than urban areas despite their comparable prevalence of depression. This suggests the identification of additional contributors is necessary to improve our understanding of suicide risk in rural regions. Investigating the independent contribution of depression, and the impact of co-existing psychiatric disorders, to suicidal ideation and suicide attempts in a rural community sample may provide clarification of the role of depression in rural suicidality.

Methods: 618 participants in the Australian Rural Mental Health Study completed the Composite International Diagnostic Interview, providing assessment of lifetime suicidal ideation and attempts, affective disorders, anxiety disorders and substance-use disorders. Logistic regression analyses explored the independent contribution of depression and additional diagnoses to suicidality. A receiver operating characteristic (ROC) analysis was performed to illustrate the benefit of assessing secondary psychiatric diagnoses when determining suicide risk.

Results: Diagnostic criteria for lifetime depressive disorder were met by 28% (174) of the sample; 25% (154) had a history of suicidal ideation. Overall, 41% (63) of participants with lifetime suicidal ideation and 34% (16) of participants with a lifetime suicide attempt had no history of depression. When lifetime depression was controlled for, suicidal ideation was predicted by younger age, being currently unmarried, and lifetime anxiety or post-traumatic stress disorder. In addition to depression, suicide attempts were predicted by lifetime anxiety and drug use disorders, as well as younger age; being currently married and employed were significant protective factors. The presence of comorbid depression and PTSD significantly increased the odds of reporting a suicide attempt above either of these conditions independently.

Conclusions: While depression contributes significantly to suicidal ideation, and is a key risk factor for suicide attempts, other clinical and demographic factors played an important role in this rural sample. Consideration of the contribution of factors such as substance use and anxiety disorders to suicidal ideation and behaviours may improve our ability to identify individuals at risk of suicide. Acknowledging the contribution of these factors to rural suicide may also result in more effective approaches for the identification and treatment of at-risk individuals.

Comment

Main findings: Suicidality is often considered a symptom of depression, due to the high prevalence of depression in suicidal individuals. Research has suggested that viewing suicide as a component of a depressive disorder may lead to an underestimation of suicide risk. Despite having a similar prevalence of depression to urban
regions, rural communities generally have higher rates of suicide. For this reason, the current study used a rural population in Australia to investigate the independent contribution of depression to suicidality, as well as the influence of other psychiatric diagnoses, including anxiety and substance use. The sample included 618 New South Wales Residents who were 18 and over and had participated in the Australian Rural Mental Health Study. The mean age of participants was 55.2 years and 39% were male. Twenty-eight per cent (174) of participants met the criteria for depressive disorder. A large percentage of those who did not meet the criteria for depression had still experienced symptoms of depression, including a past episode of feeling sad which did not last for longer than several days in 40.5% (250) of participants. Conversely, 31.4% (194) of participants reported no lifetime depressive symptoms.

Twenty-five per cent (154) of participants had a history of suicidal ideation, 31% (47) of whom had made at least one past attempt at suicide. Of the participants who reported lifetime suicidal ideation, 58% (91) met the criteria for a depressive disorder and risk varied significantly depending on the type of depressive disorder. Forty-two per cent (63) of individuals who had experienced suicidal ideation had no history of a depressive disorder, and 12% (19) did not meet the diagnostic criteria for any disorder. The study found that factors other than depression, such as being unemployed, aged less than 65 years and unmarried, and a history of anxiety disorders, including post-traumatic stress disorder, increased the risk of suicidal ideation. With regards to suicide attempts, 34% (16) of individuals who had attempted suicide in their lifetime had no history of diagnosed depression, however all suicide attempters had some form of psychiatric disorder. Similarly, risk factors included being unmarried, unemployed, and suffering from a depressive, anxiety or drug use disorder.

Implications: The current study suggests that, while often strongly related, depression and suicidality appear to be separate constructs. Australian research has shown that 84% of suicides in rural areas in Queensland involved the diagnosis of a mental disorder at time of death. While depression was present in 54% of these cases, anxiety disorders (40%), substance use disorders (38%), and psychotic disorders (10%) were also present in a number of suicide cases. The main implications of these findings relate to the clinical treatment of suicidal individuals in Australia. The authors note that current clinical assessments may fail to test for suicidality if primary symptoms of depression are not present. However, it is clearly important not to neglect the possibility of suicide when treating individuals with other disorders such as anxiety and substance abuse disorders. When suicidality and depression are both present, it may be important to also address other factors contributing to the suicidality, including comorbid psychiatric conditions.

Endnotes
Repetition of self-harm and suicide following self-harm in children and adolescents: Findings from the Multicentre Study of Self-harm in England

Hawton K, Bergen H, Kapur N, Cooper J, Steeg S, Ness J, Waters K (UK)

Background: Self-harm (intentional self-poisoning and self-injury) in children and adolescents is often repeated and is associated with increased risk of future suicide. We have investigated factors associated with these outcomes.

Method: We used data collected in the Multicentre Study of Self-harm in England on all self-harm hospital presentations by individuals aged 10–18 years between 2000 and 2007, and national death information on these individuals to the end of 2010. Cox hazard proportional models were used to identify independent and multivariable predictors of repetition of self-harm and of suicide.

Results: Repetition of self-harm occurred in 27.3% of individuals (N = 3920) who presented between 2000 and 2005 and were followed up until 2007. Multivariate analysis showed that repetition was associated with age, self-cutting, and previous self-harm and psychiatric treatment. Of 51 deaths in individuals who presented between 2000 and 2007 and were followed up to 2010 (N = 5133) half (49.0%) were suicides. The method used was usually different to that used for self-harm. Multivariate analysis showed that suicide was associated with male gender [Hazard ratio (HR) = 2.4, 95% CI 1.2-4.8], self-cutting (HR = 2.1, 95% CI 1.1–3.7) and prior psychiatric treatment at initial presentation (HR = 4.2, 95% CI 1.7–10.5). It was also associated with self-cutting and history of psychiatric treatment at the last episode before death, and history of previous self harm.

Conclusions: Self-cutting as a method of self-harm in children and adolescents conveys greater risk of suicide (and repetition) than self-poisoning although different methods are usually used for suicide. The findings underline the need for psychosocial assessment in all cases.

Comment

Main findings: Self-harm is relatively common in adolescents and is often repeated. Although suicide is rare event, self-harm is recognised as a risk factor for eventual suicide. In fact repeated self-harm is the strongest predictor of a future completed suicide1. There are few studies considering self-harm as a factor in adolescent suicide, however. Of particular interest to the authors was whether or not method of self-harm is predictive of suicide risk, as has been found previously in adults1. Self-cutting is often considered to be low risk, for example, and individuals who self-harm in this way will often be discharged without a psychosocial assessment.

The authors found that repeated self-harm was indeed common, with more than one-quarter continuing to engage in self-harming behaviour. Furthermore, although mortality was relatively low, slightly less than one in every hundred
people died during the follow-up period, of which half were suicides or probable suicides. This high proportion of suicides among those that died provides further support for the notion that self-harm is a major risk factor for eventual suicide. It was also found that repeated self-cutters were at a high risk for subsequent suicide, especially those who were male and with a history of mental illness.

The rates of repetition in this study are likely to be underreported, as any initial incidence of self-harm that occurred prior to the study period was not detected. It is also probable that the rates of completed suicide are underreported given that the cause of death in many accidental deaths was more indicative of suicide. The authors maintain that there is often a reluctance to rule the death of a young person as a suicide.

Implications: The high incidence of suicide among those that died reinforces the link between self-harming behaviour and eventual suicide, especially among young males who engage in self-cutting on a repeated basis. These findings have important clinical implications. Self-harm among youth has been found to be highly prevalent in Australia, with one study finding a lifetime incidence of 8.1%. It is extremely important for all those that engage in self-harm, including self-cutting, and presenting at a hospital to undergo a psychosocial assessment. Furthermore, repeaters need special attention and should be closely followed-up. Finally, the link between self-harm and completed suicide should continue to be studied. As the authors note, it has important implications for the proposed inclusion of the diagnostic category “non-suicidal self-injury” in the DSM-V (the next edition of the American Psychiatric Association’s Diagnostic and Statistical Manual).

Endnotes
Self-harm and suicide are major public health problems in adolescents, with rates of self-harm being high in the teenage years and suicide being the second most common cause of death in young people worldwide. Important contributors to self-harm and suicide include genetic vulnerability and psychiatric, psychological, familial, social, and cultural factors. The effects of media and contagion are also important, with the internet having an important contemporary role. Prevention of self-harm and suicide needs both universal measures aimed at young people in general and targeted initiatives focused on high-risk groups. There is little evidence of effectiveness of either psychosocial or pharmacological treatment, with particular controversy surrounding the usefulness of antidepressants. Restriction of access to means for suicide is important. Major challenges include the development of greater understanding of the factors that contribute to self-harm and suicide in young people, especially mechanisms underlying contagion and the effect of new media. The identification of successful prevention initiatives aimed at young people and those at especially high risk, and the establishment of effective treatments for those who self-harm, are paramount needs.

Comment

Main findings: While suicide is less prevalent than non-fatal self-harm among adolescents, the tragedy of a young person taking their own life is enormous and young people are understandably often specifically targeted by national suicide prevention initiatives. The purpose of the present paper is to synthesise the evidence for adolescent self-harm and suicide and to provide an overview of the main areas that remain uncertain.

Given that there is a lack of evidence regarding what treatments are the most effective in preventing self-harm and suicide, the development and subsequent evaluation of new psychosocial and pharmacological interventions should be treated as a priority. As only a minority of people who self-harm make contact with clinical services, access to treatment also needs to be improved, especially in low- and middle-income countries. It is also important to take full advantage of available technologies in order to widen the reach of treatment and preventative services, including telephone, mobile, and internet-based services. Further, the restriction of access to means is understood to be a major preventative measure, including the safe storage of pesticides and restricted access to firearms. Finally, stigma related to mental illness remains a major barrier to effective help seeking among those with suicidal behaviours.

Implications: Many activities are in place around the world to address the concerns expressed by the authors of the present article. Finland was the first country in the world to introduce a national suicide prevention program in 1992. Australia implemented a national program in 1995 specifically targeting youth, widened to
address the entire population in 1999. A study on 21 OECD countries, including Australia, found an association between the introduction of national prevention strategies and reduction in overall suicide rates, with a particularly robust effect among youth, even when controlling for stronger results from particular countries and potential time-lag effect\(^1\). Another study found no discernible effect for locally targeted youth suicide prevention initiatives in the Australian case\(^2\), however, and it is also important to remain mindful of data reliability issues in the Australian case in the last decade\(^3\). Recent efforts by the Queensland Government to reduce the stigma related to mental illness\(^4\) and the Department of Health and Ageing to expand preventative activities at a national level, particularly those targeted at more vulnerable sub-populations such as Indigenous Australians\(^5\) and minority sexualities and genders\(^6\), are particularly welcome.

**Endnotes**


Suicide in recently admitted psychiatric in-patients: A case-control study

Hunt IM, Bickley H, Windfuhr K, Shaw J, Appleby L, Kapur N (UK)
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Background: Around a quarter of in-patient suicides occur within the first week of admission to psychiatric in-patient care. Little is known on the factors associated with suicide during this critical time. We aimed to identify risk factors for suicide among in-patients within the first week of admission.

Methods: A national population-based case-control study of 107 current psychiatric in-patients in England who died by suicide within a week of admission, matched on admission date with 107 living controls.

Results: Forty-two (40%) suicide cases died within the first 3 day of admission. A fifth of all suicides were on authorised leave at the time of death, but 34% were off the ward without staff agreement compared to only 1% of controls. Independent risk factors for suicide included previous self-harm, recent adverse life events, and a short (< 12 months) duration of illness.

Limitations: This is a retrospective study, using clinical data mainly collected from case records. Clinicians were not blind to case/control status.

Conclusions: The first few days of admission should be recognised as the period of highest risk. Careful risk evaluation is needed at this time, particularly in those with recent illness onset or previous suicide attempts. Knowledge of life events experienced before admission should be incorporated into risk assessments. Improvements to the ward environment to lessen the distress of an admission may be an important preventative measure. Protocols may require adapting to improve the safety of those on agreed leave, and prevent absconding through increased vigilance and closer observation of ward exits.

Comment

Main findings: The risk of suicide is highly increased in individuals with mental disorders severe enough to require psychiatric in-patient care. In fact, current psychiatric in-patients have been found to be approximately 50% more likely to die by suicide than the general population. While previous studies have focused on suicides that occurred at any time point during admission, the current study evaluated those suicides occurring during the first week of admission into psychiatric in-patient care in England. The study analysed risk factors for suicide comparing 107 psychiatric in-patients between the ages of 18 and 65 years who had died by suicide within one week of admission, with 107 living matched controls. The most common methods of suicide were hanging (n = 50, 47%) and jumping from height or in front of a moving vehicle (n = 31, 29%). The majority of suicides involved patients with a primary diagnosis of major affective disorder (n = 44, 42%), followed by schizophrenia (n = 39, 37%) and personality disorder (n = 7, 7%). Nearly half (n = 52, 49%) also had a secondary diagnosis. Eleven per cent
of suicides occurred on the day of admission, while 40% died within the first three days. Suicide risk within the first week of admission was higher in males, individuals who had a lifetime history of self-harm, a primary diagnosis of an affective disorder, an illness with duration of less than 12 months and having experienced an adverse life event (work problems, relationship breakdowns) within the previous 3 months. The results showed no significant differences between suicides and controls with regards to the number of co-morbid psychiatric illnesses or histories of violence or substance misuse.

Implications: A 1997 Australian paper on suicide in psychiatric inpatients at a large psychiatric hospital in Melbourne identified a total of 103 inpatient suicides over the 21-year study period. Despite the high prevalence of suicide within psychiatric in-patients, this English study was the first study to evaluate the risk factors for psychiatric in-patient suicides within one week of admission in a national sample. The authors were able to compare the current findings to their previous findings, concluding that factors such as shorter duration of mental illness and recent adverse life events are unique to in-patient suicides occurring within the first week of admission. Patients displaying such risk factors on admission may require additional monitoring during the first week of their stay; however, this being the first study to analyse this time period, it is evident that further research is needed to further confirm the results, particularly in the Australian context.

Endnotes

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Background: Psychiatric in-patients are at high risk of suicide. Recent reductions in bed numbers in many countries may have affected this risk but few studies have specifically investigated temporal trends. We aimed to explore trends in psychiatric in-patient suicide over time.

Method: A prospective study of all patients admitted to National Health Service (NHS) in-patient psychiatric care in England (1997–2008). Suicide rates were determined using National Confidential Inquiry and Hospital Episode Statistics (HES) data.

Results: Over the study period there were 1942 psychiatric in-patient suicides. Between the first 2 years of the study (1997, 1998) and the last 2 years (2007, 2008) the rate of in-patient suicide fell by nearly one-third from 2.45 to 1.68 per 100 000 bed days. This fall in rate was observed for males and females, across ethnicities and diagnoses. It was most marked for patients aged 15-44 years. Rates also fell for the most common suicide methods, particularly suicide by hanging on the ward (a 59% reduction). Although the number of post-discharge suicides fell, the rate of post-discharge suicide may have increased by 19%. The number of suicide deaths in those under the care of crisis resolution/home treatment teams has increased in recent years to approximately 160 annually.

Conclusions: The rate of suicide among psychiatric in-patients in England has fallen considerably. Possible explanations include falling general population rates, changes in the at-risk population or improved in-patient safety. However, a transfer of risk to the period after discharge or other clinical settings such as crisis resolution teams cannot be ruled out.

Comment

Main findings: Psychiatric inpatients are known to be at an elevated risk for suicide\(^1\), although in recent years there has been a shift towards community-based care in many countries, including Australia. Nevertheless, attention has been paid to reducing the prevalence of suicide among psychiatric in-patients, by way of measures such as the removal of ligature points in wards\(^2\) and restriction of unauthorised absences. The authors note that earlier research of theirs has found that in-patient suicides have indeed fallen in England but that there has been an attendant increase in the number of suicides in the post-discharge period. The aim of the present study was to extend previous research by using a national (England-wide) sample and analyse it over a longer period of time (12 years). It is indeed the case that rates of psychiatric in-patient suicide fell over the study period (by between 29% and 31%) and that the number of post-discharge suicide deaths increased (by up to 19%). The
number of suicides in crisis resolution/home treatment has risen to the extent that they now outnumber in-patient suicide deaths.

The fall in in-patient suicides has occurred despite the number of available beds declining over the same period and the level of morbidity of in-patients therefore being higher. Yet, it is precisely for this reason that the authors hypothesise that post-discharge suicide rates may have increased: the discharged patients represent a higher risk group.

Implications: The fall in in-patient suicide rates over the study period point to the effectiveness of the various strategies that have been implemented in England, Australia, and elsewhere to reduce the number of deaths by suicide in psychiatric wards. The fact that, in the present study, suicide by hanging fell by almost 60%, and one of the main prevention measures has been the removal of ligature points, and that generally the reduction in suicides within the ward was greater than those at a distance from the ward, are both strongly suggestive that these initiatives are working. Nevertheless, the rate of suicide among psychiatric in-patients is still approximately 60 times that of the general population and continued attention to reducing in-patient suicide is warranted and indeed necessary.

The reported increase in post-discharge and home treatment suicides is also of concern. Although the risk does not appear to be simply shifting from the ward to the home, given that the characteristics of those that die by suicide as in-patients and those that die by suicide at home are becoming increasingly different rather than similar, suicide prevention initiatives need to focus on this growing area of risk, especially given the shift to community-based treatment in Australia and many other countries. Prompt follow-up for discharged patients and optimal care for those being treated at home are required.

Endnotes


Fluctuations of suicidality in the aftermath of a marital separation: 6-month follow-up observations
Kõlves K, Ide N, De Leo D (Australia)
Journal of Affective Disorders 142, 256–263, 2012

**Background:** There is a lack of understanding of how the changing nature of the separation process impacts on suicidality.

**Aims:** This paper aims to identify factors contributing to fluctuations in suicidality during the process of marital/de facto separation along a 6-month follow-up.

**Method:** Separated persons who had contacted relationship-counselling services, help-line services, and variety of support and self-help groups were asked to participate in the first assessment. A ‘Follow-Up Questionnaire’ was sent 6 months later. Participants were required to be 18 years or older and separated from their married/de facto partner within the previous 18 months but not yet divorced.

**Results:** Overall, in the first assessment, separated females presented lower levels of suicidality than males. During the follow-up suicidality decreased. There were some gender differences in terms of predictors of changes in suicidality. Separated males who showed an increase or stability in suicidality were more affected by stressful experiences such as legal negotiations on obtaining a divorce, feelings of loss and loneliness, loss of social networks and financial difficulties than males who were not suicidal in either assessment. Separated males and females who remained suicidal were more likely to report different mental and physical illnesses.

**Limitations:** Relatively low response rates of the follow-up (60%) limited our statistical analyses as some of the groups were too small and did not enable modelling.

**Conclusions:** Suicidality decreased, which seems to indicate that individuals adjusted to their new life circumstances. However, persons whose suicidality remained or increased reported more frequently stressful life events, physical and mental illnesses.

**Comment**

**Main findings:** Recent relationship separation is a risk factor for both fatal and non-fatal suicidal behaviours. Previous research into separation and suicidal behaviours has treated separation as an acquired state rather than a process. This study examines the dynamics of relationship separation and how suicidal behaviours fluctuate as a function of this process, and also identifies the factors that lead to suicidality. Previous findings by these authors have shown high prevalence of suicidality in the initial post-separation period of 18 months, especially among separated males. This subsequent analysis demonstrated a significant reduction over the 6-month follow-up period. The small proportion of both males and females who experienced stable or increased suicidality over the study period was more likely to also experience stressful life events, psychological and physical disorders, which may well play a large part in the increase in suicidal behaviours.
There are several limitations to the study. The psychological distress reported by the participants is based on their own understanding of their mental health, rather than on professional diagnosis. It is also based on a convenience sample (subjects volunteering their participation), meaning that those who experienced more extreme suicidality may not have agreed to participate. On the other hand, as participants were recruited from different support services, and men are less likely to seek professional help when suicidal, the male subjects who participated in the study may have actually been suffering from higher levels of distress than males generally do following a separation.

**Implications:** Although most individuals gradually adjust to changes in personal circumstances brought about by a relationship breakdown, for those individuals who continue to experience distress, the incidence of suicidal behaviours is higher. This is compounded by the fact that both physical and psychological health is likely to be poorer among these individuals. For suicide prevention activities, it is important, firstly, to target those going through a relationship separation. Secondly, it is important for general and mental health services to monitor and address problems in the physical and mental wellbeing of those who have gone through a break-up, particularly in the initial post-separation period.

**Endnotes**

Natural disasters and suicidal behaviours:
A systematic literature review
Kõlves K, Kõlves KE, De Leo D (Australia)

Background: Various consequences including suicidal behaviours can arise in the aftermath of natural disasters. The aim of the present review was to systematically analyse the existing literature on the potential impact of natural disasters on suicidal behaviours.

Methods: A systematic search of English-language articles indexed in electronic databases was conducted. The current review covers 42 papers containing empirical analyses of the relationship between natural disasters and suicidal behaviours.

Results: In total, 19 papers analysed suicide mortality and 23 non-fatal suicidal behaviours. The effects of earthquakes on suicidal behaviours are the most frequently studied among natural disasters (n = 20), followed by hurricanes (n = 11). Further, there were four papers about tsunamis, three about floods, three about heat waves and drought, and one investigating the effects of multiple natural disasters. The studies show different directions in suicide mortality following natural disasters. Nevertheless, there seems to be a drop in non-fatal suicidal behaviours in the initial post-disaster period, which has been referred to as the ‘honeymoon’ phase. A delayed increase in suicidal behaviours has been reported in some studies. However, other factors increasing the risk of suicidal behaviours after natural disasters have been reported, such as previous and current mental health problems. Furthermore, contributing factors, such as economic conditions, should also be considered.

Limitations: The exclusion of non-English articles.

Conclusions: In light of the various methodological limitations observed, there is a need for further studies using proper designs. Mental health and suicidal behaviours should continue to be monitored for several years after the disaster.

