## Contents

**Foreword** ...........................................................................................................vii

**Acknowledgments** ..............................................................................................viii

**Introduction**
- Context ..................................................................................................................1
- Methodology .........................................................................................................2

**Key articles**

**Biddle et al, 2016.** Suicide and the Internet: Changes in the accessibility of suicide related information between 2007 and 2014 ...........9

**Coimbra et al, 2016.** Do suicide attempts occur more frequently in the spring too? A systematic review and rhythmic analysis ...........12

**de Beurs et al, 2015.** Evaluation of benefit to patients of training mental health professionals in suicide guidelines: Cluster randomised trial .......14

**Doran et al, 2015.** The impact of a suicide prevention strategy on reducing the economic cost of suicide in the New South Wales Construction Industry. .................................................................17

**Ferrey et al, 2016.** The impact of self-harm by young people on parents and families: A qualitative study ...............................19

**Garraza et al, 2015.** Effect of the Garrett Lee Smith memorial suicide prevention program on suicide attempts among youths. ............22

**Guildin et al, 2015.** Incidence of suicide among persons who had a parent who died during their childhood: A population-based cohort study.................................................................25

**Gysin-Mailart et al, 2016.** A novel brief therapy for patients who attempt suicide: A 24-months follow-up randomized controlled study of the Attempted Suicide Short Intervention Program (ASSIP) ........28

**Harris et al, 2016.** Exploring synergistic interactions and catalysts in complex interventions: Longitudinal, mixed methods case studies of an Optimised Multi-Level Suicide Prevention Intervention in four European countries (OSPI-Europe) ....................................................31

**Hawton et al, 2015.** Interventions for self-harm in children and adolescents ........................................................................34

Kõlves & De Leo, 2016. Adolescent suicide rates between 1990 and 2009: Analysis of age group 15-19 years worldwide.............41


Kõlves et al, 2015. Allergies and suicidal behaviors: A systematic literature review.................................................................46

Makris et al, 2015. Serotonergic medication enhances the association between suicide and sunshine ........................................49

Meerwijk et al, 2016. Direct versus indirect psychosocial and behavioural interventions to prevent suicide and suicide attempts: A systematic review and meta-analysis ...........................................52

Milner et al, 2015. Occupational class differences in suicide: Evidence of changes over time and during the global financial crisis in Australia...................................................................................55

Milner et al, 2015. Suicide among male road and rail drivers in Australia: A retrospective mortality study........................................57

Mishara et al, 2015. The association of physical illness and self-harm resulting in hospitalisation among older people in a population-based study........................................................................63

Pirkis et al, 2015. Interventions to reduce suicides at suicide hotspots: A systematic review and meta-analysis ................................65


Swannel et al, 2015. Suicidal ideation, suicide attempts and non-suicidal self-injury among lesbian, gay, bisexual and heterosexual adults: Findings from an Australian national study........69

Wang et al, 2015. Is case management effective for long-lasting suicide prevention? A community cohort study in northern Taiwan ....71

Yovell et al, 2015. Ultra-low-dose buprenorphine as a time-limited treatment for severe suicidal ideation: A randomized controlled trial ...........................................................................................................73

Recommended readings .................................................................79

Citation list

Fatal suicidal behaviour:
  Epidemiology .................................................................135
  Risk and protective factors ..............................................140
  Prevention ......................................................................150
  Postvention and bereavement ......................................151

Non-fatal suicidal behaviour:
  Epidemiology .................................................................152
  Risk and protective factors ..............................................156
  Prevention ......................................................................191
  Care and support .............................................................195

Case reports ...........................................................................201
Miscellaneous .......................................................................206
Foreword

This volume contains quotations from internationally peer-reviewed suicide research published during the semester November 2015 – April 2016; it is the fifteenth of a series produced biannually by our Institute with the aim of assisting the Commonwealth Department of Health to be constantly updated on new evidences from the scientific community.

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

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

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

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

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

Diego De Leo, DSc

Emeritus Professor, Australian Institute for Suicide Research and Prevention
Acknowledgments

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 in the funding of this report is gratefully acknowledged.
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 2013, 2,522 deaths by suicide were registered in Australia, representing an age-standardised rate of 10.7 per 100,000.

Despite the estimated mortality, the prevalence of suicide and self-harming behaviour in particular remains difficult to gauge due to the often secretive nature of these acts. Without a clear understanding of the scope of suicidal behaviours and the range of interventions available, the opportunity to implement effective initiatives is reduced. Further, it is important that suicide prevention policies are developed on the foundation of evidence-based empirical research, especially as the quality and 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 (DoH) appointed AISRAP as the National Centre of Excellence in Suicide Prevention. This latter recognition awards not only many years of high quality research, but also of fruitful cooperation between the Institute and several different governmental agencies.

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

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

The review is presented in three sections. The first contains a selection of the best articles published in the last six months internationally. For each article identified by us (see the method of choosing articles described below), the original abstract is accompanied by a brief comment explaining why we thought the study was providing an important contribution to research and why we considered its possible applicability to Australia. The second section presents the abstracts of the most relevant literature — following our criteria — collected between November 2015 to April 2016; while the final section presents a list of citations of all literature published over this time-period.

Methodology

The literature search was conducted in four phases.

Phase 1

Phase one consisted of weekly searches of the academic literature performed from November 2015 to April 2016. To ensure thorough coverage of the available published research, the literature was sourced using several scientific electronic databases including: PubMed, ProQuest, Scopus, SafetyLit and Web of Science, using the following key words: suicide OR suicidal OR self-harm OR self-injury OR parasuicide.

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

Specific inclusion criteria for Phase 1 included:

• Timeliness: the article was published (either electronically or in hard-copy) between November 2015 to April 2016;
• 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 14 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
• inevitably, an important aspect was the importance of the journal in which the paper was published (because of the high standards that have to be met in order to obtain publication in that specific journal); priority was given to papers published in high impact factor journals
• particular attention has been paid to widen the literature horizon to include socio-logical and anthropological research that may have particular relevance to the Australian context.

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

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

Phase 4
In the final phase of the search procedure all articles were divided into the following classifications:

• *Fatal suicidal behaviour* (epidemiology, risk and protective factors, prevention, postvention and bereavement)
• *Non-fatal suicidal/self-harming behaviours* (epidemiology, risk and protective factors, prevention, care and support)
• *Case reports* include reports of fatal and non-fatal suicidal behaviours
• *Miscellaneous* includes all research articles that could not be classified into any other category.

---

**Figure 1**

Articles selected via keyword search of electronic databases

\[ N = 12,401 \]

Articles selected based on Phase 1 selection criteria

\[ N = 1,611 \]

Articles selected based on Phase 2 selection criteria

\[ N = 70 \]

Articles selected based on Phase 3 selection criteria

\[ N = 26 \]

Citation list

Recommended readings

Key articles
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
Suicide and the Internet: Changes in the accessibility of suicide-related information between 2007 and 2014
Biddle, L, Derges J, Mars B, Heron J, Donovan JL, Potokar J, Piper M, Wyllie C, Gunnell D (United Kingdom).
Journal of Affective Disorders 190, 370-375, 2016

Background: Following the ongoing concerns about cyber-suicide, we investigate changes between 2007 and 2014 in material likely to be accessed by suicidal individuals searching for methods of suicide.

Methods: 12 search terms relating to suicide methods were applied to four search engines and the top ten hits from each were categorised and analysed for content. The frequency of each category of site across all searches, using particular search terms and engines, was counted.

Results: Key changes: growth of blogs and discussion forums (from 3% of hits, 2007 to 18.5% of hits, 2014); increase in hits linking to general information sites – especially factual sites that detail and evaluate suicide methods (from 9%, 2007 to 21.7%, 2014). Hits for dedicated suicide sites increased (from 19% to 23%), while formal help sites were less visible (from 13% to 6.5%). Overall, 54% of hits contained information about new high-lethality methods.

Limitations: We did not search for help sites so cannot assess the balance of suicide promoting versus preventing sites available online. Social media was beyond the scope of this study.

Conclusions: Working with ISPs and search engines would help optimise support sites. Better site moderation and implementation of suicide reporting guidelines should be encouraged

Comment

Main findings: Information about suicide is easily accessible through news sites, factual information-based sites and within dedicated or pro-suicide sites. However there has also been a surge of user-generated suicide content (e.g., personal websites, interactive discussion forums, chat rooms), allowing opportunities for users to exchange information on a global scale. Replicating the researchers’ previous work in 2007 that examined what a suicidal person might find on searching the internet for information on suicide methods\(^1\), the present study examined changes between 2007 and 2014 in online material. This study also examined in more detail the content of these sites by focusing on themes such as peer support, images, site moderation, help within discussion forum and blogs. Searches were conducted using the same 12 search terms as their previous study, (i.e., suicide; suicide methods; suicide sure methods; most effective methods of suicide; methods of suicide; ways to commit suicide; how to commit suicide; how to kill yourself; easy suicide methods; best suicide methods; pain-free suicide, and quick suicide). These searches were applied to the four most popular search engines: Google, Bing, Yahoo and Ask. The top 10 hits from each were categorised and analysed for content. The content analy-
sis provided additional information on the nature of the sites; such as references to celebrity suicides, links to help sites or services, images relating to suicide (i.e., video clips, pictures and photographs), and information about novel high lethality methods. This yielded a total of 135 unique websites (after accounting for duplicates). Results showed a slight increase from 90 hits (19%) for suicide sites in 2007, to 111 (23.1%) in 2014. The biggest increase was in the number of hits leading to websites providing factual information about suicide methods; a three-fold increase from 24 (5%) to 73 (15.2%). These websites provided suicide method lists, detailed information and sometimes evaluation of suicide methods and information on implementation. There was also a six-fold increase in the number of chat rooms and blogs discussing suicide methods during this period from 12 (3%) to 89 (18.5%). Conversely, there was a 50% decrease in suicide prevention and support sites hits from 62 (13%) to 31 (6.5%). Furthermore, a new category of websites containing explicit images of self-harm, suicide and suicide methods also emerged in 2014, accounting for 1.7% of all hits. Content analysis revealed that over half of the hits (54%) contained information about new high-lethality suicide methods. The overall intent behind some sites was often blurred. For example, some sites promote themselves as offering suicide method information whilst also encouraging users to seek help. In contrast, other sites claim to provide support to individuals yet also list explicit and detailed information on suicide methods.

**Implications:** This the first study to employ a comparative and longitudinal approach to analyse trends in online content relating to suicide methods across two time-points, mimicking types of internet usage by a suicidal individual. As suicide method information is disseminated widely on the internet, this creates challenges for suicide prevention initiatives given the difficulties in moderating content on the World Wide Web. These findings are not without limitations, given that search engines may personalise results according to previous search history, potentially increasing the volume of suicide-related information in subsequent searches. Thus this study may have underestimated the accessibility of material to returning search engine users. Additionally, as the keywords were used to mimic internet users researching suicide methods rather than those seeking help, the results did not reflect the balance of suicide promoting versus suicide preventing sites. From a policy perspective, a potential strategy would be to work with internet service providers and search engines to optimise supportive sites and minimise pro-suicide sites. However, it could be argued that this approach could violate rights to freedom of expression and also potentially remove suicide prevention peer support blogs and discussion-based forums. It is clear that this is a complex issue, requiring multiple approaches to address. Information sites (e.g., Wikipedia, News sites) are usually sourced by people researching and seeking to perfect suicide methods, thus it is important that website moderators follow media reporting guidelines, and are made accountable for the type of information approved and published online. Given that online support is an important part of Australia's current suicide prevention initiatives, it is important that this research area is not neglected, in order to improve future suicide prevention initiatives regarding online content.
Endnotes


Do suicide attempts occur more frequently in the spring too?  
A systematic review and rhythmic analysis

Coimbra DG, Pereira E Silva AC, de Sousa-Rodrigues CF, Barbosa FT, de Siqueira Figueredo D, Araújo Santos JL, Barbosa MR, de Medeiros Alves V, Nardi AE, de Andrade TG (Brazil)

Journal of Affective Disorders 196, 125-137, 2016

**Background:** Seasonal variations in suicides have been reported worldwide, however, there may be a different seasonal pattern in suicide attempts. The aim of this study was to perform a systematic review on seasonality of suicide attempts considering potential interfering variables, and a statistical analysis for seasonality with the collected data.

**Method:** Observational epidemiological studies about seasonality in suicide attempts were searched in PubMed, Web of Science, LILACS and Cochrane Library databases with terms attempted suicide, attempt and season. Monthly or seasonal data available were evaluated by rhythmic analysis softwares.

**Results:** Twenty-nine articles from 16 different countries were included in the final review. It was observed different patterns of seasonality, however, suicide attempts in spring and summer were the most frequent seasons reported. Eight studies indicated differences in sex and three in the method used for suicide attempts. Three articles did not find a seasonal pattern in suicide attempts. Cosinor analysis identified an overall pattern of seasonal variation with a suggested peak in spring, considering articles individually or grouped and independent of sex and method used. A restricted analysis with self-poisoning in hospital samples demonstrated the same profile.

**Limitations:** Grouping diverse populations and potential analytical bias due to lack of information are the main limitations.

**Conclusions:** The identification of a seasonal profile suggests the influence of an important environmental modulator that can reverberate to suicide prevention strategies. Further studies controlling interfering variables and investigating the biological substrate for this phenomenon would be helpful to confirm our conclusion.

**Comment**

**Main findings:** There is mixed evidence regarding seasonality of suicide attempts, and to date, no systematic review has been published on this topic. This systematic review aimed to explore which season reports the highest incident rates while considering potential confounding variables such as sex, suicide methods and source of data. A statistical analysis for seasonality was also conducted with the collected data to examine the rhythmic phenomena. Searches were limited to articles published in English, Portuguese and Spanish. A total of 208 potentially relevant articles were found, with only 29 studies which satisfied all criteria. The majority of studies were cross-sectional in design, with one prospective study of case series and one case-control study. An overall pattern was found for a peak in
spring, independent of sex, region and type of method used. The majority of studies (n=23) identified seasonality in suicide attempts, while three did not find this association. Moreover, when applying methods for the analysis of rhythmic patterns to each article, the peak of suicide attempts was most frequent in spring. However, there were three articles that presented a significant peak in winter and one that presented a peak in summer. Statistical analyses revealed no differences between sexes in seasonality of suicide attempts. The results suggest that suicidal behaviour may be strongly modulated by endogenous or environmental factors associated with seasonal variation rather than sex. Only two studies analysed suicide methods by sex, and they found that among males, seasonality occurred regardless of method used. Meanwhile in females only one study identified seasonality in non-violent methods.

**Implications:** This systematic review found that a pattern of peak suicide attempts occurred in mid-late spring, irrespective of country. The authors suggest that this association may be a consequence of the increasing photoperiod and light intensity in spring. Although these findings can serve as a starting point for further investigation, the strength and generalisability of these results are limited as this systematic review grouped globally diverse populations (e.g., different ages, suicide methods, ethnic groups, social/economic statuses, cultural differences) and different data sources for their analyses. Thus, to further investigate this association, future studies should aim to employ a significant sample size from various countries, and include measures of different latitudes, photoperiod variation, sex and suicide methods, while controlling for psychiatric disorders and analysing for rhythmic variation. The results would help inform future suicide prevention initiatives\(^1\), by providing relevant bodies such as public health agencies and health professionals with a better understanding of seasonal variations in suicide attempts in order to provide assistance to vulnerable individuals when they are most at risk.

**Endnotes**


Evaluation of benefit to patients of training mental health professionals in suicide guidelines: Cluster randomised trial


**Background:** Randomised studies examining the effect on patients of training professionals in adherence to suicide guidelines are scarce.

**Aims:** To assess whether patients benefited from the training of professionals in adherence to suicide guidelines.

**Method:** In total 45 psychiatric departments were randomised (Dutch trial register: NTR3092). In the intervention condition, all staff in the departments were trained with an e-learning supported train-the-trainer programme. After the intervention, patients were assessed at admission and at 3-month follow-up. Primary outcome was change in suicide ideation, assessed with the Beck Scale for Suicide Ideation.

**Results:** For the total group of 566 patients with a positive score on the Beck Scale for Suicide Ideation at baseline, intention-to-treat analysis showed no effects of the intervention on patient outcomes at 3-month follow-up. Patients who were suicidal with a DSM-IV diagnosis of depression (n = 154) showed a significant decrease in suicide ideation when treated in the intervention group. Patients in the intervention group more often reported that suicidality was discussed during treatment.

**Conclusions:** Overall, no effect of our intervention on patients was found. However, we did find a beneficial effect of the training of professionals on patients with depression.

**Comment**

**Main findings:** In order to strengthen suicide prevention in Dutch mental healthcare, an evidence-based multidisciplinary practice guideline for the assessment and treatment of suicidal behaviour (PGSB) was implemented in 2012. It has been argued that training of professionals in guideline recommendations improves adherence to guidelines and thus improves patient care. However, to date, randomised control trials (RCT) examining the effectiveness of suicide guideline training is limited. Therefore, an RCT was conducted examining the effectiveness of an e-learning supported train-the-trainer program (TtT-e), delivered to multidisciplinary teams of mental healthcare departments. TtT-e is based on the premise that adults learn more effectively where the education is relevant to their work, where it draws on their previous experience and where it is delivered through a trusted social network. The TtT-e combines 1-day face-to-face training with an additional e-learning module. It was hypothesised that suicidal individuals who received treatment from TtT-e trained professionals would recover more quickly from suicidal ideation than patients treated by professionals who did not receive the TtT-e training (control), but received information on the...
release of the guideline via the usual methods (e.g., internet, conferences, workshops). Secondary measures were self-reported suicide attempts, treatment satisfaction and discussion of suicidal thoughts. Mental healthcare departments were included in the study where they treated patients 18 years and older and where professionals felt the need for suicide prevention skill training. Forty-five departments were deemed eligible, 22 being randomly allocated to the TtT-e group and 23 to the control group. Departments were matched on patients' DSM-IV main diagnosis and on comparable average length of treatment. Data were collected from patients at admission (baseline) and then three months after admission (follow-up). Of the 881 patients included, 556 (64%) had a baseline suicide ideation score greater than one, and 250 (28%) reported at least one suicide attempt. Results showed there was no significant effect of TtT-e on either suicide ideation or suicide attempts between baseline and follow-up. However, TtT-e did have an effect on depressed patients, recording an 8.4 point decrease in suicidal ideation between baseline and follow-up, compared to a 4.8 point decrease in the control group. There was also no effect of TtT-e on suicide attempts or treatment satisfaction for depressed patients. Suicidal thoughts were more likely to be discussed in the TtT-e group than in the control group.

Implications: These findings align with previous research demonstrating the effectiveness of guideline training for general practitioners treating older adults with depression. It is possible that the TtT-e training was only effective with depressed patients because its focus on making contact with patients and discussing suicidality might be more appropriate for suicidal patients with a depressive disorder than for those with other disorders such as borderline or psychotic disorder. The finding that suicidality was discussed more during treatment indicates that professionals changed their behaviour during individual treatment sessions, and is consistent with previous research that found that general practitioners assessed more patients for suicide risk following the implementation of a tailored depression guideline. A limitation of this study was that 37% of patient diagnoses were missing, preventing the authors from testing the effectiveness of TtT-e on subgroups other than patients with depression. The results of this study provide evidence for the effectiveness of TtT-e training for depressed patients, and support the use of training to reinforce suicide prevention guidelines amongst mental health professionals. This is particularly relevant in the Australian context given that both Federal and State governments plan to implement effective mental health guidelines for community and clinical services.

Endnotes
3. Alexopoulos GS, Reynolds CF III, Bruce ML, Katz IR, Raue PJ, Mulsant BH, Oslin DW, Ten Have T (2009). Reducing suicidal ideation and depression in older primary care patients: 24-


The Impact of a Suicide Prevention Strategy on Reducing the Economic Cost of Suicide in the New South Wales Construction Industry

Doran CM, Ling R, Gullestrup J, Swannell S, Milner A (Australia)
Crisis 37, 121-129, 2016

**Background:** Little research has been conducted into the cost and prevention of self-harm in the workplace.

**Aims:** To quantify the economic cost of self-harm and suicide among New South Wales (NSW) construction industry (CI) workers and to examine the potential economic impact of implementing Mates in Construction (MIC).

**Method:** Direct and indirect costs were estimated. Effectiveness was measured using the relative risk ratio (RRR). In Queensland (QLD), relative suicide risks were estimated for 5-year periods before and after the commencement of MIC. For NSW, the difference between the expected (i.e., using NSW pre-MIC [2008–2012] suicide risk) and counterfactual suicide cases (i.e., applying QLD RRR) provided an estimate of potential suicide cases averted in the post-MIC period (2013–2017). Results were adjusted using the average uptake (i.e., 9.4%) of MIC activities in QLD. Economic savings from averted cases were compared with the cost of implementing MIC.

**Results:** The cost of self-harm and suicide in the NSW CI was AU $527 million in 2010. MIC could potentially avert 0.4 suicides, 1.01 full incapacity cases, and 4.92 short absences, generating annual savings of AU $3.66 million. For every AU $1 invested, the economic return is approximately AU $4.6.

**Conclusion:** MIC represents a positive economic investment in workplace safety.

**Comment**

**Main findings:** Current literature suggests that suicide rates are differentially distributed across industry and occupational groups. Low-skilled occupation groups and construction industry (CI) workers are said to experience higher rates of suicide. Unfortunately, suicide prevention in the workplace has not yet been adequately addressed. This study therefore aimed to quantify the economic impact of suicide and self-harm in the New South Wales (NSW) CI, and to examine the potential economic impact of implementing the suicide prevention strategy Mates in Construction (MIC). The study calculated the total economic cost of CI self-harm and suicide by multiplying the average indirect and direct costs by cases of self-harm and suicide. The classification structure for economic costs was comprised of production disturbance costs (workplace costs), human capital costs (lost future earnings), medical costs, administrative costs, transfer costs and other costs. Also relevant to cost was the outcome severity of suicidal behaviours. Three levels of outcome severity were used: short absence involving less than five days off work, full incapacity resulting in the individual being permanently unable to return to work, and a fatality.

The study utilised the MIC prevention strategy to assess the economic impact of reducing CI suicides and suicide attempts. MIC is an early intervention program consisting of three components: general awareness training, connector training and
applied suicide intervention skills training. It has been primarily implemented in Queensland and has been shown to be effective at reducing suicide rates. Intervention effectiveness for the NSW CI was estimated using the change in suicide cases experienced following the implementation of MIC in Queensland; which was a reduction of 9.64%. In Queensland, 9.4% of CI workers were exposed to MIC. Therefore, to calculate the effect of MIC on suicide and suicide attempts in NSW, the authors attributed 9.4% of the 9.64% estimated decrease in suicide cases to MIC.

In 2010, the cost of self-harm and suicide in the NSW CI was calculated at $527 million; this included 145 self-harm incidents resulting in full incapacity, 710 self-harm incidents resulting in short work absences, and 57 deaths by suicide. The per person costs for suicide cases were estimated to be $925 for short term absences, $2.78 million for full incapacity and $2.14 million due to death. Moreover, for every 15 suicide attempts there was one fatality, 2.55 incapacity cases and 12.45 short absence cases. Hence, it was estimated that if implemented, MIC would avert 0.4 suicide fatalities, 1.01 full incapacitations and 4.92 short absences from work, potentially saving $3.66 million each year. Given the cost of implementing MIC is $800,000, the return on investment would be $4.60 for every $1.00.

**Implications:** These findings are consistent with research from Beyond Blue which found that workplace mental health investment resulted in a benefit-cost ratio of $2.30 for every $1 spent. The current study provides a strong economic case to increase expenditure in suicide prevention and mental health programs aimed at not only the CI but other at-risk occupations. It highlights the significant impact that suicide prevention investments can have, and further validates the need to provide support to people working in low skilled and CI occupations. The study captured the wide ranging costs of suicide, such as the costs associated with suicide bereavement and counselling. However, a limitation of this study is that its benefit-cost estimations are based on Queensland data and not NSW data. Therefore, it is unclear whether the same outcomes seen in Queensland would apply to NSW. The study also adopted very conservative estimates in assessing MIC uptake in the CI. It is possible that MIC would have greater uptake in the NSW CI, especially over time, given Queensland’s positive experience.

**Endnotes**

The impact of self-harm by young people on parents and families: A qualitative study


*BMJ Open* 6, e009631, 2016

**Objectives:** Little research has explored the full extent of the impact of self-harm on the family. This study aimed to explore the emotional, physical and practical effects of a young person’s self-harm on parents and family.

**Design and Participants:** We used qualitative methods to explore the emotional, physical and practical effects of a young person’s self-harm on their parents and family. We conducted a thematic analysis of thirty-seven semistructured narrative interviews with parents of young people who had self-harmed.

**Results:** After the discovery of self-harm, parents described initial feelings of shock, anger and disbelief. Later reactions included stress, anxiety, feelings of guilt and in some cases the onset or worsening of clinical depression. Social isolation was reported, as parents withdrew from social contact due to the perceived stigma associated with self-harm. Parents also described significant impacts on siblings, ranging from upset and stress to feelings of responsibility and worries about stigma at school. Siblings had mixed responses, but were often supportive. Practically speaking, parents found the necessity of being available to their child often conflicted with the demands of full-time work. This, along with costs of, for example, travel and private care, affected family finances. However, parents generally viewed the future as positive and hoped that with help, their child would develop better coping mechanisms.

**Conclusions:** Self-harm by young people has major impacts on parents and other family members. Clinicians and staff who work with young people who self-harm should be sensitive to these issues and offer appropriate support and guidance for families.

**Comment**

*Main findings:* Most research on self-harm has examined the characteristics, intentions and outcomes of the individuals involved. A person’s self-harm may have significant impacts on their parents and family; yet there has been a lack of research in this area. This study addressed this gap by examining the emotional and practical impacts on family and parents of young people who self-harmed. This qualitative study employed semistructured narrative interviews with 37 parents of 35 young people who had self-harmed. Interviewers asked follow-up questions if more information was required. Participants were purposively sampled through mental health charities, support groups, clinicians, adverts, social media, personal contacts and snowballing through existing contacts in England, Scotland.
and Wales. The average age of the young people who self-harmed was 15.1 years, and all young persons had engaged in multiple acts of self-harm. Although ranging in severity, self-harm included self-cutting, overdoses, burning and strangulation. Twenty-nine of the young people were female and six were male.

Parents reported that they often discovered their child’s self-harm from teachers, their children, friends of their children, or through searching for information (such as reading their child’s diary). Their initial reaction to discovering their child self-harmed included shock, horror, frustration, annoyance, anger. Parents also described feelings of shame, guilt or embarrassment. Depression was common among parents, which some related directly to their child’s self-harm. One parent reported that the impact of her child self-harming lead to a relapse of her own self-harm. Some parents experienced physical symptoms as a result (e.g., feeling sick, panic attacks, physical exhaustion, chest pains, and losing a lot of weight). The stresses associated with self-harm also put strain on relationships between family members and sometimes led to marriage problems. The reactions of other siblings to the child’s self-harm behaviour varied as several experienced distress, anger, resentment and frustration, while others were extremely supportive, and became overprotective of their sibling. Some siblings felt responsible and avoided irritating their sibling in case they self-harmed, while school-aged siblings worried about stigma at school. Relationships with parents (child’s grandparents) were also affected as some family members were reportedly unsupportive. However some grandparents were determined to help, and as a result developed stronger relationships with their children and grandchildren.