Comment

Main findings: Australia and other countries around the world have recently been affected by a number of severe natural disasters including floods, earthquakes, tsunamis, and hurricanes. Aside from the initial loss of life and property, the effects of these disasters may be long lasting, with some victims suffering from psychological symptoms well after the event¹. While some research has suggested that adverse life events can impact on suicidal behaviours later in life, research analysing suicidal behaviours due to the effect of natural disasters is very limited. The current study systematically analysed the existing literature on the impact of natural disasters on suicidal behaviours, including 42 papers which empirically analysed natural disasters and suicidal behaviours in the aftermath of a major natural disaster (climatic catastrophes, including cyclones, droughts, floods, heat waves, and landslides, and tectonic disasters, such as earthquakes, tsunamis, and
volcanic eruptions), which were published between 1966 and 2011. Nineteen papers analysed fatal suicidal behaviour while 23 included non-fatal suicidal behaviours. The papers involved a number of different kinds of disasters and showed that the direction of suicide mortality following natural disasters differed between studies. For example, suicide rates dropped after the Northridge earthquake in the US for both genders and for males after Kobe and Niigata-Chetsu earthquakes in Japan. Conversely, an increase was observed after Nantau earthquake in Taiwan, while other natural disasters showed no significant changes in suicide trends. There may be also differences between one-off events such as cyclones and more constant phenomena such as drought. A study from Australia showed that drought increased the likelihood of suicide in NSW3, findings which were supported by a later study, also in NSW, which reported that suicide risk increased by 15% in males aged between 30 and 49 as the severity of drought increased4. The analysis of non-fatal suicidal behaviours appeared to indicate that suicidal behaviours decreased in the initial post-disaster period (referred to as the ‘honeymoon’ period), but suicidal ideation, in particular, may increase after the initial period. There appear to be several predicting factors in the increase of suicidal behaviour, including factors related to the individual (major depression, post-traumatic stress disorder, and previous mental health problems), and external factors (severe destruction to property, injuries to relatives, and economic conditions). At the same time, family support may act as a protective factor. The impact of gender on suicide and non-fatal suicidal behaviours after natural disasters showed conflicting results depending on the study in question. Furthermore, the review also indicated several methodological problems in the studies; as natural disasters are unpredictable, it is hard to design research projects that follow a sound methodology.

Implications: The International Disasters Database shows that the number of natural disasters around the world has increased between 1975 and 20102. Australia is not immune to natural disasters, with floods, cyclones, and bushfires causing major destruction in recent years, making it important to understand the possible risk factors for suicide and suicidal behaviours after these events. Although some studies have analysed the effect of natural disasters on suicidal behaviours, research to date shows conflicting results, particularly in regards to the gender of those at risk for suicidal behaviour following these events. The current study reveals the need for further research using sound designs in order to create models of risk factors for suicidal behaviours.

In line with the current research, a Queensland study analysing the impact of the 2001 floods in Ipswich and Toowoomba in the six months after the floods showed that suicide rates did not significantly increase during this time period5. However, as the current study has suggested, there is the possibility that rates may increase some time after the event. This indicates the need for continued mental health monitoring of affected individuals for some time after the disaster occurs, particularly those who are psychologically vulnerable or have suffered economic consequences, such as the loss of a job.
Endnotes


A cross-sectional survey of prevalence and correlates of suicidal ideation and suicide attempts among prisoners in New South Wales, Australia

Larney S, Topp L, Indig D, O’Driscoll C, Greenberg D (Australia)
BMC Public Health 12, 14, 2012

Background: We aimed to estimate the prevalence of suicidal ideation and suicide attempt among prisoners in New South Wales, Australia; and, among prisoners reporting suicidal ideation, to identify factors associated with suicide attempt.

Methods: A cross-sectional design was used. Participants were a random, stratified sample of 996 inmates who completed a telephone survey. The estimated population prevalence of suicidal ideation and suicide attempt were calculated and differences by sex and Aboriginality were tested using $\chi^2$ tests. Correlates of suicidal ideation and suicide attempt were tested using logistic regression.

Results: One-third of inmates reported lifetime suicidal ideation and one-fifth had attempted suicide. Women and Aboriginal participants were significantly more likely than men and non-Aboriginal participants, respectively, to report attempting suicide. Correlates of suicidal ideation included violent offending, traumatic brain injury, depression, self-harm, and psychiatric hospitalisation. Univariate correlates of suicide attempt among ideators were childhood out-of-home care, parental incarceration and psychiatric hospitalization; however, none of these remained significant in a multivariate model.

Conclusions: Suicidal ideation and attempts are highly prevalent among prisoners compared to the general community. Assessment of suicide risk is a critical task for mental health clinicians in prisons. Attention should be given to ensuring assessments are gender- and culturally sensitive. Indicators of mental illness may not be accurate predictors of suicide attempt. Indicators of childhood trauma appear to be particularly relevant to risk of suicide attempt among prisoners and should be given attention as part of risk assessments.

Comment

Main findings: Suicide is a serious problem in Australian prisons, with self-inflicted deaths being the most common cause of death in male and female prisoners since 1980. The high prevalence of suicide in prisons is found across the world. A previous paper including male prison suicides in 12 countries showed rates as high as 147 per 100,000 in Denmark compared to 27 per 100,000 in the general population. Australia had the lowest rate of the 12 countries analysed (58 suicides per 100,000 prisoners), however this was still much higher than the general population (16 suicides per 100,000).

Prisoners experience many risk factors for suicide that are observed in the general population, but also a number of factors which are unique to the prison environment. The current study had three main aims: to estimate the
12-month and lifetime prevalence of suicidal ideation and attempt among NSW prisoners, to identify risk factors associated with suicidal ideation, and to identify the risk factors for suicide attempt in those prisoners reporting lifetime suicidal ideation. In total, 996 prisoners agreed to participate in a telephone survey; 20% of participants were females, while 31% were of Aboriginal descent. Results showed that the overall lifetime prevalence of suicidal ideation in the NSW sample of prisoners was 33.7%, with 20.5% having a previous suicide attempt. While there was no gender or race difference in the presence of suicidal ideation, women were significantly more likely than men to have attempted suicide, and Aboriginal prisoners were significantly more likely than non-Aboriginal prisoners to have attempted suicide both in their lifetime and in the past 12 months. More than half of the prisoners reporting lifetime suicidal ideation had a previous suicide attempt.

The current study identified a number of risk factors for lifetime suicidal ideation; the most important ones (which remained significant in the multivariate analysis) included older age, having a violent offence, a history of traumatic brain injury, moderate to severe depression, and self-harm without suicidal intent. Surprisingly, no risk factors for suicide attempt maintained significance in the multivariate analysis.

**Implications:** The development of preventative programs for suicide in prisons should be reliant on the identification of risk factors for suicidal ideation and attempts. Research has shown that the most effective suicide prevention programs in prisons are multi-factored programs addressing all categories of risk, with studies reporting vast reductions in suicide numbers after implementation. The current study showed a number of risk factors for suicidal ideation in New South Wales prisons, which may be transferrable to prisons across the country. Women make up a small percentage of the total population of prisoners, thereby facing the risk of being neglected as a separate population in research and the development of programs. This study indicated that women were at a high risk of suicidal behaviours, suggesting the need for gender-specific suicide prevention programs to be developed and implemented.

The finding of increased risk for suicide attempt in Aboriginal prisoners contrasted with previous findings from a study in the same prison, which found no increased risk in this population. These conflicting results suggest the critical need for further investigation for this population, which is highly overrepresented in Australian prisons and generally understood to be at a higher risk of suicide than non-Indigenous Australians.

**Endnotes**


Suicidality among adults with intellectual disability

Lunsky Y, Raina P, Burge P (Canada)


**Background:** The objective of the current study is to arrive at a better understanding of individuals with intellectual disability (ID) who threaten or attempt suicide.

**Methods:** From a sample of 751 adults with ID who experienced a crisis, demographic and clinical profiles of 39 adults who threatened to commit suicide were compared to 28 adults who attempted suicide. These individuals were then compared to 337 adults who behaved aggressively toward others.

**Results:** Individuals who attempted suicide appeared similar to those who voiced suicide with the exception that suicide attempters were younger and more likely to visit the emergency department. Females, higher functioning individuals, and persons with a history of self-harm had higher odds of attempting or threatening suicide.

**Limitations:** Research findings based on informant reported data, so diagnoses and delivery of services in hospital cannot be validated.

**Conclusions:** Suicidality does occur in adults with ID, and can result in emergency department visits and hospitalizations. Recognition of variables associated with suicidality among those with ID by clinicians may allow for enhanced assessment, treatment services and ultimately more positive mental health outcomes for this group.

**Comment**

**Main findings:** Research has indicated that people with an intellectual disability (ID) have a high prevalence of mental illness, and may have other risk factors for suicide, including physical illness, a lowered ability to cope, and increased social dependence. Despite this, limited research has been conducted on suicide in people with ID, with most studies on this population focusing on aggression. Furthermore, the majority of studies conducted so far have been limited by small sample sizes and their descriptive nature. This Canadian study used a sample of 751 adults with ID who had experienced a crisis to identify 67 suicidal individuals. Of these individuals, 39 had threatened suicide, while 28 had attempted suicide. These two groups were then compared on variables such as sex, age, and past suicidal behaviour. The study also compared suicidal individuals with ID to individuals with ID who were not suicidal but had acted aggressively towards other people.

The study found that women, higher functioning individuals, and those with a history of suicidal behaviour were most likely to attempt or threaten suicide, when compared with the non-suicidal, aggressive individuals. In fact, 67.9% of participants who attempted suicide and 56.4% who threatened suicide had previously visited an Emergency Department (ED), and 42.9% of attempters and
42.6% of those who threatened suicide had a history of psychiatric hospitalisation. Those who attempted suicide were younger, with a mean age of 28.7 years compared to 37.1 years for those who threatened suicide. Contrary to the general population, negative life events and affective disorder were not found to predict suicidal behaviour in the ID group. The most common methods used in the group that attempted suicide were drug overdose (30%) and self-inflicted stab wounds (30%).

**Implications:** Adults with ID are a very diverse group, ranging from low to high support needs, and growing population numbers are creating an increasing strain on disability services within Australia. A recent Australian study found that 1.3% of people with ID had a psychotic disorder, 8% had a depressive disorder, and 14% had an anxiety disorder during the previous six months. Unfortunately, this study did not include an analysis of suicidal behaviours. In an area largely neglected by research, the findings from the detailed analysis of suicidal behaviours by Lunsky and colleagues are important from both a clinical and research perspective. Clinicians and family members may underestimate the seriousness of suicidal threats in individuals with ID. Therefore, a better understanding of the characteristics that may put an individual with ID at a higher risk of engaging in suicidal behaviour is imperative. The study found that suicidal individuals with ID were likely to have come into previous contact with EDs or psychiatric hospitals. This finding signifies the importance of a preventative focus, including follow-ups and ongoing support services to reduce further suicidal acts on release from an ED or hospital. Although aggressiveness has mainly been the focus of research in adults with ID, this study indicated that there are differing characteristics between those who act aggressively and those who are suicidal. Therefore, it is essential that further research be conducted focusing directly on suicidal behaviours in people with ID.

**Endnotes**
Can postdischarge follow-up contacts prevent suicide and suicidal behavior?

Luxton DD, June JD, Comtois KA (USA)

Crisis. Published online: 30 July 2012. doi: 10.1027/0227-5910/a000158, 2012

**Background:** The time period following discharge from inpatient psychiatry and emergency department (ED) treatment is one of heightened risk for repeat suicide attempts for patients. Evidence reported in the literature shows that follow-up contacts might reduce suicide risk, although there has not been a comprehensive and critical review of the evidence to date.

**Aims:** To evaluate evidence for the effectiveness of suicide prevention interventions that involve follow-up contacts with patients.

**Methods:** Published empirical studies of follow-up interventions with suicidal behaviors (suicide, attempts, and ideation) as outcomes were searched. Study populations were inpatient psychiatric or ED patients being discharged to home. Contact modalities included phone, postal letter, postcards, in-person, and technology-based methods (e-mail and texting).

**Results:** Eight original studies, two follow-up studies, and one secondary analysis study met inclusion criteria. Five studies showed a statistically significant reduction in suicidal behavior. Four studies showed mixed results with trends toward a preventative effect and two studies did not show a preventative effect.

**Conclusions:** Repeated follow-up contacts appear to reduce suicidal behavior. More research is needed, however, especially randomized controlled trials, to determine what specific factors might make follow-up contact modalities or methods more effective than others.

**Comment**

**Main findings:** The risk of suicide following psychiatric hospitalisation is high, particularly within the first month, the peak being after one week. Some estimates claim that the risk during this period may be as much as 100 times greater than that of the general population. Suicidality may be difficult to accurately assess on discharge, however, and compliance with follow-up care regimes is typically low. This study reviews the literature on the efficacy of post-discharge follow-up contacts, as there is evidence that these may help reduce suicidal behaviours in this high-risk group.

Of the 11 studies reviewed, three showed a statistically significant reduction in repeat attempts and two revealed a reduction in completed suicides. The authors conclude that follow-up contact can be effective in reducing suicidal behaviours and suggest that the increase in social support and integration that this type of activity affords may be the mechanism that makes it potentially effective. It should be noted that not all of the articles reviewed revealed a preventative effect for follow-up contact, although, as the authors note, suicide tended to occur before
the initial contact and it may therefore be important to reduce the length of time until the first follow-up.

**Implications:** While there are no randomised control trials to confirm whether or not compulsory hospitalisation following a suicide attempt is the most effective course of action, it is often considered to be the safest option. Nevertheless, an Australian study found that the risk for subsequent death by suicide was 3.2 times higher among those who were involuntarily hospitalised following treatment for a drug overdose. However, those that absconded without further treatment were at a 10.7-times greater risk for suicide. Thus it is possible to infer that compulsory hospitalisation may reduce suicide risk. Nevertheless, the risk for suicide post-discharge, as found by the present study, is still great.

Increasing a suicidal individual’s sense of belonging and decreasing their feelings of burdensomeness are theorised to buffer against suicidal behaviour. The findings of the present study strongly suggest that efforts to maintain contact with suicidal patients post-discharge for psychiatric treatment are of utmost importance. By doing so, it is possible to increase the level of social integration and support perceived and experienced by the individual, thereby lowering his or her level of suicidality and also increasing the likelihood he or she will comply with subsequent treatment regimes. The initial follow-up should also be made shortly following discharge.

**Endnotes**

Suicide prevention and method restriction: Evaluating the impact of limiting access to lethal means among young Australians

McPhedran S, Baker J (Australia)
Archives of Suicide Research 16, 135-146, 2012

Given the finite resources allocated to suicide prevention, it is necessary to direct resources into interventions that are most likely to have an impact. This article tests for possible impacts on youth suicides of a cost-intensive Australian policy change (increased firearms restriction) that limited access to a means of suicide. Suicide rates by different age groups and methods were examined for structural breaks, using Zivot-Andrews and Quandt tests. No breakpoint was found in firearm suicide among Australian youth around the time of the 1996 legislative changes. Method restriction in the form of firearms legislation could not be tied to a corresponding impact on youth suicide.

Comment

Main findings: A general decline in suicides rates has occurred in Australia since the 1990s, following a consistent rise during the 1970s and 1980s. This trend has been broadly attributed to various initiatives, including the National Suicide Prevention Strategy and the National Depression Initiative (beyondblue) and improvements in the quality and the availability of mental health care. Another prevention strategy that is considered as important is the restriction of access to means\(^1\). The authors of the present article argue that the evidence for the effectiveness of means restriction in reducing the number of suicides is equivocal, however. In their review of the literature, they found that there is some evidence that changes in prescribing practices have seen a reduction in the number of self-poisonings, but that there is no clear evidence that the introduction of catalytic converters in vehicles to lower the emission of carbon monoxide, for example, has been effective. Australia introduced legislation in 1996 to prohibit the ownership of many types of firearms following a mass shooting in Tasmania in which 35 people lost their lives. This restriction of firearm ownership was also considered to be a suicide prevention measure\(^2,3\) but the literature reviewed by the authors either indicates no reduction in suicide by firearms or that there has simply been a substitution of methods. The main finding of the present study was that suicide deaths by firearms for the age groups analysed (15 to 24, 25 to 34, and 35 to 44 year olds) actually began to decline prior to the introduction of the legislation, but that there was also a further decline following the change in the law for the 35 to 44 year olds, although a similar decline occurred in hangings in this age group at the time.

As noted by the author, the study is limited by the fact that it did not include data on Indigenous suicides. Although firearms are a rare choice of method among Indigenous people in Australia, those in this group, especially its younger members, are at a particularly high risk for suicide. Another limitation is that the study did not include those aged over 44 years and therefore nothing can be concluded about firearms restrictions for older age groups.
Implications: As the authors suggest, the funding for the restriction of access to firearms is a significant ongoing cost to the Australian Commonwealth Government. While it would be premature to conclude that there is no effect of this means restriction on suicide rates overall based on the results of the present study, it is certainly important to consider whether funding is being dedicated in the right proportions to other methods of suicide prevention, such as improving mental health literacy, the reduction of stigma surrounding mental illness in general and suicide in particular, and the provision of mental health support services. Further research into the effects of means restriction on suicide rates, particularly firearm restriction among older age groups in Australia, is warranted.

Endnote
Does the installation of blue lights on train platforms prevent suicide? A before-and-after observational study from Japan

Matsubayashi T, Sawada Y, Ueda M (USA, Japan)

Background: Railway and metro suicides constitute a major problem in many parts of the world. Japan has experienced an increase in the number of suicides by persons diving in front of an oncoming train in the last several years. Some major railway operators in Japan have begun installing blue light-emitting-diode (LED) lamps on railway platforms and at railway crossings as a method of deterring suicides, which is less costly than installing platform screen doors. However, the effectiveness of the blue lights in this regard has not yet been proven.

Methods: This study evaluates the effect of blue lights on the number of suicides at 71 train stations by using panel data between 2000 and 2010 from a railway company in a metropolitan area of Japan. We use a regression model and compare the number of suicides before and after and with and without the intervention by the blue light. We used the number of suicides at 11 stations with the intervention as the treatment group and at the other 60 stations without the intervention as the control group.

Results: Our regression analysis shows that the introduction of blue lights resulted in a 84% decrease in the number of suicides (CI: 14–97%).

Limitation: The analysis relies on data from a single railroad company and it does not examine the underlying suicide-mitigation mechanism of blue lights.

Conclusion: As blue lights are easier and less expensive to install than platform screen doors, they can be a cost-effective method for suicide prevention.

Comment

Main findings: Suicide by jumping or lying in front of a train is a highly lethal, albeit relatively rare, method of suicide and is the leading cause of death on railways around the world. Suicides at railway stations have serious consequences, ranging from economic losses due to delays in services to negative psychological impacts on train drivers and witnesses. Results from previous studies have shown that restricting access to means through the implementation of platform screen doors has the ability to reduce or completely prevent railway suicides. Although effective, these prevention methods are very expensive and not always possible to implement. As an alternative method, a number of railways in Japan have installed blue lights at stations in the hope that they may deter suicides by having a calming effect over people contemplating suicide. The effectiveness of these blue lights had not been systematically evaluated prior to this study. The current study used data from 71 train stations between 2000 and 2010 to compare the number of suicides before and after implementation of the lights at 11 stations in 2008, 2009, and 2010, using the other stations as a control group. Results showed that suicides decreased by 84% when blue lights were present. Only one suicide occurred at one
of the stations after the introduction of blue lights, and this suicide occurred during the daytime, when the lights were not turned on. It is concluded that the introduction of blue lights resulted in a statistically significant reduction in railway suicides, making this a viable option for suicide prevention.

**Implications:** While the implementation of platform screen doors may be possible in countries of smaller geographical size, or with underground train stations, the size of Australia and the presence of long stretches of open railway track make it economically infeasible to implement platform screen doors. Not only are current suicide prevention practices expensive to implement, but rail suicides cost Australia a great deal of money, with a report by Bureau of Transport and Regional Economics estimating that rail suicides and attempts cost a total of $53 million in 1999 (a number likely to have greatly increased by the current time). Unfortunately, although expensive, no other suicide prevention methods to date have proven to be as effective as platform screen doors at reducing suicides. Being the first study to systematically analyse the effectiveness of blue lights, this study presents promising results which indicate that blue lights may serve as a practicable and cost-effective suicide prevention alternative in Australia, however it is clear that much more research is required.

**Endnotes**


Merrall EL, Bird SM, Hutchinson SJ (UK)

Aims: To investigate the relationship between time after hospital discharge and drug-related death (DRD) and suicide among drug users in Scotland, while controlling for potential confounders.

Design: Cohort study

Setting and Participants: The 69,457 individuals who registered for drug treatment in Scotland during 1 April 1996 to 31 March 2006.

Measurements: Time-at-risk was from the date of an individual’s first attendance at drug treatment services after 1 April 1996 until the earlier of date of death or end-of-study, 31 March 2006; and was categorized according to time since most recent hospitalization, as: during hospitalisation, within 28 days, 29–90 days, 91 days to 1 year, >1 year since discharge from most recent hospital stay versus ‘never admitted’ (reference).

Findings: Time-periods soon after discharge were associated with increased risk of DRD. DRD-rates per 1,000 person-years were: 87 (95% CI: 72–104) during hospitalisation, 21 (18–25) within 28 days, 12 (10–15) during 29–90 days and 8.5 (7.5–9.5) during 91 days to 1 year after discharge versus 4.2 (3.7–4.7) when > 1 year after most recent hospitalization and 1.9 (1.7–2.1) for those never admitted. Adjusted hazard ratios by time since hospital discharge (versus never admitted) were: 9.6 (95% CI: 8-12) within 28 days, 5.6 (4.6–6.8) during days 29–90, thereafter 4.0 (3.5–4.7) and 2.3 (2.0–2.7) when > 1 year. Non-drug-related suicides were less frequent than DRDs (269 versus 1383) but a similar risk-pattern was observed.

Conclusions: In people receiving treatment for drug dependence, discharge from a period of hospitalisation marks the start of a period of heightened vulnerability to drug-related death.

Comment

Drug use has been linked to increased chance of mortality by a number of causes, including overdose, accidents, homicide1, and suicide2. In fact, a previous Scottish study showed that drug-related deaths (DRD) and suicides were the main causes of death in drug users who accessed drug treatment services3. The current study is the most comprehensive study of Scottish drug users’ mortality, utilising drug treatment registrations with death records and hepatitis C virus (HCV) diagnoses from the Scottish Drug Misuse Database (SDMD) between April 1996 and March 2006. The paper analyses the risks of DRD and suicides that did not involve drugs relative to time since discharge from hospital, as well as the corresponding DRD and non-drug-related suicide rates during hospitalisation. At baseline, the 69,457
individuals had a total of 137,512 episodes recorded in the SDMD and 3,096 HCV diagnoses. During follow-up, there were a further 6,385 HCV cases, 94,652 hospital stays, and 2,590 deaths. Risk for DRD and non-drug-related suicide was highest during hospitalisation (87 and 18 per 1,000 person years [PYS], respectively). DRD rates decreased to 21 per 1,000 PYS within 28 days of discharge, 12 per 1,000 PYS between 29–90 days after discharge and 8.5 per 1,000 for the remainder of the first year. The first year after discharge accounted for 40% of all DRDs. A similar pattern was recorded for suicide deaths, with 38% of the non-drug-related suicides occurring within the first year of discharge.

Implications: The study by Merrall and colleagues builds on previous research in Scotland by using a large sample size and including an analysis of the time intervals of DRDs and non-drug-related suicides after hospital discharge. The findings suggest that the year after release from hospital is a time period with heightened risk for death in drug-treatment patients, by both suicide and drug-related deaths. Increased follow-up treatment and monitoring for drug-treatment patients upon release from hospital may be necessary to reduce the large number of drug-related deaths and suicides during this period. Further studies in Australia would be important and could potentially build on these findings by including causes of death other than suicides and drug-related deaths.

Endnotes
**Objective:** Around the world, a substantial proportion of motor vehicle crash deaths are recognised as “hidden” suicides. This project sought to progress understandings of drivers who used a motor vehicle to die by suicide in Queensland, Australia, during the period 1990 to 2007.

**Methods:** Data for this study were derived from the Queensland Suicide Register and forensic crash investigation case records. Analysis focused on life circumstances and events preceding the death, physical and mental illnesses, past suicidality, and indication of suicide intent (e.g., suicide notes or statements).

**Results:** Compared to cases using other methods, confirmed driver suicides were more likely to be males aged between 25 and 44 years who were employed at the time of death. A large proportion of driver suicides had consumed alcohol immediately prior to the crash and experienced a number of life events, including relationship conflict, legal or criminal issues, and financial problems.

**Conclusion:** These exploratory results indicate the need to educate crash investigators about the characteristics of those who use a motor vehicle to die. Improving the information available on the mental and physical health and background life-related factors of crash victims can help coroners and researchers determine whether these deaths were intentional. Further investigation is needed in order to formulate intervention strategies for those who may be vulnerable to driver suicide.

**Comment**

**Main findings:** Although road fatalities in Australia have decreased remarkably (by half) over the past four decades, road safety campaigns have focused on accidental deaths. While they are a minority of total fatalities, up to 7% of road deaths may in fact be intentional. Suicide by motor vehicle “accident” often goes undetected as investigation tends to surround the physical circumstances of the event rather than also taking into account the life events and physical and mental health of the individual in the period leading up to the event. The potential for motor vehicle suicides to be misclassified as accidents has been recognised for some time; however, there has been little research on the topic to date in Australia. The present study compares confirmed driver suicides with possible driver suicides in Queensland and seeks to characterise the features of suicide by motor vehicle in comparison to other methods of suicide.

Given that it was found that the primary difference between confirmed and possible suicides was the presence of a suicide note or the prior communication of suicidality, the authors contend that possible cases may well be represented by suicides that have not been properly investigated or in which the individual has purposely concealed intent. Another possibility, in cases where there is no prior
evidence or communication of suicidality, is that they are suicides carried out impulsively. Indeed, it has been argued that many motor vehicle accidents involving reckless behaviour in fact reflect unconscious suicidal behaviours. There were also important differences found between driver suicide and suicide by other methods, with driver suicides seeming to occur more impulsively following a significant life stressor, and often with alcohol involved.

Implications: Although the authors suspect that many possible cases do in fact constitute suicides, there is no way of carrying out further investigation to clarify this because of current data collection protocols, which do not gather information on the circumstances in the life of the individual leading up to death. A widening of the scope of the evidence collected by crash investigators would help overcome this barrier. The authors also point out the need for greater education of police personnel and crash investigators about the indicators of possible suicide.

Motor vehicles represent a particularly lethal method of suicide. Given the finding that motor vehicle suicides appear to be more impulsive than those by other methods, it is important to integrate education about caring for oneself and others following stressful life events into mental health awareness campaigns, with particular attention to the dangers of alcohol and driving, especially among young men. After suicide, death by motor vehicle crash is the second biggest cause of death in 15-34 year old males, and many of these cases may indeed involve a significant degree of intentional self-harm.

Endnote

Effect of assertive outreach after suicide attempt in the AID (assertive intervention for deliberate self-harm) trial: Randomised controlled trial

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Objective: To assess whether an assertive outreach intervention after suicide attempt could reduce the frequency of subsequent suicidal acts, compared with standard treatment.

Design: Randomised, parallel group, superiority trial with blinded outcome assessment.

Setting: Outpatient intervention at one location at Copenhagen University Hospital, Denmark.

Participants: Patients older than 12 years admitted to regional hospitals in Copenhagen with a suicide attempt within the past 14 days. We excluded patients diagnosed with schizophrenia spectrum disorders and patients living in institutions.

Intervention: Case management through assertive outreach that provided crisis intervention and flexible problem solving. This approach incorporated motivational support and actively assisted patients to scheduled appointments to improve adherence with after-treatment as an add on to standard treatment.

Main Outcome: Repeated suicide attempt and death by suicide, recorded in medical records and death register at 1-year follow-up.

Results: 243 patients were included. During 12 months of follow-up, 20/123 (16%) patients in the intervention group had been registered in hospital records with subsequent suicide attempt, compared with 13/120 (11%) in the control group (odds ratio 1.60, 95% confidence interval 0.76 to 3.38; \( P = 0.22 \)). By contrast, self-reported data on new events showed 11/95 (12%) in the intervention group versus 13/74 (18%) in the control group (0.61, 0.26 to 1.46; \( P = 0.27 \)). By imputing missing data on the self-reported outcomes, we estimated 15/123 (12%) events in the intervention group and 23/120 (19%) in the control group (0.69, 0.34 to 1.43; \( P = 0.32 \)).

Conclusion: Assertive outreach showed no significant effect on subsequent suicide attempt. The difference in rates of events between register data and self-reported data could indicate detection bias.

Comment

Main findings: Research has suggested that more than 50% of individuals who attempt suicide will attempt again, with almost 20% doing so within the first 12 months of the attempt\(^1\). Despite being a major predictor of subsequent suicidal behaviours, a number of difficulties exist in the treatment of individuals after an attempt, with suicidal patients being described as difficult to engage in
after-treatment. To reach out to those with severe mental illness who may not otherwise have access to mental health services, assertive outreach may be used to provide community-based treatment. The current assertive outreach program involved community case management, crisis intervention and flexible, problem solving, and assertive outreach. More specifically, eight to 20 consultations were provided over 6 months, in addition to standard treatment, with the first consultation being accessible a few days after discharge. The assertive intervention for deliberate self-harm (AID) was trialed on 243 male and female patients older than 12 years who had been admitted into regional hospitals in Copenhagen as a result of a suicide attempt between November 2007 and March 2010. Participants were randomly assigned to the AID group (n = 123) and to the control group (n = 120). The latter received standard treatment. At baseline, patients in the intervention group were more frequently treated with antidepressants at inclusion, and used narcotics as a method of suicide attempt more often. During the 12-month follow-up period, 20 of the 123 patients in the intervention group (16%) attended hospital for a suicide attempt, compared with 11 out of 120 for the control group. When looking at self-reported suicide attempts, four patients in the intervention group and three in the control group who had registered an attempt in hospital records did not report the attempt. Conversely, one in the intervention group and eight in the control group reported attempts that were not registered in hospital records. Overall, no significant differences were found in repetition rates between the intervention group and the control group. Three deaths occurred during the course of the study, two of which were due to causes other than suicide. The one suicide that did occur was from the intervention group, within two weeks of the first attempt.

Implications: Due to difficulties in treating suicidal individuals, an assertive outreach approach to the prevention of suicide has been providing the potential for improved outcomes. The results from this paper suggest that, currently, these programs do not appear to be any more effective at reducing subsequent suicidal behaviour than traditional treatment strategies. It is clear that more research is needed for the further development of programs that may target specific subgroups of suicide attempters, allowing for more specialised therapeutic interventions. Furthermore, programs could be introduced which focus on primary prevention strategies before a suicide attempt occurs. While no reduction of suicide attempts was found, the authors suggest that a comparison of secondary outcomes after treatment such as depressive symptoms, substance abuse, and self-efficacy may be important to detect any differences in outcomes between treatment types. Furthermore, increasing the sample size would facilitate the use suicide as the main outcome variable in clinical trials.
Endnotes


Changes in suicide rates following media reports on celebrity suicide: A meta-analysis

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Background: A growing number of studies indicate that sensationalist reporting of suicide is associated with increases in suicide rates, but in the light of some negative findings, the issue has remained controversial. The aim of this study was to evaluate the best current evidence on the association between celebrity suicide stories and subsequent suicides.

Methods: Literature searches of six data sources (Medline, Psychlit, Communication Abstracts, Education Resources Information Center, Dissertation Abstracts and Australian Public Affairs Database (APAIS)) were conducted. Studies were included if they (1) adopted an ecological design, (2) focused on celebrity suicide, (3) had completed suicide as outcome variable, (4) analysed suicide rates across all suicide methods, (5) used data from after World War II and (6) satisfied basic quality criteria.

Results: 10 studies with totally 98 suicides by celebrities met the criteria. The pooled estimate indicated a change in suicide rates (suicides per 100,000 population) of 0.26 (95% CI 0.09 to 0.43) in the month after a celebrity suicide. There was substantial heterogeneity between studies, which was explained by the type of celebrity (entertainment elite vs others) and the region of study, as indicated by mixed-effects meta-regression. The region-of-study-specific effect of reporting a suicide by an entertainment celebrity was 0.64 (95% CI 0.55 to 0.73) in North America, 0.58 (95% CI 0.47 to 0.68) in Asia, 0.36 (95% CI -0.10 to 0.61) in Australia and 0.68 (95% CI 0.51 to 0.85) in Europe. There was no indication of publication bias.

Conclusions: Reports on celebrity suicide are associated with increases in suicides. Study region and celebrity type appear to have an impact on the effect size.

Comment

Main findings: Sensationalised media reporting after suicide events has been researched as a major risk factor for copycat behaviour. An Australian study found that 39% of media reports of suicide were followed by an increase in male suicides, and 31% were followed by an increase in female suicides. The study further indicated that the way in which these events are reported might alter the risk of a subsequent copycat effect, with those incidents that received television coverage recording a higher increase. These results support the findings from previous studies that the suicides of influential celebrities which are extensively reported have a greater risk of a copycat effect. Despite such results, mixed findings from other studies have triggered a debate into the actual effect of these events on suicide rates. To address this, Niederkrotenthaler and colleagues conducted the first meta-analysis to provide a cumulative effect size of copycat behaviour. The
paper presented the analysis of ten ecological studies of completed suicides following the media reporting of a celebrity suicide. The ten studies included a total of 93 celebrity suicides from Asia, North America, Australia, and Europe and indicated an average increase in suicide rate of 0.26 (95% CI 0.09 to 0.43) in the month following the suicide event. There was considerable heterogeneity between the individual studies, with results indicating that the effect of the celebrity death depended on type of celebrity and the region in which the death occurred. Deaths of foreign celebrities or those who were less well known appeared to have a smaller copycat effect than national entertainment elites, and effects were higher in North America (0.64) and Europe (0.68) than Asia (0.58) or Australia (0.36). These results may reflect differences in the reporting practices, and cultural attitudes towards suicide within different countries.

Implications: The heterogeneity of the studies in this meta-analysis reflects the need for more research analysing the effect of region on copycat suicides. Furthermore, more uniform approaches to studying this phenomenon should be used to allow for reliable comparisons between studies. Based on this paper, the copycat effect of suicide appears to be lower in Australia than in other countries. Further research in this area may indicate why these rates are lower, particularly with regards to the quality of media reporting and reporting guidelines in Australia. This paper affirms the notion that considerable care must be taken when reporting suicides, particularly those of high profile celebrities. The authors do not argue that these events should not be reported; instead, they emphasise the importance of collaboration between mental health workers and media professionals to ensure that reporting is done in a way that reduces the risk of copycat events. In Australia, this is in line with current media reporting guidelines prepared by the Mindframe National Media Initiative in 2002, and updated by the Australian Press Council in 2011. These guidelines recommend that carefully presented media reports should also include information on help-seeking possibilities, to utilise the media’s potential for suicide prevention.

Endnotes
Suicide in young men
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Suicide is second to only accidental death as the leading cause of mortality in young men across the world. Although suicide rates for young men have fallen in some high-income and middle-income countries since the 1990s, wider mortality measures indicate that rates remain high in specific regions, ethnic groups, and socioeconomic groups within those nations where rates have fallen, and that young men account for a substantial proportion of the economic cost of suicide. High-lethality methods of suicide are preferred by young men: hanging and firearms in high-income countries, pesticide poisoning in the Indian subcontinent, and charcoal-burning in east Asia. Risk factors for young men include psychiatric illness, substance misuse, lower socioeconomic status, rural residence, and single marital status. Population-level factors include unemployment, social deprivation, and media reporting of suicide. Few interventions to reduce suicides in young men have been assessed. Efforts to change help-seeking behaviour and to restrict access to frequently used methods hold the most promise.

Comment

Main findings: The aim of this article was to review the international literature from 2000 to 2011 in order to provide an updated picture of the burden of suicide in young men (defined as those aged 19–30 years) as well as the specific risk factors and evidence-based interventions relevant to this group. Young male suicide rates were found to vary remarkably both within and between countries. Socioeconomic and religious factors were highlighted as important issues to take into account when tailoring suicide prevention initiatives at the national level. Furthermore, while many countries have seen an overall decrease in suicide rates among young men, these often mask local variability, especially as a function of geography, ethnic background, and socioeconomic status.

Risk factors for suicide in young men identified from evidence-based studies at the population level were unemployment (England, Wales, Ireland, Asia, Australia), social deprivation and social fragmentation (England and Wales), and media influences, such as the way in which suicide is reported (Taiwan). At the individual level, the factors identified were psychiatric disorder, substance misuse, occupational group (agricultural workers in Australia and veterans in the US), ethnicity and Indigenous group, rural or remote place of residence (Australia, China, Denmark, Austria, England, and Wales), lower socioeconomic status (Australia), and single relationship status (high-income countries).

Implications: Given the differences identified in the literature between risk factors for suicide among young men across different contexts, it is important that understandings of appropriate preventative activities are not simply extrapolated from what is known about other age groups or about young men in other settings. In the Australian case, important work has been done to address suicide risk among
young men. The Department of Health and Ageing’s national strategy, Living Is For Everyone (LIFE), identifies young men as a specific high risk group\(^1\). MensLine Australia is a 24-hour counselling service catering specifically to men\(^3\) and it is promoted as part of the Australian National Suicide Prevention Strategy. Furthermore, specific subgroups are also targeted. The Read the Signs initiative by Lifeline addresses suicide risk among men and their “mates”\(^4\). MATES in Construction was established within the LIFE framework to address high suicide rates among construction workers in Queensland, based on evidence provided by AISRAP\(^5\). It has now expanded to Western Australia. Similar preventative and support activities focusing on specific risk subgroups are encouraged.

Endnotes

Spatial clusters of suicide in Australia
Qi X, Hu W, Page A, Tong S (Australia)
BMC Psychiatry 12, 86, 2012

Background: Understanding the spatial distribution of suicide can inform clues to planning, implementing and evaluating suicide prevention activity. This study explored spatial clusters of suicide in Australia, and investigated likely socio-demographic determinants of these clusters.

Methods: National suicide and population data at a statistical local area (SLA) level were obtained from the Australian Bureau of Statistics for the period of 1999 to 2003. Standardised mortality ratios (SMR) were calculated at the SLA level, and Geographic Information System (GIS) techniques were applied to investigate the geographical distribution of suicides and detect clusters of high risk in Australia.

Results: Male suicide incidence was relatively high in the northeast, parts of the east coast, central and southeast inland, compared with the national average. Among the total male population and male group aged 15 to 34, Mornington Shire had the whole or a part of primary high risk cluster for suicide followed by Bathurst-Melville area, one of the secondary clusters in the north coastal area of the Northern Territory. Other secondary clusters changed with the selection of cluster radius and age group. For males aged 35 to 54 years, only one cluster in the east of the country was identified. There was only one significant female suicide cluster near Melbourne while other SLAs had very few female suicide cases and were not identified as clusters index for area (SEIFA) than the national average, but their shapes changed with selection of maximum cluster. Male suicide clusters had a higher proportion of Indigenous population and lower median socio-economic radii setting.

Conclusion: This study found high suicide risk clusters at the SLA level in Australia, which appeared to be associated with lower median socio-economic status and higher proportion of Indigenous population. Future suicide prevention programs should focus on these high risk areas.

Comment

Main findings: Suicide in Australia has been previously shown to vary spatially as a function of local socioeconomic status, urban versus rural location, and by small-area geographic units. Earlier research has largely concentrated on urban and state-level analyses or has used smoothed standardised mortality ratios (SMRs), which fail to capture spatial clusters in sparsely populated areas. This is the first study to investigate the spatial patterns of suicide across the entire country. National-level spatial analysis is important as it allows a visualisation of related factors across different areas (e.g., similar socioeconomic status across non-contiguous regions).

The study revealed numerous male suicide clusters from across Australia, but generally not (state/federal) capital city regions. Only the capitals of Adelaide and Darwin were found to have male clusters, although these are the fifth and eighth largest of Australia’s eight capital cities, respectively. The Adelaide cluster has also been found
to have a higher incidence of mental and behavioural disorders. Suicide rates tended to be highest in areas that were both of lower socioeconomic status and with a higher concentration of Indigenous inhabitants. Only one female cluster was identified, and over 40% of statistical local areas (SLAs) had no female suicides at all during the study period.

**Implications:** The rate of Indigenous suicide in Australia is alarmingly high. Overall, it is at least twice the general rate, and among some vulnerable subgroups it is even more elevated. For young females, for example, it is five times that of non-Indigenous females of the same age. This study provides further evidence that there is a pressing need for a more refined approach to addressing suicide among Indigenous Australians, particularly where socioeconomic status is lower and usage of alcohol and drugs is elevated. Currently, the Menzies School of Health Research, appointed by the Department of Health and Ageing, is in the process of conducting an Australia-wide consultation in order to develop the National Aboriginal and Torres Strait Islander Suicide Prevention Strategy. Such a strategy is urgently needed. Furthermore, as this study highlights, the gap in general between urban suicide rates on the one hand and rural and remote rates on the other in Australia is large. A report prepared by AISRAP recommended greater social and economic support, further opportunities for education and training, attention to specific risk factors, such as excessive consumption of alcohol, and the development of culturally appropriate sources of support for non-urban locations.

The effectiveness of suicide prevention strategies can be greatly improved with data on the areas associated with higher risk, such as those provided by the present research. Nevertheless, this study is limited by the fact that the data used for analysis were not current and there is the possibility of a recording bias, as the quality of suicide statistics has recently been improved by the ABS. Furthermore, potentially moderating factors such as localised alcohol and drug use and the local provision of health care services, including mental health care and suicide preventative activities, were not taken into account. This study can be used as a basis for research to gain the more detailed information required on these high risk areas in order to better address the crises of suicide that they are facing.

**Endnotes**

Objective: To examine suicide risk in relation to physical illness across a broad range of illnesses, including hospitalisation history, specific organ or system illness and comorbidity.

Design: A nested case-control study.

Setting: Data were retrieved from five Danish national registers.

Subjects: Based on the entire population of Denmark, this study included 27,262 suicide cases and 468,007 live controls matched for sex and date of birth.

Main Outcome Measures: Risk of suicide was assessed using conditional logistic regression.

Results: In the study population, 63.5% of suicide cases and 44.5% of comparison controls had a history of hospitalisation for physical illness. A physical illness significantly increased the risk of subsequent suicide (IRR 2.13, 95% CI 2.07–2.18) with a substantially greater effect in women than in men (P < 0.01). The elevated risk increased progressively with frequency and recency of hospitalisation, and was significant for diseases occurring in all organs or systems of the body. Comorbidity involving several organs or systems increased the risk substantially. The associated estimates were to some extent reduced but remained highly significant after adjustment for psychiatric history and socioeconomic status. Taking into account both prevalence and adjusted effect size, physical illness accounted for 24.4%, 21.0% and 32.3% of population attributable risk for suicide in the total, male and female populations, respectively.

Conclusions: Physical illness constitutes a significant risk factor for suicide independent of psychiatric and socioeconomic factors. Clinicians treating physically ill patients should be aware of the risk, especially among those with multiple or recent hospitalisations, or multiple comorbidities.

Comment

Main findings: Physical illness is widely understood to be a risk factor for suicide and previous studies have found particular diseases, such as cancer and coronary heart disease, particularly among younger women to increase the risk of suicide1. Nevertheless, there has been a lack of research on a large scale examining a range of physical conditions and which also takes into account socioeconomic status and psychiatric history, likely due, the authors contend, to the difficulty in gaining access to the necessary data. The present study was carried out on the entire Danish population using national registers.

As witnessed in previous research, a heightened risk for suicide was found in those that had been hospitalised for physical illness, especially among females. The
present findings extend previous studies by showing that a disease of any organ or physical systems increases the risk of suicide, not just major illnesses such as cancer and heart disease. Although no information was available for analysis on the severity of illness, risk increased with frequency and recency of hospitalisation and with number of comorbidities and the involvement of more than one organ or system. While physical illness was predictive of suicide risk, the association was weaker once psychiatric history was taken into account. This suggests that mental illness may be, as has been previously suggested, an important mediating variable in suicidal behaviours among those with physical illness.

There are certain limitations to the study. Only physical conditions requiring hospitalisation were taken into account and therefore individuals being treated as outpatients were not included. Similarly, mental disorder was only detectable by way of history of psychiatric treatment and therefore mental illness is underestimated in this study. Individual physical conditions, furthermore, were not identifiable, as ICD-10 categories, related to organs and systems, were used instead.