A common theme observed was a profound sense of isolation and a desire to keep a child’s problems private. Some parents withdrew socially due to their perceived stigma of self-harm, which could potentially lead to temporary or permanent loss of social support. Several parents reported that friendships function as an important source of support, especially when hearing about the experiences of others in similar situations. Many parents found themselves in financial strain as it was difficult to manage work commitments while wanting to be available for their children. In addition, parents often spent large amounts of money on private psychiatric care or counselling for their child. Nevertheless, parents mostly thought about the future in a guardedly positive light. Another common theme was “taking life one day at a time”. Parents were aware of their child’s problems, concerned about their vulnerabilities and ability to cope as an adult and worried about the effect stigma might have on others’ opinions of their child.

Implications: This is one of the first qualitative studies to explore the emotional, physical and practical effects of young peoples’ self-harm on their parents and family. Results showed that self-harm can have extensive effects on parents’ emotional states, as well as mental health, relationships with partners and others, employment and finances. A common worry was that their child self-harming was a result of what they did or did not do as a parent, which resulted in feelings of shame, embarrassment or guilt. It should be noted that this study relied on self-
reported data from one parent, which may be subject to a number of biases. There was also limited diversity as only one participant was from a minority ethnic background. In order to capture the full impact of a child’s self-harming behaviour on their families, future research should aim for wider ethnic diversity and include other family members such as fathers, siblings and grandparents. The findings from this study should help inform organisations such as Parentline\textsuperscript{2} in providing support and guidance to parents whose children are self-harming.

Endnotes


Effect of the Garrett Lee Smith memorial suicide prevention program on suicide attempts among youths

Garraza LG, Walrath C, Goldston DB, Reid H, McKeon R (United States)  
JAMA Psychiatry 72, 1143-1149, 2015

**Importance:** Youth suicide prevention is a major public health priority. Studies documenting the effectiveness of community-based suicide prevention programs in reducing the number of nonlethal suicide attempts have been sparse.

**Objective:** To determine whether a reduction in suicide attempts among youths occurs following the implementation of the Garrett Lee Smith Memorial Suicide Prevention Program (hereafter referred to as the GLS program), consistent with the reduction in mortality documented previously.

**Design, Setting, and Participants:** We conducted an observational study of community-based suicide prevention programs for youths across 46 states and 12 tribal communities. The study compared 466 counties implementing the GLS program between 2006 and 2009 with 1161 counties that shared key preintervention characteristics but were not exposed to the GLS program. The unweighted rounded numbers of respondents used in this analysis were 84000 in the control group and 57000 in the intervention group. We used propensity score-based techniques to increase comparability (on background characteristics) between counties that implemented the GLS program and counties that did not. We combined information on program activities collected by the GLS national evaluation with information on county characteristics from several secondary sources. The data analysis was performed between April and August 2014. P < .05 was considered statistically significant.

**Exposures:** Comprehensive, multifaceted suicide prevention programs, including gatekeeper training, education and mental health awareness programs, screening activities, improved community partnerships and linkages to service, programs for suicide survivors, and crisis hotlines.

**Main Outcomes and Measures:** Suicide attempt rates for each county following implementation of the GLS program for youths 16 to 23 years of age at the time the program activities were implemented. We obtained this information from the National Survey on Drug Use and Health administered to a large national probabilistic sample between 2008 and 2011.

**Results:** Counties implementing GLS program activities had significantly lower suicide attempt rates among youths 16 to 23 years of age in the year following implementation of the GLS program than did similar counties that did not implement GLS program activities (4.9 fewer attempts per 1000 youths [95% CI, 1.8-8.0 fewer attempts per 1000 youths]; P = .003). More than 79000 suicide attempts may have been averted during the period studied following implementation of the GLS program. There was no significant difference in suicide attempt rates among individuals older than 23 years during that same period. There was no evidence of longer-term differences in suicide attempt rates.
Conclusions and Relevance: Comprehensive GLS program activities were associated with a reduction in suicide attempt rates. Sustained suicide prevention programming efforts may be needed to maintain the reduction in suicide attempt rates.

Comment

Main findings: The Garrett Lee Smith Memorial Suicide Prevention Program (GLS program) funds competitive grants for suicide prevention activities throughout the United States. These activities include mental health awareness programs, screening activities, gate-keeper training, crisis hotlines, programs for suicide survivors and improved community partnerships and linking services. Limited research has been published on the effectiveness of community-based suicide prevention programs, such as those funded by the GLS program. This study sought to address this deficiency by examining the differences in suicide attempts between communities that implemented a GLS funded program and those with similar characteristics that did not. The study aimed to complement an earlier report investigating the effectiveness of the GLS program on suicide mortality among young people. Community gatekeeper training was used as an indicator of GLS program implementation due to its ubiquity in GLS funded programs. The study investigated the effectiveness of GLS programs targeting youth and therefore examined suicide attempts in youth within the age range targeted by the program (i.e., those who were between 16 and 23 years old during the implementation of the programs). Given that previous findings have shown GLS programs to be ineffective beyond one year, suicide attempts over time were also examined. Data were collected from 466 counties in America that were exposed to GLS programs between 2006 and 2009, as well as 1161 counties that shared similar characteristics but did not have GLS programs. Analysis was based on data from the National Survey on Drug Use and Health (NSDUH) conducted between 2008 and 2011. The primary variable of interest was the suicide attempt rate post GLS program implementation. Suicide attempt rates for adults aged 24 years and older were used as a control outcome, as this demographic group was not the target of the GLS programs. Several county level and individual level covariates, such as demographics and economic indicators, were also included for the purpose of sample selection and weighting prior to the main analysis. Results showed a significant reduction in suicide attempts in youths aged 16 to 23 years in counties that implemented a GLS funded program compared to those that did not. It is estimated that these suicide prevention programs resulted 39% fewer suicide attempts or 4.9 fewer attempts per 1000 youths. The absence of change in youths aged 24 years and older provides support for the premise that the changes were due to GLS program activities. However, consistent with previous research these results were temporary, with no effect on suicide attempts two or more years after the implementation of GLS programs.

Implementation: These findings contribute to the evidence base regarding the effectiveness of a comprehensive approach to suicide prevention. They also high-
light the temporary impact of these initiatives on suicidality and the importance of continued implementation of suicide prevention program activities to ensure results over time. However, it is important that these findings are interpreted within the limitations of the study. Causality cannot be definitively inferred from this study given the lack of experimental randomisation, and whilst the authors did account for potential confounding variables prior to their main analysis, it is still possible that other variables may have influenced the results. Furthermore, information concerning lifetime suicide attempts was not available to the authors, meaning they could not determine whether the effectiveness of the GLS programs differed based upon one’s history of suicidal behaviour. The apparent success of these programs in reducing suicide attempts lends further support to the implementation of community-based suicide prevention programs in Australia. The Queensland Suicide Prevention Action Plan 2015-17 recommends the use of gatekeeper training as a way to improve the screening and detection of suicidal ideation and behaviour. Whilst gatekeeper training has been implemented in Australia, this study suggests that more extensive and ongoing training is needed through community-based suicide prevention programs.

Endnotes
Incidence of suicide among persons who had a parent who died during their childhood: A population-based cohort study.

Guldin MB, Li J, Pedersen HS, Obel C, Agerbo E, Gissler M, Cnattingius S, Olsen J, Vestergaard M (Denmark)

*JAMA Psychiatry* 72, 1227-1234, 2015

**Importance:** Parental death from suicide is associated with increased risk of suicide in the bereaved child, but little is known about the long-term risks of suicide after parental death from other causes. A better understanding of this association may improve suicide prevention efforts.

**Objective:** To examine the long-term risks of suicide after parental death and how the risk trajectories differed by cause of parental death while accounting for major potential confounding variables.

**Design, Setting, and Participants:** A population-based matched cohort study was performed using information from nationwide registers (data from 1968 to 2008) in 3 Scandinavian countries (for a total of 7 302 033 persons). We identified 189 094 children (2.6%) who had a parent who died before the child reached 18 years of age (ie, the bereaved cohort). Each bereaved child was matched by sex and age to 10 children who did not have a parent who died before they reached 18 years of age (for a total of 1 890 940 children) (ie, the reference cohort). Both cohorts were followed for up to 40 years. Poisson regression was used to calculate the incidence rate ratio (IRR), while accounting for age at parental death, sex, time since bereavement, maternal/paternal death, birth order, family history of psychiatric illness, and socioeconomic status. Data analyses were finalized June 24, 2015.

**Exposure:** The main exposure was death of a parent within the first 18 years of life.

**Main Outcomes And Measures:** Incidence of suicide among persons who had a parent who died during their childhood.

**Results:** During follow-up, 265 bereaved persons (0.14%) and 1342 non-bereaved persons (0.07%) died of suicide (IRR = 2.02 [95%CI, 1.75-2.34]); IRR = 3.44 (95%CI, 2.61-4.52) for children who had a parent who died of suicide, and IRR = 1.76 (95%CI, 1.49-2.09) for children who had a parent who died of other causes. The IRR tended to be higher for children who had a parent who died before they reached 6 years of age, and the IRR remained high for at least 25 years. During 25 years of follow-up, the absolute risk of suicide was 4 in 1000 persons for boys who experienced parental death and 2 in 1000 persons for girls who experienced parental death.

**Conclusions and Relevance:** Parental death in childhood is, irrespective of cause, associated with an increased long-term risk of suicide. The consequences of parental death in childhood are far-reaching, and suicide risk trajectories may be influenced by early-life conditions. Future public health efforts should consider helping highly distressed children to cope with bereavement.
Main findings: Experiencing the death of a parent can be extremely damaging to children, resulting in mental health problems and suicidality. Research on the long-term effects of parental death is limited, with few studies of sufficient size and follow-up time. This large population-based matched cohort study was therefore conducted with the aim of investigating the long-term suicide risk of parental death and how the risk trajectories differ due to different factors.

Population cohort data was collected from Denmark, Finland and Sweden by linking data from the national registers of these countries. Unique personal identification numbers used in the Nordic countries allows linkage of individual-level data between different registers. Cohort data consisted of persons born in Denmark from 1968 to 2008, Sweden between 1973 and 2006 and a random sample of 89.3% of persons born in Finland from 1987 to 2007. Each of the 189,094 children who were found to have experienced parental death before 18 years of age (i.e., the bereaved cohort) were then matched to 10 children who did not have a parent who died before they reached 18 years of age (1,890,940 in total for the reference cohort). Matching was based upon age at the time of parental death, gender and country of residence. Citizen data was collected from the time of their parent’s death (or equivalent in the reference cohort) until either their own death, emigration from their country or the end of the study (December 31, 2009, in Denmark; December 31, 2008, in Sweden; and December 31, 2010, in Finland). The authors were interested in whether incidence rate ratios (IRRs) varied according to specific suicide risk factors: sex, age at time of parental death, time since parental death, maternal or paternal death, parity, family history of psychiatric illness, socioeconomic status, and parental education level. Based upon the International Classification of Diseases (ICD), cause of death was categorised as either suicides, accidents or other causes.

Overall, 265 (0.14%) bereaved children died by suicide compared to 1342 (0.07%) non-bereaved children in the reference cohort. This equates to an IRR of 2.02 bereaved suicides for every one non-bereaved suicide. Suicide risk remained high for at least 25 years after parental death, with the absolute suicide risk for boys being four in 1000 and for girls, two in 1000. Suicide risk was over three times higher for children who experience parental suicide compared to non-bereaved children. Comparatively, suicide risk for children whose parents died by other causes was 1.76 times greater and for those whose parents died by accident it was 1.89 times higher. The incident rate of suicide was higher for: boys whose mother had died (IRR = 2.52 [95% CI, 1.93-3.27]), children who experienced parental death before reaching six years of age (IRR = 2.83 [95% CI, 2.12-3.78]), and for first-born children (IRR = 2.22 [95% CI, 1.75-2.82]).

Implications: These findings have important public health implications as they highlight the increased suicide risks facing survivors of parental death. This study reinforces the need for mental health services to provide support for children bereaved by parental death, particularly for those whose parents died by suicide.
These findings are consistent with other studies that have investigated the impact of parental death on children\textsuperscript{3,4}. Furthermore, the study’s large sample size and access to precise longitudinal data is unparalleled. However, it is important to note that investigation of the interaction between psychiatric disorders and suicides was challenged due to the rarity of psychiatric disorders in offspring who died by suicide. Furthermore, specific data was limited to particular countries, with data on parent education levels only available for Denmark, and data on socioeconomic status and psychiatric disorders only available for Denmark and Sweden. The underlying causal mechanism for the association between parental death and subsequent suicide risk in offspring remains unclear. However, the findings do suggest that the pathway leading to suicide can have its beginnings in early life experiences, such as the death of a parent.

Endnotes

A novel brief therapy for patients who attempt suicide: A 24-months follow-up randomized controlled study of the Attempted Suicide Short Intervention Program (ASSIP)

Gysin-Maillart A, Schwab S, Soravia L, Megert M, Michel K (Switzerland)

**Background:** Attempted suicide is the main risk factor for suicide and repeated suicide attempts. However, the evidence for follow-up treatments reducing suicidal behavior in these patients is limited. The objective of the present study was to evaluate the efficacy of the Attempted Suicide Short Intervention Program (ASSIP) in reducing suicidal behavior. ASSIP is a novel brief therapy based on a patient-centered model of suicidal behavior, with an emphasis on early therapeutic alliance.

**Methods and Findings:** Patients who had recently attempted suicide were randomly allocated to treatment as usual (n = 60) or treatment as usual plus ASSIP (n = 60). ASSIP participants received three therapy sessions followed by regular contact through personalized letters over 24 months. Participants considered to be at high risk of suicide were included, 63% were diagnosed with an affective disorder, and 50% had a history of prior suicide attempts. Clinical exclusion criteria were habitual self-harm, serious cognitive impairment, and psychotic disorder. Study participants completed a set of psychosocial and clinical questionnaires every 6 months over a 24-month follow-up period. The study represents a real-world clinical setting at an outpatient clinic of a university hospital of psychiatry. The primary outcome measure was repeat suicide attempts during the 24-month follow-up period. Secondary outcome measures were suicidal ideation, depression, and health-care utilization. Furthermore, effects of prior suicide attempts, depression at baseline, diagnosis, and therapeutic alliance on outcome were investigated. During the 24-month follow-up period, five repeat suicide attempts were recorded in the ASSIP group and 41 attempts in the control group. The rates of participants reattempting suicide at least once were 8.3% (n = 5) and 26.7% (n = 16). ASSIP was associated with an approximately 80% reduced risk of participants making at least one repeat suicide attempt (Wald $\chi^2 = 13.1$, 95% CI 12.4-13.7, p < 0.001). ASSIP participants spent 72% fewer days in the hospital during follow-up (ASSIP: 29 d; control group: 105 d; W = 94.5, p = 0.038). Higher scores of patient-rated therapeutic alliance in the ASSIP group were associated with a lower rate of repeat suicide attempts. Prior suicide attempts, depression, and a diagnosis of personality disorder at baseline did not significantly affect outcome. Participants with a diagnosis of borderline personality disorder (n = 20) had more previous suicide attempts and a higher number of reattempts. Key study limitations were missing data and dropout rates. Although both were generally low, they increased during follow-up. At 24 months, the group difference in dropout rate was significant: ASSIP, 7% (n = 4); control, 22% (n = 13). A further limitation is that we do not have detailed information of the co-active follow-up treatment.
apart from participant self-reports every 6 months on the setting and the duration of the co-active treatment.

**Conclusions:** ASSIP, a manual-based brief therapy for patients who have recently attempted suicide, administered in addition to the usual clinical treatment, was efficacious in reducing suicidal behavior in a real-world clinical setting. ASSIP fulfils the need for an easy-to-administer low-cost intervention. Large pragmatic trials will be needed to conclusively establish the efficacy of ASSIP and replicate our findings in other clinical settings.

**Comment**

**Main findings:** Attempted Suicide Short Intervention Program (ASSIP) is a novel brief treatment composed of three 60-90 minute therapy sessions, and follow-up over two years via personalised mailed letters for those who had recently attempted suicide. It is based on a patient-centred model of suicidal behaviour, focusing on early therapeutic alliance. This program includes psychoeducation, cognitive case conceptualisation, safety planning and continued long-term outreach contact. The aim of this randomised control trial was to evaluate the efficacy of the ASSIP in reducing the rate of repeated suicide attempts. The researchers also made comparisons between the groups on suicidal ideation, levels of depression, and how often people were hospitalised. A total of 120 patients were randomly assigned to ASSIP (n=60) or control group (n=60). Treatment as usual (inpatient, day patient and individual outpatient care) continued in both groups. Patients who had habitual self-harm, serious cognitive impairment, psychotic disorder, insufficient fluency of German, and resided outside the hospital catchment area were excluded. There was a 5% dropout rate for ASSIP and a 22% dropout rate for the control group at 12 months. At 24 months, there was a significant difference in dropout rates between groups: 7% and 22%, for ASSIP and the control group respectively. During the 24-month follow-up period, there were five repeat suicide attempts in ASSIP and 41 in the control group. The rates of patients reattempting suicide at least once were 8.3% (n=5) and 26.7% (n=16), respectively. Moreover, ASSIP was associated with an approximately 80% reduced risk of patients making at least one repeat suicide attempt (95% CI 12.4-13.7, p < 0.001). The ASSIP group spent 72% fewer days in the hospital than controls during follow-up (ASSIP: 29 days; control group: 105 days). However, there were no differences between groups in self-reported suicidal ideation or levels of depression.

**Implications:** The results of this study showed that ASSIP significantly reduced suicidal behaviour up to the 24-month follow up in patients who had recently attempted suicide. This treatment was based on a published manual, which, according to the authors is highly structured and easy to adhere to for both therapists and patients. The findings from this study are promising given the real-world clinical setting (a university hospital) and the potential to reduce suicide attempts, deaths from suicide and health-care costs. A limitation of the study was the use of small trials which may have impacted the effect sizes. In addition, meas-
measurements of suicidal ideation and depression were primarily based on self-reports (although the authors attempted to minimise this problem by supplementing the self-reported data with medical records etc). Further testing using large clinical trials is recommended in order to establish the efficacy of ASSIP in reducing suicidal behaviours. These findings may help inform Australia’s suicide prevention programs, and potentially lower the healthcare costs of suicide, which was estimated to be $1.7 billion in 2012¹. Moreover, further investigation into the efficacy and efficiency of programs like ASSIP in treatment settings would be in line with Australia’s mental health reform, by identifying opportunities for better use of services, reducing duplication and removing inefficiencies in the mental health system, and improving post-discharge care for people at high risk of suicide².

**Endnotes**


Exploring synergistic interactions and catalysts in complex interventions: Longitudinal, mixed methods case studies of an Optimised Multi-Level Suicide Prevention Intervention in four European countries (OSPI-Europe)

Harris FM, Maxwell M, O’Connor R, Coyne JC, Arensman E, Coffey C, Koburger N, Gusmão R, Costa S, Szekely A, Cserháti Z, McDaid D, Van Audenhove C, Hegerl U (United Kingdom, Netherlands, Ireland, Germany, Portugal, Hungary, Belgium)

BMC Public Health 16, 1-9, 2016

**Background:** The Medical Research Council (MRC) Framework for complex interventions highlights the need to explore interactions between components of complex interventions, but this has not yet been fully explored within complex, non-pharmacological interventions. This paper draws on the process evaluation data of a suicide prevention programme implemented in four European countries to illustrate the synergistic interactions between intervention levels in a complex programme, and to present our method for exploring these.

**Methods:** A realist evaluation approach informed the process evaluation, which drew on mixed methods, longitudinal case studies. Data collection consisted of 47 semi-structured interviews, 12 focus groups, one workshop, fieldnoted observations of six programme meetings and 20 questionnaires (delivered at six month intervals to each of the four intervention sites). Analysis drew on the framework approach, facilitated by the use of QSR NVivo (v10). Our qualitative approach to exploring synergistic interactions (QuaSIC) also developed a matrix of hypothesised synergies that were explored within one workshop and two waves of data collection.

**Results:** All four implementation countries provided examples of synergistic interactions that added value beyond the sum of individual intervention levels or components in isolation. For instance, the launch ceremony of the public health campaign (a level 3 intervention) in Ireland had an impact on the community-based professional training, increasing uptake and visibility of training for journalists in particular. In turn, this led to increased media reporting of OSPI activities (monitored as part of the public health campaign) and also led to wider dissemination of editorial guidelines for responsible reporting of suicidal acts. Analysis of the total process evaluation dataset also revealed the new phenomenon of the OSPI programme acting as a catalyst for externally generated (and funded) activity that shared the goals of suicide prevention.

**Conclusions:** The QuaSIC approach enabled us to develop and refine our definition of synergistic interactions and add the innovative concept of catalytic effects. This represents a novel approach to the evaluation of complex interventions. By exploring synergies and catalytic interactions related to a complex intervention or programme, we reveal the added value to planned activities and how they might be maximised.
Comment

**Main findings:** Complex suicide prevention strategies consist of multiple components which are thought to interact to produce synergistic outcomes. However, little is known about which of these components are the most effective, or of the synergistic interactions that arise from these interactions. This paper therefore examined the interactions between the components of a multi-level suicide intervention program implemented in Germany, Hungary, Ireland and Portugal (OPSI-Europe). The program consisted of five levels: primary care (e.g., training general practitioners), community-based professionals (e.g., training social workers, teachers); a public health campaign; support for patients and families (e.g., self-help groups and signposting sources of help to those at risk); and reducing access to lethal means (in this case, mostly restricted to the identification of suicide hotspots). Process evaluation data gathered from participating countries was used to explore synergistic interactions between these five levels and to identify any added value that emerged from their interactions. A longitudinal, mixed method case study design was applied to the process evaluation. Four waves of qualitative and quantitative data were collected at six monthly intervals (January 2010 – December 2011). This was comprised of semi-structured interviews (n = 47) and focus groups (n = 12); field notes recorded at six intervention team meetings; and five waves of questionnaires (to track progress of implementation in each country). Quantitative analysis involved charting and summarising data, distilling it into major themes and then developing an analytical matrix where each intervention level was broken down into components. Based on existing evidence of synergistic interactions, hypotheses about further potential synergies were generated and workshopped by experts in each participant country.

Synergistic interactions were evident in all four countries providing added value beyond the sum of OPSI-Europe program’s individual levels. For example, in Germany self-help group participants became volunteers for the program, increasing the visibility of its public awareness campaign through distributing flyers and helping with public events etc. In both Ireland and Germany there was evidence that inviting members of the press to attend public launches of OSPI-Europe activities developed media interest prior to the launch which in turn enhanced subsequent press coverage. Analysis also revealed that the program acted as a catalyst for externally generated activities that shared the goals of suicide prevention (referred to as catalytic interactions). For example, in Portugal, initiating suicide prevention training and rolling out a public awareness campaign resulted in complimentary activities being developed by professionals with a shared interest in suicide prevention.

**Implications:** These findings have important implications for maximising the effectiveness of suicide prevention initiatives. It is important that multi-level suicide initiatives are structured in a way that maximises both synergistic and catalytic interactions. For example, these initiatives should approach and engage with service user groups and local volunteers where possible, and co-ordinate activities
to maximise impact. Public launches of initiatives should also be close to the actual delivery of suicide prevention training in order to maximise the potential synergies between media reporting, take-up of public awareness messages and recruitment for training. Adopting a complex suicide intervention program similar to the OPSI-Europe program could aid the Australian government in its goal to better integrate mental health services, particularly at the regional level. This study had several limitations. It did not measure the intervention’s actual impact on suicidal behaviours, limiting the conclusions one can draw regarding its effectiveness. The study did not take into account pre-existing health programs that might have already generated the conditions for synergy. Finally, the study did not consider the possibility of aversive consequences arising from multiple interactions which could reduce their overall effectiveness due to being ‘crowded out’ by other factors.

Endnotes
Interventions for self-harm in children and adolescents
Cochrane Database of Systematic Reviews 12, CD012013, 2015

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

**Objectives:** To identify all randomised controlled trials of psychosocial interventions, pharmacological agents, or natural products for SH in children and adolescents, and to conduct meta-analyses (where possible) to compare the effects of specific treatments with comparison types of treatment (e.g. treatment as usual (TAU), placebo, or alternative pharmacological treatment) for children and adolescents who SH.

**Search Methods:** For this update the Cochrane Depression, Anxiety and Neurosis Group (CCDAN) Trials Search Co-ordinator searched the CCDAN Specialised Register (30 January 2015).

**Selection Criteria:** We included randomised controlled trials comparing psychosocial or pharmacological treatments with treatment as usual, alternative treatments, or placebo or alternative pharmacological treatment in children and adolescents (up to 18 years of age) with a recent (within six months) episode of SH resulting in presentation to clinical services.

**Data Collection and Analysis:** Two reviewers independently selected trials, extracted data, and appraised study quality, with consensus. For binary outcomes, we calculated odds ratios (OR) and their 95% confidence intervals (CI). For continuous outcomes measured using the same scale we calculated the mean difference (MD) and 95% CI; for those measured using different scales we calculated the standard mean difference (SMD) and 95% CI. Meta-analysis was only possible for two interventions: dialectical behaviour therapy for adolescents and group-based psychotherapy. For these analyses, we pooled data using a random-effects model.

**Main Results:** We included 11 trials, with a total of 1,126 participants. The majority of participants were female (mean = 80.6% in 10 trials reporting gender). All trials were of psychosocial interventions; there were none of pharmacological treatments. With the exception of dialectical behaviour therapy for adolescents (DBT-A) and group-based therapy, assessments of specific interventions were based on single trials. We downgraded the quality of evidence owing to risk of bias or imprecision for many outcomes. Therapeutic assessment appeared to increase
adherence with subsequent treatment compared with TAU (i.e. standard assessment; \(n = 70; k = 1\); OR = 5.12, 95% CI 1.70 to 15.39), but this had no apparent impact on repetition of SH at either 12 (\(n = 69; k = 1\); OR 0.75, 95% CI 0.18 to 3.06; GRADE: low quality) or 24 months (\(n = 69; k = 1\); OR = 0.69, 95% CI 0.23 to 2.14; GRADE: low quality evidence). These results are based on a single cluster randomised trial, which may overestimate the effectiveness of the intervention. For patients with multiple episodes of SH or emerging personality problems, mentalisation therapy was associated with fewer adolescents scoring above the cut-off for repetition of SH based on the Risk-Taking and Self-Harm Inventory 12 months post-intervention (\(n = 71; k = 1\); OR = 0.26, 95% CI 0.09 to 0.78; GRADE: moderate quality). DBT-A was not associated with a reduction in the proportion of adolescents repeating SH when compared to either TAU or enhanced usual care (\(n = 104; k = 2\); OR 0.72, 95% CI 0.12 to 4.40; GRADE: low quality). In the latter trial, however, the authors reported a significantly greater reduction over time in frequency of repeated SH in adolescents in the DBT condition, in whom there were also significantly greater reductions in depression, hopelessness, and suicidal ideation. We found no significant treatment effects for group-based therapy on repetition of SH for individuals with multiple episodes of SH at either the six (\(n = 430; k = 2\); OR 1.72, 95% CI 0.56 to 5.24; GRADE: low quality) or 12 month (\(n = 490; k = 3\); OR 0.80, 95% CI 0.22 to 2.97; GRADE: low quality) assessments, although considerable heterogeneity was associated with both (I(2) = 65% and 77% respectively). We also found no significant differences between the following treatments and TAU in terms of reduced repetition of SH: compliance enhancement (three month follow-up assessment: \(n = 63; k = 1\); OR = 0.67, 95% CI 0.15 to 3.08; GRADE: very low quality), CBT-based psychotherapy (six month follow-up assessment: \(n = 39; k = 1\); OR = 1.88, 95% CI 0.30 to 11.73; GRADE: very low quality), home-based family intervention (six month follow-up assessment: \(n = 149; k = 1\); OR = 1.02, 95% CI 0.41 to 2.51; GRADE: low quality), and provision of an emergency card (12 month follow-up assessment: \(n = 105, k = 1\); OR = 0.50, 95% CI 0.12 to 2.04; GRADE: very low quality). No data on adverse effects, other than the planned outcomes relating to suicidal behaviour, were reported.

Authors’ Conclusions: There are relatively few trials of interventions for children and adolescents who have engaged in SH, and only single trials contributed to all but two comparisons in this review. The quality of evidence according to GRADE criteria was mostly very low. There is little support for the effectiveness of group-based psychotherapy for adolescents with multiple episodes of SH based on the results of three trials, the evidence from which was of very low quality according to GRADE criteria. Results for therapeutic assessment, mentalisation, and dialectical behaviour therapy indicated that these approaches warrant further evaluation. Despite the scale of the problem of SH in children and adolescents there is a paucity of evidence of effective interventions. Further large-scale trials, with a range of outcome measures including adverse events, and investigation of therapeutic mechanisms underpinning these interventions,
Comment

Main findings: It is concerning that children and adolescents suffer from high rates of self-harm, which is strongly linked to risk of future suicide. This paper was one of three systematic reviews evaluating the effectiveness of self-harm interventions for children and adolescents. Randomised control trials (RCTs) testing the efficacy of psychosocial and pharmacological treatments were reviewed and where possible, meta-analyses were conducted to compare the effects of specific treatments for children and adolescents who self-harm. A total of 11 RCTs comprised of 1,126 participants were included in the systematic review. Participants were children and adolescents up to 18 years of age whom had recently (within six months) self-harmed resulting in presentation to clinical services. Of the 10 trials that recorded gender, the majority of participants (80.6%) were female, which reflects the typical gender proportions of self-harm in children and adolescents. Measures of treatment effectiveness included self-harm repetition, suicide, depression, hopelessness, treatment adherence, suicidal ideation and problem solving. All trials in the review were of psychosocial interventions; none of the trials evaluated pharmacological treatments. RCTs were included where they compared psychosocial treatments to treatment as usual, alternative treatments or placebo. Results showed that only one therapeutic approach had a significant impact on episodes of self-harm. Mentalisation therapy for patients with multiple self-harm episodes or emerging personality problems, led to fewer self-harm repetitions in the three months leading up to 12 months post-intervention. Mentalisation is a therapy that aims to improve patients’ ability to empathise with others through developing an understanding of their own behaviour, as well as better regulating their emotions. Although there was some suggestion of beneficial effects of dialectical behaviour therapy (DBT) for adolescents, the evidence was regarded as ambiguous. Similarly, therapeutic assessment appeared to increase adherence with subsequent treatment, but had no apparent effect on repetition of self-harm.

Implications: Mentalisation was the only therapeutic intervention found to be associated with a reduction in the frequency of repetition of self-harm in children and adolescents. It should be noted however, that the effect was modest and the trial was small, thus limiting the ability to make any firm conclusions about the effectiveness of this approach. Nevertheless, given that mentalisation, DBT and therapeutic assessment showed some promise, the authors recommend that these interventions warrant further evaluation. Limitations of the study include relatively small sized trials and potential bias (as it is generally not possible to blind patients or clinicians for psychological interventions). In addition, independent reviewers rated the RCTs to be low in quality overall. The lack of eligible pharma-
ecological RCTs meant the effectiveness of these treatments could not be gauged. The authors note that there are surprisingly few trials examining this population given the significant problem of self-harm in children and adolescents worldwide. These results highlight the need for further investigation into psychosocial and pharmacological interventions for self-harm in children and adolescents. Given the extent of self-harming behaviour in children and adolescents, greater attention should be paid to the development and evaluation of specific therapies for this population. This is particularly important given the elevated suicide risk young people already face.

Endnotes


Childhood predictors of lifetime suicide attempts and non-suicidal self-injury in depressed adults

Johnstone JM, Carter JD, Luty SE, Mulder RT, Frampton CM, Joyce PR (United States, New Zealand)

Australian and New Zealand Journal of Psychiatry 50, 135-144, 2016

Objective: Adverse childhood experiences are well-recognized risk factors for a variety of mental health issues, including depression, suicide attempts and non-suicidal self-injury. However, less is known about whether childhood adversity, in the form of low parental care, overprotection and abuse, is associated with suicide attempt and non-suicidal self-injury within a sample of depressed adults.

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

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

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

Comment

Main findings: Childhood adversity is a risk factor for developing depression and other mental health problems in adulthood. In this study the authors investigated the link between childhood adversity and suicide attempts (SA) and non-suicidal self-injury (NSSI) in people with depression. Childhood adversity was examined in three categories: low parental care, overprotection and abuse (psychological, sexual and physical). The authors were interested in the significance of these risk factors
in predicting SA and NSSI. Participants were recruited by inviting clinically depressed outpatients to participate in two consecutive clinical studies investigating the effectiveness of medication and psychotherapy for depression. Between the two trials there were 372 participants (133 males and 239 females). In this study the authors were not interested in the clinical trials outcomes regarding the effectiveness of medication and psychotherapy (the results of which were published separately); rather, the clinical trials were used by the authors to collect pre-trial measures of depression (age of onset, score on depression scale), maternal and paternal care, overprotection, childhood abuse (psychological, physical and sexual), lifetime SA and NSSI and demographics.

Univariate analyses found participant age, age of depression onset, score on depression scale, level of maternal care, level of paternal care, maternal protection, abuse, and child sexual abuse (CSA) to be significantly associated with SA. When controlling for related variables, only maternal care, age of depression onset and score on depression scale were associated with SA. In total, these three variables helped explain 11-16% of the variance in SA. Maternal care was the only childhood adversity variable to independently predict SA. Participants who reported low maternal care were 2.3 times more likely to have attempted suicide than those who reported high maternal care. Results also showed that participant age, age of depression onset, paternal care, and abuse were associated with NSSI. However, when controlling for related variables, only age of depression onset and level of paternal care were associated with NSSI. Participants reporting low scores in paternal care (i.e., parental neglect) were 2.7 times more likely to engage in NSSI than those reporting high parental care.

**Implications:** These findings align with previous research establishing a link between poor parental care and SA and NSSI\(^1\). They reinforce the negative impact that insecure parental attachment and disruptive family environments can have on one’s emotional well-being over the lifetime\(^2\)\(^-\)\(^4\). Interestingly, contrary to previous research, abuse was not found to be independently associated with SA or NSSI. A possible explanation is that because childhood abuse usually occurs in neglectful parental care environments\(^5\), the impact of the abuse on SA and NSSI may be simply overshadowed by the poor parental care received by the child. This paper was not without its limitations. The cross-sectional design limits the ability to infer causality, and the use of retrospective measures is problematic as they may be subject to memory bias and potential reporting bias. These findings highlight the relationship between low parental care (characterised by emotional neglect) and increased risk of SA and NSSI in adults with depression. It is important that children’s services are aware of children who are at risk of parental neglect and ensure that they provide early support to families and conduct interventions where necessary. The Queensland Suicide Prevention Action Plan recommends the use of mobile outreach, extended hours of service delivery and school-based emotional and social learning programs that focus on building supportive environments and providing interventions to those who need them\(^6\). These strategies could greatly assist in preventing or limiting the negative effect of poor parental care.
Endnotes


Adolescent suicide rates between 1990 and 2009: Analysis of age group 15-19 years worldwide
Kõlves, K, De Leo, D (Australia)
Journal of Adolescent Health, 58, 69-77

**Purpose:** The aim of the current analysis is to analyze suicide rates in adolescents aged 15-19 years in decades between 1990 and 2009 worldwide.

**Methods:** Suicide data were obtained from the World Health Organization Mortality Database and population data from the World Bank Data set. In total, 81 countries or territories, having data at least for 5 years in 1990-1999 and in 2000-2009, were included in the analysis. Additional analysis for regional trends with 57 countries was performed.

**Results:** Over the decades considered, analysis showed a declining trend in the overall suicide rate for males from 10.30 to 9.51 per 100,000 (p = .076), and for females from 4.39 to 4.18 (p = .472). The average suicide rate showed a significant decline for both genders in Europe, dropping from 13.13 to 10.93 (p = .001) in males and from 3.88 to 3.34 in females (p = .038). There was a significant increase in South American countries for males, from 7.36 to 11.47 (p = .016), and a close to significant rise for females, from 5.59 to 7.98 (p = .053). Although other world regions did not show significant trends, there were several significant changes at country level.

**Conclusions:** Reasons behind the decrease in Western countries could potentially be related to the overall improvements in global health; the possible contribution of suicide prevention activities remains unclear. Increases in several South American countries might be related to economic recession and its impact on adolescents from diverse cultural backgrounds, and partly also to improvements in mortality registration.

**Comment**

**Main findings:** Given that suicide rates have been shown to be high in the 15-19 year age group in some countries, the aim of this study was to analyse suicide rates in adolescents aged 15-19 years worldwide in the last two decades, 1990-1999 and 2000-2009. Suicide data were obtained from the World Health Organization Mortality Database and population data obtained from the World Bank dataset. A total of 81 countries or territories with available data at least for 5 years from 1990-1999 and from 2000-2009 were included in the analyses. Additional analyses were also conducted for regional trends for 57 countries. Results showed that average suicide rates of youth aged 15-19 years in 81 countries declined for both genders in these two decades. Globally, the average suicide rate for males dropped from 10.32 to 9.50 (per 100,000) (close to significance level: p = .066) and remained steady for females from 4.41 to 4.19 (per 100,000). Significant changes were detected in a number of countries. In Europe, the average suicide rate showed a significant decline for both genders, dropping from 13.13 to 10.93 (per
There was a significant increase in South American countries for males, from 7.36 to 11.47 (per 100,000) (p=.016), and a close to significant rise for females, (5.59 to 7.98 per 100,000) (p=.053). In Northern America, there was a significant decrease in suicide rates for males (16.13 to 11.81 per 100,000) (p<.001) and females (3.31 to 2.82 per 100,000) (p<.001) in the United States. Moreover, in Canada a significant drop was observed for males from 19.56 to 13.32 (per 100,000) (p<.001) but not for females. In Australia there was a significant decline in suicides for males 15-19 years (16.79 to 11.10 per 100,000) (p<.001), while rates were stable for females (4.12 to 4.17 per 100,000). There was also a decline for males in New Zealand (28.23 to 22.38 per 100,000)(p<.001), and a nonsignificant decline for females (9.71 to 9.55 per 100,000).

**Implications:** It is important to acknowledge that a key limitation of this study is the availability of data. Although western countries (e.g., Europe and America) are well covered, there is limited data available from African and Asian countries, especially heavily populated countries such as India and China. The WHO estimates high suicide rates in India and some African countries; however, most African countries have no official registration of suicide mortality, and estimates for India and China are based on population samples. The prevalence of suicide is also likely to be underestimated due to misclassification and under-reporting. Nevertheless, monitoring youth suicide is important as it can help inform future suicide prevention strategies. This worldwide analysis provides a snapshot of adolescent suicide trends and serves as a guideline for future investigations. Of interest, are Australia and New Zealand’s suicide rates, which showed a significant decline throughout the study for males. For females, a significant upward trend was observed until 1998, followed by nonsignificant decline up to 2009. Australia’s suicide prevention youth position statement was last updated in 2010. The observed declining trends for both genders in the latter years may reflect the effectiveness of suicide prevention initiatives, thus it is important to further develop, evaluate and improve these initiatives for adolescents in Australia.
Ten years of suicide mortality in Australia: Socio-economic and psychiatric factors in Queensland
Kõlves K, Potts B, De Leo D (Australia)
Journal of Forensic and Legal Medicine 36, 136-143, 2015

**Background:** With the exception of the United States, in recent years suicide rates have been declining in most western countries. Notoriously, suicide rates fluctuate – especially in males – in response to a range of socio-political and environmental factors, some of them difficult to identify. Our aim was to obtain an updated profile of main commonalities in suicide cases of Queensland residents between 2002 and 2011 to inform prevention strategies.

**Methods:** Data were obtained from the Queensland Suicide Register (QSR), including police and toxicology reports, post-mortem autopsy and Coroner’s findings. Data are crosschecked with records from the National Coronial Information System. Age-standardised rates (ASR) of suicide, Poisson regression and Chi² tests are presented.

**Results:** A total of 5,752 suicides by Queensland residents was registered between 2002 and 2011; 76.9% by males and 23.1% by females. The average ASR was 14.3 per 100,000, with a significant decrease between 2002 and 2011. Rates declined significantly in males, not in females. On average, rates were 3.41-times higher in males. ASR for Aboriginal and Torres Strait Islander peoples was significantly higher than for other Australians. Overall, male suicide rates were particularly high in remote areas, as well as in the most disadvantaged ones. One third of suicide cases presented history of previous suicidal behaviour, and half a detected and treated mental disorder. Hanging was the most common method.

**Conclusions:** Suicide rates have declined in Queensland, Australia. It is problematic to say if this was due to suicide prevention programs or other factors.

**Comment**

**Main findings:** A recent World Health Organization (WHO) report found that suicide rates have declined in most western countries except for the Unites States. The report recommended that in order to continuously improve suicide prevention programs for communities and countries, it is imperative to improve data quality to ensure effectiveness evaluation of interventions. The aim of this study was to analyse recent suicide trends to inform suicide prevention planning in Queensland. Suicide trends were analysed by age and gender, and in vulnerable populations. Socio-demographic characteristics, psychiatric characteristics, life events and physical health of people who died by suicide in Queensland were explored. Data over a 10-year period (2002-2011) was collated from the Queensland Suicide Register (QSR).

Between 2002 and 2011, a total of 5,752 people died by suicide. The average ASR for this period was 14.3 suicides per 100,000. A significant decrease in the ASRs was observed from 2002 to 2011. Male suicides decreased significantly from 2002
to 2011 (25.5 to 19.5), while females suicides remained relatively stable during the same period (6.8 to 7.2). Suicide rates for males were significantly higher than female suicide rates, being 3.41 times more likely to die by suicide (95%CI 3.21-3.62). Both genders had the highest suicide rates in the 35-44 years age group and the lowest suicide rates in the below 15 years age group. The ASR rate for Aboriginal and Torres Strait Islander peoples was significantly higher than for other Australians (20.5 and 13.3 per 100,000 respectively). Suicide rates increased with remoteness (i.e., metropolitan, regional and remote areas). For males rates increased from 18.6, 23.9 and 33.6 (per 100,000), respectively. Similarly for females suicide rates increased with remoteness from 6.8, 7.4 and 12.0 (per 100,000). The highest suicide rates were in the most disadvantaged areas (in terms of relative socioeconomic disadvantage, economic resources, education and occupation) and the lowest in the most advantaged areas; this was significant for both genders, with differences most noticeable in males.

Overall, hanging was the most frequent method (45.1%), followed by drug poisoning (16.3%), carbon monoxide poisoning (11.4%), firearms and explosives (8.9%) and jumping from height (3.4%). Furthermore, 49.2% of all people who died by suicide suffered from at least one psychiatric disorder. Unipolar depression was the most frequent psychiatric diagnosis (34.7%), followed by psychotic disorders (6.8%), substance use disorders (5.4%), anxiety disorders (4.9%) and bipolar disorders (4.5%). Almost half of the people (49%) who died by suicide during this period were observed to have received psychiatric treatment, while almost one-third (27.4%) had consulted a health professional with regards to their mental health in the three months previous to suicide. Physical illness was reported in 34.9% of people who died by suicide. Regarding life events, relationship separation was reported in 22.6% of those who died by suicide. This was followed by financial problems (12.7%), bereavement (10.4%), pending legal matters (8.9%), recent/pending unemployment (7.4%), and work/school related problems (6.9%).

**Implications:** Despite the QSR being a comprehensive suicide mortality database, several limitations may affect the accuracy of these results. The information in the QSR is gathered from various sources (e.g., police, Coroners, next-of-kins, autopsy reports and toxicology reports) and the accuracy of information provided depends on the quality of investigation into the possible suicide cases. Thus, some information that may have been relevant to the person’s death may be unrecorded. The findings from this study indicate an overall decline in suicide rates in Queensland, particularly for males over the time period 2002-2011, in line with the WHO (2014) report. It remains unclear if higher suicide rates in Aboriginal and Torres Strait Islander people are related to cultural, social, political or environmental factors. There is no clear understanding how Aboriginal and Torres Strait Islander people define, describe or understand mental health problems or how they would correlate with Western concepts and diagnoses. It is therefore important for suicide prevention researchers to gain a better understanding of Aboriginal and
Torres Strait Islander concepts of mental health and suicide to inform culturally appropriate suicide prevention measures. Despite the decline in rates, it is important to continue to improve suicide prevention initiatives and stay updated with key risk factors for suicide. In Queensland, those at risk have socio-economic disadvantage, poor resources, poor education and poor occupations. Moreover, men with relationship separations are at high risk, and should also be targeted for prevention programs. Thus, a range of approaches, rather than a single approach is necessary for prevention. In a recent mental health review, the Australian Government highlighted existing inefficiencies in the current system, stating that we often wait too long to intervene and offer services, and employ a one size fits all approach which does not cater to individuals' needs. Similarly, the Queensland Suicide Prevention Action Plan 2015-17 also prioritises support for vulnerable groups (i.e., those who are experiencing higher rates and at greater risk of suicide). The authors of this paper concluded that reduction of suicide rates could be achievable with the coordination of the health sector with other key-sectors such as education, employment, social welfare and the judiciary.

Endnote

Allergies and suicidal behaviors: A systematic literature review
Kõlves K, Barker E, De Leo D (Australia)
Allergy and Asthma Proceedings 36, 433-438, 2015

**Background:** Allergies are among the most common chronic conditions. In addition to physical and social impacts, a number of studies have consistently linked allergies to poor psychological outcomes, including depression and anxiety.

**Objectives:** The aim of the present systematic literature review was to analyze the existing literature about the relationship between allergies and fatal and nonfatal suicidal behaviors.

**Methods:** Data sources include articles retrieved from Scopus, PubMed, ProQuest, and Web of Knowledge. Search terms: "suicid* and (allerg* or hay fever or atop* or eczema or aeroallergen*)" in English-language peer-reviewed journals between 1990 and 2014.

**Eligibility Criteria:** Original research articles that provide empiric evidence about the potential link between allergies and suicidal behaviors.

**Results:** The initial search identified a total of 769 articles with 17 original research articles that present empiric evidence. Nine articles analyzed the relationship between allergies and fatal suicidal behavior, and nine analyzed nonfatal suicidal behaviors (one article included both). There currently is little research into the relationship between allergies and suicidal behavior.

**Limitations:** The review was restricted to English-language articles published within the chosen time period; other limitations included the small number of articles that involve suicide mortality, and the fact that the majority of articles originated from the United States and Scandinavia.

**Conclusions:** Analysis of the results indicates a link between allergies and suicide, particularly suicide mortality; however, results for nonfatal suicidal behaviors are mixed. It is important that further research by using more rigorous study designs be carried out to lend strength to these findings.

**Comment**

**Main findings:** Allergies are associated with various physical effects, as well as other consequences such as reduced cognitive ability, work/school performance, increased daytime sleepiness, impoverished quality of life, and poor psychological outcomes, including major depression and anxiety. The most common conditions in Western countries are allergic rhinitis (AR), asthma, and atopic dermatitis (AD). This systematic literature review aimed to investigate whether there is an association between allergies and fatal and nonfatal suicidal behaviours. A total of 17 original research articles on suicidal behaviours were identified. One article included self-harm as well as fatal suicidal behaviour, nine articles focused on the relationship between allergies and fatal suicidal behaviour, and the remaining nine articles focused on nonfatal suicidal behaviour (five measured suicide
There is mixed evidence for an association between fatal suicidal behaviours and allergies. Some studies found an association between suicide rates and peak pollen periods, however this became non-significant when controlling for psychosocial factors and other potential confounding factors (urban or rural location, income, psychiatrists in area)\(^1\). Another study found an increase relative risk of suicide during pollen increases, even when controlling for other factors\(^2\). A significant gender difference was also found, where males responded immediately to small increases in pollen counts, while females responded gradually, in line with increasing pollen counts. Another study found that as prescriptions for intranasal corticosteroids increased, suicide rates declined. This association also remained significant when antidepressant use was controlled for. However, the authors suggest that prescription rates of nonsedating antihistamines may indicate higher prevalence of allergies in the community, but have little association with suicide. Two articles found associations between hospital related atopic disorders (AD, AR, and asthma) and suicide. Those who were treated for atopic disorder died significantly more often during the first half of the year than the second half; and AR was found to predict suicide in patients who had received inpatient treatment for their allergy and those who had AR in combination with bronchial asthma. Other studies investigating AR found an association between AR and increased risk of suicide at a 12 year follow up in young people aged 11-15 years; however this relationship was attenuated after controlling for current and previous asthma, and smoking. Another study found no evidence for an association between atopy without asthma, eczema-urticaria only, or hay fever only, and suicide. However, individuals with combination of eczema-urticaria and hay fever showed a higher risk of suicide, and this remained significant after adjusting for demographic variables and current smoking. A further study found that persons with eczema were more likely to die by suicide than those without, and this was significant while controlling for demographic variables.

The evidence for the association between nonfatal suicidal behaviour and allergies is mixed, such that significant increases in suicidal ideation were found in adults and adolescents with AD. In contrast, three studies did not support the association between AR and nonfatal suicidal behaviours, and only one study each among children and adults supported an association with ideation but not suicide attempts. Several studies also found gender differences in the association such that allergies were associated with increased depression in women but not men, or that there was a higher prevalence of suicidal ideation in women compared to men. Although one study found an association with suicidal ideation in patients with AD and various other skin conditions, they did not have a comparison or control group\(^3\).

**Implications:** This systematic review highlighted the lack of research into the association between allergies and suicidal behaviour. Most studies did not control for psychosocial factors which may have affected the results, and those that did control for these factors found mixed results. Reasons for the potential link
between allergies and suicidal behaviours are still poorly understood. The findings presented should be interpreted with caution due to the small number of studies and the restriction to only English-language articles. A number of articles employed ecological designs or cross-sectional designs which do not allow inferences of causality, and relied on self-reported data which may hinder the accuracy and reliability of these results. Moreover, the majority of studies were conducted in North America and Scandinavia, and therefore differences in climates, seasonal conditions and the prevalence of allergies may not be transferable to Australia. Future research should aim to explore the association between allergies and suicide more thoroughly by controlling for psychosocial and demographic variables, and severity of allergies. The results would help inform future suicide prevention strategies to support those at risk.

Endnotes


Serotonergic medication enhances the association between suicide and sunshine


Journal of Affective Disorders 189, 276-281, 2015

Background: An association between suicide and sunshine has been reported. The effect of sunshine on hormones and neurotransmitters such as serotonin has been hypothesized to exert a possible triggering effect on susceptible individuals. The aim of this study is to examine if there is an association between sunshine and suicide, adjusting for season, and if such an association differs between individuals on different antidepressants.

Methods: By using Swedish Registers and the Swedish Meteorological and Hydrological Institute we obtained information, including forensic data on antidepressive medication for 12,448 suicides and data on monthly sunshine duration. The association between monthly suicide and sunshine hours was examined with Poisson regression analyses while stratifying for sex and age and controlling for time trend and season. These analyses were repeated in different groups of antidepressant treatment.

Results: We found a significantly increased suicide risk with increasing sunshine in both men and women. This finding disappeared when we adjusted for season. Among both men and women treated with selective serotonin reuptake inhibitors (SSRIs) there was a positive association between sunshine and suicide even after adjustment for season and time trend for suicide. Pair comparisons showed that the sunshine-suicide association was stronger among men treated with SSRIs compared to other antidepressant medications or no medication at all.

Limitations: Other meteorological factors were not controlled (i.e. temperature) for in the analyses.

Conclusions: There is an enhanced association between sunshine and suicide among those with SSRI medication, even after adjusting for season. This may have interesting theoretical and clinical implications.

Comment

Main findings: The aim of this study was to investigate the relationship between sunshine and suicide, controlling for season, and whether this relationship differs for those on different antidepressants (selective serotonin reuptake inhibitors (SSRIs) or other antidepressants). It was hypothesized that sunlight and serotonergic medication act upon the same neurobiological system, and may have an amplifying effect, thus leading to an increased risk for suicide in vulnerable individuals. Monthly data was obtained from the Swedish Cause of Death Register and The Swedish Meteorological and Hydrological Institute between 1992-2003. For counties which no sunshine data was obtained, the average number of sunshine hours form neighbouring counties were used instead. Suicides with toxic levels of
antidepressants were excluded from the analyses since it would be difficult to ascertain whether these patients were adhering to prescribed treatment. A total of 12,448 suicides (72.4% male, 27.6% female) with information about blood levels of antidepressants, month of death and gender were identified. For males, 8.7% screened positive for any SSRI, compared to 13.3% of females. Moreover, 7.2% of males and 14.6% of females were positive for another antidepressant. In addition, 81.7% of males and 69.1% of females were not positive for any antidepressant drug. An increase by one hour of sunshine a day was significantly associated with an increase of average monthly number of suicides by in men (1.6%) and women (1.2%). However, this association disappeared after adjusting for season. Meanwhile for those treated with SSRIs, a significant association was found between sunshine and suicide even after adjusting for season and time trend for suicide. That is, an increase by one hour of sunshine a day was significantly associated with an increase of average monthly number of suicides by men (5.4%) and women (3.1%). This association was largely driven by the age group of 65 years and older, which presented monthly increases of 10.4% in men and 4.75% in women. No association was observed between sunshine and suicide for those treated with other antidepressants.

**Implications:** This study showed that there is an association between sunshine duration and suicide, although this association is attenuated when controlling for season. However, for those treated with SSRI antidepressants, the association between sunshine duration and suicide remains significant, even when adjusting for age, and especially among older adults aged 65 and over. The authors postulated that in the short-term, increased sunshine and treatment with SSRIs may further reduce serotonin transporter binding capacity, which could foster impulsivity or anxiety in some individuals who might be prone to suicidal behaviour. However the generalisability of these findings are limited to only those who adhered to prescribed antidepressant treatment, since those with toxic levels of antidepressants were excluded. A limitation of this study is that other meteorological variables (e.g., temperature) or other factors such as ethnicity were not available for analyses, which may have contributed to the associations observed. Moreover, this study was of an observational design, therefore causality cannot be inferred. Although a previous meta-analysis found no significant association between sunshine and monthly suicide when controlling for seasonality in Australia, Greece and Norway, future research should aim to investigate this association using a case-control design including variables such as antidepressant treatment, psychiatric disorders, demographic variables, and temperature, as this would help inform our future mental health programmes and services. The results of such research in Australia may have clinical implications in terms of identifying and monitoring individuals who could potentially be at risk (e.g., those being treated with SSRIs who are older and living in areas experiencing prolonged sunshine). This would be in line with the Australian Government’s response to the current mental health programmes and services, to provide effective early intervention and shifting the balance to provide the right care when it is needed.
Endnotes


Direct versus indirect psychosocial and behavioural interventions to prevent suicide and suicide attempts: A systematic review and meta-analysis

Meerwijk EL, Parekh A, Oquendo MA, Allen IE, Franck LS, Lee KA

Lancet Psychiatry 3, 544-554, 2016

Background: Psychosocial and behavioural interventions that address suicidal thoughts and behaviour during treatment (direct interventions) might be more effective in preventing suicide and suicide attempts than indirect interventions that address symptoms associated with suicidal behaviour only (eg, hopelessness, depression, anxiety, quality of life). To test this hypothesis, we did a systematic review and meta-analysis of psychosocial and behavioural interventions aimed at preventing suicide and suicide attempts.