**Implications:** The fact that one-quarter of suicides in the present study were associated with physical illness that required hospitalisation is a finding of major significance. Physical illness has been found to be risk factors for suicide in the Australian case as well, particularly in the elderly. Given the strong link between psychiatric disorders and suicide, present suicide prevention efforts focus on mental illness; yet the connection between physical illness and suicide deserves close attention and further investigation. An important implication, furthermore, is that because there was a weakening of the association between physical illness and suicidality when history of contact with psychiatric services was taken into account, mental health professionals should be especially vigilant of suicide risk among patients who have both physical and mental health conditions, particularly in the case of women and those suffering multiple conditions or conditions involving more than one system or organ. Suicide prevention initiatives should be fully integrated into hospital and general practitioner (GP) settings. The frequent contact individuals often have with GPs following hospitalisation for physical illness should be exploited as an opportunity to save a significant proportion of lives that would otherwise be lost to suicide. According to the results of this study, that may be up to one-quarter of all suicides.

**Endnotes**


Suicides by persons reported as missing prior to death: A retrospective cohort study

Sveticic J, Too LS, De Leo D (Australia)
BMJ Open 2, e000607, 2012

**Objective:** A first study to compare suicides by missing persons with other suicide cases.

**Design:** Retrospective cohort study for the period 1994–2007.

**Geographical location:** Queensland, Australia.

**Population:** 194 suicides by missing persons and 7545 other suicides were identified through the Queensland Suicide Register and the National Coroners Information System. Main outcome measure chi(2) statistics and binary logistic regression were used to identify distinct characteristics of suicides by missing persons.

**Results:** Compared with other suicide cases, missing persons significantly more often died by motor vehicle exhaust gas toxicity (23.7% vs 16.4%; chi(2) = 7.32, p < 0.01), jumping from height (6.7% vs 3.2%; chi(2) = 7.08, p < 0.01) or drowning (8.2% vs 1.8%; chi(2) = 39.53, p < 0.01), but less frequently by hanging (29.4% vs 39.9%; chi(2) = 8.82, p < 0.01). They were most frequently located in natural outdoors locations (58.2% vs 11.1%; chi(2) = 388.25, p < 0.01). Persons gone missing were less likely to have lived alone at time of death (OR 0.45, 95% CI 0.26 to 0.76), yet more likely to be institutionalised (OR 3.12, 95% CI 1.28 to 7.64). They were less likely to have been physically ill (OR 0.64, 95% CI 0.43 to 0.95) or have a history of problematic consumptions of alcohol (OR 0.52, 95% CI 0.31 to 0.87). In comparison to other suicide cases, missing persons more often communicated their suicidal intent prior to death (OR 1.58, 95% CI 1.13 to 2.22).

**Conclusions:** Suicides by missing persons show several distinct characteristics in comparisons to other suicides. The findings have implications for development of suicide prevention strategies focusing on early identification and interventions targeting this group. In particular, it may offer assistance to police in designing risk assessment procedures and subsequent investigations of missing persons.

**Comment**

**Main findings:** In Australia, individuals are estimated to be reported as missing to police at a rate of 1.7/1,000 people per year, representing some 35,000 people per year. This may well be an underestimate, however, as individuals from particular subgroups, such as youth, homeless people, minority sexualities and genders, cultural and linguistic minorities, and individuals with intellectual disabilities, are less likely to be reported as missing. The proportion of individuals that go missing that is found dead, for suicide or other reasons, is estimated to be between 0.3% and 1%. The present study is the first to analyse the characteristics of completed suicides among people reported as missing to all other types of suicide. Methods
of suicide and individual characteristics varied in important ways among missing persons when compared to all other suicides.

**Implications:** On average, a minimum of 12 relatives and/or friends are adversely affected by the disappearance of a person, with over one-third of these people going on to experience physical and/or mental health problems as a result. The cost of this suffering needs to be understood as an additional public burden to the some $72 million estimated to be spent on searches for missing people in Australia.

The fact that absconders from psychiatric facilities were overrepresented among missing person suicides is an important finding. Those absconding from a psychiatric facility have been found to be at more than 10 times the risk of suicide than others in Australia, underscoring the importance of restricting unauthorised absences from in-patient facilities as a suicide prevention strategy. It also highlights the need for the conducting of intensive searches for individuals who have absconded and the allocation of sufficient resources to police to do this.

Currently, there is no standard protocol in Australia for deciding which missing persons cases are to be treated with priority and this left up to the discretion of the police officers involved. The development of a standard procedure based on empirical evidence regarding risk for harm to the individual, including suicide, is warranted. For example, it has been found that friends and family are many almost 80 times more accurate in their suspicions when a person has left with the intention of dying by suicide than they are when they have general concerns for the welfare of a missing person.

**Endnotes**

Suicide in the world
Värnik P (Estonia)

**Introduction:** Over the past 20 years the WHO has considerably improved world mortality data. There are still shortcomings but more countries now report data and worldwide estimates are regularly made.

**Methods:** Data about mortality have been retrieved from the WHO world database. Worldwide injury mortality estimates for 2008 as well as trends of the suicide rate from 1950 to 2009 were analysed.

**Results:** Suicides in the world amount to 782 thousand in 2008 according to the WHO estimate, which is 1.4% of total mortality and 15% of injury mortality. The suicide rate for the world as a whole is estimated at 11.6 per 100,000 inhabitants. The male-female rate ratio of suicide is estimated to be highest in the European Region (4.0) and the lowest in the Eastern Mediterranean region (1.1). Among males the highest suicide rate in the 15-29 age group is in the SE Asian region, in the 45-59 age group in European males and for ages above 60 in the Western Pacific region. Females from SE Asia have a remarkably high suicide rate among 15-29-year-olds and from age 45 in the Western Pacific region. The leading country is currently Lithuania, with a suicide rate of 34.1 per 100,000 inhabitants. Also among males the suicide rate is the highest in Lithuania at 61.2. Among females South Korea with 22.1 is at the top of world suicide rates.

**Conclusions:** During the past six decades, according to the WHO Japan, Hungary, and Lithuania have topped the list of world countries by suicide rate, but if the current trends continue South Korea will overtake all others in a few years. The heart of the problem of suicide mortality has shifted from Western Europe to Eastern Europe and now seems to be shifting to Asia. China and India are the biggest contributors to the absolute number of suicides in the world.

**Comment**

**Main findings:** While making reliable estimates of national suicide rates is complicated by the questionable ways in which mortality data are collected and recorded in many countries, as well as the eternal problem determining the decedent’s intent, the quality of suicide statistics from around the world has improved remarkably in recent years. The World Health Organization has been collecting data on national suicide rates since 1950 and, based on the information available to them, there are particular countries that stand out as having especially high rates of suicide. Japan had the highest rate in the 1950s and was then overtaken by Hungary, which sat in first place until the early 1990s when Lithuania took over. Other countries that have had alarmingly high rates include Finland, Estonia, Latvia, and Russia in Europe, Cuba and Guyana in Latin America, and Sri Lanka in Asia. The general trend has seen a shift in the region showing the highest rates from Western to Eastern Europe, moving now, it seems, to East Asia. No Western
European welfare state appears any more in the top ten ranked countries. On the other hand, cohort effects of the Asian economic crisis of the late 1990s are cited as a potential reason for the steady upward trend of the suicide rate in (South) Korea. If the current tendency continues, Korea will overtake Lithuania within a few years. Two countries also stand out in terms of their absolute contribution to global suicide numbers: China and India. While this may not be surprising, given the size of their populations, together they account for the majority of the world’s suicides (estimated at 54%), and this may well be an underestimate, given the lack of comprehensive reporting systems in these countries and, in particular, their large numbers of rural inhabitants.

**Implications:** One million suicides a year worldwide is the oft-cited statistic in discussions about the enormity of the problem. The cost in emotional, personal, and economic terms is massive. The low-income countries of the Asia-Pacific region can already be said to shoulder the highest burden of suicide across the globe. This coincides with Australia’s repositioning as a key player in the Asia-Pacific region in recent years, a shift which has seen greater regional integration not only economically, but also socially and culturally. Interestingly, Australian residents born in Asia have lower rates of suicide than native-born residents, as well as New Zealand- and UK-born inhabitants. This may be due to the demographic makeup of Asian immigrants, who tend to be younger than their European counterparts. Nevertheless, in worldwide comparative terms, the apparent shift in the global suicidal burden to (East) Asia is not a development which, precisely because of our ever-closer ties with the region, Australia can or should ignore. The WHO/START (Suicide Trend in At-Risk Territories) study, coordinated by AISRAP, is an ambitious project which aims precisely to address problems related to both fatal and non-fatal suicidal behaviours, by providing important transcultural expertise and raising awareness in the countries of the region that need these most. Given the lack of coordinated data collection and the worrying predictions for suicide in the Western Pacific region in general, the implementation of the START Study is particularly timely.

**Endnotes**

A clinical audit of changes in suicide ideas with Internet treatment for depression

Watts S, Newby JM, Mewton L, Andrews G (Australia)
BMJ Open 2. Published online: 13 September 2012. doi: 10.1136/bmjopen-2012-001558, 2012

**Objectives:** To examine reductions in suicidal ideation among a sample of patients who were prescribed an internet cognitive behavior therapy (iCBT) course for depression.

**Design:** Effectiveness study within a quality assurance framework. Setting: Primary care.

**Participants:** 299 patients who were prescribed an iCBT course for depression by primary care clinicians. Intervention: Six lesson, fully automated cognitive behavior therapy course delivered over the internet. Primary outcome: suicidal ideation as measured by question 9 on the Patient Health Questionnaire (PHQ-9).

**Results:** Suicidal ideation was common (54%) among primary care patients prescribed iCBT treatment for depression but dropped to 30% post-treatment despite minimal clinician contact and the absence of an intervention focused on suicidal ideation. This reduction in suicidal ideation was evident regardless of sex and age.

**Conclusions:** The findings do not support the exclusion of patients with significant suicidal ideation.

**Comment**

**Main findings:** Many people who suffer from depression are unable to access appropriate care due to financial obstacles or limited treatment options. It has been suggested that online therapy programs may help to fill this gap with some recent studies showing significant reductions in participants’ depressive symptoms after taking part in such programs. Patients reporting suicidal ideation have mostly been excluded from these trials in the past due to difficulties with ethical clearance when including suicidal individuals. The current study extended previous research by testing the effectiveness of Internet cognitive behavioural therapy (iCBT) on 299 primary care patients with and without suicidal ideation who were prescribed iCBT for depression by their clinicians at the St Vincent’s Hospital in NSW. The program involved six lessons covering psycho-education, behavioural activation, cognitive restructuring, problem solving, graded-exposure, and relapse prevention, with clinicians being advised to contact patients at least twice during the duration of the program. Depression severity was measured before and after treatment using the Patient Health Questionnaire (PHQ-9), which also includes a question on suicidal ideation. Before program implementation, PHQ-9 scores showed an average score of 14.3, with 216 participants likely to meet the criteria for Major Depressive Disorder (scores of 10–27). Results of the study showed that depression scores on the PHQ-9 were significantly reduced by an average of 6.2 points after completion of the program. The overall number of
participants with some level of suicidal ideation was significantly reduced from 54% down to 30% post-treatment. Before treatment, 45 participants (15.15%) had thought about suicide daily for at least half of the day in the past two weeks, while 26 participants (8.7%) had experienced suicidal ideation almost every day in the two weeks before joining the trial. After completion of the program, these numbers had reduced to 14 (4.7%) and 10 (3.3%) respectively. The reduction in suicidal ideation was present, regardless of the sex and age of participants.

Implications: A 2004 study by the World Health Organization found that 45% of individuals in Australia with major depression had not received treatment for their illness in the previous 12 months. The current study supports previous findings that iCBT programs may be effective in treating depression, strengthening the argument that they could potentially be used to ensure that more Australians are able to access appropriate treatment. The study further suggests that these programs may go beyond the reduction of depressive symptoms, also lowering the occurrence of suicidal ideation. This is important from the perspective of suicide prevention, considering that suicidal ideation appeared in more than half of the individuals who were prescribed iCBT for depression in this Australian study.

This is the first paper to demonstrate the association between iCBT, depression, and suicidal ideation in primary care, highlighting a significant gap in the research to date. Due to the positive results of this study, the authors attest that the continued exclusion of individuals with suicidal ideation from iCBT programs may be unwarranted. Further research which could build on findings of the current study by including a measure of the intensity of suicidal ideation, intention to act on thoughts or suicidal plans, and by assessing whether the changes in suicidal ideation are sustained over time.

Endnotes
Examination of the effectiveness of the mental health environment of care checklist in reducing suicide on inpatient mental health units

Watts BV, Young-Xu Y, Mills PD, DeRosier JM, Kemp J, Shiner B, Duncan WE (USA)
Archives of General Psychiatry 69, 588-592, 2012

Context: Suicide is one of the leading causes of death in the United States. While suicides occurring during psychiatric hospitalization represent a very small proportion of the total number of suicides, these events are highly preventable owing to the controlled nature of the environment. Many methods have been proposed, but no interventions have been tested.

Objective: To evaluate the effect of identification and abatement of hazards on inpatient suicides in the Veterans Health Administration (VHA).

Design, Setting, and Patients: The effect of implementation of a checklist (the Mental Health Environment of Care Checklist) and abatement process designed to remove suicide hazards from inpatient mental health units in all VHA hospitals was examined by measuring change in the rate of suicides before and after the intervention.

Intervention: Implementation of the Mental Health Environment of Care Checklist.

Main Outcome Measure: The number of completed suicides on inpatient mental health units in VHA hospitals.

Results: Implementation of the Mental Health Environment of Care Checklist was associated with a reduction in the rate of completed inpatient suicide in VHA hospitals nationally. This reduction remained present when controlling for number of admissions (2.64 per 100 000 admissions before to 0.87 per 100 000 admissions after implementation; P < .001) and bed days of care (2.08 per 1 million bed days before to 0.79 per 1 million bed days after implementation; P < .001).

Conclusions: Use of the Mental Health Environment of Care Checklist was associated with a substantial reduction in the inpatient suicide rate occurring on VHA mental health units. Use of the checklist in non-VHA hospitals may be warranted.

Comment

Main findings: Although the majority of suicides occur among outpatients, the phenomenon of in-patient suicide nonetheless continues to constitute a major area of concern in suicide prevention. In 2007, the Veterans Health Administration (VHA) in the USA implemented the use of the Mental Health Environment of Care Checklist (MHEOCC). This initiative led to the abatement of 8,298 hazards across VHA health units in its first two years of enforcement. The present research considers the effectiveness of this risk abatement.

Although the Checklist involves only changes in the clinical environment and not in treatment processes, the implementation of MHEOCC was associated with
a reduction in the suicide rate. The reduction remained after controlling for volume of care (number of admissions and bed days). Nevertheless, without a control group of hospital with which to compare, it is impossible to say with certainty that the implementation of the Checklist led to the reduction in suicides. It is possible that one or more other factors alone or in combination with the Checklist brought about the reduction. For example, at the time of the study, the VHA was engaging in various activities to reduce out-patient suicide and it may well be that this had an effect on in-patient suicide rates.

**Implications:** The present research lends support to other studies\(^1,2\) that suggest that alterations to the ward environment can help reduce psychiatric in-patient suicide rates. As the authors suggest, it is worthwhile considering the implementation of these changes in non-VHA hospitals as well as modifications to the patient treatment procedures.

The implementation of these changes in VHA hospitals in the USA is an important step, given the elevated rates of mental illness and suicide among veterans, particularly in the USA\(^3\). There is also some evidence that some Australian veterans may be at a higher risk for suicide\(^4\). The Australian Department of Veteran Affairs (DVA) runs a suicide prevention program, consisting of a series of workshops, entitled Operation Life\(^5\). The Department also operates the Veterans Line telephone counselling service. The DVA does not operate its own hospitals but does cover the cost of treatment in civilian hospitals for those who are entitled\(^6\). Initiatives such as the removal of ligature points from civilian psychiatric facilities are in place in Australian hospitals and should be continued as well as evaluated.

**Endnotes**


Suicide prevention for youth - a mental health awareness program: Lessons learned from the Saving and Empowering Young Lives in Europe (SEYLE) intervention study


BMC Public Health 12, 776, 2012

**Background:** The Awareness program was designed as a part of the EU-funded Saving and Empowering Young Lives in Europe (SEYLE) intervention study to promote mental health of adolescents in 11 European countries by helping them to develop problem-solving skills and encouraging them to self-recognize the need for help as well as how to help peers in need.

**Methods:** For this descriptive study all coordinators of the SEYLE Awareness program answered an open-ended evaluation questionnaire at the end of the project implementation. Their answers were synthesized and analyzed and are presented here.

**Results:** The results show that the program cultivated peer understanding and support. Adolescents not only learned about mental health by participating in the Awareness program, but the majority of them also greatly enjoyed the experience.

**Conclusions:** Recommendations for enhancing the successes of mental health awareness programs are presented. Help and cooperation from schools, teachers, local politicians and other stakeholders will lead to more efficacious future programs.

**Comment**

**Main findings:** A large number of mental disorders develop during adolescence and early adulthood. However, for various reasons including stigma, lack of mental health awareness, lack of adequate services available and knowledge of these services and an increasing sense of self-sufficiency, many suicidal youth do not seek professional medical help for these disorders. In fact, a Queensland study found that 39% of males and 22% of females aged between 15 and 24 would not seek professional help for personal, emotional or distressing problems. The current multicentre European study addressed the issue of mental health awareness and involved the implementation of an awareness program within the framework of a randomized-controlled intervention trial (RCT) named Saving and Empowering Young Lives in Europe (SEYLE). The purpose of these mental health awareness programs is to increase the knowledge and awareness of mental health in young people. The program was implemented in 11 different countries (Austria, Estonia, France, Germany, Hungary, Ireland, Israel, Italy, Romania, Slovenia, and Spain) and involved the participation of 12,395 students from 289 schools. This descriptive study explained in the current paper used open-ended
questions to evaluate the attitudes of the Awareness program coordinators towards the program and its effectiveness. All awareness coordinators praised the design of the program, which allowed for the discussion of important mental health related topics, otherwise unaddressed. Coordinators reported that the adolescent participants were able to use role-plays as an opportunity to discuss their feelings, and appreciated the chance to discuss topics such as problem-solving, depression, anxiety, bullying, stress crisis situations, pregnancy, conflict, and suicidal behaviours. The program was able to promote social networks by providing pupils with information about available support services and increasing peer support. The role-plays allowed adolescents to work on their communication skills, and often they were able to overcome their fears and open up. The program did have some negative aspects, including the tight time frame allocated to complete the workshops, with difficulties ensuring that the needs of all pupils were met and all topics were covered in the time provided.

**Implications:** Due to the reluctance of young people in Australia to seek help for mental health issues, and the difficulties in identifying which adolescents are most at risk for suicide, Australian school-based programs such as MindMatters have been implemented to increase the general mental health awareness of adolescents\(^4\). Further evaluation of these programs might give more indication of their effectiveness. Additionally, the development of further programs encouraging youth to self-recognise the need for help and emphasis of the importance of helping peers may go some way to reducing suicide in adolescents suffering from mental illness.

The current study had a number of strengths. Firstly, the successful implementation of the program in eleven different countries suggests that the program may be beneficial in Australia, provided that cultural differences are addressed. The use of open-ended questions in this study allowed for a greater understanding of the implementation of the Awareness program, as well as difficulties involved with its implementation. Using this newfound knowledge, the program may now be improved. Despite these strengths, the important results of the active randomised controlled trial part of the overall study are as yet unavailable and thus not presented in this paper.

**Endnotes**

Recommended Readings
Suicide attempts in veterans with bipolar disorder during treatment with lithium, divalproex, and atypical antipsychotics


Suicide attempt rates were assessed in 1306 subjects in this 6 year retrospective study of Bipolar disorder. Participants were Veterans from 5 different Veterans Administration Hospitals who met criteria for bipolar type 1 or 2 and who had at least one prescription for lithium or divalproex or both during the study period. This study focused on the impact of atypical antipsychotics on the suicide attempt rate when used in addition to or in place of lithium or divalproex. Medication exposure was calculated using computerized pharmacy records. Suicide attempts were established through chart review including emergency room records, inpatient records, and outpatient records. There were a total of 117 suicide attempts and 2 suicide completions during the study period. Most attempts (59%) occurred when patients were on no medications. Nearly 90% of subjects spent an average of 45 months during the 6 year period on none of the aforementioned medications. The lowest percentage of suicide attempts (15%) occurred while on lithium, 21% while on divalproex and 24% while on atypical antipsychotics. When total months of exposure were taken into account, the lowest attempt rate occurred on lithium plus divalproex (6.3 attempts per 10,000 months of exposure), followed by divalproex alone (7.0 attempts/10,000 months of exposure), and lithium alone (7.7 attempts per 10,000 months of exposure). Patients on atypical antipsychotics alone had an attempt rate of 26.1 attempts per 10,000 months of exposure. In this study, lithium and divalproex provided protection against suicide attempts. Results need to be replicated in future prospective studies and clearly strategies for improving medication compliance among veterans are warranted.

A randomized trial to reduce the prevalence of depression and self-harm behavior in older primary care patients


Purpose: We wanted to determine whether an educational intervention targeting general practitioners reduces the 2-year prevalence of depression and self-harm behavior among their older patients.

Methods: Our study was a cluster randomized controlled trial conducted between July 2005 and June 2008. We recruited 373 Australian general practitioners and 21,762 of their patients aged 60 years or older. The intervention consisted of a practice audit with personalized automated audit feedback, printed educational material, and 6 monthly educational newsletters delivered over a period of 2 years. Control physicians completed a practice audit but did
not receive individualized feedback. They also received 6 monthly newsletters
describing the progress of the study, but they were not offered access to the educa-
tional material about screening, diagnosis and management of depression, and
suicide behavior in later life. The primary outcome was a composite measure of clin-
ically significant depression (Patient Health Questionnaire score ≥10) or self-harm
behavior (suicide thoughts or attempt during the previous 12 months). Information
about the outcomes of interest was collected at the baseline assessment and again after
12 and 24 months. We used logistic regression models to estimate the effect of the
intervention in a complete case analysis and intention-to-treat analysis by imputed
chain equations (primary analysis).

**Results:** Older adults treated by general practitioners assigned to the interven-
tion experienced a 10% (95% CI, 3%-17%) reduction in the odds of depres-
sion or self-harm behavior during follow-up compared with older adults
treated by control physicians. Post hoc analyses showed that the relative effect
of the intervention on depression was not significant (OR = 0.93; 95% CI,
0.83-1.03), but its impact on self-harm behavior over 24 months was (OR =
0.80; 95% CI, 0.68–0.94). The beneficial effect of the intervention was prima-
rily due to the relative reduction of self-harm behavior among older adults
who did not report symptoms at baseline. The intervention had no obvious
effect in reducing the 24-month prevalence of depression or self-harm behav-
ior in older adults who had symptoms at baseline.

**Conclusions:** Practice audit and targeted education of general practitioners
reduced the 2-year prevalence of depression and self-harm behavior by 10%
compared with control physicians. The intervention had no effect on recovery
from depression or self-harm behavior, but it prevented the onset of new cases
of self-harm behavior during follow-up. Replication of these results is required
before we can confidently recommend the roll-out of such a program into
normal clinical practice.
Child maltreatment and deliberate self-harm among college students: Testing mediation and moderation models for impulsivity

Arens AM, Gaher RM, Simons JS (USA)
The American Journal of Orthopsychiatry 82, 328–337, 2012

This study examined the relationship between child maltreatment, impulsivity, and deliberate self-harm in a sample of college students. Four subtypes of impulsivity (urgency, premeditation, perseverance, and sensation seeking) were examined. Results show that participants who report child maltreatment histories also report higher levels of negative affect and higher levels of impulsivity, specifically negative urgency. In addition, those who report histories of child maltreatment are more likely to endorse deliberate self-harm behaviors as an adult. Of the 4 subtypes of impulsivity, urgency was most strongly related to deliberate self-harm. Urgency, but not the other subtypes of impulsivity, mediated the relationship between child maltreatment and self-harm. The current study contributes to the understanding of the mechanisms behind deliberate self-harm behavior by suggesting that individuals with histories of child maltreatment are more likely to engage in deliberate self-harm in an attempt to quickly reduce intense negative affect.

Shared characteristics of suicides and other unnatural deaths following non-fatal self-harm? A multicentre study of risk factors

Psychological Medicine 42, 727–741, 2012

Background: Mortality, including suicide and accidents, is elevated in self-harm populations. Although risk factors for suicide following self-harm are often investigated, rarely have those for accidents been studied. Our aim was to compare risk factors for suicide and accidents.

Method: A prospective cohort (n = 30 202) from the Multicentre Study of Self-harm in England, 2000–2007, was followed up to 2010 using national death registers. Risk factors for suicide (intentional self-harm and undetermined intent) and accidents (narcotic poisoning, non-narcotic poisoning, and non-poisoning) following the last hospital presentation for self-harm were estimated using Cox models.

Results: During follow-up, 1833 individuals died, 378 (20.6%) by suicide and 242 (13.2%) by accidents. Independent predictors of both suicide and accidents were: male gender, age ≥ 35 years (except accidental narcotic poisoning) and psychiatric treatment (except accidental narcotic poisoning). Factors differentiating suicide from accident risk were previous self-harm, last Method of self-harm (twofold increased risks for cutting and violent self-injury versus self-poisoning) and mental health problems. A risk factor specific to accidental narcotic poisoning was recreational/illicit drug problems, and a risk factor specific to accidental non-narcotic poisoning and non-poisoning accidents was alcohol involvement with self-harm.
Conclusions: The similarity of risk factors for suicide and accidents indicates common experiences of socio-economic disadvantage, life problems and psychopathology resulting in a variety of self-destructive behaviour. Of factors associated with the accidental death groups, those for non-narcotic poisoning and other accidents were most similar to suicide; differences seemed to be related to criteria coroners use in reaching verdicts. Our findings support the idea of a continuum of premature death.

Deliberate self-harm patients in the emergency department: Who will repeat and who will not? Validation and development of clinical decision rules


Objectives: (1) Validate an existing clinical tool for assessing risk after deliberate self-harm (DSH), Manchester Self-Harm Rule, in a new setting and new population, (2) develop a clinical decision rule based on factors associated with repeated self-harm in a Swedish population and (3) compare these rules.

Design: A consecutive series of 1524 patients attending one of Scandinavia’s largest emergency departments (ED) due to DSH during a 3-year period were included. Explanatory factors were collected from hospital charts and national databases. A nationwide register-based follow-up of new DSH episode or death by suicide within 6 months was used. We used logistic regression, area under the curve and classification trees to identify factors associated with repetition. To evaluate the ability of different decision rules to identify patients who will repeat DSH, we calculated the sensitivity and specificity.

Main Outcome Measure: Repeated DSH or suicide within 6 months.

Results: The cumulative incidence for patients repeating within 6 months was 20.3% (95% CI 18.0% to 22.0%). Application of Manchester Self-Harm Rule to our material yielded a sensitivity of 89% and a specificity of 21%. The clinical decision rule based on four factors associated with repetition in the Swedish population yielded a sensitivity of 90% and a specificity of 18%.

Conclusions: Application of either rules, with high sensitivity, may facilitate assessment in the ED and help focus right resources on patients at a higher risk. Irrespective of the choice of decision rule, it is difficult to separate those who will repeat from those who will not due to low specificity.
Depression in rural adolescents: Relationships with gender and availability of mental health services

Black G, Roberts RM, Li-Leng T (Australia)
Rural Remote Health 12, 2092, 2012

Introduction: There is growing evidence in the literature which indicates that the prevalence of depression is similar in both non-metropolitan and metropolitan areas. However, it is generally perceived that factors associated with compromised mental health in rural residents include deprivation and lack of access to healthcare services. This study examines the relationship between depression and possible determinants of mental health among rural adolescents. The determinants identified were degree of remoteness, gender, socioeconomic status and the perception of rural community characteristics. Rural community characteristics examined were long waiting lists and lack of mental health professionals.

Method: Respondents were 531 South Australian adolescents (55.7% female) aged 13 to 18 years, living outside the Adelaide (state capital) metropolitan area. Respondents completed a questionnaire including: demographic questions; the Kutcher Adolescent Depression Scale (KADS); and questions regarding individual perceptions of community characteristics. The data were obtained by self-report, degree of remoteness was measured using the Accessibility and Remoteness Index of Australia Plus, and socio-economic status was determined from the Australian Bureau of Statistics (ABS) Socio-Economic Index of Relative Socio-Economic Advantage and Disadvantage (SEIFA).

Results: The rate of depression obtained from this sample of rural adolescents is concerning; 18% screened positive for depression on the KADS, 41% reported low mood much of the time or more often, and 20% experienced occasional or more frequent self-harm or suicidal thoughts, plans or actions. Depression was related to gender, with more females (23%) screening positive for depression than males (11.8%). Prevalence of depression was unrelated to degree of remoteness or the socioeconomic status of the participants. This finding is not consistent with other research that identifies socioeconomic status as a psychosocial determinant of mental health. It is noteworthy that the perception of long waiting lists and a lack of mental health professionals were related to depression but that this relationship was only significant for females. This may be because those who experience symptoms of depression are more likely to be aware of service availability due to help-seeking behaviour. That this finding is significant for females is consistent with research that identifies females as being better able to identify symptoms of depression and more willing to seek help.

Conclusion: Efforts to enhance the mental health of rural Australian adolescents should focus on improving the availability of mental health services, improving mental health literacy and promoting help-seeking behaviour for mental health difficulties. Consideration should be given to the gender differences identified when developing future mental health initiatives.
Media guidelines for the responsible reporting of suicide
Bohanna I, Wang X (Australia)
*Crisis* 4, 190–198, 2012

**Background:** The media have a powerful influence on those at risk of suicide. Evidence linking sensational media reporting with imitative suicidal behavior continues to grow, prompting the widespread development of guidelines for media professionals on the reporting of suicide. While such guidelines have been widely implemented, only a small amount of research has addressed their use and effectiveness.

**Aims:** To conduct a systematic literature review aimed at critically evaluating the evidence concerning the use and effectiveness of media guidelines for reporting on suicide.

**Methods:** All research publications that addressed the effectiveness of media guidelines against a variety of outcome measures were examined.

**Results:** The findings highlight cases in which guideline implementation has successfully mitigated imitative suicides. Significant variability in the effect of guidelines on the quality of suicide reporting was observed between studies, and research suggests journalist awareness, use, and opinion of guidelines is generally low. The critical positive effects of media collaboration and training on reporting are noted.

**Conclusions:** Overall, the findings of this review suggest that the guidelines can change reporting style and prevent imitative suicide, but that approaches centered on consultation, collaboration, media ownership, and training are likely to achieve the greatest success.

Crisis interventions for people with borderline personality disorder
*Cochrane Database of Systematic Reviews* 6, CD009353, 2012

**Background:** People with borderline personality disorder (BPD) frequently present to health services in crisis, often involving suicidal thoughts or actions. Despite this, little is known about what constitutes effective management of acute crises in this population.

**Objectives:** To review the evidence for the effectiveness of crisis interventions for adults with BPD in any setting. For the purposes of the review, we defined crisis intervention as ‘an immediate response by one or more individuals to the acute distress experienced by another individual, which is designed to ensure safety and recovery and lasts no longer than one month.’

**Search Methods:** We searched the following databases in September 2011: CENTRAL (The Cochrane Library 2011, Issue 3), MEDLINE (1948 to August
Selection Criteria: Randomised controlled trials (RCTs) comparing crisis interventions with usual care or no intervention or a waiting list control for adults of any age with BPD.

DATA Collection and Analysis: Two authors independently screened titles, abstracts and full-text articles and assessed these against the inclusion criteria. Main Results: The search identified 15 studies, 13 of which we excluded. Reasons for exclusion were: lack of randomisation (N = 8); retrospective design (N = 2); or the intervention was a complex psychological therapy lasting longer than one month (N = 3). We identified two ongoing RCTs that met the inclusion criteria, with a combined predicted sample size of 688. These trials are ongoing and the results are therefore not included in the review, although they will be incorporated into future updates.

Authors’ Conclusions: A comprehensive search of the literature showed that currently there is no RCT-based evidence for the management of acute crises in people with BPD and therefore we could not reach any conclusions about the effectiveness of any single crisis intervention. High-quality, large-scale, adequately powered RCTs in this area are urgently needed.

Levels of aggressiveness are higher among alcohol-related suicides: Results from a psychological autopsy study

Chachamovich E, Ding Y, Turecki G (Canada)
Alcohol 46, 529–536, 2012

Suicide is one of the major causes of deaths worldwide. Several studies have shown that alcohol use disorders (AUD) are associated with suicide ideation, suicide attempts, and suicide completion. The majority of the theoretical conceptualization and the bulk of evidence on suicidal behavior and AUD are based on investigations of nonfatal cases because data on nonfatal suicidal behaviors are more readily available. This study aims to explore demographic, clinical, and
behavioral dimensions in a large sample of alcohol-related suicides compared to an age-gender matched sample of non-AUD suicides to identify specific factors associated with AUD suicides. We conducted a psychological autopsy study with 158 pairs of AUD and non-AUD suicides. Findings showed that AUD suicides have lower educational level, more biological children and were more likely to be heavy smokers (OR = 3.32). Cases were more likely to have family history of alcohol (OR = 1.73) and drug abuse (OR = 3.61). Subjects had similar prevalences of depressive disorders, anxiety disorders or psychotic disorders. AUD suicides were more likely to meet criteria for current cocaine abuse/dependence (OR = 6.64). With respect to personality disorders, AUD suicides presented higher prevalence of Antisocial Personality Disorder (OR = 4.68), and were less likely to meet criteria for Avoidant (OR = 0.26) and Obsessive-Compulsive Personality Disorders (OR = 0.35). Impulsivity scores were higher in AUD suicides ($p = 0.18$), as well as aggression scores ($p < 0.001$). Results form the conditional logistic regression models showed that cocaine abuse/dependence (OR = 4.20) and Antisocial Personality Disorder (OR = 6.24) were associated with AUD suicide. After controlling for impulsive-aggressive behaviors, levels of aggression were the only psychopathological feature statistically different between AUD and non-AUD suicides (OR = 1.28). In conclusion, higher levels of aggressive behaviors are a specific characteristic of AUD suicides. Apart from substance-related diagnoses, AUD and non-AUD suicides have comparable Axis I psychiatric diagnoses and familial transmission of suicidal behavior.

A longitudinal population-based study exploring treatment utilization and suicidal ideation and behavior in major depressive disorder
Chartrand H, Robinson J, Bolton JM (Canada)

Background: This study aimed to longitudinally examine the relationship between treatment utilization and suicidal behavior among people with major depressive disorder in a nationally representative sample.

Methods: Data came from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) (Wave 1: N = 43,093; Wave 2: N = 34,653). Suicidal and non-suicidal individuals at Wave 1 were compared based on subsequent treatment utilization. Suicidal behavior at Wave 2 was compared between people with major depressive disorder who had sought treatment at Wave 1 versus those that had not.

Results: Individuals with past year major depressive disorder at Wave 1 who attempted suicide were more likely to be hospitalized at follow up compared to non-suicidal people with major depressive disorder [adjusted odds ratio (AOR) = 4.46; 95% confidence interval [95% CI]: 2.54–7.85]; however, they were not more likely to seek other forms of treatment. Among those with past year major depressive disorder who sought treatment at baseline, visiting an emergency room (AOR
Limitations: Unable to draw conclusions about completed suicide or adequacy of treatment.

Conclusions: Suicidal behavior does not lead individuals with major depressive disorder to seek treatment with professionals or use antidepressant medications; instead, they are more likely to use emergency services. These findings suggest that treatment efforts for people with major depressive disorder who are suicidal need improvement.

The mediator roles of trait anxiety, hostility, and impulsivity in the association between childhood trauma and dissociation in male substance-dependent inpatients


The aim of this study was to investigate the mediator roles of negative affect, aggression, and impulsivity in the association between childhood trauma and dissociation in male substance-dependent inpatients. In addition, the effect of some variables that may be related with childhood trauma and dissociation among treatment-seeking substance dependents, such as substance of choice (alcohol/drug), mean of current age, and age at regular substance use was controlled. Participants were consecutively admitted 200 male substance-dependent inpatients. Patients were investigated with the Dissociative Experiences Scale, the Childhood Trauma Questionnaire, the Barratt Impulsiveness Scale, the Buss-Perry Aggression Questionnaire, the Beck Depression Inventory, and the Spielberger State-Trait Anxiety Inventory. Seventy-seven patients (38.5%) with pathologic dissociation were compared with 123 nondissociative patients (61.5%) classified by dissociative taxon membership. The dissociative group had lower age, age at regular substance use, duration of education, and higher rate of drug dependency rather than alcohol dependency. Beside higher scores on anxiety, depression, childhood trauma, aggression, and impulsivity, a larger proportion of dissociative group reported suicide attempts and self-mutilation than did the nondissociative group. Results of regression analyses suggest that severity of chronic anxiety, aggression (particularly hostility), and impulsivity were found to be mediators of association between childhood trauma and dissociation. Results suggest that, to reduce the risk of dissociation and related behavior such as suicide attempt and self-mutilation among substance dependents, chronic anxiety together with the feelings of hostility and impulsivity must be the targets of evaluation and treatment among those with history of childhood trauma.
Suicide and cardiovascular death after a cancer diagnosis
Fang F, Fall K, Mittleman MA, Sparen P, Ye W, Adami HO, Valdimarsdottir U (Sweden)

Background: Receiving a diagnosis of cancer is a traumatic experience that may trigger immediate adverse health consequences beyond the effects of the disease or treatment.

Methods: Using Poisson and negative binomial regression models, we conducted a historical cohort study involving 6,073,240 Swedes to examine the associations between a cancer diagnosis and the immediate risk of suicide or death from cardiovascular causes from 1991 through 2006. To adjust for unmeasured confounders, we also performed a nested, self-matched case-crossover analysis among all patients with cancer who died from suicide or cardiovascular diseases in the cohort.

Results: As compared with cancer-free persons, the relative risk of suicide among patients receiving a cancer diagnosis was 12.6 (95% confidence interval [CI], 8.6 to 17.8) during the first week (29 patients; incidence rate, 2.50 per 1000 person-years) and 3.1 (95% CI, 2.7 to 3.5) during the first year (260 patients; incidence rate, 0.60 per 1000 person-years). The relative risk of cardiovascular death after diagnosis was 5.6 (95% CI, 5.2 to 5.9) during the first week (1318 patients; incidence rate, 116.80 per 1000 person-years) and 3.3 (95% CI, 3.1 to 3.4) during the first 4 weeks (2641 patients; incidence rate, 65.81 per 1000 person-years). The risk elevations decreased rapidly during the first year after diagnosis. Increased risk was particularly prominent for cancers with a poor prognosis. The case-crossover analysis largely confirmed results from the main analysis.

Conclusions: In this large cohort study, patients who had recently received a cancer diagnosis had increased risks of both suicide and death from cardiovascular causes, as compared with cancer-free persons.

Suicidal behavior and severe neuropsychiatric disorders following glucocorticoid therapy in primary care
Fardet L, Petersen I, Nazareth I (UK)

Objective: The incidence and the risk of suicidal behaviors and severe neuropsychiatric disorders in people treated with systemic glucocorticoids are poorly known. The authors assessed the incidence rates of depression, mania, delirium, panic disorder, and suicidal behaviors in patients treated with glucocorticoids in primary care settings and the risk factors for developing these outcomes.

Method: Data were obtained for all adult patients registered between 1990 and 2008 at U.K. general practices contributing to The Health Improvement Network (THIN) primary care database. The incidence rates for the outcomes of interest were assessed in patients who received prescriptions for oral glucocorticoids and compared with those in patients who did not receive such prescriptions. The pre-
dictors of these outcomes in exposed patients were ascertained using Cox proportional hazards models.

**Results:** Overall, 786,868 courses of oral glucocorticoids were prescribed for 372,696 patients. The authors identified 109 incident cases of suicide or suicide attempt and 10,220 incident cases of severe neuropsychiatric disorders in these patients. The incidence of any of these outcomes was 22.2 per 100 person-years at risk for first-course treatments. Compared to people with the same underlying medical disease who were not treated with glucocorticoids, the hazard ratio for suicide or suicide attempt in exposed patients was 6.89 (95% CI = 4.52–10.50); for depression, 1.83 (95% CI = 1.72–1.94); for mania, 4.35 (95% CI = 3.67–5.16); for delirium, confusion, or disorientation, 5.14 (95% CI = 4.54–5.82); and for panic disorder, 1.45 (95% CI = 1.15–1.85). Older men were at higher risk of delirium/confusion/disorientation and mania, while younger patients were at higher risk of suicide or suicide attempt. Patients with a previous history of neuropsychiatric disorders and those treated with higher dosages of glucocorticoids were at greater risk of neuropsychiatric outcomes.

**Conclusions:** Glucocorticoids increase the risk of suicidal behavior and neuropsychiatric disorders. Educating patients and their families about these adverse events and increasing primary care physicians’ awareness about their occurrence should facilitate early monitoring.

### A systematic review of social factors and suicidal behavior in older adulthood

Fässberg MM, van Orden KA, Duberstein P, Erlangsen A, Lapierre S, Bodner E, Canetto SS, De Leo D, Szanto K, Waern M (Sweden, USA, Canada, Israel, Australia)


Suicide in later life is a global public health problem. The aim of this review was to conduct a systematic analysis of studies with comparison groups that examined the associations between social factors and suicidal behavior (including ideation, non-fatal suicidal behavior, or deaths) among individuals aged 65 and older. Our search identified only 16 articles (across 14 independent samples) that met inclusion criteria. The limited number of studies points to the need for further research. Included studies were conducted in Canada (n = 2), Germany (n = 1), Hong Kong (n = 1), Japan (n = 1), Singapore (n = 1), Sweden (n = 2), Taiwan (n = 1), the U.K. (n = 2), and the U.S. (n = 3). The majority of the social factors examined in this review can be conceptualized as indices of positive social connectedness—the degree of positive involvement with family, friends, and social groups. Findings indicated that at least in industrialized countries, limited social connectedness is associated with suicidal ideation, non-fatal suicidal behavior, and suicide in later life. Primary prevention programs designed to enhance social connections as well as a sense of community could potentially decrease suicide risk, especially among men.
Asthma and suicide behaviors: Results from the third national health and nutrition examination survey (NHANES III)

Goodwin RD, Demmer RT, Galea S, Lemeshow AR, Ortega AN, Beautrais A (USA)

Asthma and suicide attempts are leading causes of morbidity and mortality among adults in the United States. The objective of this study was to investigate the relationship between asthma and suicidal ideation and suicide attempt among adults in the United States, and to examine whether timing of asthma, mood disorders, poverty, allergies, cigarette smoking and sex differences confound these relationships. Data were drawn from the Third National Health and Nutrition Examination Survey (NHANES III), a representative sample of adults (N = 6584) in the United States. Logistic regression analyses were used to examine the relationships between current and former asthma and suicidal ideation and suicide attempt, adjusting for demographics, poverty, smoking, allergies and mood disorders. Current asthma is significantly associated with an increased likelihood of suicidal ideation (OR: 1.77, CI: 1.11, 2.84) and suicide attempt (OR: 3.26, CI: 1.97, 5.39), after adjusting for mood disorders, smoking, poverty and demographics. There does not appear to be a significant relationship between former asthma and suicidal ideation or suicide attempt. These findings confirm and extend previous evidence by showing that the link between asthma and suicide-related outcomes is evident among adults in a representative sample and that this relationship persists after adjusting for a range of variables. This study may provide an empiric foundation for including asthma in the clinical assessment of suicide risk.

Suicide and war: The mediating effects of negative mood, posttraumatic stress disorder symptoms, and social support among army national guard soldiers

Griffith J (USA)
Suicide & Life-Threatening Behavior 42, 453, 2012

The mediating effects of posttraumatic stress disorder (PTSD) symptoms, negative mood, and social support on the relationship of war experiences to suicidality were examined. The research literature suggested a sequence among study scales representing these constructs, which was then tested on survey data obtained from a sample of National Guard soldiers (N = 4,546). Results from structural equation modeling suggested that war experiences may precipitate a sequence of psychological consequences leading to suicidality. However, suicidality may be an enduring behavioral health condition. War experiences showed no direct effects on postdeployment suicidality, rather its effect was indirect through PTSD symptoms and negative mood. War experiences were, however, predictive of PTSD symptoms, as would be expected. PSTD symptoms showed no direct
effect on postdeployment suicidality, but showed indirect effects through negative mood. Results also suggested that suicidality is relatively persistent, at least during deployment and postdeployment. The percentage of those at risk for suicide was low both during and after deployment, with little association between suicidality and time since returning from deployment. Additionally, few soldiers were initially nonsuicidal and then reported such symptoms at postdeployment. Implications of relationships of both negative mood and combat trauma to suicidality are discussed, as well as possible mediating effects of both personal dispositions and social support on relationships of war experiences to PTSD, negative mood, and suicidality.