Methods: For this systematic review and meta-analysis, we searched MEDLINE and PsycINFO from inception to Dec 25, 2015, for randomised controlled trials that reported suicides or suicide attempts as an outcome, irrespective of participants’ diagnoses or the publication language. We excluded studies with pharmacological or device-based interventions, those that targeted communities or clinicians, primary prevention trials, and trials that reported events of non-suicidal self-injury as suicide attempts. Trials that had no suicides or suicide attempts in both groups were also excluded. Data were extracted by one investigator and independently verified by a second investigator. We used random-effects models of the odds ratio (OR) based on a pooled measure of suicides and the number of individuals who attempted suicide, immediately post-treatment and at longer-term follow-up.

Findings: Of 2024 unique abstracts screened, 53 articles met eligibility criteria and reported on 44 studies; 31 studies provided post-treatment data with 6658 intervention group participants and 6711 control group participants at baseline, and 29 studies provided follow-up data. The post-treatment difference between direct interventions and indirect interventions did not reach statistical significance at the 0.05 level (OR 0.62 [95% CI 0.45-0.87] vs 0.93 [0.77-1.12], p=0.06) and represented a large effect size (Cohen’s d=0.77). At longer-term follow-up, the difference was not significant (OR 0.65 [0.46-0.91] vs 0.82 [0.70-0.96], p=0.25) but still represented a medium effect size (Cohen’s d=0.47). These effect sizes emphasise the clinical importance of direct interventions. Post-hoc subgroup and sensitivity analyses showed that our results are robust and unlikely to be notably affected by between-study heterogeneity or publication bias.

Interpretation: Psychosocial and behavioural interventions that directly address suicidal thoughts and behaviour are effective immediately post-treatment and long term, whereas treatments indirectly addressing these components are only effective long term. Moreover, although the differences shown between direct and indirect strategies were non-significant, the difference in favour of direct interventions represented a large post-treatment improvement and medium improve-
ment at longer-term follow-up. On the basis of these findings, clinicians working with patients at risk of suicide should address suicidal thoughts and behaviours with the patient directly. Although direct interventions are effective, they are not sufficient, and additional efforts are needed to further reduce death by suicide and suicide attempts. Continued patient contact might be necessary to retain long-term effectiveness.

Comment

**Main findings:** Suicide interventions are classified as either direct or indirect interventions, with direct interventions directly targeting a person’s suicidal ideation and behaviours, and indirect interventions targeting the symptoms associated with suicide (e.g., hopelessness, depression, anxiety) but not the suicidality itself. Whilst direct interventions have been posited as more effective than indirect interventions\(^1\), to date no meta-analyses or studies have tested this assertion. In order to examine this issue, the authors conducted a systematic review and meta-analysis of psychosocial and behavioural interventions to prevent suicide and suicide attempts. The MEDLINE and PsycINFO databases were used to conduct literature searches for randomised controlled trials (RCTs), with RCTs being included if they reported suicides or suicide attempts as outcome variables for direct or indirect interventions. RCTs of pharmacological interventions, interventions that used devices, interventions that targeted communities or clinicians, and primary prevention were excluded. RCTs with a control group with no form of treatment were also excluded.

Forty-four eligible RCTs were identified, with 31 including post-treatment data (mean treatment duration being 11.3 months) and 29 including follow-up data (the mean follow-up duration being 13.6 months post-treatment). A significant proportion of RCTs investigated the effectiveness of direct interventions based on dialectical or cognitive behaviour therapy. Direct interventions were shown to significantly reduce the likelihood of suicidality at post-treatment compared to control groups (OR = 0.62, 95% CI: 0.45–0.87). However, for indirect interventions there was no significant post-treatment reduction in suicidality (OR = 0.93, 95% CI: 0.77–1.12). Whilst there was no effect of indirect interventions overall, in isolation active outreach treatments (e.g., telephone calls, home visits) had a significant preventative effect at post-treatment compared to control groups (OR = 0.75, 95% CI: 0.57–0.99). At post-treatment there was no significant difference between direct and indirect interventions (OR = 0.62 vs 0.93; *p*=0.06). For studies including follow-up data both direct interventions (OR = 0.65, 95% CI: 0.46–0.91) and indirect interventions (OR = 0.82, 95% CI: 0.70–0.96) were shown to significantly lower the likelihood of suicidality in participants compared to controls. However, in isolation, for indirect interventions only active outreach treatments were effective in reducing suicidality (OR = 0.80, 95% CI: 0.66–0.97). There was no difference in suicidality between direct and indirect interventions at follow-up (OR = 0.65 vs 0.82, *p*=0.25).
Implications: The findings demonstrate that directly addressing a person’s suicidal ideation and behaviour was effective both immediately post-treatment and long-term; whereas indirect treatments were effective long-term only. It is therefore recommended that clinicians utilise direct interventions that include discussing a client’s suicidal thoughts and behaviours, as well as strategies to reduce suicidality. Given the high proportion of direct interventions based on cognitive and dialectical therapy, the findings from this paper align with a prior meta-analysis demonstrating the effectiveness of cognitive-based interventions in reducing suicidal behaviour2. This review is not without its limitations. Half of the studies reported more than 10% missing data due to attrition, potentially biasing the results. Furthermore, the paper did not differentiate between psychological disorders when examining the effectiveness of the interventions. It is possible that direct and indirect interventions might vary in their effectiveness across different disorders. In addition, the analysis was unable to rule out whether medication use may have affected suicidal behaviour in some studies. Further research is needed to investigate these issues.

Endnotes
Occupational class differences in suicide: Evidence of changes over time and during the global financial crisis in Australia

Milner AJ, Niven H, LaMontagne AD (Australia)

BMC Psychiatry 15, 223, 2015

Background: Previous research showed an increase in Australian suicide rates during the Global Financial Crisis (GFC). There has been no research investigating whether suicide rates by occupational class changed during the GFC. The aim of this study was to investigate whether the GFC-associated increase in suicide rates in employed Australians may have masked changes by occupational class.

Methods: Negative binomial regression models were used to investigate Rate Ratios (RRs) in suicide by occupational class. Years of the GFC (2007, 2008, 2009) were compared to the baseline years 2001-2006.

Results: There were widening disparities between a number of the lower class occupations and the highest class occupations during the years 2007, 2008, and 2009 for males, but less evidence of differences for females.

Conclusions: Occupational disparities in suicide rates widened over the GFC period. There is a need for programs to be responsive to economic downturns, and to prioritise the occupational groups most affected.

Comment

Main findings: Previous research has established that economic downturns, such as the Global Financial Crisis (GFC), are associated with an increase in population-level suicide rates. More recently, studies have revealed that economic downturns also have an impact on suicide rates in the working population. For example, in Australia suicide rates during the GFC slightly increased for the working population. The current study extended this research by investigating whether the increase in suicide rates may have masked changes by occupational class. The researchers also assessed whether gender modified the association between the GFC and suicide. Given that previous research showed that compared to females, male suicides increased in response to labour market changes (e.g., unemployment), it was hypothesised that males would be more affected by the GFC than females.

Data were retrieved from the National Coroners Information System (NCIS) and Australian Bureau of Statistics. The GFC years (2007, 2008, 2009) were compared to the baseline years (2001-2006). 2010 was also included to assess possible post-GFC related changes in suicide. A retrospective time trend analysis of suicide rates was conducted with gender, age and eight major occupational groupings from the Australian and New Zealand Standard Classification of Occupations (ANZSCO) as the variables of interest. The highest occupation class (managers) was used as the reference group.

Results showed that between 2001-2010, male suicide rates were highest amongst
labourers, farmers, machinery operators and technical and trade workers, while for females, suicides were highest amongst labourers, farmers, machinery operators, and professionals. Overall males had a four-fold higher rate ratio (RR) than females over the 10-year period. Compared to the reference group (managers) the ratio of suicide in professionals, technical and trade workers, community service workers, sales workers, machinery operators, labourers and farmers increased for males during the GFC and remained high in 2010. There was also a three-fold increase in the disparity of suicide rates for male technical and trade workers and community workers during the GFC. For females there was a four-fold increase in suicide rates for technical and trade workers compared to managers during 2007 and 2008, and a nonsignificant decline in 2009 and 2010.

**Implications:** This study suggests that a disparity in suicide rates exists between occupational class, particularly among men. This disparity widens during economically challenging times. In general males had higher suicide rates in occupations which involved physical work (i.e., labouring, agriculture, machine operators, and technical and trades employment). The findings from this study have important implications for improving suicide prevention. Initiatives should target those working in these high-risk occupational groups both before and during economic downturns. This is particularly relevant to Australia given the current slowdown in the mining sector\(^3\) and the pending closure of Australian car manufacturing\(^4\). Based on these findings and the fact that men are three times more likely to die by suicide than women in first world countries like Australia\(^5\), a focus on male suicide prevention in these areas will be important. A limitation of this study was that in some occupations small numbers of suicides meant that the authors were unable to assess statistical significance. Other potential limitations include the underreporting of suicides and the possible misclassification of occupation codes.

**Endnotes**


Suicide among male road and rail drivers in Australia: A retrospective mortality study

Milner A, Page K, LaMontagne AD (Australia)
Road and Transport Research 24, 26-31, 2015

Objectives: This paper aims to describe the epidemiology of suicide among males employed in driving occupations (road and rail) compared to other male occupations in Australia.

Methods: Suicide cases among road and rail drivers were extracted from a national dataset of occupationally coded suicide cases for the period 2001 to 2010. Suicide rates per 100 000 were calculated and standardised using the Australian standard population (2001). Incidence rate ratios (IRR) with 95% confidence intervals were calculated using Mantell Haenszel rates and compared to all employed suicide cases.

Results: The majority of suicides in this occupational category occurred in truck drivers, followed by road and rail drivers. 98% of these suicides were among males; hence only males were included in further analyses. The age-standardised rate of male suicide among Road and Rail drivers over the period 2001 to 2010 was 22.6 per 100 000 (95% CI 19.2 to 25.9). The IRR of suicide in this occupational group compared to other male occupations was 1.42 (95% CI 1.26 to 1.60).

Conclusions: Suicide among Road and Rail drivers is higher than in the other male occupations. Suicide prevention initiatives addressing these risk factors, while also providing access to treatment for those at risk, are clearly needed.

Comment

Main findings: Studies have found that road and rail drivers, like other people in lower skilled and lower status occupations have elevated suicide rates compared to higher skilled occupations1. To date, however, studies have not examined road and rail driver suicide rates independently from other low skilled occupations. Therefore, this study sought to describe the epidemiology of suicide among road and rail drivers compared to other male occupations in Australia. It was hypothesised that rates of suicide among road and rail drivers will be higher than other occupational groups.

Data were obtained from the National Coroners Information System for the years 2001-2010. Road and rail drivers were defined as drivers of cars, buses, coaches, trains, trams, vans and trucks to transport passengers and freight. All other occupations represented the study’s comparison group. To categorise the data, occupations were coded by two researchers according to the Australian and New Zealand Standard Classification of Occupations, with consensus between coders being reached via discussion. Age standardised suicide rates per 100 000 persons were calculated based on the 2001 census data for average number of people per occupation. Between 2001-2010 there were 513 suicides among all road and rail drivers. Truck drivers accounted for the majority of suicides (63%), followed by...
drivers of automobiles (10%), rail drivers (9.9%), bus and coach drivers (7.6%), delivery drivers (6.24%) and train and tram drivers (2.73%). Given that 98% of road and rail suicides were men, only male suicide was analysed in this study. Whilst there were differences in age for road and rail driver suicides compared to other occupations, with road and rail drivers being slightly older, this difference was not statistically significant. Overall, the age standardised suicide rate for road and rail drivers was 22.6 per 100 000, compared to 15.9 per 100 000 for all other occupations. Results from the statistical analysis supported the hypothesis that road and rail drivers had a significantly higher suicide rate than all other male occupational groups over the 2001-2010 period. The suicide rate for road and rail drivers was also considerably higher than the general male suicide rate (between 15 and 17.5 per 100 000).

**Implications:** These findings align with prior studies investigating suicide rates for low skilled and low status occupations. As suggested, road and rail suicide rates are likely the result of drivers facing a greater number of suicide risk factors compared to other occupations. Road and rail drivers are more likely to engage in poor health behaviours, such as alcohol consumption and smoking, and suffer from poor working conditions such as irregular hours, fatigue, limited psychosocial support and job dissatisfaction. Furthermore, given the low status and low skilled nature of their work, drivers tend to have lower socio-economic status which has been shown to be associated with poor mental health. It is therefore important that rail and road workplaces (with the help of industry and government) identify and manage occupational stressors, promote mental health and foster organisational support for its employees. The findings from this research could also help inform suicide prevention strategies in the workplace for specific occupations. It is also important that organisations such as Suicide Prevention Australia develop suicide guidelines for specific occupations. This paper is not without limitations. Firstly, this study only calculated the suicide rates for broad categories of road and rail occupations and not specific road and rail occupations. This is problematic because specific occupations within each category (e.g., short distance versus long-distance truck drivers) often face different occupational risk factors, which may in turn lead to different suicide rates. This lack of specificity could limit the ability of these findings to inform suicide initiatives for specific occupations (e.g., taxi drivers). Therefore, future research should investigate the suicide rates of specific road and rail occupations. It is also likely that given the problems with the underreporting and miscoding of suicide that incident rates were higher than reported in this study.

**Endnote**


Research since the 1960s has consistently found that lay volunteers are better at helping suicidal callers than professionals. Yet, professional degrees are increasingly becoming requirements for helpline workers. In our first study, we conducted post hoc comparisons of U.S. helplines with all professional paid staff, all lay volunteers, and a mix of both, using silent monitoring and standardized assessments of 1,431 calls. The volunteer centers more often conducted risk assessments, had more empathy, were more respectful of callers, and had significantly better call outcome ratings. A second study of five Quebec suicide prevention centers used silent monitoring to compare telephone help in 1,206 calls answered by 90 volunteers and 39 paid staff. Results indicate no significant differences between the volunteers and paid employees on outcome variables. However, volunteers and paid staff with over 140 hours of call experience had significantly better outcomes. Unlike the United States, Quebec paid employees were not required to have advanced professional degrees. We conclude from these results and previous research that there is no justification for requiring that suicide prevention helpline workers be mental health professionals. In fact, the evidence to date indicates that professionals may be less effective in providing telephone help to suicidal individuals when compared to trained lay volunteers.

Comment

Main findings: Despite professional degrees increasingly becoming requirements for telephone helplines, previous research has found that volunteers/lay persons are more effective in providing help to suicidal people than professionals. This study aimed to assess the relative effectiveness of using volunteers and professional paid staff to work on telephone helplines. Results from two separate previous studies were re-examined and compared centres with volunteers or “professional” staff. These two studies examined whether there was a difference between effectiveness of telephone help provided to suicidal callers by volunteers and paid professional staff. The first study involved conducting post hoc analyses on effectiveness of staff of telephone helplines regarding intervention styles in the United States (US). A total of 14 centres were contacted and asked whether they used all volunteers to answer their calls, all professionals or a mix of volunteers and professionals. Four of the centres employed all professionals, with a total of 168 professional helpline workers participating in the study. Three centres used 131 helpline workers, which was a mix of professionals and volunteers. In the remaining 7 centres only volunteers answered calls which was a total of 493 helpers. A total of 2,611 calls to 14 U.S helplines were silently monitored. Two trained research assistants listened to all calls and rated the charac-
teristics of the helper’s behaviours, and the observed impact on the callers using standardised rating scales. Post hoc analyses revealed that centres with all professional staff showed the highest number of calls with low empathy and low respect for callers. Meanwhile, all volunteer centres had higher levels of respect and empathy, and had higher ratings of help effectiveness than centres with all professional centres or a mix of professional and volunteers.

The second study involved a survey conducted in Quebec, Canada and aimed to compare practices and outcomes by volunteers and paid staff in telephone helplines. A total of 129 helpers participated in the study, with 90 (69.7%) volunteers and 39 (30.3%) paid staff. At the end of calls, helpers were instructed to ask callers for consent to call back as part of an evaluation study. Two clusters of intervention style were identified: the first was a nondirective approach characterised by more acceptance and approval; the second was a directive approach characterised by more orientation/investigation, more silence, reassurance, judgments, reflection, clarification, interpretation and telling a personal experience and telling about the experience of others. There were no significant differences between intervention styles between paid staff and volunteers. The directive approach was used by half the volunteers (52.7%) and paid staff (46%), the remaining used the nondirective approach (47.3% and 54%, respectively). No differences in changes in suicide urgency from beginning to the end of call when answered by volunteer or paid staff, and no changes in measures of psychological symptoms or of depression. Although services were rated higher when paid staff answered the call compared to volunteers (78.6% vs. 58.3%, $p<.026$), no differences in satisfaction ratings at follow-up was observed for those with more or less experience. In other words, both volunteers and paid staff were equally effective in answering calls from suicidal individuals. However, volunteers and paid staff with over 140 hours of call experience were found to have significantly better outcomes than those with less experience.

Implications: The authors conclude from the results of these two studies (and previous research) that there is no justification for requiring that suicide prevention helpline workers need to be mental health professionals. Future research is needed to investigate why professional qualifications are not showing advantages over volunteers, given the years of specialised training involved in becoming a professional. The authors suggested that this observed non-advantage of professional training may be due to the fact that lay persons are able to relate with experiences of callers, and that interacting as a peer rather than an expert helps connect to the caller better. As both volunteers and paid staff with more experience had better outcomes, Mishara et al. also highlight the importance of retaining volunteers and staff long-term rather than focussing on recruiting and training new personnel. Currently, Lifeline Australia accepts volunteers without requiring a tertiary degree, and trains volunteers according to guidelines and standards1. In line with these findings, Lifeline's only requirement is that volunteers should have the ability to express empathy, respect for others and have a strong sense of self-awareness. A key limitation of this study was that ad hoc
analyses were applied to a study that was not designed to compare volunteers and professionals. It would be useful to extend this research in Australia using a more systematic approach and controlling for confounding variables, in order to investigate whether volunteers or professionals for telephone support lines are more effective in helping suicidal callers.

Endnotes
The association of physical illness and self-harm resulting in hospitalisation among older people in a population-based study

Mitchell R, Draper B, Harvey L, Brodaty H, Close J (Australia)

Aging and Mental Health. Published online: 15 October 2015. doi: 10.1080/13607863.2015.1099610

**Objectives:** With population ageing, self-harm injuries among older people are increasing. Further examination of the association of physical illness and self-harm among older people is warranted. This research aims to identify the association of physical illness with hospitalisations following self-harm compared to non-self-harm injury among older people.

**Method:** A population-based cohort study of individuals aged 50+ years admitted to hospital either for a self-harm or a non-self-harm injury using linked hospital admission and mortality records during 2003–2012 in New South Wales, Australia was conducted. Logistic regression and survival plots were used to examine the association of 21 physical illnesses and mortality at 12 months by injury intent, respectively. Age-adjusted health outcomes, including length of stay, readmission and mortality were examined by injury intent.

**Results:** There were 12,111 hospitalisations as a result of self-harm and 474,158 hospitalisations as a result of non-self-harm injury. Self-harm compared to non-self-harm hospitalised injury was associated with higher odds of mental health conditions (i.e. depression, schizophrenia, bipolar and anxiety disorders), neurological disorders (excluding dementia), other disorders of the nervous system, diabetes, chronic lower respiratory disease, liver disease, tinnitus and pain. Tinnitus, pain, malignancies and diabetes all had a higher likelihood of occurrence for self-harm compared to non-self-harm hospitalisations even after adjusting for mental health conditions, number of comorbidities and alcohol and drug dependency.

**Conclusion:** Older people who are experiencing chronic health conditions, particularly tinnitus, malignancies, diabetes and chronic pain may be at risk of self-harm. Targeted screening may assist in identifying older people at risk of self-harm.

**Comment**

**Main findings:** In most countries suicide rates peak in older adults. Surprisingly, recent evidence suggests that self-harm, something traditionally associated with younger people, is increasing in older adults as well. Risk factors for older adult self-harm include psychiatric illnesses, social isolation, previous suicidal behaviour, alcohol misuse, personality factors, bereavement and relationship problems. However, the extent that physical health acts as a risk factor for self-harm is unclear. Previous research examining this link has been limited by small sample sizes, no comparison cohort and a focus on suicide and suicidal ideation as opposed to self-harm. This paper aimed to identify the link between physical illness and subsequent hospitalisations due to self-harm compared to non-self-harm injury among older adults. A retrospective analysis was conducted on self-
harm and non-self-harm injuries in New South Wales (NSW) residents aged 50 years and above. Data was gathered from linked hospital admission and mortality records from January 2003 to December 2012. Diagnoses, external cause codes and substance type were classified using the International Classification of Diseases, 10\textsuperscript{th} Revision, Australian Modification (ICD-10-AM).

There were 12,111 instances of self-harm and 474,158 instances of non-self-harm hospitalisations during the 10-year study period. In people aged 50-59 years there was over twice the proportion of self-harm hospitalisations compared to non-self-harm hospitalisations, whereas for people aged 70+ years there was a much smaller proportion. Twelve physical illnesses were identified as being associated with self-harm in older people, and after adjusting for mental health conditions, alcohol and drug dependence and number of comorbidities, four of these remained associated with self-harm. Tinnitus (2.9 times more likely), pain (1.3 times more likely), malignancies (1.3 times more likely) and diabetes (1.2 times more likely) had a higher likelihood of occurrence in older adults hospitalised for self-harm as opposed to those hospitalised for non-self-harm injuries.

**Implications:** These findings are not only consistent with previous research\textsuperscript{1,2} but they also have serious implications for Australia's public health system. The findings reinforce the need for an easily accessible health system that provides targeted screening and subsequent treatment so to ensure that deteriorating physical health does not lead self-harm. This is particularly important for physical illnesses which are associated with significant pain. Debilitating physical illnesses can be a tipping point which leads to imminent suicide risk\textsuperscript{3}. Therefore, implementing effective suicide and self-harm screening for older adults with physical conditions could help identify the risk factors for self-harm before it occurs. This paper is not without its limitations. As data validity was not able to be assessed it is possible that hospital records could have either been misclassified or inconsistently classified. It is also possible that some individuals may have chosen not to disclose that their injuries were the result of self-harm. Furthermore, the paper did not examine individuals who self-harmed, died and were not hospitalised, which may have led to an under-estimation of the number of self-harm and suicides amongst older adults.

**Endnotes**

Interventions to reduce suicides at suicide hotspots:  
A systematic review and meta-analysis  

Pirkis J, Too LS, Spittal MJ, Krysinska K, Robinson J, Cheung YTD (Australia)  
Lancet Psychiatry 2, 994-1001, 2015

**Background:** Various interventions have been introduced to try to prevent suicides at suicide hotspots, but evidence of their effectiveness needs to be strengthened.

**Methods:** We did a systematic search of Medline, PsycINFO, and Scopus for studies of interventions, delivered in combination with others or in isolation, to prevent suicide at suicide hotspots. We did a meta-analysis to assess the effect of interventions that restrict access to means, encourage help-seeking, or increase the likelihood of intervention by a third party.

**Findings:** We identified 23 articles representing 18 unique studies. After we removed one outlier, interventions that restricted access to means were associated with a reduction in the number of suicides per year (incidence rate ratio 0.09, 95% CI 0.03-0.27; p<0.0001), as were interventions that encourage help-seeking (0.49, 95% CI 0.29-0.83; p=0.0086), and interventions that increase the likelihood of intervention by a third party (0.53, 95% CI 0.31-0.89; p=0.0155). When we included only those studies that assessed a particular intervention in isolation, restricting access to means was associated with a reduction in the risk of suicide (0.07, 95% CI 0.02-0.19; p<0.0001), as was encouraging help-seeking (0.39, 95% CI 0.19-0.80; p=0.0101); no studies assessed increasing the likelihood of intervention by a third party as a lone intervention.

**Interpretation:** The key approaches that are currently used as interventions at suicide hotspots seem to be effective. Priority should be given to ongoing implementation and assessment of initiatives at suicide hotspots, not only to prevent so-called copycat events, but also because of the effect that suicides at these sites have on people who work at them, live near them, or frequent them for other reasons.

**Comment**

**Main findings:** There are four general approaches to suicide prevention at suicide hot spots: (1) restricting access to means, (2) encouraging help-seeking, (3) increasing the likelihood of intervention by a third party, and (4) encouraging responsible media reporting of suicide. A previous meta-analysis by the authors revealed unequivocal evidence for the effectiveness of restricting access to means (i.e., barriers on bridges and cliffs), while the evidence for the other approaches was weaker. In order to strengthen the evidence for the effectiveness of suicide hot-spot interventions, this systematic review and meta-analysis examined the relative effectiveness of each of the four main approaches to intervention (delivered in isolation or combined with other interventions). Search results for the systematic literature review yielded 23 articles representing 18 unique studies. Thirteen studies assessed restricting access to means (11 in isolation, and two in combination with other interventions), six assessed encouraging help-seeking (three in isolation, three in combination with other inter-
ventions), and four assessed increasing the likelihood of intervention by a third party (all in combination with other interventions). There were no studies that assessed increasing the likelihood of intervention by a third party delivered as an isolated intervention. In six of the 18 studies, the number of suicides dropped to zero in the post-intervention period. For each group of studies, a pooled incidence rate ratio (IRR) was estimated with a random-effects conditional model. This estimated the average population change in the incidence from pre to post-intervention period while accounting for between-study differences. Results revealed that there was an association between interventions that restricted access to the means and a reduction in number of suicides per year (IRR= 0.09, 95% CI 0.03-0.27; p<0.0001). Similarly, interventions that encouraged help-seeking (IRR=0.49, 95% CI 0.29-0.83; p=0.0086), and interventions that increase the likelihood of intervention by a third party (IRR=0.53, 95% CI 0.31-0.89; p=0.0155) was also associated with a reduction in number of suicides per year. Analysing studies with one type of intervention only showed that restricting access to means (IRR=0.07, 95% CI 0.02-0.19; p<0.0001) and interventions that encouraged help-seeking (IRR=0.39, 95% CI 0.19-0.80; p=0.0101) was associated with a reduction of suicide risk.

**Implications:** These findings reveal that restricting access to means, encouraging help-seeking, and increasing the likelihood of intervention by a third party are effective in reducing deaths by suicide at hotspots. The evidence for the effectiveness of both encouraging help-seeking and increasing the likelihood of intervention by a third party is very promising, given that restricting access to means is not always feasible (e.g., due to natural cliffs, tourist locations). Nevertheless, the authors note a potential limitation of this study is the source data for the meta-analysis (where not all relevant studies may have been identified). In addition, the study was unable to assess whether particular combinations of interventions produced the best outcomes, because the outcomes that were studied were not exhaustive. Future research should aim to disaggregate the effects of these different interventions to pinpoint the key approaches to suicide prevention at suicide hotspots. The authors argue that although intervention at suicide hotspots may only have a small effect on the total suicide rate, suicide prevention at hotspots is important in preventing copycat events, and in reducing the adverse impact that suicides at these sites have on people who work at them, live near them, or frequent them for other reasons. In 2015, suicide prevention barriers were installed for Queensland’s Story Bridge, as well as safety telephone systems and a 24-hour CCTV system. An evaluation of the effectiveness of these barriers would be useful to inform future suicide hotspot interventions in Australia.