Examining the link between nonsuicidal self-injury and suicidal behavior: A review of the literature and an integrated model

Hamza CA, Stewart SL, Willoughby T (Canada)

Clinical Psychology Review 32, 482–495, 2012

Self-injurious behaviors (SIB) refer to behaviors that cause direct and deliberate harm to oneself, including nonsuicidal self-injury (NSSI), suicidal behaviors, and suicide. Although in recent research, NSSI and suicidal behavior have been differentiated by intention, frequency, and lethality of behavior, researchers have also shown that these two types of self-injurious behavior often co-occur. Despite the co-occurrence of NSSI and suicidal behavior, however, little attention has been given as to why these self-injurious behaviors may be linked. Several authors have suggested that NSSI is a risk factor for suicidal behavior, but no comprehensive review of the literature on NSSI and suicidal behavior has been provided. To address this gap in the literature, we conducted an extensive review of the research on NSSI and suicidal behavior among adolescents and adults. First, we summarize several studies that specifically examined the association between NSSI and suicidal behavior. Next, three theories that have been proposed to account for the link between NSSI and suicidal behavior are described, and the empirical support for each theory is critically examined. Finally, an integrated model is introduced and several recommendations for future research are provided to extend theory development.

Epidemiology and nature of self-harm in children and adolescents: Findings from the multicentre study of self-harm in England


European Child and Adolescent Psychiatry 21, 369–277, 2012

We examined epidemiology and characteristics of self-harm in adolescents and impact of national guidance on management. Data were collected in six hospitals in three centres between 2000 and 2007 in the Multicentre Study of Self-harm in England. Of 5,205 individuals (7,150 episodes of self-harm), three-quarters were female. The female: male ratio in 10–14 year-olds was 5.0 and 2.7 in 15–18 year-olds.
Rates of self-harm varied somewhat between the centres. In females they averaged 302 per 100,000 (95 % CI 269–335) in 10–14 year-olds and 1,423 (95 % CI 1,346–1,501) in 15–18 year-olds, and were 67 (95 % CI 52–82) and 466 (95 % CI 422–510), respectively, in males. Self-poisoning was the most common method, involving paracetamol in 58.2 % of episodes. Presentations, especially those involving alcohol, peaked at night. Repetition of self-harm was frequent (53.3 % had a history of prior self-harm and 17.7 % repeated within a year). Relationship problems were the predominant difficulties associated with self-harm. Specialist assessment occurred in 57 % of episodes. Self-harm in children and adolescents in England is common, especially in older adolescents, and paracetamol overdose is the predominant method. National guidance on provision of psychosocial assessment in all cases of self-harm requires further implementation.

**Geospatial examination of lithium in drinking water and suicide mortality**

Helbich M, Leitner M, Kapusta ND (Germany)


**Background:** Lithium as a substance occurring naturally in food and drinking water may exert positive effects on mental health. In therapeutic doses, which are more than 100 times higher than natural daily intakes, lithium has been proven to be a mood-stabilizer and suicide preventive. This study examined whether natural lithium content in drinking water is regionally associated with lower suicide rates.

**Methods:** Previous statistical approaches were challenged by global and local spatial regression models taking spatial autocorrelation as well as non-stationarity into account. A Geographically Weighted Regression (GWR) model was applied with significant independent variables as indicated by a spatial autoregressive (SAR) model.

**Results:** The association between lithium levels in drinking water and suicide mortality can be confirmed by the global spatial regression model. In addition, the local spatial regression model showed that the association was mainly driven by the eastern parts of Austria.

**Conclusions:** Accordingly to old anecdotic reports the results of this study support the hypothesis of positive effects of natural lithium intake on mental health. Both, the new methodological approach and the results relevant for health may open new avenues in the collaboration between Geographic Information Science, medicine, and even criminology, such as exploring the spatial association between violent or impulsive crime and lithium content in drinking water. However, further research is needed before a voluntary intake of lithium may be recommended for the individual.
Epilepsy, suicidality, and psychiatric disorders: A bidirectional association
Hesdorffer DC, Ishihara L, Mynepalli L, Webb DJ, Weil J, Hauser WA (USA)
Annals of Neurology 72, 184–191, 2012

Objective: A study was undertaken to determine whether psychiatric disorders associated with suicide are more common in incident epilepsy than in matched controls without epilepsy, before and after epilepsy diagnosis.

Methods: A matched, longitudinal cohort study was conducted in the UK General Practice Research Database. A total of 3,773 cases diagnosed with epilepsy between the ages of 10 and 60 years were compared to 14,025 controls matched by year of birth, sex, general practice, and years of medical records before the index date. We examined first diagnosis of psychosis, depression, anxiety, and suicidality in each of the 3 years before and after the index date and annual prevalence of suicide. Referent diagnoses were eczema and acute surgery. The incidence rate ratio (IRR) was calculated for each year in the study period; the prevalence ratio (PR) was calculated for suicidality.

Results: The IRR of psychosis, depression, and anxiety was significantly increased for all years before epilepsy diagnosis (IRR, 1.5–15.7) and after diagnosis (IRR, 2.2–10.9) and for suicidality before epilepsy diagnosis (IRR, 3.1–4.5) and 1 year after diagnosis (IRR, 5.3). The PR was increased for suicide attempt before epilepsy onset (PR, 2.6–5.2) and after onset (PR, 2.4–5.6). Eczema and acute surgery were both associated with epilepsy in the first and third year after diagnosis.

Interpretation: Epilepsy is associated with an increased onset of psychiatric disorders and suicide before and after epilepsy diagnosis. These relations suggest common underlying pathophysiological mechanisms that both lower seizure threshold and increase risk for psychiatric disorders and suicide.

Psychological autopsy studies as diagnostic tools: Are they methodologically flawed?
Hjelmeland H, Dieserud G, Dyregrov K, Knizek BL, Leenaars AA (Norway)
Death Studies 36, 605–626, 2012

One of the most established “truths” in suicidology is that almost all (90% or more) of those who kill themselves suffer from one or more mental disorders, and a causal link between the two is implied. Psychological autopsy (PA) studies constitute one main evidence base for this conclusion. However, there has been little reflection on the reliability and validity of this method. For example, psychiatric diagnoses are assigned to people who have died by suicide by interviewing a few of the relatives and/or friends, often many years after the suicide. In this article, we scrutinize PA studies with particular focus on the diagnostic process and demonstrate that they cannot constitute a valid evidence base for a strong relationship between mental disorders and suicide. We show that most questions asked to
assign a diagnosis are impossible to answer reliably by proxies, and thus, one cannot validly make conclusions. Thus, as a diagnostic tool psychological autopsies should now be abandoned. Instead, we recommend qualitative approaches focusing on the understanding of suicide beyond mental disorders, where narratives from a relatively high number of informants around each suicide are systematically analyzed in terms of the informants’ relationships with the deceased.

**Anxiety symptoms and suicidal feelings in a population sample of 70-year-olds without dementia**

Jonson M, Skoog I, Marlow T, Mellqvist Fassberg M, Waern M (Sweden).

*International Psychogeriatrics* 24, 1865–1871, 2012

**Background:** The role of anxiety in late-life suicidal behavior has received relatively little attention. The aim was to explore the association between anxiety symptoms and suicidal feelings in a population sample of 70-year-olds without dementia, and to test whether associations would be independent of depression.

**Methods:** Face-to-face interviews (N = 560) were carried out by psychiatric nurses and past month symptoms were rated with the Comprehensive Psychopathological Rating Scale (CPRS). The Brief Scale for Anxiety (BSA) was derived from the CPRS to quantify anxiety symptom burden. Past month suicidal feelings were evaluated with the Paykel questions.

**Results:** Anxiety symptom burden was associated with suicidal feelings and the association remained after adjusting for major depression. One individual BSA item (Inner tension) was independently associated with suicidal feelings in a multivariate regression model. The association did not remain, however, in a final model in which depression symptoms replaced depression diagnosis.

**Conclusions:** Results from this population study suggest an association between anxiety and suicidal feelings in older adults. The role of anxiety and depression symptoms needs further clarification in the study of suicidal behavior in late life.

**When elderly people give warning of suicide**

Kjolseth I, Ekeberg O (Norway)


**Background:** The study has a dual objective: (1) to investigate the extent to which, and how and to whom, elderly people gave warning (according to the definition of the term given by the American Association of Suicidology) prior to suicide; (2) to investigate how these warnings were perceived by the recipients of them, and what reactions the recipients had to the warnings.

**Methods:** This is a psychological autopsy study based on qualitative interviews. Sixty-three informants were interviewed about 23 suicides by individuals aged over 65 in Norway. The informants comprised relatives, general practitioners
(GPs) and home-based care nurses. In general, the analysis of the interviews follows the systematic text condensation method.

**Results:** The interviews contained four main themes regarding reactions to the warnings: “not taken seriously,” “helplessness,” “exhaustion,” and “acceptance.” A total of 14 of the 23 elderly people gave warning before the suicides occurred. The warnings were given to relatives (11), home-based care nurses (5), and GPs (2).

**Conclusions:** Even though more than half of the elderly people had given warning (most frequently to relatives) before the suicide, the warnings did not initiate preventive measures. Together with passive attitudes, the lack of recognition of both the risk of suicide and the opportunities for treatment prevented possible measures being implemented. The paper discusses the grounds for the reactions as well as how suicide warnings given by elderly people can be taken seriously.

**Obesity and suicide risk in adults: A systematic review**
Klinitzke G, Steinig J, Blüher M, Kersting A, Wagner B (Germany)

**Background:** There is evidence from prospective studies that obesity is positively associated with depression. In contradiction to this, however, a number of studies have revealed that the number of completed suicides decreases with increasing BMI. The objective of this systematic review is to elucidate this ambiguous research field, providing an overview of literature examining the relationship between obesity and risk of suicide in adults (>18 years).

**Methods:** Literature searches of the databases PubMed/Medline, PsychInfo, and Web of Sciences were conducted. Fifteen studies concerning completed suicide, suicide attempts and suicidal ideation met the inclusion criteria (seven prospective and eight cross-sectional studies).

**Results:** Eight studies evaluating completed suicide reported an inverse relationship between BMI and suicide, meaning that obese people are less likely to commit suicide than people of low or normal weight, whereas one study showed no association and one showed a positive association. Studies about suicide attempts and ideation, on the other hand, found results that differed depending on gender. While obese woman reported more suicide attempts and suicidal ideation, obese men reported less attempts and thoughts.

**Discussion:** The role of confounding variables such as age or psychiatric illness on suicide risk are discussed and remaining research questions are outlined, especially regarding the role of different underlying biological pathways and consideration of different classes of obesity.
Suicidality and unhealthy weight control behaviors among female underaged psychiatric inpatients

Laakso E, Hakko H, Rasanen P, Riala K (Finland)


**Objective:** The aim of this study was to investigate whether unhealthy weight control behaviors, fear of becoming obese, binge eating, impulsivity, and body mass index are associated with suicide ideation, repetitive self-mutilative behavior (SMB), suicide attempts, or both suicide attempts and SMB among female adolescent psychiatric inpatients.

**Methods:** Data were drawn from a clinical inpatient cohort of female adolescents (N = 300, aged 12–17 years) consecutively admitted for psychiatric hospitalization between April 2001 and March 2006. Information on adolescents’ suicidal behavior, psychiatric Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), diagnoses and weight control behaviors was obtained using the Schedule for Affective Disorder and Schizophrenia for School-Age Children Present and Lifetime (K-SADS-PL).

**Results:** Even after adjustment with DSM-IV, affective, anxiety and eating disorders self-induced vomiting was significantly associated with SMB and suicide attempts with SMB. Impulsivity was related to suicide attempts with SMB. Excessive exercising was a significant finding only in those girls who had attempted suicide. Girls who had attempted suicide were more often overweight compared with girls without suicidal behavior.

**Conclusion:** Unhealthy weight control behaviors among adolescent girls were found to be strongly associated with suicidal behavior. Girls with a history of both suicide attempts and SMB seem to be the most disturbed group, with multiple weight loss methods and impulsivity. Girls who are overweight or exercise excessively may represent risk groups for attempted suicide.

Temporal patterns of charcoal burning suicides among the working age population in Hong Kong SAR: The influence of economic activity status and sex

Law CK, Leung CMC (Hong Kong)

BMC Public Health 12, 505, 2012

**Background:** Charcoal burning in a sealed room has recently emerged as the second most common suicide means in Hong Kong, causing approximately 200 deaths each year. As charcoal burning suicide victims have a unique sociodemographic profile (i.e., predominantly economically active men), they may commit suicide at specific times. However, little is known about the temporal patterns of charcoal burning suicides.

**Methods:** Suicide data from 2001 to 2008 on victims of usual working age (20–59) were obtained from the registered death files of the Census and Statistics Department
of Hong Kong. A total of 1649 cases of charcoal burning suicide were analyzed using a two-step procedure, which first examined the temporal asymmetries in the incidence of suicide, and second investigated whether these asymmetries were influenced by sex and/or economic activity status. Poisson regression analyses were employed to model the monthly and daily patterns of suicide by economic activity status and sex.

**Results:** Our findings revealed pronounced monthly and daily temporal variations in the pattern of charcoal burning suicides in Hong Kong. Consistent with previous findings on overall suicide deaths, there was an overall spring peak in April, and Monday was the common high risk day for all groups. Although sex determined the pattern of variation in charcoal burning suicides, the magnitude of the variation was influenced by the economic activity status of the victims.

**Conclusion:** The traditional classification of suicide methods as either violent or non-violent tends to elide the temporal variations of specific methods. The interaction between sex and economic activity status observed in the present study indicates that sex should be taken into consideration when investigating the influence of economic activity status on temporal variations of suicide. This finding also suggests that suicide prevention efforts should be both time- and subgroup-specific.

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**Non-suicidal self-injury, youth, and the Internet: What mental health professionals need to know**

Lewis SP, Heath NL, Michal NJ, Duggan JM (Canada)

*Child and Adolescent Psychiatry and Mental Health* 6, 13–14, 2012

Non-suicidal self-injury (NSSI) content and related e-communication have proliferated on the Internet in recent years. Research indicates that many youth who self-injure go online to connect with others who self-injure, view others’ NSSI experiences, and share their own through text and videos platforms. Although there are benefits to these behaviours in terms of receiving peer support, these activities can introduce these young people to risks, including NSSI reinforcement through the sharing of stories and strategies as well as risks for triggering NSSI urges. Due to the nature of these risks, mental health professionals need to know about them and how to effectively assess adolescents’ online activity in order to adequately monitor the effects of the purported benefits and risks associated with NSSI content. This article offers research informed clinical guidelines for the assessment, intervention, and monitoring of online NSSI activities. To help bridge the gap between youth culture and mental health culture, these essentials include descriptions of Community, Social Networking, and Video/Photo Sharing websites and the terms associated with these websites. Assessment of these behaviours can be facilitated by a basic Functional Assessment approach that is further informed using specific recommended online questions tailored to NSSI online and an assessment of the frequency, duration, and time of day of the online activities. Intervention in this area should initially assess readiness for change and use motivational interviewing to encourage substitution of healthier online activities for the activities that may currently foster harm.
Helpful or harmful? An examination of viewers’ responses to nonsuicidal self-injury videos on YouTube

Lewis SP, Heath NL, Sornberger MJ, Arbuthnott AE (Canada)


Purpose: To examine viewers’ comment responses to nonsuicidal self-injury (NSSI) YouTube videos to determine the potential risks (e.g., NSSI continuation) and benefits (e.g., recovery-oriented social support) of the videos.

Methods: Viewers’ comments from the 100 most-viewed NSSI videos on YouTube were examined using two coding rubrics, one for the global nature of comments and one for recovery-oriented themes. Both rubrics were developed using an inductive (bottom-up) approach and had high coding inter-rater reliability (exceeding .80 in all cases). For the global nature of comments, 869 randomly selected comments were evaluated using the rubric, which included 8 coding categories and 22 subcategories. For the examination of recovery-oriented themes, self-disclosure comments (n = 377) were evaluated for nature of recovery statements.

Results: Results revealed that the most frequent comments were self-disclosure comments in which individuals shared their own NSSI experiences (38.39%), followed by feedback for the video uploader, including admiration of the video quality (21.95%) or message (17.01%), and admiration for the uploader (15.40%) or encouragement to the video uploader (11.15%). Evaluation of the common self-disclosure comments for recovery-oriented content revealed that the majority did not mention recovery at all (42.89%) and indicated that they were still self-injuring (34.00%). Positive recovery statements were uncommon.

Conclusions: Results suggest that viewers’ responses to videos may maintain the behavior (by sharing their own self-injury experiences) and rarely encourage or mention recovery. It is evident that sharing their own experience online is a strong motivator for viewers of NSSI YouTube videos.
Suicidal phenotypes associated with family history of suicidal behavior and early traumatic experiences

Background: Family history of suicidal behavior and personal history of childhood trauma are risk factors for suicidal behaviors. We hypothesize that subjects with any of these risk factors will show differential features and that subjects with both of them will display more severe phenotypes.

Methods: This study compares three groups of suicide attempters (n = 878): subjects with a family history of suicidal behavior and a personal history of early traumatic experiences, subjects with a family history of suicidal behavior or a personal history of early traumatic experiences, and subjects with neither of these two risk factors, with regards to psychopathology, personality traits and suicidal behavior.

Results: Subjects with a family history of suicidal behavior and childhood trauma were younger at their first suicide attempt and made more frequent, severe and violent attempts when compared with the other groups. Differences in number and precocity of attempts remained after adjustments in a multinomial regression model. Finally, personality profiles were also substantially different in the group with higher impulsiveness, novelty seeking, affective lability and hopelessness.

Limitations: The information provided by subjects regarding childhood abuse and family history of suicidal behavior was not confirmed by other sources.

Conclusions: Suicide attempters with a family history of suicidal behavior and childhood trauma show specific characteristics that might be used to prevent future suicidal behaviors in this population. Both risk factors should be routinely investigated when assessing the suicidal risk of a patient.

Unemployment and suicide in the Stockholm population:
A register-based study on 771,068 men and women
Lundin A, Lundberg I, Allebeck P, Hemmingsson T (Sweden)

Objectives: Several studies have reported a higher risk of suicide among the unemployed. Some individuals may be more prone to both unemployment and suicide due to an underlying health-related factor. In that case, suicide among the unemployed might be a consequence of health-related selection. This study aimed to investigate the relationship between unemployment and suicide, and the importance of previous sickness absence to this relationship.

Study Design: The study was based on 771,068 adults aged 25–58 years in Stockholm County in 1990–1991. Data on sickness absence in 1990–1991 and unemployment in 1991–1993 were collected from registers for each individual. Time
and cause of death in 1994–1995 were obtained from Sweden’s Cause of Death Register.


Results: Unemployment lasting for >90 days in 1992–1993 was associated with suicide in men in 1994–1995 [odds ratio (OR) 2.16, 95% confidence interval (CI) 1.38–3.38], while unemployment lasting for ≤90 days in 1992–1993 was associated with suicide in women in 1994–1995 (OR 2.68, 95% CI 1.23–5.85). Higher levels of sickness absence were related to an increased risk of subsequent unemployment in both sexes. The higher prevalence of sickness absence among the unemployed attenuated the association between unemployment and suicide in both men and women.

Conclusions: Unemployment is related to suicide. Individuals in poor health are at increased risk of unemployment and also suicide. The higher relative risk of suicide among the unemployed seems to be, in part, a consequence of exclusion of less healthy individuals from the labour market.

What’s the harm in asking about suicidal ideation?
Suicide & Life-Threatening Behavior 42, 341–351, 2012

Both researchers and oversight committees share concerns about patient safety in the study-related assessment of suicidality. However, concern about assessing suicidal thoughts can be a barrier to the development of empirical evidence that informs research on how to safely conduct these assessments. A question has been raised if asking about suicidal thoughts can result in iatrogenic increases of such thoughts, especially among at-risk samples. The current study repeatedly tested suicidal ideation at 6-month intervals for up to 2-years. Suicidal ideation was measured with the Suicidal Ideation Questionnaire Junior, and administered to adolescents who had previously received inpatient psychiatric care. Change in suicidal ideation was tested using several analytic techniques, each of which pointed to a significant decline in suicidal ideation in the context of repeated assessment. This and previous study outcomes suggest that asking an at-risk population about suicidal ideation is not associated with subsequent increases in suicidal ideation.
**Combat-exposed war veterans at risk for suicide show hyperactivation of prefrontal cortex and anterior cingulate during error processing**
Matthews S, Spadoni A, Knox K, Strigo I, Simmons A (USA)
*Psychosomatic Medicine* 74, 471–475, 2012

*Objective:* Suicide is a significant public health problem. Suicidal ideation (SI) increases the risk for completed suicide. However, the brain basis of SI is unknown. The objective of this study was to examine the neural correlates of self-monitoring in individuals at risk for suicide. We hypothesized that combat veterans with a history of SI relative to those without such a history would show altered activation in the anterior cingulate cortex and related circuitry during self-monitoring.

*Methods:* Two groups of combat-exposed war veterans (13 men with and 13 men without history of SI) were studied. Both the SI and non-SI participants had two or more of the following: a) current major depressive disorder, b) current posttraumatic stress disorder, and c) history of mild traumatic brain injury, and each subject performed a validated stop task during functional magnetic resonance imaging. Error-related activation was compared between the SI and non-SI groups.

*Results:* The SI group demonstrated more error-related activation of the anterior cingulate (8256 mm$^3$, $t = 2.51$) and prefrontal cortex (i.e., clusters >2048 mm$^3$, voxelwise $p < .05$). The SI and non-SI participants showed similar behavioral task performance (i.e., mean error rate, $F$ values < 0.63, $p$ values > .43; and mean reaction times, $F = 0.27$, $p = .61$).

*Conclusions:* These findings suggest neural correlates of altered self-monitoring in individuals with a history of SI and may further suggest that functional magnetic resonance imaging could be used to identify individuals at risk for suicide before they engage in suicidal behavior.