**Endnotes**

Bereavement by suicide as a risk factor for suicide attempt: A cross-sectional national UK-wide study of 3432 young bereaved adults

Pitman AL, Osborn DP, Rantell K, King MB (United Kingdom)

BMJ Open, 6, 1-11, 2016

**Objectives:** US and UK suicide prevention strategies suggest that bereavement by the suicide of a relative or friend is a risk factor for suicide. However, evidence is lacking that the risk exceeds that of any sudden bereavement, is specific to suicide, or applies to peer suicide. We conducted the first controlled UK-wide study to test the hypothesis that young adults bereaved by suicide have an increased risk of suicidal ideation and suicide attempt compared with young adults bereaved by other sudden deaths.

**Design:** National cross-sectional study.

**Setting:** Staff and students at 37 UK higher educational institutions in 2010.

**Participants:** 3432 eligible respondents aged 18-40 exposed to sudden bereavement of a friend or relative after the age of 10.

**Exposures:** Bereavement by suicide (n=614), by sudden unnatural causes (n=712) and by sudden natural causes (n=2106).

**Primary Outcome Measures:** Incident suicidal ideation and suicide attempt.

**Findings:** Adults bereaved by suicide had a higher probability of attempting suicide (adjusted OR (AOR)=1.65; 95% CI 1.12 to 2.42; p=0.012) than those bereaved by sudden natural causes. There was no such increased risk in adults bereaved by sudden unnatural causes. There were no group differences in probability of suicidal ideation. The effect of suicide bereavement was similar whether bereaved participants were blood-related to the deceased or not. The significant association between bereavement by suicide and suicide attempt became non-significant when adding perceived stigma (AOR=1.11; 95% CI 0.74 to 1.67; p=0.610). When compared with adults bereaved by sudden unnatural causes, those bereaved by suicide did not show significant differences in suicide attempt (AOR=1.48; 95% CI 0.94 to 2.33; p=0.089).

**Conclusions:** Bereavement by suicide is a specific risk factor for suicide attempt among young bereaved adults, whether related to the deceased or not. Suicide risk assessment of young adults should involve screening for a history of suicide in blood relatives, non-blood relatives and friends.

**Comment**

**Main findings:** Close friends and relatives of people who die by suicide are a high risk group for suicide. This population-based study employed an online cross-sectional survey to compare the impact of specific modes of self-reported sudden death bereavement on non-fatal suicide-related outcomes. It was hypothesised that: 1) young adults who had been bereaved by suicide would have a higher risk...
of suicidal thoughts and attempts, compared to those bereaved by sudden death; 2) suicide bereavement would be a risk factor for secondary clinical and occupational measures (postbereavement, nonsuicidal self-harm, depression, occupational drop-out, and social dysfunction) which would reflect policy concerns about the contribution of bereavement to workplace mental ill health and sickness absence; 3) the impact of suicide bereavement would extend beyond genetic relatedness to peer suicides; and 4) associations with clinical or occupational outcomes would be attenuated by perceived stigma, as a marker for reduced help seeking.

A total of 5085 people of the 659 572 sampled responded to the questionnaire, and only 68% (n=3432) were eligible to participate. Participants were grouped into those bereaved by sudden natural death (n=2106), bereaved by sudden unnatural death (n=712) and bereaved by suicide (n=314). Participants were primarily female and blood-related to the deceased. Those bereaved by suicide were significantly more likely to report prebreavement psychopathology, and family history of psychiatric problems compared to those bereaved by sudden death. There were no significant differences in mean time elapsed since bereavement between the two groups (M=4.9 years). Results showed that those bereaved by suicide had a greater risk of postbereavement suicide attempt (adjusted OR (AOR)=1.65; 95% CI 1.12 to 2.42; p=0.012), but not of suicidal ideation. Moreover, those bereaved by suicide had a greater risk of occupational drop-out (AOR=1.80; 95% CI 1.20 to 2.71; p=0.005), but there was no evidence for group differences in postbereavement non-suicidal self-harm, depression or social functioning.

**Implications:** This is the first study to show that irrespective of blood-relatedness, bereavement by suicide is a specific risk factor for suicide attempts compared to those bereaved due to sudden natural causes. These findings have important clinical implications for assessing suicide risk, and highlight the need for clinicians to enquire about suicide history not only in blood relatives, but in friends and non-blood relatives. It is important to note that the relationship between suicide bereavement and suicide attempt became non-significant when controlling for perceived stigma, which suggests that perceived stigma may reduce help seeking. However, further investigation is warranted to determine causality. A strength of the study was the national, population-based sample size; however, sampling from UK higher education institutes resulted in a highly educated sample which limits the generalisability of the findings. The results of this study may be more generalisable to young bereaved women than men, and to the more highly educated. Currently there are no evidence-based interventions for this risk group. Future research should aim to develop prevention interventions and guidelines for this population, especially investigating the role of stigma in reducing help-seeking. This would help inform organisations like StandBy in their bereavement support care.

**Endnotes**

Suicidal ideation, suicide attempts and non-suicidal self-injury among lesbian, gay, bisexual and heterosexual adults: Findings from an Australian national study

Swannell S, Martin G, Page, A (Australia)


**Objectives:** This study investigated associations between sexual orientation and measures of suicidality and non-suicidal self-injury in Australian adults. Previous studies of sexual orientation and suicidality have been limited by unclear conceptualisations of suicidal intent, failure to differentiate between homosexuality and bisexuality, inattention to gender differences and use of convenience-based samples.

**Methods:** A large (N = 10,531) representative national sample of Australian adults was used to investigate associations between sexual orientation (heterosexual, homosexual, bisexual) and (1) suicidal ideation, (2) attempted suicide and (3) non-suicidal self-injury, for males and females separately, in a series of sequentially adjusted logistic regression models.

**Results:** Sexual minority participants were at greater risk of suicidality and self-injury than heterosexuals, after adjusting for age and other covariates, with patterns of risk differing by sexual orientation and gender. Compared with their heterosexual counterparts, gay men, but not bisexual men, were more likely to report suicidal ideation (odds ratio = 3.05, 95% confidence interval = [1.65, 5.60]) and suicide attempts (odds ratio = 4.16, confidence interval = [2.18, 7.93]). Bisexual women, but not lesbian women, were more likely to report suicidal ideation (odds ratio = 4.40, confidence interval = [3.00, 6.37]) and suicide attempts (odds ratio = 4.46, confidence interval = [2.41, 8.24]). Neither bisexual nor gay men were more likely than heterosexual men to report self-injury. However, bisexual women, but not lesbian women, were more likely than heterosexual women to report self-injury (odds ratio = 19.59, confidence interval = [9.05, 42.40]). Overall, bisexual females were at greatest risk of suicidality and self-injury.

**Conclusion:** Clinicians working with sexual minority populations are encouraged to openly discuss suicidal and self-injurious thoughts and behaviours with their clients and may consider using therapeutic strategies to reduce internalised stigma and enhance personal and social resources.

**Comment**

**Main findings:** Non-heterosexual orientation has been shown to be associated with increased risk of non-suicidal self-injury (NSSI)\(^1\) which is in turn linked to suicidal behaviour\(^2\). Previous studies investigating the link between sexual orientation and NSSI, have been limited by the use of convenience samples, combining homosexual and bisexual orientation into the one category, inattention to gender differences, and unclear conceptualisations of suicidal intent. This study aimed to investigate the link between sexual orientation and suicidal ideation, suicide...
attempts and NSSI in a large nationally representative sample. A total of 12,006 Australians were sampled in a national telephone survey of self-injury conducted in 2008. Data pertaining to NSSI, suicidal ideation, suicide attempts, psychological distress, demographics, sexual orientation, alcohol use and illicit drug use in adults aged 18-100 years were analysed. Logistic regression models were used to investigate associations between sexual orientation and NSSI, suicidal ideation, and suicide attempts. Overall, homosexuality and bisexuality was associated with a higher risk of suicidal ideation, suicide attempts and NSSI. Important differences emerged when gender (males, females) and sexuality (homosexual and bisexual) were considered separately and where age, psychological distress, alcohol and illicit drug use were controlled for. Homosexual males, but not bisexual males, were more likely to attempt suicide (OR = 4.16, 95% CI = [2.18, 7.93], p<0.001) and experience suicidal ideation (OR = 3.05, 95% CI = [1.65, 5.60], p<0.001). Whereas, bisexual women, but not lesbian women, were more likely to attempt suicide (OR = 4.46, 95% CI = [2.41, 8.24], p<0.001), experience suicidal ideation (OR = 4.40, 95% CI = [3.00, 6.37], p<0.001) and engage in NSSI (OR = 19.59, 95% CI = [9.05, 42.40], p<0.001).

**Implications:** These findings expand upon previous research by refining our understanding of the relationship between non-heterosexual orientation and suicidal ideation, suicide attempts and NSSI. The results highlight the importance of considering gay and bisexual males and females as distinct groups and the need to implement mental health initiatives that are tailored to their needs. Suicide Prevention Australia recommends a comprehensive approach to non-heterosexual suicidality and NSSI, implementing a range of initiatives such as community education campaigns and anti-discrimination legislation\(^1\). A strength of the study was the use of a nationally representative sample of the Australian population; however, the study was limited to a relatively small sample of homosexual and bisexual participants. Furthermore, as the research relied on self-report measures, it is possible that the results may have been influenced by recall and social desirability biases (the latter which could lead to an underreporting of non-heterosexual orientation).

**Endnotes**

Is case management effective for long-lasting suicide prevention? A community cohort study in Northern Taiwan

Wang L-J, Wu Y-W, Chen C-K (Taiwan)
Crisis 36, 194-201, 2015

Background: Case management services have been implemented in suicide prevention programs.

Aims: To investigate whether case management is an effective strategy for reducing the risks of repeated suicide attempts and completed suicides in a city with high suicide rates in northern Taiwan.

Method: The Suicide Prevention Center of Keelung City (KSPC) was established in April 2005. Subjects included a consecutive sample of individuals (N = 2,496) registered in KSPC databases between January 1, 2006, and December 31, 2011, with at least one episode of nonfatal self-harm. Subjects were tracked for the duration of the study.

Results: Of all the subjects, 1,013 (40.6%) received case management services; 416 (16.7%) had at least one other deliberate self-harm episode and 52 (2.1%) eventually died by suicide. No significant differences were found in the risks of repeated self-harm and completed suicides between suicide survivors who received case management and those who refused the services. However, a significant reduction in suicide rates was found after KSPC was established.

Conclusion: Findings suggest that case management services might not reduce the risks of suicide repetition among suicide survivors during long-term follow-up. Future investigation is warranted to determine factors impacting the downward trend of suicide rates.

Comment

Main findings: Although recent community studies have demonstrated that case management is an effective strategy to prevent repeated suicide attempts in those who have had one prior nonfatal attempt, there has been mixed evidence from studies using various types of case management services (e.g., telephone contact, home visits, brief educational interventions, and post card interventions). This study aimed to investigate whether a case management program is effective in reducing repeated suicide attempts and completed suicides. The study was conducted with The Suicide Prevention Center of Keelung City (KSPC), with a total of 2,496 participants (who survived an episode of self-harm between the study period of January 1, 2006 to December 31, 2011). If an individual had made several attempts of self-harm during the study period, the first attempt recorded in the database was defined as the index attempt. Methods of suicide were categorised as low-lethality (drug overdose, self-cutting); charcoal-burning (poisoning using other gases and vapors); and a third group involving poisoning by gases used domestically, hanging, drowning, firearms, air guns, explosives, jumping from high places, and other and unspecified means. Case managers contacted individuals via telephone or home visit within one week of
the attempt and then followed them up for six months. Case management was discontinued if issues leading up to the deliberate self-harm were resolved, if psychiatric treatment had been taken up or individuals clearly refused services more than three times. Of the participants enrolled in this study, 1,483 (59.4%) refused services.

The sample was comprised of 1,686 (67.5%) females, and 810 (32.5%) males. The most common methods chosen for the first suicide attempt were low-lethality methods (82.7%), charcoal-burning (7.5%) and other highly lethal methods (9.9%). Compared to those who refused case management services, participants receiving services had a higher rate of choosing charcoal-burning or other highly lethal methods as their first self-harm episode, and were more likely to have a pre-existing mental illness. In total, 416 (16.7%) participants carried out further deliberate self-harm and 52 (2.1%) individuals completed suicide during the study period. Repeated self-harm episodes were more likely to occur in individuals aged between 35 and 49 years and those with a history of mental illness, and less likely to occur among men, those older than 65 years old, individuals who used charcoal-burning, and those who used other high-lethality methods.

**Implications:** The study showed that the risk of repeated self-harm and subsequent suicide mortality did not differ between those who refused or accepted case management services. The authors suggest that a possible explanation was the lack of relevant prior training and experience in the newly recruited case managers. In addition, although the case management program offered psychological support to patients, it did not include support on adverse life events that may have triggered the suicide. Lastly, the observation period for this study cohort was up to six years, which is much longer than six-month follow-ups in previous studies showing positive results. Given that those receiving case management services had a more serious index episode of self-harm and more serious mental illness than those who received services, it is possible that this difference might have counteracted the benefits of the case management services. The authors highlight the importance of modifying and improving case management models to achieve long-term effects on suicide prevention (e.g., not only linking people to resources, but also providing novel approaches to care in transition). Currently, in Australia, only some Department of Health guidelines\(^1\)\(^2\)\(^3\) include case management as part of their practices. Replication of this research in Australia would assist in evaluating and improving current case management practices, and provide evidence for inclusion of case management in all Department of Health guidelines.

**Endnotes**

Ultra-low-dose buprenorphine as a time-limited treatment for severe suicidal ideation: A randomized controlled trial


Objective: Suicidal ideation and behavior currently have no quick-acting pharmacological treatments that are suitable for independent outpatient use. Suicidal ideation is linked to mental pain, which is modulated by the separation distress system through endogenous opioids. The authors tested the efficacy and safety of very low dosages of sublingual buprenorphine as a time-limited treatment for severe suicidal ideation.

Method: This was a multisite randomized double-blind placebo-controlled trial of ultra-low-dose sublingual buprenorphine as an adjunctive treatment. Severely suicidal patients without substance abuse were randomly assigned to receive either buprenorphine or placebo (in a 2:1 ratio), in addition to their ongoing individual treatments. The primary outcome measure was change in suicidal ideation, as assessed by the Beck Suicide Ideation Scale at the end of each of 4 weeks of treatment.

Results: Patients who received ultra-low-dose buprenorphine (initial dosage, 0.1 mg once or twice daily; mean final dosage=0.44 mg/day; N=40) had a greater reduction in Beck Suicide Ideation Scale scores than patients who received placebo (N=22), both after 2 weeks (mean difference -4.3, 95% CI=-8.5, -0.2) and after 4 weeks (mean difference=-7.1, 95% CI=-12.0, -2.3). Concurrent use of antidepressants and a diagnosis of borderline personality disorder did not affect the response to buprenorphine. No withdrawal symptoms were reported after treatment discontinuation at the end of the trial.

Conclusions: The time-limited, short-term use of very low dosages of sublingual buprenorphine was associated with decreased suicidal ideation in severely suicidal patients without substance abuse. Further research is needed to establish the efficacy, safety, dosing, and appropriate patient populations for this experimental treatment.

Comment

Main findings: Currently there are no quick-acting drugs for suicide ideation and behaviour that are suitable for independent outpatient use. Although most standard antidepressants relieve suicidal ideation, this effect may take several weeks, and patient response varies. As suicidality has been associated with mental pain, modulated by the separation distress system through endogenous opioids, it was hypothesized that opioids in very low dosages may help reduce suicidal ideation. A randomised, double-blind placebo-control study was applied to test whether very low doses of buprenorphine were associated with decreased suicidal ideation in severely suicidal patients. In four medical and psychiatric centres in Israel, a
total of 265 patients were screened, with 88 randomly allocated to treatment groups (57 to the buprenorphine and 31 to the placebo). Patients were eligible to participate if they were between ages of 18 to 65 and suffered from clinically significant suicidal ideation. However, they were excluded if they were pregnant or lactating, suffered from a severe medical condition, had a lifetime history of opioid abuse, a lifetime diagnosis of schizophrenia, current psychosis, ECT within past month, substance or alcohol abuse within the past two years, and benzodiazepine dependence within the past two years. More than half of the participants (56.8%) met the criteria for borderline personality disorder. In the four weeks of treatment, questionnaires were administered once a week, along with assessment of severity of suicidality, screening for adverse events and adjustment of medication dosages (i.e., daily dose could be raised in 0.1-0.2 mg increments, at maximum of 0.8 mg) by a psychiatrist. Medication dose was not raised if participants reached full remission or if they experienced significant adverse events. There was a high dropout rate of 29.5% during the first week of treatment due to the fact that almost all participants were clinically unstable, which compromised their ability to participate.

Results revealed that the effect of low-dose buprenorphine on suicidal ideation did not differ between patients who were also taking antidepressants. Overall, the buprenorphine group had a greater reduction in suicidal ideation compared to placebo, at the end of week two (mean difference=24.3, 95% CI=28.5, 20.2; p=0.04) and at the end of week four (mean difference=27.1, 95% CI=212.0, 22.3; p=0.004). One or more adverse events (i.e., dry mouth, fatigue, nausea, constipation) were reported in the buprenorphine group compared to placebo (77.2% vs. 54.8%, p=0.03).

Implications: This study found that very low doses of buprenorphine were associated with decreased suicidal ideation in severely suicidal patients. Suicidal ideation did not differ between patients who were also being treated with antidepressants and those who were not. Unlike previous research which showed that those with borderline personality disorder were associated with poorer clinical outcomes, patients with borderline personality disorder responded to the treatment similarly to those who had no diagnosis. The authors speculate that buprenorphine may address a sub-set of symptoms associated with painful feelings of rejection and abandonment and therefore might be more effective against ‘atypical/borderline’ suicidality than against ‘melancholic’ suicidality. However, these results should be interpreted with caution due to a number of limitations. The outcome measures were based on self-reports, and there was a high dropout rate in the first week of treatment due to participants being clinically unstable. Moreover, non-suicidal self-injury was not measured in this study. Thus, these findings may not be generalisable as it is unclear whether this treatment is effective for more stable, less severely suicidal patients, or those who self-harm. There was also no follow-up period to investigate long term effects (i.e., drug cravings or rebound suicidality). Future research is necessary to address these methodological
issues and identify appropriate patient populations. Despite these promising results, there is a need for caution given that buprenorphine is potentially addictive and possibly lethal. Further investigation into the use of this drug will clarify whether ultra-low dose buprenorphine treatments may be a safe and feasible treatment for suicidal ideation.

Endnotes
**Self-harm: Prevalence estimates from the second Australian Child and Adolescent Survey of Mental Health and Wellbeing**

Zubrick SR, Hafekost J, Johnson SE, Saw S, Sawyer M, Ainley J, Buckingham WJ (Australia)

*Australian and New Zealand Journal of Psychiatry.* Published online: 30 November 2015. doi: 10.1177/0004867415617837

**Objective:** To (1) estimate the lifetime and 12-month prevalence of self-harm without suicide intent in young people aged 12-17 years, (2) describe the co-morbidity of these behaviours with mental illness and (3) describe their co-variation with key social and demographic variables.

**Method:** A nationally representative random sample of households with children aged 4-17 years recruited in 2013-2014. The survey response rate was 55% with 6310 parents and carers of eligible households participating. In addition, 2967 (89%) of young people aged 11-17 completed a self-report questionnaire with 2653 of the 12- to 17-year-olds completing questions about self-harm behaviour.

**Results:** In any 12-month period, about 8% of all 12- to 17-year-olds (an estimated 137,000 12- to 17-year-olds) report engaging in self-harming behaviour without suicide intent. This prevalence increases with age to 11.6% in 16- to 17-year-olds. Eighteen percent (18.8%; 95% confidence interval [CI] = [14.5, 23.0]) of all 12- to 17-year-old young people with any mental health disorder measured by parent or carer report said that they had engaged in self-harm in the past 12 months. Among young people who were measured by self-report and met criteria for the Diagnostic and Statistical Manual of Mental Disorders' major depressive disorder almost half (46.6%; 95% CI = [40.0, 53.1]) also reported that they had engaged in self-harm in the past 12 months. Suicide risk among those who self-harm is significantly elevated relative to the general population.

**Conclusion:** The demonstrated higher risks in these young people for continued harm or possible death support the need for ongoing initiatives to reduce self-harm through mental health promotion, improved mental health literacy and continuing mental health reform to ensure services are accessible to, and meet the needs of families and young persons.

**Comment**

**Main findings:** There is a lack of population data on non-suicidal self-harm in Australian youth. This paper provides the first contemporary, community-based Australian population estimates of lifetime and 12-month prevalence for self-reported self-harm in young people. The paper aimed to: 1) estimate the lifetime and 12-month prevalence of self-harm without suicide intent in young people aged 12-17 years; 2) describe the co-morbidity of these behaviours with mental illness and; 3) describe their co-variation with key social and demographic variables. Participants were from a nationally representative random sample of households with children aged 4–17 years recruited in 2013–2014. The response rate
was 55% with 6310 parents and carers of eligible households participating. In addition, 2967 (89%) young people aged 11–17 years completed a self-report questionnaire with 2653 of 12–17 year olds completing questions about self-harm behaviour. A total of 201 (7.5%) participants aged 12 years and over reported ‘prefer not to say’ to a question on self-harm and were therefore excluded from results. Results revealed that 10.9% of people aged 12-17 years reported lifetime self-harm (95% confidence interval [CI] = [9.7, 12.2]), and of these, 8% also reported self-harm in the past 12 months (95% CI = [6.9, 9.1]). Compared to 12-15 year olds, significantly higher proportions of 16-17 year olds reported having ever self-harmed (8.2%; 95% CI = [6.7, 9.8] vs 16.1%; 95% CI = [14.1, 18.2]), having ever done so four times or more (3.8%; 95% CI = [2.7, 5.0] vs 9.8%; 95% CI = [8.1, 11.5]) and having self-harmed within the previous 12 months (6.2%; 95% CI = [4.8, 7.5] vs 11.6%; 95% CI = [9.9, 13.4]). Only 1% (95% CI = [0.4, 1.2]) of all young people received medical treatment for self-harm in the previous 12 months. Among all young people (aged 12-17), 69.2% reported cutting in their last episode of self-harm.

In both groups (12-15 and 16-17 year olds) there were higher proportions of females than males who reported ever having self-harmed, having self-harmed four or more times and having self-harmed within the last 12 months. In addition, when a mental disorder was present, the young people with the highest proportions of self-harming behaviours were female and older (16–17 years). Many young persons reported that their self-harm behaviour was not intended to end their life; however they also went on to report having engaged in suicidal behaviour(s), including suicide attempt(s).

**Implications:** This is one of the first Australian studies which estimated the prevalence of youth self-harm behaviours. These findings support the improvement of mental health literacy and current mental health services, which may in turn reduce self-harm among young people. A limitation of this study is that it relied on self-reported data from a survey, and thus findings may be subjected to biases and reliability issues. It is also difficult to ascertain how respondents interpreted the question, ‘self-harm without intending to end your own life’, since many who did report self-harm without intention of death also reported engaging in high levels of suicidal behaviour including suicide attempt(s). Limitations notwithstanding, these findings can help update The Royal Australian and New Zealand College of Psychiatrist’s self-harm treatment guide as it is currently outdated (published in 2009), and does not provide guidelines for children and youth. These guidelines may especially cater for teenage females (especially 16-17 years old), since those who also have a mental disorder present had the highest suicide risk relative to the general population.

**Endnotes**

Recommended Readings
Prior suicide attempts are less common in suicide decedents who died by firearms relative to those who died by other means

Anestis MD (United States)
Journal of Affective Disorders 189, 106-109, 2016

**Background:** Suicide prevention efforts often center on the identification of risk factors (e.g. prior suicide attempts); however, lists of risk factors without consideration of context may prove incapable of impacting suicide rates. One contextual variable worth considering is attempt method.

**Methods:** Utilizing data from the National Violent Death Reporting System (2005-2012), I examined suicide deaths (n=71,775) by firearms and other means to determine whether prior suicide attempts were more common in one group versus the other.

**Results:** Significantly fewer suicide decedents who died by firearms reported a prior history of suicide attempts (12.10%) than did decedents who died by other means (28.66%). This result was further replicated within each state that contributed data to the NVDRS.

**Limitations:** Only 17 states have contributed to the NVDRS thus far and, within those states, not all suicide deaths were reported. Due to the nature of the data, I was unable to test proposed mediators within our model.

**Conclusions:** Suicide decedents who die by firearms may die on their first attempt more often than other decedents due to a capability and willingness to utilize a highly lethal means. Current risk assessment protocols may be ill equipped to identify such individuals prospectively on their own. Broader methods of implementing means restriction (e.g. legislation) may thus be pivotal in suicide prevention efforts.

Factors associated with suicide outcomes 12 months after screening positive for suicide risk in the emergency department

Arias SA, Miller I, Camargo CA, Jr. Sullivan AF, Goldstein AB, Allen MH, Manton AP, Boudreaux ED (United States)
Psychiatric Services 67, 206-213, 2016

**Objective:** The main objective was to identify which patient characteristics have the strongest association with suicide outcomes in the 12 months after an index emergency department (ED) visit.

**Methods:** Data were analyzed from the first two phases of the Emergency Department Safety Assessment and Follow-up Evaluation (ED-SAFE). The ED-SAFE study, a quasi-experimental, interrupted time-series design, involved participation from eight general medical EDs across the United States. Participants included adults presenting to the ED with active suicidal ideation or an attempt in the past week. Data collection included baseline interview; six- and 12-month chart reviews; and six-, 12-, 24-, 36-, and 52-week telephone follow-up assessments. Regression analyses were conducted.
**Results:** Among 874 participants, the median age was 37 years (interquartile range 27-47), with 56% of the sample being female (N=488), 74% white (N=649), and 13% Hispanic (N=113). At baseline, 577 (66%) participants had suicidal ideation only, whereas 297 (34%) had a suicide attempt in the past week. Data sufficient to determine outcomes were available for 782 (90%). In the 12 months after the index ED visit, 195 (25%) had documentation of at least one suicide attempt or suicide. High school education or less, an ED visit in the preceding six months, prior nonsuicidal self-injury, current alcohol misuse, and suicidal intent or plan were predictive of future suicidal behavior.

**Conclusions:** Continuing to build an understanding of the factors associated with future suicidal behaviors for this population will help guide design and implementation of improved suicide screening and interventions in the ED and better allocation of scarce resources.

---

**An exploratory randomised trial of a simple, brief psychological intervention to reduce subsequent suicidal ideation and behaviour in patients admitted to hospital for self-harm**

Armitage CJ, Abdul Rahim W, Rowe R, O’Connor RC (United Kingdom)

*British Journal of Psychiatry* 208, 470-476, 2016

**Background:** Implementation intentions link triggers for self-harm with coping skills and appear to create an automatic tendency to invoke coping responses when faced with a triggering situation. Aims: To test the effectiveness of implementation intentions in reducing suicidal ideation and behaviour in a high-risk group.

**Method:** Two hundred and twenty-six patients who had self-harmed were randomised to: (a) forming implementation intentions with a 'volitional help sheet'; (b) self-generating implementation intentions without help; or (c) thinking about triggers and coping, but not forming implementation intentions. We measured self-reported suicidal ideation and behaviour, threats of suicide and likelihood of future suicide attempt at baseline and then again at the 3-month follow-up.

**Results:** All suicide-related outcome measures were significantly lower at follow-up among patients forming implementation intentions compared with those in the control condition (ds>0.35). The volitional help sheet resulted in fewer suicide threats (d = 0.59) and lowered the likelihood of future suicide attempts (d = 0.29) compared with patients who self-generated implementation intentions.