**Predicting future suicide attempts among depressed suicide ideators: A 10-year longitudinal study**
May AM, Klonsky ED, Klein DN (Canada)

Suicidal ideation and attempts are a major public health problem. Research has identified many risk factors for suicidality; however, most fail to identify which suicide ideators are at greatest risk of progressing to a suicide attempt. Thus, the present study identified predictors of future suicide attempts in a sample of psychiatric patients reporting suicidal ideation. The sample comprised 49 individuals who met full DSM-IV criteria for major depressive disorder and/or dysthymic disorder and reported suicidal ideation at baseline. Participants were followed for 10 years. Demographic, psychological, personality, and psychosocial risk factors were assessed using validated questionnaires and structured interviews. Phi coefficients and point-biserial correlations were used to identify prospective predictors of attempts, and logistic regressions were used to identify which variables predicted future attempts.
over and above past suicide attempts. Six significant predictors of future suicide attempts were identified - cluster A personality disorder, cluster B personality disorder, lifetime substance abuse, baseline anxiety disorder, poor maternal relationship, and poor social adjustment. Finally, exploratory logistic regressions were used to examine the unique contribution of each significant predictor controlling for the others. Comorbid cluster B personality disorder emerged as the only robust, unique predictor of future suicide attempts among depressed suicide ideators. Future research should continue to identify variables that predict transition from suicidal thoughts to suicide attempts, as such work will enhance clinical assessment of suicide risk as well as theoretical models of suicide.

Help-seeking for suicidal thoughts and self-harm in young people: A systematic review
Michelmore L, Hindley P (UK)
*Suicide & Life-Threatening Behavior* 42, 507–524, 2012

There is a growing body of evidence to suggest that only a minority of young people experiencing suicidal thoughts or self-harm present to any health services. This is of concern given that young people with suicidal thoughts or self-harm often require treatment for mental illness as well as to reduce their risk of completed suicide. We reviewed previously published international community epidemiological studies examining help-seeking for suicidal thoughts or self-harm in young people up to the age of 26. The studies confirm that the majority of these young people do not seek professional help, and this includes seeking medical help after an overdose. The majority of young people studied do, however, seek help from social networks that most commonly are peers. Factors influencing and barriers to help-seeking are discussed and highlight a need for further research into the role that peers and family play in the help-seeking process for young people with suicidal thoughts or self-harm.

Suicide in the absence of mental disorder? A review of psychological autopsy studies across countries
Milner A, Sveticic J, De Leo D (Australia)

**Background:** While numerous past reviews of psychological autopsy (PA) studies have examined the relationship between mental disorder and suicide, there has been little systematic investigation of suicide occurring in the absence of any identifiable psychiatric condition.

**Aim:** This article reviews available literature on the topic by considering Axis I, sub-threshold, mild disorders and personality disorders.
Method: We conducted a systematic review of PA studies from 2000 onwards. Studies included in the review had to clearly describe the proportion of suicide cases without a classifiable mental disorder or sub-threshold condition.

Results: Up to 66.7% of suicide cases remained without diagnosis in those studies that only examined Axis I disorders (n = 14). Approximately 37.1% of suicide cases had no psychiatric condition in research papers that assessed personality and Axis I disorders (n = 9), and 37% of suicides had no Axis I, sub-threshold/mild conditions (n = 6). In general, areas in China and India had a higher proportion of suicides without a diagnosis than studies based in Europe, North America or Canada.

Conclusion: Variation in the proportion of suicide cases without a psychiatric condition may reflect cultural specificities in the conceptualization and diagnosis of mental disorder, as well as methodological and design-related differences between studies.

Interaction of combat exposure and unit cohesion in predicting suicide-related ideation among post-deployment soldiers

Mitchell MM, Gallaway MS, Millikan AM, Bell M (USA).

Suicide & Life-Threatening Behavior 42, 486–494, 2012.

Suicide is one of the leading causes of death among U.S. Army soldiers. Suicide-related ideation, which is associated with suicide attempts and suicide, can cause considerable distress. In a sample of 1,663 recently redeployed soldiers, we used factor analysis and structural equation modeling to test the associations between combat exposure, unit cohesion, and their interaction in predicting suicide-related ideation. We found that combat exposure was a significant risk factor for suicide-related ideation, while unit cohesion was a significant protective factor. The significant interaction between the two factors indicated that soldiers who experienced greater combat exposure but also had higher levels of unit cohesion had relatively lower levels of suicide-related ideation. In addition, those who had higher levels of combat exposure and lower unit cohesion were most at risk for suicide-related ideation. Our findings indicate the importance of unit cohesion in protecting soldiers from suicide-related ideation and suggest a higher risk group of soldiers who should be targeted for interventions.

Self-harm, substance use and psychological distress in the Australian general population

Moller CI, Tait RJ, Byrne DG (Australia)


Aims: To examine predictors of self-harm, especially substance use and psychological distress, in an Australian adult general population sample.

Design: Sequential-cohort design with follow-up every four years.

Setting: Australian general population.
**Participants:** A random sample of adults aged 20–24 and 40–44 years (at baseline) living in and around the Australian Capital Territory.

**Measurements:** Self-report survey including items on four common forms of self-harm. Psychological distress was indexed by the combined Goldberg Anxiety and Depression scale scores and alcohol problems by the Alcohol Use Disorders Identification Test (AUDIT).

**Findings:** 4,160 people (84% of baseline) were re-interviewed at eight years: 4126 reported their self-harm status. Past year self-harm was reported by 8.2% (95% CI 7.4–9.0%) of participants (males: 9.3% (8.0–10.6%), females: 7.3% (6.2–8.4%)). Several forms of substance use - smoking (odds ratio = 1.52), marijuana use (odds ratio = 1.77), and drinking alcohol at a level likely to cause dependence (AUDIT score > 20) (odds ratio = 2.08) - were independently predictive of past year self-harm. Additional key risk factors for self-harm in the past year were childhood sexual abuse by a parent (odds ratio = 3.07), bisexual orientation (odds ratio = 2.65), younger age (odds ratio = 2.23) and male gender (odds ratio = 1.86). Other independent predictors were years of education, adverse life events, psychological distress and financial strain.

**Conclusions:** Self-harm in young and middle-aged adults appears to be associated with current smoking, marijuana and “dependent” alcohol use. Other independent predictors include younger age, male gender, bisexual orientation, financial strain, education level, psychological distress, adverse life events and sexual abuse by a parent.

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**Alcohol use disorder in elderly suicide attempters: A comparison study**

Morin J, Wiktorsson S, Marlow T, Olesen PJ, Skoog I, Waern M (Sweden)

*American Journal of Geriatric Psychiatry.* Published online: 16 April 2012. doi: 10.1097/JGP.0b013e3182423b35, 2012

**Objectives:** To compare lifetime prevalence of alcohol use disorder (AUD) in older adults who were hospitalized in connection with a suicide attempt and in a population comparison group, as well as to compare previous suicidal behavior in attempters with and without AUD.

**Design:** Case-comparison.

**Setting:** Five hospitals in Western Sweden.

**Participants:** Persons 70 years or older, who were treated in a hospital because of a suicide attempt during 2003–2006 were recruited. Of 133 eligible participants, 103 participants were enrolled (47 men, 56 women, mean age 80 years, response rate 77%). Four comparison subjects per case were randomly selected among participants in our late-life population studies.
Measurements: Lifetime history of AUD in accordance with Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, was discerned on the basis of interview data, case record review, and the hospital discharge register. Depression symptoms were rated using the Montgomery-Åsberg Rating Scale.

Results: AUD was observed in 26% of the cases and in 4% of the comparison group (odds ratio [OR]: 10.5; 95% confidence interval [CI]: 4.9–22.5). Associations were noted in men (OR: 9.5; 95% CI: 4.0–22.8) and women (OR: 12.0; 95% CI: 2.4–59.5). More than half of the cases with AUD and a third of those without AUD had made at least one prior suicide attempt. In these, AUD was associated with a longer interval between the first attempt and the index attempt.

Conclusions: A strong association between AUD and hospital-treated suicide attempts was noted in both sexes in this northern European setting. Given the high rates of suicide worldwide in this fast-growing and vulnerable group, comparison studies in other settings are needed.

International prevalence of adolescent non-suicidal self-injury and deliberate self-harm

Muehlenkamp JJ, Claes L, Havertape L, Plener PL (USA)
Child and Adolescent Psychiatry and Mental Health 6, 10, 2012

Background: The behaviours of non-suicidal self-injury (NSSI) and deliberate self-harm (DSH) are prevalent among adolescents, and an increase of rates in recent years has been postulated. There is a lack of studies to support this postulation, and comparing prevalence across studies and nations is complicated due to substantial differences in the methodology and nomenclature of existing research.

Methods: We conducted a systematic review of current (2005 - 2011) empirical studies reporting on the prevalence of NSSI and DSH in adolescent samples across the globe.

Results: Fifty-two studies fulfilling the inclusion criteria were obtained for analysis. No statistically significant differences in prevalence were found between NSSI (18.0% SD = 7.3) and DSH (16.1% SD = 11.6) studies. Assessment using single item questions led to lower prevalence rates than assessment with specific behaviour checklists. Mean prevalence rates have not increased in the past five years, suggesting stabilization.

Conclusion: NSSI and DSH have a comparable prevalence in studies with adolescents from different countries. The field would benefit from adopting a common approach to assessment to aide cross-cultural study and comparisons.
Antiepileptic drugs and suicidality: An expert consensus statement from the task force on therapeutic strategies of the ilae commission on neuropsychobiology

Mula M, Kanner AM, Schmitz B, Schachter S (USA)

In 2008, the U.S. Food and Drug Administration (FDA) issued an alert to health care professionals about an increased risk of suicide ideation and suicide behavior in people treated with antiepileptic drugs (AEDs). Since then, a number of retrospective cohort and case-control studies have been published that are trying to address this issue, but gathered results are contradictory. This report represents an expert consensus statement developed by an ad hoc task force of the Commission on Neuropsychobiology of the International League Against Epilepsy (ILAE). Although some (but not all) AEDs can be associated with treatment-emergent psychiatric problems that can lead to suicidal ideation and behavior, the actual suicidal risk is yet to be established, but it seems to be very low. The risk of stopping AEDs or refusing to start AEDs is significantly worse and can actually result in serious harm including death to the patient. Suicidality in epilepsy is multifactorial, and different variables are operant. Clinicians should investigate the existence of such risk factors and adopt appropriate screening instruments. If necessary, patients should be referred for a psychiatric evaluation, but AED treatment should not be withheld, even in patients with positive suicidal risks. When starting an AED or switching from one to other AEDs, patients should be advised to report to their treating physician any change in mood and suicidal ideation. Data on treatment-emergent psychiatric adverse events need to be collected, in addition to general safety information, during controlled studies in order to have meaningful information for patients and their relatives when a new drug is marketed.
Perinatal conditions and parental age at birth as risk markers for subsequent suicide attempt and suicide: A population based case-control study

Niederkrotenthaler T, Rasmussen F, Mittendorfer-Rutz E (Austria, Sweden)

Restricted fetal growth and young maternal age have been associated with increased risk of suicidal behaviour later in life. Research investigating the independent and interacting effects of these risk factors with parental mental health and socio-economic status is scarce. A case-control study was effected through record linkage between Swedish registers. Individuals born 1973–1983 who were hospitalized due to a suicide attempt (n = 17,159) or committed suicide (n = 1,407) were matched to ≤10 controls by sex, month and county of birth. Controlling for parental conditions, significantly increased odds ratios (OR) for suicide attempt were found for low birth weight (OR = 1.12, 95 % CI 1.01–1.25), short birth length (OR = 1.15, 95 % CI 1.08–1.22), short and light for gestational age (OR = 1.23, 95 % CI: 1.10–1.38), short but not light for gestational age (OR = 1.18, 95 % CI: 1.09, 1.29), teenage motherhood (OR = 1.66, 95 % CI 1.53–1.80), young fatherhood (OR = 1.33, 95 % CI 1.27–1.39) and multiparity (OR = 1.40, 95 % CI 1.31–1.50). For completed suicide, increased odds ratios were found for low birth weight (OR = 1.65, 95 % CI 1.16–2.35), teenage motherhood (OR = 1.44, 95 % CI 1.09–1.90) and young fatherhood (OR = 1.20, 95 % CI 1.02–1.41). There was a synergy effect between teenage motherhood and parental psychiatric inpatient care with regard to suicide attempt in offspring [synergy index = 1.53 (95 % CI 1.27–1.84)]. Low birth weight and length, and short and light for gestational age may increase the risk of subsequent suicidal behaviour, and more research is needed to investigate underlying mechanisms. Public health implications from this study include measures to improve pre- and perinatal parental mental health, particularly in teenage pregnancies.

Overview of violence to self and others during the first episode of psychosis

Nielssen OB, Malhi GS, McGorry PD, Large MM (Australia)

Background: We aimed to review the evidence for an association between the first episode of psychosis and violence and to consider the possible explanations for this association and the implications for clinicians and service providers.

Data Sources: We searched for published studies in English describing an association between violence and first-episode psychosis using the subject headings, key words, abstracts, and titles in PubMed/MEDLINE from 1970 to 2010, using the terms first-episode schizophrenia OR first-episode psychosis OR early schizophrenia AND suicide OR self harm OR suicide attempt OR homicide OR violence. Study Selection: We identified 20 studies reporting data on violent suicide
attempts, self-mutilation, minor violence, severe nonlethal interpersonal violence, or homicide in first-episode and previously treated psychosis.

**Data Extraction:** The number of people committing acts of violence prior to initial treatment for psychosis and after initial treatment was extracted from the relevant studies.

**Results:** The proportion of people found to be in the first episode of psychosis at the time of an act of violence was compared to the expected ratio of first-episode to previously treated patients. A substantial proportion of psychotic patients examined after violent suicide attempts (49%), major self-mutilation (54%), homicide (39%), and assault resulting in serious injury (38%) are in their first episode of psychosis. Moreover, a substantial proportion of first-episode patients commit an act of less serious violence or attempt suicide prior to initial treatment.

**Conclusions:** The findings support the need for early intervention and community-wide programs to reduce the duration of untreated psychosis.

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**A longitudinal evaluation of religiosity and psychosocial determinants of suicidal behaviors among a population-based sample in the United States**

Nkansah-Amankra S, Diedhiou A, Agbanu SK, Agbanu HLK, Opoku-Adomako NS, Twumasi-Ankrah P (USA)

*Journal of Affective Disorders* 139, 40–51, 2012

**Background:** Relationships among religiosity and other psychosocial factors in determining suicidal behaviors in adolescence and in emerging adulthood have been inconclusive. We sought to investigate prospective relationships among religiosity, psychosocial factors and suicidal behaviors using a nationally representative sample of adolescents emerging into adulthood.

**Method:** Analysis was based on 9412 respondents from four waves of National Longitudinal Study of Adolescent Health. A Generalized Estimating Equation (GEE) procedure was used to fit a series of models on the response variable (suicidal behaviors) and a set of psychosocial and religiosity predictors taking into account the correlated structure of the datasets.

**Results:** Analyses showed that adolescent suicidality and religious activity participation showed significant declines over time. Using multinomial logistic regression we found that females showed statistically significant risks of suicidal behaviors, but this effect declined in adulthood. In adjusted models, baseline attendance of a church weekly was associated with 42% reduction (95% Confidence Interval: 0.35–0.98) of suicide ideation in Wave III. Across all waves, low support from fathers (compared with mothers) consistently explained variability in suicidal behaviors among genders emerging into adulthood. Limitations: Accurate measurement of religiosity is psychometrically challenging.
Conclusions: The findings of the study indicate that religious activity participation is associated with reduced suicidal behaviors among adolescents but this effect declines during emerging adulthood. Psychosocial supports particularly from fathers’ have an enduring impact on reduced suicidal behaviors among adolescents and emerging adults. Prevention, identification and evaluation of disorders of suicidality need a careful assessment of underlying mental pain (psyache) to reduce the likelihood of aggravated suicide.

Self-regulation of unattainable goals in suicide attempters: A two year prospective study
O’Connor RC, O’Carroll RE, Ryan C, Smyth R (UK)

Background: Although suicide is a global public health concern with approximately one million people dying by suicide annually, our knowledge of the proximal risk mechanisms is limited. In the present study, we investigated the utility of two proximal mechanisms (goal disengagement and goal reengagement) in the prediction of hospital-treated self-harm repetition in a sample of suicide attempters.

Methods: Two hundred and thirty-seven patients hospitalised following a suicide attempt completed a range of clinical (depression, anxiety, hopelessness, suicidal ideation) and goal regulation measures (goal reengagement and disengagement) while in hospital. They were followed up two years later to determine whether they had been re-hospitalised with self-harm between baseline and the follow-up.

Results: Self-harm hospitalisation in the past 10 years, suicidal ideation and difficulty reengaging in new goals independently predicted self-harm two years later. In addition, among younger people, having difficulty re-engaging in new goals further predicted self-harm re-hospitalisation when disengagement from existing unattainable goals was also low. Conversely, the deleterious impact of low reengagement in older people was elevated when goal disengagement was also high.

Limitations: Only hospital-treated self-harm and suicide were recorded at follow-up, episodes of less medically serious self-harm were not recorded.

Conclusions: Suicidal behaviour is usefully conceptualised in terms of goal self-regulation following the experience of unattainable goals. Treatment interventions should target the self-regulation of goals among suicide attempters and clinicians should recognise that different regulation processes need to be addressed at different points across the lifespan.
Sensation seeking as risk factor for suicidal ideation and suicide attempts in adolescence

Ortin A, Lake AM, Kleinman M, Gould MS (USA)
Journal of Affective Disorders. Published online: 23 August 2012. doi: 10.1016/j.jad.2012.05.058, 2012

**Background:** High sensation seeking in adolescence is associated with engagement in risk-taking behaviors, especially substance use. Although depressed adolescents are prone to increased risk-taking, and suicidal behavior can be considered within the spectrum of risk-taking behaviors, the relationships between sensation seeking, depression, and suicidal behavior have not been explored.

**Methods:** A self-report questionnaire assessing sensation seeking, depression, substance use problems, and suicidal ideation and suicide attempts was completed by 9th- through 12th-grade students (n = 2189) in six New York State high-schools from 2002 through 2004. Logistic regression analyses were conducted to examine main and interaction effects between sensation seeking and the four clinical variables.

**Results:** High sensation seeking was positively associated with depressive symptoms and substance use problems. The main effects of sensation seeking on suicidal ideation and suicide attempts remained significant after controlling for depression and substance use. The association between sensation seeking and suicide attempts was moderated by substance use problems.

**Limitations:** The schools were suburban and predominantly white, limiting the generalizability of the results. Other mental disorders with potential implications for sensation seeking and for suicidal behavior, such as bipolar disorders, were not assessed.

**Conclusions:** The finding that sensation seeking makes an independent contribution to the risk of suicidal ideation and attempts is consistent with findings in literature on novelty seeking and impulsivity. The associations between sensation seeking, depressive symptoms and suicidal behavior may be compatible with the presence of an underlying temperamental dysregulation. Screening for sensation seeking may contribute to the reduction of adolescent suicide risk.

Hopelessness, defeat, and entrapment in posttraumatic stress disorder: Their association with suicidal behavior and severity of depression

Panagioti M, Gooding PA, Tarrier N (UK)
Journal of Nervous and Mental Disease 200, 676–683, 2012

Research has shown an increased frequency of suicidal behaviors in those with PTSD, but few studies have investigated the factors that underlie the emergence of suicidal behavior in PTSD. Two theories of suicide, the Cry of Pain and the Schematic Appraisal Model of Suicide, propose that feelings of hopelessness, defeat, and entrapment are core components of suicidality. This study aimed to examine the association between suicidal behavior and hopelessness, defeat, and
Suicide Research: Selected Readings

entrapment in trauma victims with and without a PTSD diagnosis. The results demonstrated that hopelessness, defeat, and entrapment were significantly positively associated with suicidal behavior in those with PTSD. Hopelessness and defeat were also significantly positively associated with suicidal behavior in trauma victims without PTSD. In those with PTSD, the relationship between suicidal behavior and hopelessness and entrapment remained significant after controlling for comorbid depression. The findings provide support for the contemporary theories of suicidality and have important clinical implications.

Prevalence and correlates of child sexual abuse: A national study

Pérez-Fuentes G, Olfson M, Villegas L, Morcillo C, Wang S, Blanco C (USA)
Comprehensive Psychiatry. Published online: 30 July 2012. doi: 10.1016/j.comppsych.2012.05.010, 2012

Background: This study examines the prevalence, correlates, and psychiatric disorders of adults with history of child sexual abuse (CSA).

Methods: Data were derived from a large national sample of the US population. More than 34 000 adults 18 years and older residing in households were interviewed face-to-face in a survey conducted during the 2004–2005 period. Diagnoses were based on the Alcohol Use Disorder and Associated Disabilities Interview Schedule-Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, version. Weighted means, frequencies, and odds ratios of sociodemographic correlates and prevalence of psychiatric disorders were computed. Logistic regression models were used to examine the strength of associations between CSA and psychiatric disorders, adjusted for sociodemographic characteristics, risk factors, and other Axis I psychiatric disorders.

Results: The prevalence of CSA was 10.14% (24.8% in men and 75.2% in women). Child physical abuse, maltreatment, and neglect were more prevalent among individuals with CSA than among those without it. Adults with CSA history had significantly higher rates of any Axis I disorder and suicide attempts. The frequency, type, and number of CSA were significantly correlated with psychopathology.

Conclusions: The high correlation rates of CSA with psychopathology and increased risk for suicide attempts in adulthood suggest the need for a systematic assessment of psychiatric disorders and suicide risk in these individuals. The risk factors for CSA emphasize the need for health care initiatives geared toward increasing recognition and development of treatment approaches for the emotional sequelae CSA as well as early preventive approaches.
An adolescent suicide cluster and the possible role of electronic communication technology
Robertson L, Skegg K, Poore M, Williams S, Taylor B (New Zealand)
Crisis 33, 239–245, 2012

Background: Since the development of Centers for Disease Control’s (CDC) guidelines for the management of suicide clusters, the use of electronic communication technologies has increased dramatically.

Aims: To describe an adolescent suicide cluster that drew our attention to the possible role of online social networking and SMS text messaging as sources of contagion after a suicide and obstacles to recognition of a potential cluster.

Methods: A public health approach involving a multidisciplinary community response was used to investigate a group of suicides of New Zealand adolescents thought to be a cluster. Difficulties in identifying and managing contagion posed by use of electronic communications were assessed.

Results: The probability of observing a time-space cluster such as this by chance alone was \( p = .009 \). The cases did not belong to a single school, rather several were linked by social networking sites, including sites created in memory of earlier suicide cases, as well as mobile telephones. These facilitated the rapid spread of information and rumor about the deaths throughout the community. They made the recognition and management of a possible cluster more difficult.

Conclusions: Relevant community agencies should proactively develop a strategy to enable the identification and management of suicide contagion. Guidelines to assist communities in managing clusters should be updated to reflect the widespread use of communication technologies in modern society.