**Conclusions:** Implementation intention-based interventions, particularly when supported by a volitional help sheet, show promise in reducing future suicidal ideation and behaviour.
Recommended Readings

Geographic variation in suicide rates in Australian farmers: Why is the problem more frequent in Queensland than in New South Wales?


Research on farmer suicide is limited in explaining the variations in farmers' demographic characteristics. This study examines farmer suicides in two Australian states: Queensland (QLD) and New South Wales (NSW). Standardised suicide rates over 2000-2009 showed a two times higher prevalence of suicide in QLD than NSW (147 vs. 92 cases, respectively). Differences in age and suicide method were observed between states, although they do not appear to account for the sizeable intra- and inter-state variations. Suicide prevention initiatives for farmers should account for different age groups, and also specific place-based risk factors that may vary between and within jurisdictions.

Population trends in substances used in deliberate self-poisoning leading to intensive care unit admissions from 2000 to 2010


*Journal of Clinical Psychiatry* 76, e1583-e1589, 2015

**Objective:** To examine population trends in serious intentional overdoses leading to admission to intensive care units (ICUs) in Winnipeg, Manitoba, Canada.

**Method:** Participants consisted of 1,011 individuals presenting to any of the 11 ICUs in Winnipeg, Canada, with deliberate self-poisonings from January 2000 to December 2010. Eight categories of substances were created: poisons, over-the-counter medications, prescription medications, tricyclic antidepressants (TCAs), sedatives and antidepressants, anticonvulsants, lithium, and cocaine. Using the population of Winnipeg as the denominator, we conducted generalized linear model regression analyses using the Poisson distribution with log link to determine significance of linear trends in overdoses by substance over time.

**Results:** Women accounted for more presentations than men (57.8%), and the largest percentage of overdoses occurred among individuals in the 35- to 54-year age range. A large proportion of admissions were due to multiple overdoses, which accounted for 65.7% of ICU admissions. At the population level, multiple overdoses increased slightly over time (incidence rate ratio [IRR] = 1.02, P <.05), whereas use of poisons (IRR = 0.897, P <.01), over-the-counter medications (IRR = 0.910, P <.01), nonpsychotropic prescription medications (IRR = 0.913, P <.01), anticonvulsants (IRR = 0.880, P <.01), and TCAs (IRR = 0.920, P <.01) decreased over time. Overdoses did not change over time as a function of age or sex. However, severity of overdoses classified by length of stay increased over time (IRR = 1.08, P <.01).

**Conclusions:** It is important for physicians to exercise vigilance while prescribing medication, including being aware of other medications their patients have access to.
Self-harm emergencies after bariatric surgery: A population-based cohort study.

Bhatti JA, Nathens AB, Thiruchelvam D, Grantcharov T, Goldstein BI, Redelmeier DA (Canada)

*JAMA Surgery* 151, 226-232, 2016

**Importance:** Self-harm behaviors, including suicidal ideation and past suicide attempts, are frequent in bariatric surgery candidates. It is unclear, however, whether these behaviors are mitigated or aggravated by surgery.

**Objective:** To compare the risk of self-harm behaviors before and after bariatric surgery.

**Design, Setting, and Participants:** In this population-based, self-matched, longitudinal cohort analysis, we studied 8815 adults from Ontario, Canada, who underwent bariatric surgery between April 1, 2006, and March 31, 2011. Follow-up for each patient was 3 years prior to surgery and 3 years after surgery.

**Main Outcomes and Measures:** Self-harm emergencies 3 years before and after surgery.

**Results:** The cohort included 8815 patients of whom 7176 (81.4%) were women, 7063 (80.1%) were 35 years or older, and 8681 (98.5%) were treated with gastric bypass. A total of 111 patients had 158 self-harm emergencies during follow-up. Overall, self-harm emergencies significantly increased after surgery (3.63 per 1000 patient-years) compared with before surgery (2.33 per 1000 patient-years), equaling a rate ratio (RR) of 1.54 (95% CI, 1.03-2.30; P = .007). Self-harm emergencies after surgery were higher than before surgery among patients older than 35 years (RR, 1.76; 95% CI, 1.05-2.94; P = .03), those with a low-income status (RR, 2.09; 95% CI, 1.20-3.65; P = .01), and those living in rural areas (RR, 6.49; 95% CI, 1.42-29.63; P = .02). The most common self-harm mechanism was an intentional overdose (115 [72.8%]). A total of 147 events (93.0%) occurred in patients diagnosed as having a mental health disorder during the 5 years before the surgery.

**Conclusions and Relevance:** In this study, the risk of self-harm emergencies increased after bariatric surgery, underscoring the need for screening for suicide risk during follow-up.
Trends from the surveillance of suicidal behaviour by the Belgian Network of Sentinel General Practices over two decades: A retrospective observational study

Boffin N, Moreels S, Van Casteren V (Belgium)

BMJ Open 5, e008584, 2015

Objectives: First, we describe trends in characteristics of suicidal events using new (2011-2012) and previous (1993-1995, 2000-2001 and 2007-2008) data reported by the Belgian Network of Sentinel General Practices (SGP); second, we examine patient age-related trends in on-site attendance of sentinel general practitioners (GPs) as first professional caregivers following suicidal behaviour; third, we investigate the accuracy of suicide incidence estimates derived from the SGP data.

Design: Retrospective observational study.

Setting: General practices from the nationwide representative Belgian Network of SGP.

Outcome Measures: Patient gender and age, suicide methods, whether the patient was new, whether the GP was the first caregiver on-site, and the outcome of the suicidal behaviour (fatal or not) were recorded on standard registration forms. The accuracy of suicide incidence estimates was tested against suicide mortality data.

Results: Over the four time periods, 1671 suicidal events were reported: 275 suicides, 1287 suicide attempts and 109 events of suicidal behaviour of unknown outcome. In 2011-2012, sentinel GPs' on-site attendance following the suicidal behaviour of patients <65 years had continued to decrease (from 71% in 1993-1995 to 58% in 2000-2001, 39% in 2007-2008 and 25% in 2011-2012). In 2011-2012, it had also decreased steeply in the population ≥65 years (from 70% in 1993-1995, 76% in 2000-2001 and 79% in 2007-2008 to 35% in 2011-2012). No significant differences were found between the SGP-based suicide incidence estimates for 2011-2012 and the available suicide mortality rates for people <65 and ≥65 years.

Conclusions: GPs' on-site attendance as first professional caregivers following suicidal behaviour continues to decline since 2011-2012 also in the population ≥65 years. Unawareness of patients’ suicidal behaviour endangers both care for surviving patients and the completeness of SGP surveillance data. Yet, the incidence of suicide for 2011-2012 was estimated accurately by the SGP.
Self-harm following release from prison: A prospective data linkage study.
Borschmann R, Thomas E, Moran P, Carroll M, Heffernan E, Spittal MJ, Sutherland G, Alati R, Kinner SA (Australia, United States, United Kingdom)
Australian and New Zealand Journal of Psychiatry. Published online: 24 March 2016. doi: 10.1177/0004867416640090

Objective: Prisoners are at increased risk of both self-harm and suicide compared with the general population, and the risk of suicide after release from prison is three times greater than for those still incarcerated. However, surprisingly little is known about the incidence of self-harm following release from prison. We aimed to determine the incidence of, identify risk factors for and characterise emergency department presentations resulting from self-harm in adults after release from prison.

Method: Cohort study of 1325 adults interviewed prior to release from prison, linked prospectively with State correctional and emergency department records. Data from all emergency department presentations resulting from self-harm were secondarily coded to characterise these presentations. We used negative binomial regression to identify independent predictors of such presentations.

Results: During 3192 person-years of follow-up (median 2.6 years per participant), there were 3755 emergency department presentations. In all, 83 (6.4%) participants presented due to self-harm, accounting for 165 (4.4%) presentations. The crude incidence rates of self-harm for males and females were 49.2 (95% confidence interval: [41.2, 58.7]) and 60.5 (95% confidence interval: [44.9, 81.6]) per 1000 person-years, respectively. Presenting due to self-harm was associated with being Indigenous (incidence rate ratio: 2.01; 95% confidence interval: [1.11, 3.62]), having a lifetime history of a mental disorder (incidence rate ratio: 2.13; 95% confidence interval: [1.19, 3.82]), having previously been hospitalised for psychiatric treatment (incidence rate ratio: 2.68; 95% confidence interval: [1.40, 5.14]) and having previously presented due to self-harm (incidence rate ratio: 3.91; 95% confidence interval: [1.85, 8.30]).

Conclusion: Following release from prison, one in 15 ex-prisoners presented to an emergency department due to self-harm, within an average of 2.6 years of release. Demographic and mental health variables help to identify at-risk groups, and such presentations could provide opportunities for suicide prevention in this population. Transition from prison to the community is challenging, particularly for those with a history of mental disorder; mental health support during and after release may reduce the risk of adverse outcomes, including self-harm.
Improving suicide risk screening and detection in the emergency department

Boudreaux ED, Camargo CA, Arias SA, Sullivan AF, Allen MH, Goldstein AB, Manton AP, Espinola JA, Miller IW (United States)


Introduction: The Emergency Department Safety Assessment and Follow-up Evaluation Screening Outcome Evaluation examined whether universal suicide risk screening is feasible and effective at improving suicide risk detection in the emergency department (ED).

Methods: A three-phase interrupted time series design was used: Treatment as Usual (Phase 1), Universal Screening (Phase 2), and Universal Screening + Intervention (Phase 3). Eight EDs from seven states participated from 2009 through 2014. Data collection spanned peak hours and 7 days of the week. Chart reviews established if screening for intentional self-harm ideation/behavior (screening) was documented in the medical record and whether the individual endorsed intentional self-harm ideation/behavior (detection). Patient interviews determined if the documented intentional self-harm was suicidal. In Phase 2, universal suicide risk screening was implemented during routine care. In Phase 3, improvements were made to increase screening rates and fidelity. Chi-square tests and generalized estimating equations were calculated. Data were analyzed in 2014.

Results: Across the three phases (N=236,791 ED visit records), documented screenings rose from 26% (Phase 1) to 84% (Phase 3) ($\chi^2 [2, n=236,789]=71,000$, $p<0.001$). Detection rose from 2.9% to 5.7% ($\chi^2 [2, n=236,789]=902$, $p<0.001$). The majority of detected intentional self-harm was confirmed as recent suicidal ideation or behavior by patient interview.

Conclusions: Universal suicide risk screening in the ED was feasible and led to a nearly twofold increase in risk detection. If these findings remain true when scaled, the public health impact could be tremendous, because identification of risk is the first and necessary step for preventing suicide.
Association between victimization by bullying and direct self injurious behavior among adolescence in Europe:
A ten-country study

European Child and Adolescent Psychiatry. Published online: 24 March 2016. doi: 10.1007/s00787-016-0840-7

Previous studies have examined the association between victimization by bullying and both suicide ideation and suicide attempts. The current study examined the association between victimization by bullying and direct-self-injurious behavior (D-SIB) among a large representative sample of male and female adolescents in Europe. This study is part of the Saving and Empowering Young Lives in Europe (SEYLE) study and includes 168 schools, with 11,110 students (mean age = 14.9, SD = 0.89). Students were administered a self-report survey within the classroom, in which they were asked about three types of victimization by bullying (physical, verbal and relational) as well as direct self-injurious behavior (D-SIB). Additional risk factors (symptoms of depression and anxiety, suicide ideation, suicide attempts, loneliness, alcohol consumption, drug consumption), and protective factors (parent support, peer support, pro-social behavior) were included. The three types of victimization examined were associated with D-SIB. Examination of gender as moderator of the association between victimization (relational, verbal, and physical) and D-SIB yielded no significant results. As for the risk factors, depression, but not anxiety, partially mediated the effect of relational victimization and verbal victimization on D-SIB. As for the protective factors, students with parent and peer support and those with pro-social behaviors were at significantly lower risk of engaging in D-SIB after being victimized compared to students without support/pro-social behaviors. This large-scale study has clearly demonstrated the cross-sectional association between specific types of victimization with self-injurious behavior among adolescents and what may be part of the risk and protective factors in this complex association.
Background: Most of the research conducted on people who harm themselves has been undertaken in secondary healthcare settings. Little is known about the frequency of self-harm in primary care patient populations. This is the first study to describe the epidemiology of self-harm presentations to primary care using broadly representative national data from across the United Kingdom (UK).

Methods: Using the Clinical Practice Research Datalink (CPRD), we calculated directly standardised rates of incidence and annual presentation during 2001-2013. Rates were compared by gender and age and across the nations of the UK, and also by degree of socioeconomic deprivation measured ecologically at general practice level.

Results: We found significantly elevated rates in females vs. males for incidence (rate ratio - RR, 1.45, 95% confidence interval - CI, 1.42-1.47) and for annual presentation (RR 1.56, CI 1.54-1.58). An increasing trend over time in incidence was apparent for males ($P < 0.001$) but not females ($P = 0.08$), and both genders exhibited rising temporal trends in presentation rates ($P < 0.001$). We observed a decreasing gradient of risk with increasing age and markedly elevated risk for females in the youngest age group (aged 15-24 years vs. all other females: RR 3.75, CI 3.67-3.83). Increasing presentation rates over time were observed for males across all age bands ($P < 0.001$). We found higher rates when comparing Northern Ireland, Scotland, and Wales with England, and increasing rates of presentation over time for all four nations. We also observed higher rates with increasing levels of deprivation - most vs. least deprived male patients: RR 2.17, CI 2.10-2.25.

Conclusions: Incorporating data from primary care yields a more comprehensive quantification of the health burden of self-harm. These novel findings may be useful in informing public health programmes and the targeting of high-risk groups toward the ultimate goal of lowering risk of self-harm repetition and premature death in this population.
Clinical management following self-harm in a UK-wide primary care cohort

Journal of Affective Disorders 197, 182-188, 2016

**Background:** Little is known about the clinical management of patients in primary care following self-harm.

**Methods:** A descriptive cohort study using data from 684 UK general practices that contributed to the Clinical Practice Research Datalink (CPRD) during 2001-2013. We identified 49,970 patients with a self-harm episode, 41,500 of whom had one complete year of follow-up.

**Results:** Among those with complete follow-up, 26,065 (62.8%, 62.3-63.3) were prescribed psychotropic medication and 6318 (15.2%, 14.9-15.6) were referred to mental health services; 4105 (9.9%, CI 9.6-10.2) were medicated without an antecedent psychiatric diagnosis or referral, and 4,506 (10.9%, CI 10.6-11.2) had a diagnosis but were not subsequently medicated or referred. Patients registered at practices in the most deprived localities were 27.1% (CI 21.5-32.2) less likely to be referred than those in the least deprived. Despite a specifically flagged NICE 'Do not do' recommendation in 2011 against prescribing tricyclic antidepressants following self-harm because of their potentially lethal toxicity in overdose, 8.8% (CI 7.8-9.8) of individuals were issued a prescription in the subsequent year. The percentage prescribed Citalopram, an SSRI antidepressant with higher toxicity in overdose, fell sharply during 2012/2013 in the aftermath of a Medicines and Healthcare products Regulatory Agency (MHRA) safety alert issued in 2011.

**Conclusions:** A relatively small percentage of these vulnerable patients are referred to mental health services, and reduced likelihood of referral in more deprived localities reflects a marked health inequality. National clinical guidelines have not yet been effective in reducing rates of tricyclic antidepressant prescribing for this high-risk group.
Newspaper reporting and the emergence of charcoal burning suicide in Taiwan: A mixed methods approach

Chen Y-Y, Tsai C-W, Biddle L, Niederkrotenthaler T, Wu KC-C, Gunnell D (Taiwan, United Kingdom, Austria)

*Journal of Affective Disorders* 193, 355-361, 2016

**Background:** It has been suggested that extensive media reporting of charcoal burning suicide was a key factor in the rapid spread of this novel method in many East Asian countries. But very few empirical studies have explored the relationship between media reporting and the emergence of this new method of suicide.

**Aims:** We investigated the changing pattern of media reporting of charcoal burning suicides in Taiwan during 1998-2002 when this method of suicide increased most rapidly, assessing whether the characteristics of media reporting were associated with the changing incidence of suicide using this method.

**Methods:** A mixed method approach, combining quantitative and qualitative analysis of newspaper content during 1998-2002 was used. We compared differences in reporting characteristics before and after the rapid increase in charcoal burning suicide. Point-biserial and Pearson correlation coefficients were calculated to quantify the associations between the media item content and changes in suicide rates.

**Results:** During the period when charcoal burning suicide increased rapidly, the number of reports per suicide was considerably higher than during the early stage (0.31 vs. 0.10). Detailed reporting of this new method was associated with a post-reporting increase in suicides using the method. Qualitative analysis of news items revealed that the content of reports of suicide by charcoal burning changed gradually; in the early stages of the epidemic (1999-2000) there was convergence in the terminology used to report charcoal burning deaths, later reports gave detailed descriptions of the setting in which the death occurred (2001) and finally the method was glamourized and widely publicized (2001-2002).

**Limitations:** Our analysis was restricted to newspaper reports and did not include TV or the Internet.

**Conclusions:** Newspaper reporting was associated with the evolution and establishment of charcoal burning suicide. Working with media and close monitoring of changes in the incidence of suicide using a new method might help prevent a suicide epidemic such as charcoal burning suicide seen in Taiwan.
Geographical and temporal variations in the prevalence of mental disorders in suicide: Systematic review and meta-analysis

Cho SE, Na KS, Cho SJ, Im JS, Kang SG (Korea)
Journal of Affective Disorders 190, 704-713, 2016

Background: In contrast to the previous studies reporting that most suicides occur among people with mental disorders, recent studies have reported various rates of mental disorders in suicide in different geographical regions. We aimed to comprehensively investigate the factors influencing the variation in the prevalence of mental disorders reported among suicide victims.

Method: The authors searched Embase, Medline, Web of Science, and the Cochrane Library to identify psychological autopsy studies reporting the prevalence of any mental disorders among suicide victims. A meta-regression analysis was conducted to identify the potential effects of geographical regions, the year of publication, measurements of personality disorder, measurements of comorbidity, and the ratio of females on the prevalence of mental disorders in addition to examining the heterogeneity across studies.

Results: From 4475 potentially relevant studies, 48 studies met eligibility criteria, with 6626 suicide victims. The studies from East Asia had a significantly lower mean prevalence (69.6% [95% CI=56.8 to 80.0]) than those in North America (88.2% [95% CI=79.7-93.5]) and South Asia (90.4% [95% CI=71.8-97.2]). The prevalence of any mental disorder decreased according to the year of publication (coefficients=-0.0715, p<0.001).

Limitations: Substantial heterogeneities were identified within all subgroup analyses.

Conclusions: The prevalence of mental disorders among suicide cases seemed relatively low in the East Asia region, and recently published studies tended to report a lower prevalence of mental disorders. The link between the risk factors and suicide in the absence of a mental disorder should be examined in different geographical and sociocultural contexts.

Patterns of health care usage in the year before suicide: A population-based case-control study.

Chock MM, Bommersbach TJ, Geske JL, Bostwick JM (United States)
Mayo Clinic Proceedings 90, 1475-1481, 2015

Objective: To compare the type and frequency of health care visits in the year before suicide between decedents and controls.

Patients and Methods: Cases (n=86) were Olmsted County, Minnesota, residents whose death certificates listed "suicide" as the cause of death from January 1, 2000, through December 31, 2009. Each case had 3 age- and sex-matched controls (n=258). Demographic, diagnostic, and health care usage data were abstracted from medical records. Conditional logistic regression was used to analyze differences in the likelihood of having had psychiatric and nonpsychiatric visits in the year before death, as well as in visit types and frequencies 12 months, 6 months, and 4 weeks before death.
Results: Cases and controls did not significantly differ in having had any health care exposure (P=.18). Suicide decedents, however, had a significantly higher number of total visits in the 12 months, 6 months, and 4 weeks before death (all P<.001), were more likely to have carried psychiatric diagnoses in the previous year (odds ratio [OR], 8.08; 95% CI, 4.31-15.17; P<.001), and were more likely to have had outpatient and inpatient mental health visits (OR, 1.24; 95% CI, 1.05-1.47; P=.01 and OR 6.76; 95% CI, 1.39-32.96; P=.02, respectively). Only cases had had emergency department mental health visits; no control did.

Conclusion: Given that suicide decedents did not differ from controls in having had any health care exposure in the year before death, the fact alone that decedents saw a doctor provides no useful information about risk. Compared with controls, however, decedents had more visits of all types including psychiatric ones. Higher frequencies of health care contacts were associated with elevated suicide risk.

Nonsuicidal self-injury and suicide attempts among ED patients older than 50 years: Comparison of risk factors and ED visit outcomes

Choi NG, DiNitto DM, Marti CN, Choi BY (United States)

Background: Although the number of older adults who engage in nonsuicidal self-injury (NSSI) is not insignificant, research on older adults’ NSSI is scant. The current study examined the prevalence and characteristics of NSSI compared to suicide attempt (SA) in adults older than 50 years who were seen at Emergency Departments (EDs) and their ED visit outcomes.

Methods: Data came from the 2012 Nationwide Emergency Department Sample. We used binary logistic regression analysis to examine demographic and clinical characteristics of NSSI versus SA among 67,069 visits with a diagnosis of either SA or NSSI, and multinomial logistic regression analysis to examine associations between NSSI versus SA and ED outcomes.

Results: Of self-inflicted intentional injuries, 76.89% were SA and 23.11% were NSSI. Visits for NSSI were associated with lower levels of psychiatric disorders and alcohol use disorders than SA and were more likely than SA visits to occur among older age groups (65-74 and 75. +), females, and those with multiple injuries and drug use disorders. NSSI visits were also associated with greater risks of hospital admission (relative risk ratio [RRR] = 1.45, 95% CI = 1.36-1.54) and death (RRR = 18.64, 95% CI = 14.19-24.49), as opposed to treat-and-release, but lower risks of facility transfer/discharge with home health care (RRR = 0.77, 95% CI = 0.72-0.83).

Conclusions: The findings of higher hospitalization and death rates among those with NSSI than SA show how lethal intentional self-destructive behaviors in late life can be even if they are not classified as suicide attempts. The need for mental health and substance abuse treatment is discussed.
Rates of self-harm presenting to general hospitals: A comparison of data from the multicentre study of self-harm in England and hospital episode statistics


BMJ Open 6, e009749, 2016

Objective: Rates of hospital presentation for self-harm in England were compared using different national and local data sources.

Design: The study was descriptive and compared bespoke data collection methods for recording self-harm presentations to hospital with routinely collected hospital data.

Setting: Local area data on self-harm from the 3 centres of the Multicentre Study of Self-harm in England (Oxford, Manchester and Derby) were used along with national and local routinely collected data on self-harm admissions and emergency department attendances from Hospital Episode Statistics (HES).

Primary Outcome: Rate ratios were calculated to compare rates of self-harm generated using different data sources nationally and locally (between 2010 and 2012) and rates of hospital presentations for self-harm were plotted over time (between 2003 and 2012), based on different data sources.

Results: The total number of self-harm episodes between 2010 and 2012 was 13,547 based on Multicentre Study data, 9,600 based on HES emergency department data and 8,096 based on HES admission data. Nationally, routine HES data underestimated overall rates of self-harm by approximately 60% compared with rates based on Multicentre Study data (rate ratio for HES emergency department data, 0.41 (95% CI 0.35 to 0.49); rate ratio for HES admission data, 0.42 (95% CI 0.36 to 0.49)). Direct local area comparisons confirmed an overall underascertainment in the HES data, although the difference varied between centres. There was a general increase in self-harm over time according to HES data which contrasted with a fall and then a rise in the Multicentre Study data.

Conclusions: There was a consistent underestimation of presentations for self-harm recorded by HES emergency department data, and fluctuations in year-on-year figures. HES admission data appeared more reliable but missed non-admitted episodes. Routinely collected data may miss important trends in self-harm and cannot be used in isolation as the basis for a robust national indicator of self-harm.
**Risk factors for suicide in bipolar I disorder in two prospectively studied cohorts**

Coryell W, Kriener A, Butcher B, Nurnberger J, McMahon F, Berrettini W, Fiedorowicz J (United States)

*Journal of Affective Disorders* 190, 1-5, 2016

**Background:** These analyses were undertaken to determine whether similar risk factors for suicide emerged across two prospectively studied cohorts of individuals with bipolar I disorder.

**Methods:** The NIMH Collaborative Study of Depression (CDS) recruited 288 patients with bipolar I disorder from 1978-1981 as they sought treatment. Subjects were followed semiannually and then annually for up to 30 years. The Bipolar Genomics studies identified individuals through clinical referrals and advertisement. Clinical follow-up did not occur but personal identifiers of 1748 were matched with National Death Index (NDI) records. Kaplan-Meier survival analyses tested ten potential risk factors.

**Results:** The CDS and Genomic follow-ups encompassed 12,667 and 4529 person-years, respectively. Suicides/100 person-years were 0.26 and 0.055. The demographic or clinical variables that predicted suicide differed considerably in the two cohorts. The odds ratio for suicide for those with any history of suicide attempt was 2.3 and 2.8, respectively, and was the third highest odds ratio of the tested risk factors in both studies.

**Limitations:** Conclusions: Differences in the sources of participants in studies of suicide risk may result in marked differences across studies in both rates of suicide and in risk factors. A history of suicide attempt is a relatively robust risk factor across samples.

**Development of suicide postvention guidelines for secondary schools: A Delphi study**

Cox GR, Bailey E, Jorm AF, Reavley NJ, Templer K, Parker A, Rickwood D, Bhar S, Robinson J (Australia)

*BMC Public Health* 16, 180, 2016

**Background:** Suicide of school-aged adolescents is a significant problem, with serious implications for students and staff alike. To date, there is a lack of evidence regarding the most effective way for a secondary school to respond to the suicide of a student, termed postvention [(Crisis 33:208-214, 2012), (Crisis 34:164-182, 2013)]. The aim of this study was to employ the expert consensus (Delphi) methodology to the development of a set of guidelines, to assist English-speaking secondary schools to develop a plan to respond to a student suicide, or to respond to a suicide in the absence of a predetermined plan.

**Methods:** The Delphi methodology was employed, which involved a two-stage process. Firstly, medical and research databases, existing postvention guidelines developed for schools, and lay literature were searched in order to identify poten-
tial actions that school staff could carry out following the suicide of a student. Based on this search, an online questionnaire was produced. Secondly, 40 experts in the area of suicide postvention from English-speaking countries were recruited and asked to rate each action contained within this questionnaire, in terms of how important they felt it was to be included in the postvention guidelines. A set of guidelines was developed based on these responses. In total, panel members considered 965 actions across three consensus rounds.

**Results:** Five hundred forty-eight actions were endorsed for inclusion into the postvention guidelines based on an 80% consensus agreement threshold. These actions were grouped according to common themes, which are presented in the following sections: 1. Developing an Emergency Response Plan; 2. Forming an Emergency Response Team; 3. Activating the Emergency Response Team; 4. Managing a suspected suicide that occurs on school grounds; 5. Liaising with the deceased student’s family; 6. Informing staff of the suicide; 7. Informing students of the suicide; 8. Informing parents of the suicide; 9. Informing the wider community of the suicide; 10. Identifying and supporting high-risk students; 11. Ongoing support of students; 12. Ongoing support of staff; 13. Dealing with the media; 14. Internet and social media; 15. The deceased student’s belongings; 16. Funeral and memorial; 17. Continued monitoring of students and staff; 18. Documentation; 19. Critical Incident Review and annual review of the ER Plan; 20. Future prevention. Panel members frequently commented on every suicide being ‘unique’, and the need for flexibility in the guidelines, in order to accommodate the resources available, and the culture of the school community.

**Conclusion:** In order to respond effectively and safely to the suicide of a student, schools need to undertake a variety of postvention actions. These are the first set of postvention guidelines produced worldwide for secondary schools that are based on expert opinion using the Delphi method.

---

**Socio-demographic, health, and psychological correlates of suicidality severity in Australian adolescents**

Delfabbro PH, Malvaso C, Winefield AH, Winefield HR (Australia)

*Australian Journal of Psychology.* Published online: 5 November 2015. doi: 10.1111/ajpy.12104

**Objective:** Few studies have examined whether factors related to suicide ideation alone are also related to suicide plans and attempts. The aim of this study was to examine the psychological and social factors associated with different levels of suicide risk in Australian adolescents.

**Method:** A sample of 2,552 young people aged 14-16 years completed a detailed survey that included demographic, social, and psychological indicators as well as a four-tier measure of suicidality: occasional ideation, regular ideation, suicide plans, and suicide attempts. Separate statistical models were developed for each level of suicide risk as well as an overall multinomial logistic regression to compare more severe levels of suicidality against occasional ideation.

**Results:** The results showed that while most well-established predictors were indicative of elevations of each level of suicide risk, only some factors predicted
suicide attempts. The highest suicide attempt risk was observed in girls, those who
smoked, had romantic relationships, and who had poorer health. Students with
concerns about their weight, who used marijuana, who had more negative
mood states, and who were in romantic relationships were more likely to have
suicide plans.

Conclusions: The results suggest that the identification of young people at highest
risk of suicide attempts can be enhanced by focusing on specific indicators,
including gender (females higher), smoking and marijuana use, and declines in
physical health.

Re-examination of classic risk factors for suicidal behavior in the
psychiatric population
Dennis BB, Roshanov PS, Bawor M, ElSheikh W, Garton S, DeJesus J, Rangarajan S, Vair J,
Sholer H, Hutchinson N, Lordan E, Thabane L, Samaan Z (Canada)
Crisis 36, 231-240, 2015

Background: For decades we have understood the risk factors for suicide in the
general population but have fallen short in understanding what distinguishes the
risk for suicide among patients with serious psychiatric conditions.

Aims: This prompted us to investigate risk factors for suicidal behavior among
psychiatric inpatients.

Method: We reviewed all psychiatric hospital admissions (2008-2011) to a cen-
tralized psychiatric hospital in Ontario, Canada. Using multivariable logistic
regression we evaluated the association between potential risk factors and lifetime
history of suicidal behavior, and constructed a model and clinical risk score to
predict a history of this behavior.

Results: The final risk prediction model for suicidal behavior among psychiatric
patients (n = 2,597) included age (in three categories: 60-69 [OR = 0.74, 95% CI
= 0.73-0.76], 70-79 [OR = 0.45, 95% CI = 0.44-0.46], 80+ [OR = 0.31, 95% CI =
0.30-.31]), substance use disorder (OR = 1.30, 95% CI = 1.27-1.32), mood disor-
der (OR = 1.49, 95% CI = 1.47-1.52), personality disorder (OR = 2.30, 95% CI =
2.25-2.36), psychiatric disorders due to general medical condition (OR = 0.52,
95% CI = 0.50-0.55), and schizophrenia (OR = 0.42, 95% CI = 0.41-0.43). The
risk score constructed from the risk prediction model ranges from -9 (lowest risk,
0% predicted probability of suicidal behavior) to +5 (highest risk, 97% predicted
probability).

Conclusion: Risk estimation may help guide intensive screening and treatment
efforts of psychiatric patients with high risk of suicidal behavior.
Suicides during pregnancy and 1 year postpartum in Sweden, 1980-2007

Esscher A, Essen B, Innala E, Papadopoulos FC, Skalkidou A, Sundstrom-Poromaa I, Hogberg U (Sweden)

*British Journal of Psychiatry* 208, 462-469, 2016

**Background:** Although the incidence of suicide among women who have given birth during the past 12 months is lower than that of women who have not given birth, suicide remains one of the most common causes of death during the year following delivery in high-income countries, such as Sweden.

**Aims:** To characterise women who died by suicide during pregnancy and postpartum from a maternal care perspective.

**Method:** We traced deaths (n = 103) through linkage of the Swedish Cause of Death Register with the Medical Birth and National Patient Registers. We analysed register data and obstetric medical records.

**Results:** The maternal suicide ratio was 3.7 per 100 000 live births for the period 1980-2007, with small magnitude variation over time. The suicide ratio was higher in women born in low-income countries (odds ratio 3.1 (95% CI 1.3-7.7)). Violent suicide methods were common, especially during the first 6 months postpartum. In all, 77 women had received psychiatric care at some point, but 26 women had no documented psychiatric care. Antenatal documentation of psychiatric history was inconsistent. At postpartum discharge, only 20 women had a plan for psychiatric follow-up.

**Conclusions:** Suicide prevention calls for increased clinical awareness and cross-disciplinary maternal care approaches to identify and support women at risk.

---

Meta-analysis of risk factors for nonsuicidal self-injury

Fox KR, Franklin JC, Ribeiro JD, Kleiman EM, Bentley KH, Nock MK (United States)

*Clinical Psychology Review* 42, 156-167, 2015

Nonsuicidal self-injury (NSSI) is a prevalent and dangerous phenomenon associated with many negative outcomes, including future suicidal behaviors. Research on these behaviors has primarily focused on correlates; however, an emerging body of research has focused on NSSI risk factors. To provide a summary of current knowledge about NSSI risk factors, we conducted a meta-analysis of published, prospective studies longitudinally predicting NSSI. This included 20 published reports across 5078 unique participants. RESULTS from a random-effects model demonstrated significant, albeit weak, overall prediction of NSSI (OR=1.59; 95% CI: 1.50 to 1.69). Among specific NSSI risk factors, prior history of NSSI, cluster b, and hopelessness yielded the strongest effects (ORs>3.0); all remaining risk factor categories produced ORs near or below 2.0. NSSI measurement, sample type, sample age, and prediction case measurement type (i.e. binary versus continuous) moderated these effects. Additionally, results highlighted several limitations of the existing literature,
including idiosyncratic NSSI measurement and few studies among samples with NSSI histories. These findings indicate that few strong NSSI risk factors have been identified, and suggest a need for examination of novel risk factors, standardized NSSI measurement, and study samples with a history of NSSI.

**Perceptions of suicide stigma**

Frey LM, Hans JD, Cerel J (United States)

*Crisis* 37, 95-103, 2016

**Background:** Previous research has failed to examine perceptions of stigma experienced by individuals with a history of suicidal behavior, and few studies have examined how stigma is experienced based on whether it was perceived from treatment providers or social network members.

**Aims:** This study examined stigma experienced by individuals with previous suicidal behavior from both treatment providers and individuals in one’s social and family networks.

**Method:** Individuals (n = 156) with a lifetime history of suicidal behavior were recruited through the American Association of Suicidology listserv.

**Results:** Respondents reported the highest rates of perceived stigma with a close family member (57.1%) and emergency department personnel (56.6%). Results indicated that individuals with previous suicidal behavior were more likely to experience stigma from non-mental health providers and social network members than from mental health providers. A hierarchical regression model including both source and type of stigma accounted for more variance (R² = .14) in depression symptomology than a model (R² = .06) with only type of stigma. Prevalence of stigma perceived from social network members was the best predictor of depression symptom severity.

**Conclusion:** These findings highlight the need for future research on how social network members react to suicide disclosure and potential interventions for improving interactions following disclosure.
**Associations between peer victimization and suicidal ideation and suicide attempt during adolescence: Results from a prospective population-based birth cohort**

Geoffroy MC, Boivin M, Arseneault L, Turecki G, Vitaro F, Brendgen M, Renaud J, Seguin JR, Tremblay RE, Cote SM (Canada, Russia, United Kingdom)


**Objective:** To test whether adolescents who are victimized by peers are at heightened risk for suicidal ideation and suicide attempt, using both cross-sectional and prospective investigations.

**Method:** Participants are from the Quebec Longitudinal Study of Child Development, a general population sample of children born in Quebec in 1997 through 1998 and followed up until 15 years of age. Information about victimization and serious suicidal ideation and suicide attempt in the past year was obtained at ages 13 and 15 years from self-reports (N = 1,168).

**Results:** Victims reported concurrently higher rates of suicidal ideation at age 13 years (11.6-14.7%) and suicide attempt at age 15 years (5.4-6.8%) compared to those who had not been victimized (2.7-4.1% for suicidal ideation and 1.6-1.9% for suicide attempt). Being victimized by peers at 13 years predicted suicidal ideation (odds ratio [OR] = 2.27; 95% CI = 1.25-4.12) and suicide attempt (OR = 3.05, 95% CI = 1.36-6.82) 2 years later, even after adjusting for baseline suicidality and mental health problems and a series of confounders (socioeconomic status, intelligence, family's functioning and structure, hostile-reactive parenting, maternal lifetime suicidal ideation/suicide attempt). Those who were victimized at both 13 and 15 years had the highest risk of suicidal ideation (OR = 5.41, 95% CI = 2.53-11.53) and suicide attempt (OR = 5.85, 95% CI = 2.12-16.18) at 15 years.

**Conclusion:** Victimization is associated with an increased risk of suicidal ideation and suicide attempt over and above concurrent suicidality and prior mental health problems. The longer the history of victimization, the greater the risk.

**How parental reactions change in response to adolescent suicide attempt**

Greene-Palmer FN, Wagner BM, Neely LL, Cox DW, Kochanski KM, Perera KU, Ghahramanlou-Holloway M (United States)

*Archives of Suicide Research* 19, 414-421, 2015

This study examined parental reactions to adolescents' suicide attempts and the association of reactions with future suicidal self-directed violence. Participants were 81 mothers and 49 fathers of 85 psychiatric inpatient adolescents. Maternal hostility and paternal anger and arguing predicted future suicide attempts. From pre- to post-attempt, mothers reported feeling increased sadness, caring, anxiety, guilt, fear, and being overwhelmed; fathers reported increased sadness, anxiety, and fear. Findings have clinical implications; improving parent-child relationships post suicide attempt may serve as a protective factor for suicide.
Structured follow-up by general practitioners after deliberate self-poisoning: A randomised controlled trial

Grimholt TK, Jacobsen D, Haavet OR, Sandvik L, Jorgensen T, Norheim AB, Ekeberg O (Norway)
BMC Psychiatry 15, 245, 2015

**Background:** General Practitioners (GPs) play an important role in the follow-up of patients after deliberate self-poisoning (DSP). The aim was to examine whether structured follow-up by GPs increased the content of, adherence to, and satisfaction with treatment after discharge from emergency departments.

**Methods:** This was a multicentre, randomised trial with blinded assignment. Five emergency departments and general practices in the catchment area participated. 202 patients discharged from emergency departments after DSP were assigned. The intervention was structured follow-up by the GP over a 6-month period with a minimum of five consultations, accompanied by written guidelines for the GPs with suggestions for motivating patients to follow treatment, assessing personal problems and suicidal ideation, and availability in the case of suicidal crisis. Outcome measures were data retrieved from the Register for the control and payment of reimbursements to health service providers (KUHR) and by questionnaires mailed to patients and GPs. After 3 and 6 months, the frequency and content of GP contact, and adherence to GP consultations and treatment in general were registered. Satisfaction with general treatment received and with the GP was measured by the EUROPEP scale.

**Results:** Patients in the intervention group received significantly more consultations than the control group (mean 6.7 vs. 4.5 (p = 0.004)). The intervention group was significantly more satisfied with the time their GP took to listen to their personal problems (93.1 % vs. 59.4 % (p = 0.002)) and with the fact that the GP included them in medical decisions (87.5 % vs. 54.8 % (p = 0.009)). The intervention group was significantly more satisfied with the treatment in general than the control group (79 % vs. 51 % (p = 0.026)).

**Conclusions:** Guidelines and structured, enhanced follow-up by the GP after the discharge of the DSP patient increased the number of consultations and satisfaction with aftercare in general practice. Consistently with previous research, there is still a need for interventional studies.
Problem-solving therapy reduces suicidal ideation in depressed older adults with executive dysfunction

Gustavson KA, Alexopoulos GS, Niu GC, McCulloch C, Meade T, Arean PA (United States)

*American Journal of Geriatric Psychiatry* 24, 11-17, 2016

**Objective:** To test the hypothesis that Problem Solving Therapy (PST) is more effective than Supportive Therapy (ST) in reducing suicidal ideation in older adults with major depression and executive dysfunction. We further explored whether patient characteristics, such as age, sex, and additional cognitive impairment load (e.g. memory impairments) were related to changes in suicidal ideation over time.

**Design:** Secondary data analysis using data from a randomized clinical trial allocating participants to PST or ST at 1:1 ratio. Raters were blind to patients' assignments.

**Setting:** University medical centers.

**Participants:** 221 people aged 65 years old and older with major depression determined by Structured Clinical Interview for DSM-III-R diagnosis and executive dysfunction as defined by a score of 33 or less on the Initiation-Perseveration Score of the Mattis Dementia Rating Scale or a Stroop Interference Task score of 25 or less.

**Interventions:** 12 weekly sessions of PST or ST.

**Main Outcome Measures:** The suicide item of the Hamilton Depression Rating Scale.

**Results:** Of the 221 participants, 61% reported suicidal ideation (SI). The ST group had a lower rate of improvement in SI after 12 weeks (44.6%) than did the PST group (60.4%, Fisher's exact test p = 0.031). Logistic regression showed significantly greater reductions in SI in elders who received PST at both 12 weeks (OR: .50, Z = -2.16, p = 0.031) and 36 weeks (OR: 0.5, Z = -1.96, p = 0.05) after treatment.

**Conclusions:** PST is a promising intervention for older adults who are at risk for suicide.

What happens when you tell someone you self-injure?
The effects of disclosing NSSI to adults and peers

Hasking P, Rees CS, Martin G, Quigley J (Australia)

*BMC Public Health* 15, 1039, 2015

**Background:** Non-suicidal self-injury (NSSI) is associated with significant adverse consequences, including increased risk of suicide, and is a growing public health concern. Consequently, facilitating help-seeking in youth who self-injure is an important goal. Although young people who disclose their NSSI typically confide in peers and family, it is unclear how this disclosure and related variables (e.g. support from family and friends, coping behaviours, reasons for living) affect help-seeking over time. The aim of this study was to advance understanding of the impact of disclosure of NSSI by young people and to investigate these effects over time.

**Methods:** A sample of 2637 adolescents completed self-report questionnaires at three time points, one year apart.

**Results:** Of the sample, 526 reported a history of NSSI and 308 of those who self-
injured had disclosed their behaviour to someone else, most commonly friends and parents.

**Conclusions:** Overall, we observed that disclosure of NSSI to parents facilitates informal help-seeking, improves coping and reduces suicidality, but that disclosure to peers might reduce perceived social support and encourage NSSI in others. We discuss these findings in light of their clinical and research implications.

---

**Impact of the recent recession on self-harm: Longitudinal ecological and patient-level investigation from the multicentre study of self-harm in England**


*Journal of Affective Disorders* 191, 132-138, 2016

**Background:** Economic recessions are associated with increases in suicide rates but there is little information for non-fatal self-harm.

**Aims:** To investigate the impact of the recent recession on rates of self-harm in England and problems faced by patients who self-harm.

**Method:** Analysis of data from the Multicentre Study of Self-harm in England for 2001-2010 and local employment statistics for Oxford, Manchester and Derby, including interrupted time series analyses to estimate the effect of the recession on rates of self-harm.

**Results:** Rates of self-harm increased in both genders in Derby and in males in Manchester in 2008-2010, but not in either gender in Oxford, results which largely followed changes in general population unemployment. More patients who self-harm were unemployed in 2008-10 compared to before the recession. The proportion in receipt of sickness or disability allowances decreased. More patients of both genders had employment and financial problems in 2008-2010 and more females also had housing problems, changes which were also largely found in employed patients.

**Limitations:** We have assumed that the recession began in 2008 and information on problems was only available for patients having a psychosocial assessment.

**Conclusions:** Increased rates of self-harm were found in areas where there were greater rises in rates of unemployment. Work, financial and housing problems increased in people who self-harmed. Changes in welfare benefits may have contributed.
Psychotic experiences and risk of self-injurious behaviour in the general population: A systematic review and meta-analysis
Honings S, Drukker M, Groen R, van Os J (The Netherlands)
Psychological Medicine 46, 237-251, 2016

**Background:** Recent studies suggest that psychotic experiences (PE) in the general population are associated with an increased risk of self-injurious behaviour. Both the magnitude of this association and the level of adjustment for confounders vary among studies. A meta-analysis was performed to integrate the available evidence. The influence of possible confounders, including variably defined depression, was assessed.

**Method:** A systematic review and meta-analysis was conducted including general population studies reporting on the risk of self-injurious behaviour in individuals with PE. Studies were identified by a systematic search strategy in Pubmed, PsycINFO and Embase. Reported effect sizes were extracted and meta-analytically pooled.

**Results:** The risk of self-injurious behaviour was 3.20 times higher in individuals with PE compared with those without. Subanalyses showed that PE were associated with self-harm, suicidal ideation as well as suicidal attempts. All studies had scope for considerable residual confounding; effect sizes adjusted for depression were significantly smaller than effect sizes unadjusted for depression. In the longitudinal studies, adjustment for psychopathology resulted in a 74% reduction in excess risk.

**Conclusions:** PE are associated with self-injurious behaviour, suggesting they have potential as passive markers of suicidality. However, the association is confounded and several methodological issues remain, particularly how to separate PE from the full range of connected psychopathology in determining any specific association with self-injurious behaviour. Given evidence that PE represent an indicator of severity of non-psychotic psychopathology, the association between PE and self-injurious behaviour probably reflects a greater likelihood of self-injurious behaviour in more severe states of mental distress.
Risk factors for repetition of a deliberate self-harm episode within seven days in adolescents and young adults: A population-level record linkage study in Western Australia

Hu N, Glauert RA, Li J, Taylor CL (Australia)
Australian and New Zealand Journal of Psychiatry 50, 154-166, 2016

Objective: The risk of repetition of deliberate self-harm peaks in the first 7 days after a deliberate self-harm episode. However, thus far no studies have examined the risk factors for repeating deliberate self-harm during this short-term period. We aimed to investigate the effects of socio-demographic factors, self-harm method and mental health factors in adolescents (10-19 years old) and young adults (20-29 years old).

Methods: We used data linkage of population-wide administrative records from hospital inpatients and emergency departments to identify all the deliberate self-harm-related episodes that occurred in adolescents and young adults in Western Australia from 2000 to 2011. Logistic regression with generalised estimating equations was used for the analyses.

Results: The incidence of repeating deliberate self-harm within the first 7 days after an index episode was 6% (403/6,768) in adolescents and 8% (842/10,198) in young adults. Socio-demographic risk factors included female gender and socio-economic disadvantage. Compared with non-poisoning, self-poisoning predicted increased risk of having a repeated deliberate self-harm episode in males, but not in females. Borderline personality, impulse-control and substance use disorders diagnosed within one week before and one week after an index deliberate self-harm episode conferred the highest risk, followed by depressive and anxiety disorders. Having a preceding deliberate self-harm episode up to 7 days before an index episode was a strong predictor for the future repetition of a deliberate self-harm episode.

Conclusion: Having a repeated deliberate self-harm episode within the first 7 days was related to a wide range of factors present at an index deliberate self-harm episode including socio-demographic characteristics, deliberate self-harm method and co-existing psychiatric conditions. These factors can inform risk assessments tailored to adolescents and young adults respectively to reduce the repetition of deliberate self-harm within a short but critical period, potentially contributing to reduce the repetition of deliberate self-harm in the long term.
Clinical features, impulsivity, temperament and functioning and their role in suicidality in patients with bipolar disorder

Jimenez E, Arias B, Mitjans M, Goikolea JM, Ruiz V, Brat M, Saiz PA, Garcia-Portilla MP, Buron P, Bobes J, Oquendo MA, Vieta E, Benabarre A (Spain, Germany, United States)


**Objective:** Our aim was to analyse sociodemographic and clinical differences between non-suicidal (NS) bipolar patients (BP), BP reporting only suicidal ideation (SI) and BP suicide attempters according to Columbia-Suicide Severity Rating Scale (C-SRSS) criteria. Secondarily, we also investigated whether the C-SRSS Intensity Scale was associated with emergence of suicidal behaviour (SB).

**Method:** A total of 215 euthymic bipolar out-patients were recruited. Semistructured interviews including the C-SRSS were used to assess sociodemographic and clinical data. Patients were grouped according to C-SRSS criteria: patients who scored \( \leq 1 \) on the Severity Scale were classified as NS. The remaining patients were grouped into two groups: 'patients with history of SI' and 'patients with history of SI and SB' according to whether they did or did not have a past actual suicide attempt respectively.

**Results:** Patients from the three groups differed in illness onset, diagnosis, number of episodes and admissions, family history, comorbidities, rapid cycling and medication, as well as level of education, functioning, impulsivity and temperamental profile.

**Conclusion:** Our results suggest that increased impulsivity, higher rates of psychiatric admissions and a reported poor controllability of SI significantly increased the risk for suicidal acts among patients presenting SI.

Trajectories of suicidal ideation in depressedolder adults undergoing antidepressant treatment

Kasckow J, Youk A, Anderson SJ, Dew MA, Butters MA, Marron MM, Begley AE, Szanto K, Dombrovski AY, Mulsant BH, Lenze EJ, Reynolds CF (United States)


Suicide is a public health concern in older adults. Recent cross sectional studies suggest that impairments in executive functioning, memory and attention are associated with suicidal ideation in older adults. It is unknown whether these neuropsychological features predict persistent suicidal ideation. We analyzed data from 468 individuals \( \geq \) age 60 with major depression who received venlafaxine XR monotherapy for up to 16 weeks. We used latent class growth modeling to classify groups of individuals based on trajectories of suicidal ideation. We also examined whether cognitive dysfunction predicted suicidal ideation while controlling for time-dependent variables including depression severity, and age and education. The optimal model using a zero inflated Poisson link classified individuals into four groups, each with a distinct temporal trajectory of suicidal ideation: those with 'minimal suicidal ideation' across time points; those with 'low suicidal
ideation'; those with 'rapidly decreasing suicidal ideation'; and those with 'high and persistent suicidal ideation'. Participants in the 'high and persistent suicidal ideation' group had worse scores relative to those in the "rapidly decreasing suicidal ideation" group on the Color-Word 'inhibition/switching' subtest from the Delis-Kaplan Executive Function Scale, worse attention index scores on the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) and worse total RBANS index scores. These findings suggest that individuals with poorer ability to switch between inhibitory and non-inhibitory responses as well as worse attention and worse overall cognitive status are more likely to have persistently higher levels of suicidal ideation.

The impact of intimate partner relationships on suicidal thoughts and behaviours: A systematic review

Kazan D, Calear AL, Batterham PJ (Australia)

*Journal of Affective Disorders* 190, 585-598, 2016

**Background:** A systematic review was conducted to identify the impact of intimate partner relationships on suicidality. The aim of the review was to identify factors within intimate partner relationships that influence suicidal ideation, attempts and completion.

**Method:** Fifty-one articles were identified through Scopus, PubMed and PsycINFO databases. Due to the high heterogeneity of the included studies, a narrative data synthesis was conducted.

**Results:** The research drew attention to specific contingents of the population, for example examining suicide risk in individuals under the age of 35 or lesbian, gay, bisexual and transgender (LGBT) individuals who are experiencing relationship discord, and in males who have recently separated.

**Limitations:** Interpretation of these findings is constrained by methodological limitations prevalent in much of the literature. Limitations of the existing literature and corresponding directions for future research are discussed.

**Conclusions:** Relationship separation and poor quality relationships are likely to be important risk factors for suicidal thoughts and behaviours and are frequent triggers for a suicide attempt. This review highlights intimate partner relationships as a significant component in a suicide risk assessment, regardless of the clinical setting. Consequently, clinicians should be aware that individuals reporting relationship problems are likely to be at increased risk of suicidal thoughts and behaviours.
Suicidality in schizophrenia spectrum disorders: The relationship to hallucinations and persecutory delusions
European Psychiatry 30, 830-836, 2015

Background: Assessment of suicide risk is crucial in schizophrenia and results concerning risk contributed by hallucinations and persecutory delusions are inconsistent. We aimed to determine factors associated with suicidal ideation and plans at the time of acute admission in patients suffering from schizophrenia spectrum disorders.

Methods: One hundred and twenty-four patients older than 18 years admitted to an acute psychiatric ward due to psychosis were consecutively included. Predictors of suicidal ideation and suicide plans at the time of admission were examined with multinominal logistic regression and structural equation modelling (SEM). The study design was pragmatic, thus entailing a clinically relevant representation.

Results: Depression Odds Ratio (OR) 12.9, Drug use OR 4.07, Hallucinations OR 2.55 and Negative symptoms OR 0.88 significantly predicted Suicidal ideation. Suspiciousness/Persecution did not. Only Depression and Hallucinations significantly predicted Suicide plans. In the SEM-model Anxiety, Depression and Hopelessness connected Suspiciousness/Persecution, Hallucinations and Lack of insight with Suicidal ideation and Suicide plans.

Conclusions: The study contributes to an increasing evidence base supporting an association between hallucinations and suicide risk. We want to emphasise the importance of treating depression and hallucinations in psychotic disorders, reducing hopelessness while working with insight and reducing drug abuse in order to lower suicide risk.

Differences in the effectiveness of psychosocial interventions for suicidal ideation and behaviour in women and men: A systematic review of randomised controlled trials
Krysinska K, Batterham P, Christensen H (Australia)
Archives of Suicide Research. Published online: 16 March 2016. doi: 10.1080/13811118.2016.1162246

Objectives: To explore outcomes of preventive programs and psychosocial treatments for suicidal ideation and behaviour in gender sub-groups in mixed gender studies and in studies limited to one gender.

Methods: A systematic review of randomised controlled trials (RCTs) which included women or men only, or reported and/or examined outcomes of psychosocial interventions in mixed gender samples.

Results: Twenty-seven (18%) of RCTs reported or examined differences in intervention outcomes. Five (33%) of the mixed gender RCTs reported greater effectiveness for females than males. The review identified promising interventions in female-only samples. None of the trials reported greater effectiveness of the intervention in men.
Conclusion: The majority of reviewed studies looking at treatment outcomes in gender sub-groups showed no differences between women and men or indicated that some psychosocial interventions are effective for women. There is a need for studies which look at gender effects and development of interventions more effective and appealing for men at risk of suicide.

Dialectical behavior therapy for high suicide risk in individuals with borderline personality disorder: A randomized clinical trial and component analysis

Linehan MM, Korslund KE, Harned MS (United States)  
*JAMA Psychiatry* 72, 475-482, 2015

**Importance:** Dialectical behavior therapy (DBT) is an empirically supported treatment for suicidal individuals. However, DBT consists of multiple components, including individual therapy, skills training, telephone coaching, and a therapist consultation team, and little is known about which components are needed to achieve positive outcomes.

**Objective:** To evaluate the importance of the skills training component of DBT by comparing skills training plus case management (DBT-S), DBT individual therapy plus activities group (DBT-I), and standard DBT which includes skills training and individual therapy.

**Design, Setting, and Participants:** We performed a single-blind randomized clinical trial from April 24, 2004, through January 26, 2010, involving 1 year of treatment and 1 year of follow-up. Participants included 99 women (mean age, 30.3 years; 69 [71%] white) with borderline personality disorder who had at least 2 suicide attempts and/or nonsuicidal self-injury (NSSI) acts in the last 5 years, an NSSI act or suicide attempt in the 8 weeks before screening, and a suicide attempt in the past year. We used an adaptive randomization procedure to assign participants to each condition. Treatment was delivered from June 3, 2004, through September 29, 2008, in a university-affiliated clinic and community settings by therapists or case managers. Outcomes were evaluated quarterly by blinded assessors. We hypothesized that standard DBT would outperform DBT-S and DBT-I.