Rockett IR, Regier MD, Kapusta ND, Coben JH, Miller TR, Hanzlick RL, Todd KH, Sattin RW, Kennedy LW, Kleinig J, Smith GS (USA)
American Journal of Public Health 102, e84–e92, 2012

Objectives: We have described national trends for the 5 leading external causes of injury mortality. Methods. We used negative binomial regression and annual underlying cause-of-death data for US residents for 2000 through 2009.

Results: Mortality rates for unintentional poisoning, unintentional falls, and suicide increased by 128%, 71%, and 15%, respectively. The unintentional motor vehicle traffic crash mortality rate declined 25%. Suicide ranked first as a cause of injury mortality, followed by motor vehicle traffic crashes, poisoning, falls, and homicide. Females had a lower injury mortality rate than did males. The adjusted fall mortality rate displayed a positive age gradient. Blacks and Hispanics had lower adjusted motor vehicle traffic crash and suicide mortality rates and higher
adjusted homicide rates than did Whites, and a lower unadjusted total injury mortality rate.

Conclusions: Mortality rates for suicide, poisoning, and falls rose substantially over the past decade. Suicide has surpassed motor vehicle traffic crashes as the leading cause of injury mortality. Comprehensive traffic safety measures have successfully reduced the national motor vehicle traffic crash mortality rate. Similar efforts will be required to diminish the burden of other injury.

Suicide among war veterans
Rozanov V, Carli V (Ukraine)

Studies aiming to identify if war veterans are at higher risk of suicide have often produced inconsistent results; this could be due to the complexity of comparisons and different methodological approaches. It should be noted that this contingent has many risk factors, such as stressful exposures, wounds, brain trauma and pain syndrome. Most recent observations confirm that veterans are really more likely to die of suicide as compared to the general population; they are also more likely to experience suicidal ideation and suffer from mental health problems. Suicides are more frequent in those who develop PTSD, depression and comorbid states due to war exposure. Combat stress and its’ frequency may be an important factor leading to suicide within the frame of the stress-vulnerability model. According to this model, the effects of stress may interact with social factors, interpersonal relations and psychological variables producing suicidal tendencies. Modern understanding of stress-vulnerability mechanisms based on genetic predispositions, early life development, level of exposure to stress and stress-reactivity together with interpersonal aspects may help to build more effective suicide prevention programs based on universal/ selective/indicated prevention principles.

Does place of residence affect risk of suicide? A spatial epidemiologic investigation in Kentucky from 1999 to 2008
Saman DM, Walsh S, Borowko A, Odoi A (USA)
*BMC Public Health* 12, 108, 2012

Background: Approximately 32,000 people take their own lives every year in the United States. In Kentucky, suicide mortality rates have been steadily increasing since 1999. Few studies in the United States have assessed spatial clustering of suicides. The purpose of this study was to identify high-risk clusters of suicide at the county level in Kentucky and assess the characteristics of those suicide cases within the clusters.

Methods: A spatial epidemiological study was undertaken using suicide data for the period January 1, 1999 to December 31, 2008, obtained from the Kentucky Office of Vital Statistics. Descriptive analyses using Pearson’s chi-square test and t-test were performed to determine whether differences existed in age, marital
status, year, season, and suicide method between males and females, and between cases inside and outside high-risk spatial clusters. Annual age-adjusted cumulative incidence rates were also calculated. Suicide incidence rates were spatially smoothed using the Spatial Empirical Bayesian technique. Kulldorff’s spatial scan statistic was applied on all suicide cases at the county level to identify counties with the highest risks of suicide. Temporal cluster analysis was also performed.

Results: There were a total of 5,551 suicide cases in Kentucky from 1999 to 2008, of which 5,237 (94%) were included in our analyses. The majority of suicide cases were males (82%). The average age of suicide victims was 45.4 years. Two statistically significant ($p < 0.05$) high-risk spatial clusters, involving 15 counties, were detected. The county level cumulative incidence rate in the most likely high-risk cluster ranged from 12.4 to 21.6 suicides per 100,000 persons. The counties inside both high-risk clusters had relative risks ranging from 1.24 to 1.38.

Conclusions: Statistically significant high-risk spatial clusters of suicide were detected at the county level. This study may be useful for guiding future research and intervention efforts. Future studies will need to focus on these high-risk clusters to investigate reasons for these occurrences.

Suspected and confirmed fatalities associated with mephedrone (4-methylmethcathinone, “meow meow”) in the United Kingdom

Schifano F, Corkery J, Ghodse AH (UK)

Background: International media have been reporting about fatalities allegedly related to mephedrone, a popular recreational stimulant, but now a proportion of them have been confirmed. We aimed here at analyzing information relating to the circumstances of mephedrone-related deaths in the United Kingdom.

Methods: Descriptive analysis of information was mainly extracted from the UK National Programme on Substance Abuse Deaths database. With an average annual response rate of 95%, UK National Programme on Substance Abuse Deaths receives information from coroners on drug-related deaths among both addicts and nonaddicts in the United Kingdom, the Channel Islands, and the Isle of Man.

Results: So far, 128 alleged mephedrone-associated fatalities have been reported; mephedrone was identified at postmortem in 90 cases; inquests have been concluded in 69 cases, 62 of which are analyzed here. Typical mephedrone victims were young (mean age, 28.8 years), male, and with a previous history of drug misuse. There was a notable number (18 cases [29%], 11 being from hanging) of deaths involving self-harm. Mephedrone alone was identified at postmortem on 8 occasions (13% of the inquests’ sample).

Conclusions: Present mortality data may suggest a significant level of caution when ingesting mephedrone. Limitations include an inability to determine the exact extent of risks associated with mephedrone consumption.
Preventing suicide through improved training in suicide risk assessment and care: An American Association of Suicidology Task Force report addressing serious gaps in U.S. mental health training

Schmitz WM, Allen MH, Feldman BN, Gutin NJ, Jahn DR, Kleespies PM, Quinnett P, Simpson S (USA)

*Suicide & Life-Threatening Behavior* 42, 292–304, 2012

There are twice as many suicides as homicides in the United States, and the suicide rate is rising. Suicides increased 12% between 1999 and 2009. Mental health professionals often treat suicidal patients, and suicide occurs even among patients who are seeking treatment or are currently in treatment. Despite these facts, training of most mental health professionals in the assessment and management of suicidal patients is surprisingly limited. The extant literature regarding the frequency with which mental health professionals encounter suicidal patients is reviewed, as is the prevalence of training in suicide risk assessment and management. Most importantly, six recommendations are made to address the longstanding insufficient training within the mental health professions regarding the assessment and management of suicidal patients.

Can we really prevent suicide?

Schwartz-Lifshitz M, Zalsman G, Giner L, Oquendo MA (Israel)


Every year, suicide is among the top 20 leading causes of death globally for all ages. Unfortunately, suicide is difficult to prevent, in large part because the prevalence of risk factors is high among the general population. In this review, clinical and psychological risk factors are examined and methods for suicide prevention are discussed. Prevention strategies found to be effective in suicide prevention include means restriction, responsible media coverage, and general public education, as well identification methods such as screening, gatekeeper training, and primary care physician education. Although the treatment for preventing suicide is difficult, follow-up that includes pharmacotherapy, psychotherapy, or both may be useful. However, prevention methods cannot be restricted to the individual. Community, social, and policy interventions will also be essential.

Testosterone levels in suicide attempters with bipolar disorder

Sher L, Grunebaum MF, Sullivan GM, Burke AK, Cooper TB, Mann JJ, Oquendo MA (USA)


Objective: The best known neurobehavioral effects of testosterone are on sexual function and aggression. However, testosterone and other androgens may be involved in the pathophysiology of mood disorders and suicidal behavior. This is
the first study to examine whether there is a relation between testosterone levels and clinical parameters in bipolar suicide attempters.

**Methods:** Patients with a DSM-IV diagnosis of a bipolar disorder (16 males and 51 females), in a depressive or mixed episode with at least one past suicide attempt were enrolled. Demographic and clinical parameters, including lifetime suicidal behavior, were assessed and recorded. Plasma testosterone was assayed using a double antibody radioimmunoassay procedure.

**Results:** The number of major depressive episodes, the maximum lethality of suicide attempts, and the testosterone levels were higher in men compared to women. Current suicidal ideation scores were higher in women compared to men. Controlling for sex, we found that testosterone levels positively correlated with the number of manic episodes and the number of suicide attempts.

**Conclusion:** Our findings are consistent with previous observations of the association between testosterone levels and parameters of mood and behavior. This study suggests that testosterone levels may be related to the course of bipolar disorder and suicidal behavior. Further studies of the role of testosterone in the neurobiology of mood disorders and suicidal behavior are merited.

**Psychosocial characteristics associated with frequent physical fighting: Findings from the 2009 national youth risk behavior survey**

Swahn MH, Bossarte RM, Palmier JB, Yao H, Van Dulmen MHM (USA)

*Injury Prevention.* Published online: 8 September 2012. doi: 10.1136/injuryprev-2012–040381, 2012

The goal of the current study was to determine the prevalence and psychosocial correlates associated with frequent fighting among US high school students. Cross-sectional analyses were conducted using the 2009 Youth Risk Behavior Survey (N = 16,410). Multivariate logistic regression analyses determined associations between demographic and psychosocial correlates of frequent fighting. Among students, 13.6% reported fighting once, 15.3% reported fighting 2–11 times and 2.6% reported fighting 12 or more times in the past year. Risk factors associated with frequent fighting were weapon carrying (adjusted OR = 10.55; 95% CI 7.40 to 15.05), suicide attempt (adjusted OR = 6.16; 95% CI 3.70 to 10.28), binge drinking (adjusted OR = 3.15; 95% CI 2.16 to 4.59) and feeling too unsafe to go to school (adjusted OR = 3.09; 95% CI 2.00 to 4.77). There is a clear need to better understand the patterns and psychosocial characteristics of frequent physical fighting and the prevention and interventions strategies that may be most relevant for these vulnerable youth.
Child maltreatment, subsequent non-suicidal self-injury and the mediating roles of dissociation, alexithymia and self-blame


Child Abuse and Neglect 36, 572–584, 2012

Objective: Although child maltreatment is associated with later non-suicidal self-injury (NSSI), the mechanism through which it might lead to NSSI is not well understood. The current retrospective case-control study examined associations between child maltreatment and later NSSI, and investigated the mediating roles of dissociation, alexithymia, and self-blame.

Methods: Participants were 11,423 Australian adults (response rate 38.5%), randomly selected from the Australian Electronic White Pages, aged between 18 and 100 (M = 52.11, SD = 16.89), 62.2% female. Data were collected via telephone interviewing. Main outcome measures were reported history of child maltreatment (sexual abuse, physical abuse, neglect) and reported 12-month NSSI. Dissociation, alexithymia, and self-blame were examined as potential mediating variables in the relationship between child maltreatment and later NSSI. All analyses were conducted using logistic regression and adjusted for age and psychiatric diagnosis.

Results: Results differed by gender. Compared to no child maltreatment, physical abuse (OR 2.75, 95% CI 1.68–4.51) and neglect (OR 2.56, 95% CI 1.65–3.99) independently increased the odds of NSSI among females. Physical abuse (OR 2.69, 95% CI 1.44–5.03) increased the odds of NSSI among males. Sexual abuse did not independently increase the odds of NSSI for males or females. For females, self-blame had the greatest effect on the child maltreatment-NSSI relationship (OR decreased by 14.6%, p<.000), although dissociation and alexithymia also partially mediated the relationship. For males, dissociation had the greatest effect (OR decreased by 12.9%, p = .003) with self-blame also having a relatively strong effect.

Conclusions: The results indicate that child maltreatment, and in particular, physical abuse, is strongly associated with the development of subsequent NSSI and may be partially mediated by dissociation, alexithymia, and self-blame for females and dissociation and self-blame for males. Altering attributional style (through cognitive therapy or emotion focussed therapy) and improving the capacity to regulate emotions (through dialectical behaviour therapy) may contribute to reduction or cessation of NSSI.
Motivations for self-injury, affect, and impulsivity: A comparison of individuals with current self-injury to individuals with a history of self-injury

Taylor J, Peterson CM, Fischer S (USA)

Individuals who report nonsuicidal self-injury (NSSI) are characterized by the tendency to act rashly while experiencing distress (negative urgency), the tendency to act without thinking, and endorsement of both social and affect regulation motives for the behavior. However, very little research has identified characteristics that distinguish current self-injurers from those with a history of the behavior. The purpose of this study was to compare individuals with current self-injury to a history of self-injury on impulsivity-related personality traits, motives for self-injury, and distress. Among a sample of 429 undergraduates, 120 reported self-injury. Among these 120 individuals, 33 endorsed self-injury within the past month, with a mean frequency of 4.77 acts of NSSI. Within the self-injury group, current self-injurers reported higher endorsement of affect regulation motives for NSSI, and higher levels of current negative affect than individuals with a history of self-injury. There were no differences between current and former self-injurers on measures of impulsivity, endorsement of social motives for NSSI, or positive affect. We propose that individuals who use NSSI to regulate negative affect may be more likely to repeatedly engage in this behavior over time.

Polypharmacy with antipsychotics, antidepressants, or benzodiazepines and mortality in schizophrenia

Tiihonen J, Suokas JT, Suvisaari JM, Haukka J, Korhonen P (Finland)
Archives of General Psychiatry 69, 476–483, 2012

Context: Polypharmacy is widely used in the treatment of schizophrenia, although it is believed to have major adverse effects on the well-being of patients.

Objective: To investigate if the use of benzodiazepines, antidepressants, or multiple concomitant antipsychotics is associated with increased mortality among patients with schizophrenia.

Design: Registry-based case linkage study.

Setting: Academic research.

Patients: We linked national databases of mortality and medication prescriptions among a complete nationwide cohort of 2588 patients hospitalized in Finland for the first time with a diagnosis of schizophrenia between January 1, 2000, and December 31, 2007.

Main Outcome Measures: Hazard ratios (HRs) were computed for all-cause mortality during the use of antipsychotics, antidepressants, or benzodiazepines in out-
patient care, adjusting for the effects of sociodemographic and clinical variables, geographic location, and current and past pharmacological treatments.

**Results:** Compared with antipsychotic monotherapy, concomitant use of 2 or more antipsychotics was not associated with increased mortality (HR, 0.86; 95% CI, 0.51–1.44). Similarly, antidepressant use was not associated with a higher risk for mortality (HR, 0.57; 95% CI, 0.28–1.16) and was associated with markedly decreased suicide deaths (HR, 0.15; 95% CI, 0.03–0.77). However, benzodiazepine use was associated with a substantial increase in mortality (HR, 1.91; 95% CI, 1.13–3.22), and this was attributable to suicidal deaths (HR, 3.83; 95% CI, 1.45–10.12) and to nonsuicidal deaths (HR, 1.60; 95% CI, 0.86–2.97). In total, 826 of 904 patients (91.4%) who used benzodiazepines had purchased prescriptions that contained more than 28 defined daily doses, violating treatment guidelines.

**Conclusions:** Benzodiazepine use was associated with a marked increase in mortality among patients with schizophrenia, whereas the use of an antidepressant or several concomitant antipsychotics was not. Antidepressant use was associated with decreased suicide deaths. The literature indicates that long-term use of benzodiazepines among patients with schizophrenia is more prevalent in other countries (eg, the United States) compared with Finland, which suggests that benzodiazepine use may contribute to mortality among this patient population worldwide.

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**Suicide and media reporting: A longitudinal and spatial analysis**

Yang AC, Tsai SJ, Yang CH, Shia BC, Fuh JL, Wang SJ, Peng CK, Huang NE (Taiwan)

*Social Psychiatry and Psychiatric Epidemiology.* Published online: 10 August 2012. doi: 10.1007/s00127–012–0562–1, 2012

**Purpose:** The impact of media reporting on copycat suicides has been well established in various cases of celebrity suicide. However, knowledge is limited about the spatial and temporal relationship between suicide death and media reporting over a long period of time. This study investigated the association of suicide deaths with suicide news in longitudinal and spatial dimensions.

**Methods:** All suicides during 2003–2010 (n = 31,364) were included. Suicide news in the study period was retrieved from Google News, and included all available news media in Taiwan. Empirical mode decomposition was used to identify the main intrinsic oscillation, reflecting both major and minor suicide events, and time-dependent intrinsic correlation was used to quantify the temporal correlation between suicide deaths and suicide news.

**Results:** The media reporting of suicide was synchronized with increased suicide deaths during major suicide events such as celebrity death, and slightly lagged behind the suicide deaths for 1 month in other periods without notable celebrity deaths. The means of suicide reported in the media diversely affected the suicide models. Reports of charcoal burning suicide exhibited an exclusive copycat effect on actual charcoal burning deaths, whereas media reports of jumping had a wide
association with various suicide models. Media reports of suicide had a higher association with suicide deaths in urban than in rural areas.

**Conclusions:** This report suggested that a delayed effect of copycat suicide may exist in media reports of minor suicide events. The competitive reporting of minor suicide events must be avoided and addressed by media professionals.

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**Prospective predictors of adolescent suicidality: 6-month post-hospitalization follow-up**

Yen S, Weinstock LM, Andover MS, Sheets ES, Selby EA, Spirito A (USA)

*Psychological Medicine. Published online: 30 August 2012. doi: 10.1017/S0033291712001912, 2012*

**Background:** The aim of this study was to examine prospective predictors of suicide events, defined as suicide attempts or emergency interventions to reduce suicide risk, in 119 adolescents admitted to an in-patient psychiatric unit for suicidal behaviors and followed naturalistically for 6 months.

**Method:** Structured diagnostic interviews and self-report instruments were administered to adolescent participants and their parent(s) to assess demographic variables, history of suicidal behavior, psychiatric disorders, family environment and personality/temperament.

**Results:** Baseline variables that significantly predicted time to a suicide event during follow-up were Black race, high suicidal ideation in the past month, post-traumatic stress disorder (PTSD), childhood sexual abuse (CSA), borderline personality disorder (BPD), low scores on positive affectivity, and high scores on aggression. In a multivariate Cox regression analysis, only Black race, CSA, positive affect intensity and high aggression scores remained significant.

**Conclusions:** Our findings suggest the following for adolescent populations: (1) in a very high-risk population, risk factors for future attempts may be more difficult to ascertain and some established risk factors (e.g. past suicide attempt) may not distinguish as well; and (2) cross-cutting constructs (e.g. affective and behavioral dysregulation) that underlie multiple psychiatric disorders may be stronger predictors of recurrent suicide events than psychiatric diagnoses. Our finding with respect to positive affect intensity is novel and may have practical implications for the assessment and treatment of adolescent suicide attempters.
A decompositional analysis of the relative contribution of age, sex and methods of suicide to the changing patterns of suicide in Taipei city, 2004–2006

Yip PS, Caine ED, Kwok RC, Chen YY (Hong Kong)

**Background:** Taipei has seen a substantial increase in suicide rates during the past decade, with a significant rise between 2004 and 2006, the time of this study period.

**Methods:** A decompositional analytic method was used to quantify the relative contributions of age, sex and case fatality of methods to attempts and suicides.

**Results:** From 2004 to 2006, the rate of fatal and non-fatal suicide attempts combined for population aged 15 years or above in Taipei increased by 37.3%, while the suicide rate increased by 29.2%. Three factors in these analyses contributed to the increase in suicide rates: (1) an increase in number of attempts, (2) a greater proportion of men among fatal and non-fatal attempts and (3) an increase in the use of a lethal method—burning of charcoal to produce carbon monoxide. The authors estimated that 74.5% and 25.6% among men and women, respectively, of the overall increased suicide mortality were attributable to increased 'charcoal burning suicides'.

**Conclusions:** The rise in suicide rate reflected an increase in attempts and an influx of working-age men joining the pool of people attempting suicide. The much larger size of the attempter pool had the effect of reducing the case fatality even as the suicide rate climbed. The increase in the number of suicide attempts and the rise in the suicide rate were age-, sex-, and method-specific. These results strongly support the concept that reducing the total number of attempts is a central element to curbing suicides.

Means restriction for suicide prevention

Yip PSF, Caine E, Yousuf S, Chang S-S, Wu KC-C, Chen Y-Y (Hong Kong)

Limitation of access to lethal methods used for suicide — so-called means restriction — is an important population strategy for suicide prevention. Many empirical studies have shown that such means restriction is effective. Although some individuals might seek other methods, many do not; when they do, the means chosen are less lethal and are associated with fewer deaths than when more dangerous ones are available. We examine how the spread of information about suicide methods through formal and informal media potentially affects the choices that people make when attempting to kill themselves. We also discuss the challenges associated with implementation of means restriction and whether numbers of deaths by suicide are reduced.
Toxoplasma gondii immunoglobulin G antibodies and nonfatal suicidal self-directed violence

Journal of Clinical Psychiatry 73, 1069–1076, 2012

Objective: The primary aim was to relate Toxoplasma gondii seropositivity and serointensity to scores on the self-rated Suicide Assessment Scale (SUAS-S). Another aim was to reevaluate the previously reported positive association between T gondii serointensity and a history of nonfatal suicidal self-directed violence.

Method: This cross-sectional, observational study compared T gondii serointensity and seropositivity in plasma from 54 adult suicide attempters (inpatients at Lund University Hospital, Lund, Sweden) and 30 adult control subjects (randomly selected from the municipal population register in Lund, Sweden) recruited between 2006 and 2010. The potential of patients and controls for self-directed violence was evaluated with the SUAS-S. Psychiatric diagnoses were made according to DSM-IV criteria. Plasma samples were tested for immunoglobulin G antibodies to T gondii, cytomegalovirus, and herpes simplex virus type 1. Data were analyzed using multivariable logistic regression to investigate the association between T gondii serointensity or seropositivity and a history of nonfatal suicidal self-directed violence; multivariable linear regression was used to explore the relationship between T gondii serointensity or seropositivity and the SUAS-S. Both regression models included sex, age, and body mass index as covariates.

Results: Seropositivity of T gondii (adjusted odds ratio [OR] = 7.12; 95% CI, 1.66–30.6; P = .008) and serointensity of T gondii (adjusted OR = 2.01; 95% CI, 1.09–3.71; P = .03) were positively associated with a history of nonfatal suicidal self-directed violence. Seropositivity of T gondii was associated with higher SUAS-S scores, a relationship significant for the whole sample (P = .026), but not for suicide attempters only. No significant associations with other pathogens were identified.

Conclusions: These results are consistent with previous reports on the association between T gondii infection and nonfatal suicidal self-directed violence. Confirming these results in future large longitudinal studies and including suicide as an outcome may lead to novel individualized approaches in suicide prevention.
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