**Interventions:** The study compared standard DBT, DBT-S, and DBT-I. Treatment dose was controlled across conditions, and all treatment providers used the DBT suicide risk assessment and management protocol.

**Main Outcomes and Measures:** Frequency and severity of suicide attempts and NSSI episodes.

**Results:** All treatment conditions resulted in similar improvements in the frequency and severity of suicide attempts, suicide ideation, use of crisis services due to suicidality, and reasons for living. Compared with the DBT-I group, interventions that included skills training resulted in greater improvements in the frequency of NSSI acts ($F_{1,85} = 59.1$ [P < .001] for standard DBT and $F_{1,85} = 56.3$ [P < .001] for DBT-S) and depression ($t_{399} = 1.8$ [P = .03] for standard
DBT and t399 = 2.9 [P = .004] for DBT-S) during the treatment year. In addition, anxiety significantly improved during the treatment year in standard DBT (t94 = −3.5 [P < .001]) and DBT-S (t94 = −2.6 [P = .01]), but not in DBT-I. Compared with the DBT-I group, the standard DBT group had lower dropout rates from treatment (8 patients [24%] vs 16 patients [48%] [P = .04]), and patients were less likely to use crisis services in follow-up (ED visits, 1 [3%] vs 3 [13%] [P = .02]; psychiatric hospitalizations, 1 [3%] vs 3 [13%] [P = .03]).

**Conclusions and Relevance:** A variety of DBT interventions with therapists trained in the DBT suicide risk assessment and management protocol are effective for reducing suicide attempts and NSSI episodes. Interventions that include DBT skills training are more effective than DBT without skills training, and standard DBT may be superior in some areas.

---

### No correlation between rates of suicidal ideation and completed suicides in Europe: Analysis of 49,008 participants (55+ years) based on the Survey of Health, Ageing and Retirement in Europe (SHARE)

Lukaschek K, Engelhardt H, Baumert J, Ladwig KH (Germany)

*European Psychiatry* 30, 874-879, 2015

**Background:** Little is known about country-specific variations in suicidal ideation (SID) by sex and how they correspond with completed suicide rate. Therefore, the aim of the present study was to assess variations in SID prevalence rates by sex and its correlation to completed suicide rates across European countries.

**Method:** SHARE is a cross-national European survey of individuals over the age of 50 and their spouse of any age. The present study relied on wave 4 conducted in 2010-2012 including 49,008 participants aged 55 to 104 years from 16 countries. SID was evaluated using a single item from the Euro-D. Data on completed suicide rates were taken from the WHO mortality database.

**Results:** Of the study population (n=49,008, 44.3% men, mean age 68.2±9.1 years), a total of 4139 (8.5%, 95% CI 8.2-8.7) reported suicidal ideation within the last month. The women:men ratio in SID prevalence ranged from 1.30 in Estonia to 2.25 in Spain and Portugal. Regarding country-specific variation, the SID prevalence patterns of both men and women did not correspond to the completed suicide rates for males and females aged 55+ reported by the WHO (2013). Correlations were rather moderate in men (r=0.45) and especially weak in women (r=0.16).

**Conclusion:** The study showed remarkable differences in SID prevalence by sex. The most exciting finding was that SID rates did not correspond with completed suicide rates in each country under investigation. However, the strength of these patterns substantially differs across countries. This unexpected finding need to be further evaluated.
Is suicide an option?: The impact of disability on suicide acceptability in the context of depression, suicidality, and demographic factors

Lund EM, Nadorff MR, Samuel Winer E, Seader K (United States)

*Journal of Affective Disorders* 189, 25-35, 2015

**Background:** Suicide is a major clinical and public health issue, especially in people with disabilities. However, research on the acceptability of suicide in people with disabilities has not directly compared the relative acceptability of suicidality in people with and without disabilities.

**Method:** An online sample of five hundred American adults read five pairs of vignettes about individuals who were experiencing suicidal ideation following a life stressor. Each pair contained a disability and no-disability condition; a sixth pair of vignettes discussed suicidal ideation in an elderly individual and contained physical and cognitive disability conditions. Participants completed questions regarding the relative acceptability of suicidality for each vignette as well as demographic items and measures of suicidality, depressive symptoms, and attitude towards disability.

**Results:** In all vignette five pairs, suicidality was seen as significantly more acceptable in the disability condition; this was true even when the participants themselves had disabilities or friends or family members with disabilities. Suicidality, depressive symptomology, and more negative attitudes towards disability predicted greater acceptability in both conditions; no factors predicted greater differences between the two conditions.

**Limitations:** The vignettes in this study focused primarily on individuals in their 20s and most did not compare two disabling conditions.

**Conclusions:** The greater social acceptability of suicidality in people with disabilities may be taken by individuals with disabilities who are suicidal as implicit permission to end their lives. The potential impact of such social influences should be assessed and addressed by clinicians and suicide prevention advocates.
'Our care through our eyes': A mixed-methods, evaluative study of a service-user, co-produced education programme to improve inpatient care of children and young people admitted following self-harm

Manning JC, Latif A, Carter T, Cooper J, Horsley A, Armstrong M, Wharrad H (United Kingdom)
BMJ Open 5, e009680, 2015

**Introduction:** Within Europe, the UK has one of the highest rates of self-harm, with a particularly high prevalence in children and young people (CYP). CYP who are admitted to paediatric hospital wards with self-harm are cared for by registered children's nurses who have been identified to lack specific training in caring for this patient group. This may impede the delivery of high quality care. Therefore, this study aims to co-produce, implement and evaluate an education programme for registered children's nurses to improve their knowledge, attitudes and confidence when caring for CYP admitted with self-harm.

**Methods and Analysis:** This mixed-methods evaluative study will involve a three-stage design. Stage 1: A priority-setting workshop will be conducted with 19 registered children's nurses. A Delphi technique will be used to establish consensus of information needs. Stage 2: An online educational intervention will be co-produced with 25 CYP and 19 registered children's nurses based on the priorities identified in Stage 1. Stage 3: The intervention will be implemented and evaluated with 250 registered children's nurses at a single hospital. Online Likert scale questionnaires will be administered at baseline and postintervention to assess levels of knowledge, attitudes and confidence in caring for CYP who self-harm. Descriptive and inferential statistics will be used to analyse the data. Statistical significance will be assessed at the 5% (two-sided) level. One-to-one qualitative interviews will also be undertaken with approximately 25 participants to explore any perceived impact on clinical practice. An interpretive descriptive approach will guide qualitative data collection and analysis.

Blunted HPA axis activity in suicide attempters compared to those at high-risk for suicidal behavior

Melhem NM, Keilp JG, Porta G, Oquendo MA, Burke A, Stanley B, Cooper TB, Mann JJ, Brent DA (United States)
Neuropsychopharmacology, 41, 1447-1456, 2015

Studies looking at the relationship of the hypothalamic-pituitary-adrenal axis (HPA) to suicidal behavior and its risk factors, such as depression, childhood abuse, and impulsive aggression, report inconsistent results. These studies also do not always differentiate between subjects who go on to attempt suicide, suicidal subjects who never attempted suicide, and non-suicidal subjects with psychiatric disorders. In this study, we examined cortisol responses to an experimental stressor, the Trier Social Stress Test (TSST), in 208 offspring of parents with mood disorder. Offspring suicide attempters showed lower total cortisol output
[\beta = -0.47, 95\% \text{ CI } (-0.83, -0.11), \ p=0.01] \text{ compared to offspring with suicide-related behavior but never attempted, non-suicidal offspring, and a healthy control group. The result remained significant even after controlling for sex, age, race, ethnicity, site, socioeconomic status, and hour of the day when the TSST was conducted. Suicide attempters also showed lower baseline cortisol prior to the TSST \[\beta = -0.45, 95\% \text{ CI } (-0.74, -0.17), \ p=0.002]\]. However, there were no significant differences between the groups on cortisol reactivity to stress \[\beta = 4.5, 95\% \text{ CI } (-12.9, 22), \ p=0.61]\]. Although subjects with suicide attempt and suicide-related behavior have similar clinical and psychosocial characteristics, this is the first study to differentiate them biologically on HPA axis indices. Blunted HPA axis activity may increase risk for suicide attempt among individuals with psychopathology by reducing their ability to respond adaptively to ongoing stressors. These results may help better identify subjects at high-risk for suicidal behavior for targeted prevention and intervention efforts.

**Suicides in visually impaired persons: A nation-wide register-linked study from Finland based on thirty years of data**

Meyer-Rochow VB, Hakko H, Ojamo M, Uusitalo H, Timonen M (Finland)


Focusing on seasonality, gender, age, and suicide methods a Finnish nation-wide cohort-based study was carried out to compare suicide data between sighted, visually-impaired (WHO impairment level I-II, i.e. visual acuity >0.05, but <0.3) and blind (WHO impairment level III-V, i.e. visual acuity <0.05) victims. Standardized mortality ratios (SMR) of age- and gender-matched populations from official 1982-2011 national registers were used. Group differences in categorical variables were assessed with Pearson’s Chi-square or Fisher’s Exact test and in continuous variables with Mann-Whitney U-test. Seasonality was assessed by Chi-square for multinomials; ratio of observed to expected number of suicides was calculated with 95\% confidence level. Hanging, poisoning, drowning, but rarely shooting or jumping from high places, were preferred suicide methods of the blind. Mortality was significantly increased in the visually impaired (SMR = 1.3; 95\% CI 1.07-1.61), but in gender-stratified analyses the increase only affected males (1.34; 95\% CI = 1.06-1.70) and not females (1.24; 95\% CI 0.82-1.88). Age-stratified analyses identified blind males of working age rather than older men (as in the general population) as a high risk group that requires particular attention. The statistically significant spring suicide peak in blind subjects mirrors that of sighted victims and its possible cause in the blind is discussed.
Suicide is a leading cause of death worldwide. Although research has made strides in better defining suicidal behaviors, there has been less focus on accurate measurement. Currently, the widespread use of self-report, single-item questions to assess suicide ideation, plans and attempts may contribute to measurement problems and misclassification. We examined the validity of single-item measurement and the potential for statistical errors. Over 1,500 participants completed an online survey containing single-item questions regarding a history of suicidal behaviors, followed by questions with more precise language, multiple response options and narrative responses to examine the validity of single-item questions. We also conducted simulations to test whether common statistical tests are robust against the degree of misclassification produced by the use of single-items. We found that 11.3% of participants that endorsed a single-item suicide attempt measure engaged in behavior that would not meet the standard definition of a suicide attempt. Similarly, 8.8% of those who endorsed a single-item measure of suicide ideation endorsed thoughts that would not meet standard definitions of suicide ideation. Statistical simulations revealed that this level of misclassification substantially decreases statistical power and increases the likelihood of false conclusions from statistical tests. Providing a wider range of response options for each item reduced the misclassification rate by approximately half. Overall, the use of single-item, self-report questions to assess the presence of suicidal behaviors leads to misclassification, increasing the likelihood of statistical decision errors. Improving the measurement of suicidal behaviors is critical to increase understanding and prevention of suicide.

Perception of mattering and suicide ideation in the Australian working population: Evidence from a cross-sectional survey

Milner A, Page KM, LaMontagne AD (Australia)

*Community Mental Health Journal.* Published online: 3 March 2016. doi: 10.1007/s10597-016-0002-x

Thoughts about suicide are a risk factor for suicide deaths and attempts and are associated with a range of mental health outcomes. While there is considerable knowledge about risk factors for suicide ideation, there is little known about protective factors. The current study sought to understand the role of perceived mattering to others as a protective factor for suicide in a working sample of Australians using a cross-sectional research design. Logistic regression analysis indicated that people with a higher perception that they mattered had lower odds of suicide ideation than those with lower reported mattering, after controlling for psychological distress, demographic and relationship variables. These results indicate the importance of further research and intervention studies on mattering as a lever for reducing suicidality. Understanding more about protective factors for suicide ideation is important as this may prevent future adverse mental health and behavioural outcomes.
Systematic review of research on railway and urban transit system suicides
Mishara BL, Bardon C (Canada)

Introduction: We critically review research on railway suicides to inform suicide prevention initiatives and future studies, including who is at risk and why, and behaviours at track locations.

Method: Literature was identified from Scopus, Web of Science, Google Scholar and our documentation centre, and contacting 71 railway companies, resulting in 716 articles and eight unpublished reports, with 94 having empirical data on 55 unique studies. Research quality was critically assessed.

Results: The quality of studies varies greatly with frequent shortcomings: no justification of sample size, lacking information on the reliability and validity of measures, no explanation nor theoretical understanding of findings. Railway suicides resemble closely people who use other methods, although they tend to be younger. As with other suicide methods, mental health problems are likely to be present. Railway suicide attempters usually die, but most urban transportation systems attempters survive. Railway suicides are rarely impulsive; people usually go to the railway for the purpose of killing themselves. Hotspots have been the focus of some prevention measures. We know little about why people choose railway suicide, but studies of survivors suggest they often thought they would have an immediate, certain and painless death. Media reports on railway suicides can increase their incidence.

Conclusions: Most research focuses on the incidence and characteristics of events and attempters. Research has not shown that railway suicides are different from suicides by other means. Better quality research is needed, particularly studies that investigate why people use railways to kill themselves and how railway suicides can be effectively prevented, as well as more evaluations of prevention programmes. Because of significant variations by country and region in characteristics of railway suicides, prevention programmes should conduct a local assessment of the characteristics of attempters and incidents.

Practical Implications: We need more research on indicators of suicide risk in attempters on railway property, and studies of how suicidal people on railway property are prevented from suicide. Changing beliefs and attitudes about railway suicides, reducing media reports, offering help onsite, controlling access at hotspots and better staff training in mental health facilities near tracks are promising prevention strategies. However, local specificities must be considered in planning prevention strategies.
Secret society 123: Understanding the language of self-harm on Instagram
Moreno MA, Ton A, Selkie E, Evans Y (United States)
*Journal of Adolescence Health* 58, 78-84, 2016

**Purpose:** Nonsuicidal self-injury (NSSI) content is present on social media and may influence adolescents. Instagram is a popular site among adolescents in which NSSI-related terms are user-generated as hashtags (words preceded by a #). These hashtags may be ambiguous and thus challenging for those outside the NSSI community to understand. The purpose of this study was to evaluate the meaning, popularity, and content advisory warnings related to ambiguous NSSI hashtags on Instagram.

**Methods:** This study used the search term "#selfharmmm" to identify public Instagram posts. Hashtag terms co-listed with #selfharmmm on each post were evaluated for inclusion criteria; selected hashtags were then assessed using a structured evaluation for meaning and consistency. We also investigated the total number of Instagram search hits for each hashtag at two time points and determined whether the hashtag prompted a Content Advisory warning.

**Results:** Our sample of 201 Instagram posts led to identification of 10 ambiguous NSSI hashtags. NSSI terms included #blithe, #cat, and #selfinjuryy. We discovered a popular image that described the broader community of NSSI and mental illness, called "#MySecretFamily." The term #MySecretFamily had approximately 900,000 search results at Time 1 and >1.5 million at Time 2. Only one-third of the relevant hashtags generated Content Advisory warnings.

**Conclusions:** NSSI content is popular on Instagram and often veiled by ambiguous hashtags. Content Advisory warnings were not reliable; thus, parents and providers remain the cornerstone of prompting discussions about NSSI content on social media and providing resources for teens.

A longitudinal study of suicidal ideation among homeless, mentally ill individuals
Noel F, Moniruzzaman A, Somers J, Frankish J, Strehlau V, Schutz C, Krausz M (Canada)
*Social Psychiatry and Psychiatric Epidemiology* 51, 107-114, 2016

**Purpose:** Previous cross-sectional studies have indicated that homeless individuals may present with high rates of suicidal ideation, which are strongly associated with completed suicide. We conducted the first known longitudinal study of suicidal ideation in the homeless.

**Methods:** We used data collected over 24 months in the Vancouver At Home project (N = 497), comprised two randomized-controlled trials of housing interventions for homeless individuals with mental disorders. Presence of suicidal ideation was determined using the Colorado symptom index.

**Results:** Suicidal ideation significantly decreased over time [odds ratio (OR) = 0.31 at 24 months, 95% confidence interval (CI) 0.21-0.46]. Baseline diagnoses of
mood (OR = 2.18, 95 % CI 1.48-3.21) and anxiety disorders (OR = 2.05, 95 % CI 1.42-2.97), as well as depressive mood (OR = 2.52, 95 % CI 1.90-3.33), use of any substance (OR = 1.59, 95 % CI 1.09-2.32), and polysubstance use (OR = 1.90, 95 % CI 1.40-2.60) were significantly associated with suicidal ideation in the multivariate model. Baseline diagnosis of a psychotic disorder (protective effect), daily substance use, intravenous drug use, recent arrest, multiple physical illnesses and history of traumatic brain injury were significantly associated with suicidal ideation in the unadjusted model only.

**Conclusions:** Interventions targeting depressive symptoms and substance use could help decrease suicide risk in homeless individuals. Mental health services need to be tailored to address the complex needs of socially marginalized individuals.

---

**Cortisol levels and suicidal behavior: A meta-analysis**

O’Connor D, Ferguson E, Green J, O’Carroll R, O’Connor R (United Kingdom)

*Psychoneuroendocrinology* 63, 370-379, 2016

Suicide is a major cause of death worldwide, responsible for 1.5% of all mortality. The causes of suicidal behavior are not fully understood. Dysregulated hypothalamic–pituitary–adrenal (HPA) axis activity, as measured by cortisol levels, is one potential risk factor. This meta-analytic review aimed (i) to estimate the strength and variability of the association between naturally fluctuating cortisol levels and suicidal behavior and (ii) to identify moderators of this relationship. A systematic literature search identified 27 studies (N = 2226; 779 suicide attempters and 1447 non-attempters) that met the study eligibility criteria from a total of 417 unique records initially examined. Estimates of effect sizes (r) obtained from these studies were analysed using Comprehensive Meta-Analysis. In these analyses, we compared participants identified as having a past history of suicide attempt(s) to those with no such history. Study quality, mean age of sample and percentage of male participants were examined as potential moderators. Overall, there was no significant effect of suicide group on cortisol. However, significant associations between cortisol and suicide attempts were observed as a function of age. In studies where the mean age of the sample was below 40 years the association was positive (i.e., higher cortisol was associated with suicide attempts; r = .234, p < .001), and where the mean age was 40 or above the association was negative (i.e., lower cortisol was associated with suicide attempts; r = -.129, p < .001). These findings confirm that HPA axis activity, as indicated by age-dependent variations in cortisol levels, is associated with suicidal behavior. The challenge for theory and clinical practice is to explain the complete reversal of the association with age and to identify its clinical implications.
Suicidal ideation in family carers of people with dementia

O’Dwyer ST, Moyle W, Zimmer-Gembeck M, De Leo D (Australia)
Aging and Mental Health 20, 222-230, 2016

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

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

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

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

Mental illness stigma, secrecy and suicidal ideation

Oexle N, Ajdacic-Gross V, Kilian R, Muller M, Rodgers S, Xu Z, Rossler W, Rusch N (Germany, Switzerland, Brazil)
Epidemiology and Psychiatric Sciences. Published online: 26 November 2015. doi: 10.1017/S2045796015001018

Aims: Whether the public stigma associated with mental illness negatively affects an individual, largely depends on whether the person has been labelled ‘mentally ill’. For labelled individuals concealing mental illness is a common strategy to cope with mental illness stigma, despite secrecy’s potential negative consequences. In addition, initial evidence points to a link between stigma and suicidality, but quantitative data from community samples are lacking.

Methods: Based on previous literature about mental illness stigma and suicidality, as well as about the potential influence of labelling processes and secrecy, a theory-driven model linking perceived mental illness stigma and suicidal ideation by a mediation of secrecy and hopelessness was established. This model was tested separately among labelled and unlabelled persons using data derived from a Swiss cross-sectional population-based study. A large community sample of people with elevated psychiatric symptoms was examined by interviews and self-report, collecting information on perceived stigma, secrecy, hopelessness and suicidal ideation. Participants who had ever used mental health services were considered
as labelled 'mentally ill'. A descriptive analysis, stratified logistic regression models and a path analysis testing a three-path mediation effect were conducted.

**Results:** While no significant differences between labelled and unlabelled participants were observed regarding perceived stigma and secrecy, labelled individuals reported significantly higher frequencies of suicidal ideation and feelings of hopelessness. More perceived stigma was associated with suicidal ideation among labelled, but not among unlabelled individuals. In the path analysis, this link was mediated by increased secrecy and hopelessness.

**Conclusions:** Results from this study indicate that among persons labelled 'mentally ill', mental illness stigma is a contributor to suicidal ideation. One explanation for this association is the relation perceived stigma has with secrecy, which introduces negative emotional consequences. If our findings are replicated, they would suggest that programmes empowering people in treatment for mental illness to cope with anticipated and experienced discrimination as well as interventions to reduce public stigma within society could improve suicide prevention.

**Needs and fears of young people presenting at accident and emergency department following an act of self-harm: Secondary analysis of qualitative data**

Owens C, Hansford L, Sharkey S, Ford T (United Kingdom)

*British Journal of Psychiatry* 207, 1-6, 2015

**Background:** Presentation at an accident and emergency (A&E) department is a key opportunity to engage with a young person who self-harms. The needs of this vulnerable group and their fears about presenting to healthcare services, including A&E, are poorly understood.

**Aims:** To examine young people's perceptions of A&E treatment following self-harm and their views on what constitutes a positive clinical encounter.

**Method:** Secondary analysis of qualitative data from an experimental online discussion forum. Threads selected for secondary analysis represent the views of 31 young people aged 16-25 with experience of self-harm.

**Results:** Participants reported avoiding A&E whenever possible, based on their own and others' previous poor experiences. When forced to seek emergency care, they did so with feelings of shame and unworthiness. These feelings were reinforced when they received what they perceived as punitive treatment from A&E staff, perpetuating a cycle of shame, avoidance and further self-harm. Positive encounters were those in which they received 'treatment as usual', i.e. non-discriminatory care, delivered with kindness, which had the potential to challenge negative self-evaluation and break the cycle.

**Conclusions:** The clinical needs of young people who self-harm continue to demand urgent attention. Further hypothesis testing and trials of different models of care delivery for this vulnerable group are warranted.
International comparison of death place for suicide; a population-level eight country death certificate study


Purpose: The places of death for people who died of suicide were compared across eight countries and socio-demographic factors associated with home suicide deaths identified.

Methods: Death certificate data were analyzed; using multivariable binary logistic regression to determine associations.

Results: National suicide death rates ranged from 1.4 % (Mexico) to 6.4 % (South Korea). The proportion of suicide deaths occurring at home was high, ranging from 29.9 % (South Korea) to 65.8 % (Belgium). Being older, female, widowed/separated, highly educated and living in an urban area were risk factors for home suicide.

Conclusions: Home suicide deaths need specific attention in prevention programs.

Variable classification of drug-intoxication suicides across US states: A partial artifact of forensics?

Rockett IRH, Hobbs GR, Wu D, Jia H, Nolte KB, Smith GS, Putnam SL, Caine ED (United States, China)


Background: The 21st-century epidemic of pharmaceutical and other drug-intoxication deaths in the United States (US) has likely precipitated an increase in misclassified, undercounted suicides. Drug-intoxication suicides are highly prone to be misclassified as accident or undetermined. Misclassification adversely impacts suicide and other injury mortality surveillance, etiologic understanding, prevention, and hence clinical and public health policy formation and practice.

Objective: To evaluate whether observed variation in the relative magnitude of drug-intoxication suicides across US states is a partial artifact of the scope and quality of toxicological testing and type of medicolegal death investigation system.

Methods: This was a national, state-based, ecological study of 111,583 drug-intoxication fatalities, whose manner of death was suicide, accident, or undetermined. The proportion of (nonhomicide) drug-intoxication deaths classified by medical examiners and coroners as suicide was analyzed relative to the proportion of death certificates citing one or more specific drugs and two types of state death investigation systems. Our model incorporated five sociodemographic covariates. Data covered the period 2008–2010, and derived from NCHS’s Multiple Cause-of-Death public use files.

Results: Across states, the proportion of drug-intoxication suicides ranged from 0.058 in Louisiana to 0.286 in South Dakota and the rate from 1 per 100,000 population in North Dakota to 4 in New Mexico. There was a low correlation between combined accident and undetermined drug-intoxication death rates and corre-
Corresponding suicide rates (Spearman’s rho = 0.38; p<0.01). Citation of 1 or more specific drugs on the death certificate was positively associated with the relative odds of a state classifying a nonhomicide drug-intoxication death as suicide rather than accident or undetermined, adjusting for region and type of state death investigation system (odds ratio, 1.062; 95% CI,1.016–1.110). Region, too, was a significant predictor. Relative to the South, a 10% increase in drug citation was associated with 43% (95% CI,11%-83%), 41% (95% CI,7%-85%), and 33% (95% CI,1%-76%) higher odds of a suicide classification in the West, Midwest, and Northeast, respectively.

**Conclusion:** Large interstate variation in the relative magnitude of nonhomicide drug-intoxication deaths classified as suicide by medical examiners and coroners in the US appears partially an artifact of geographic region and degree of toxicological assessment in the case ascertainment process. Etiologic understanding and prevention of drug-induced suicides and other drug-intoxication deaths first require rigorous standardization involving accurate concepts, definitions, and case ascertainment.

---

**Evictions and suicide: A follow-up study of almost 22 000 Swedish households in the wake of the global financial crisis**

Rojas Y, Stenberg S-A (Sweden)

*Journal of Epidemiology and Community Health* 70, 409-413, 2016

**Background:** Millions of families across the world are evicted every year. However, very little is known about the impact that eviction has on their lives. This lack of knowledge is also starting to be noticed within the suicidological literature, and prominent scholars are arguing that there is an urgent need to explore the extent to which suicides may be considered a plausible consequence of being faced with eviction.

**Method:** The present study’s sample consists of all persons served with an application for execution of an eviction order during 2009-2012. This group is compared to a random 10% sample of the general Swedish population, ages 16 years and over. The analysis is based on penalised maximum likelihood logistic regressions.

**Results:** Those who had lost their legal right to their dwellings and for whom the landlord had applied for the eviction to be executed were approximately four times more likely to commit suicide than those who had not been exposed to this experience (OR=4.42), controlling for several demographic, socioeconomic and mental health conditions prior to the date of the judicial decision.

**Conclusions:** Home evictions have a significant and detrimental impact on individuals’ risk of committing suicide, even when several other well-known suicidogenic risk factors are controlled for. Our results reinforce the importance of ongoing attempts to remove the issue of evictions from its status as a hidden and neglected social problem.
Suicide risk after nonfatal self-harm: A national cohort study, 2000-2008
Runeson B, Haglund A, Lichtenstein P, Tidemalm D (Sweden)

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

Method: We used linked Swedish national registers to design a cohort study with 34,219 individuals (59% females) who were admitted to hospital in 2000-2005 after deliberate self-harm (ICD-10 defined). They were followed for 39 years. The studied outcome was completed suicide; Cox regression models yielded hazard ratios (HRs) for suicide risk. Temporal patterns were plotted with Kaplan-Meier survival curves, calculated separately for each mental disorder and for the method used at the previous self-harm event.

Results: 1,182 subjects committed suicide during follow-up (670 males and 512 females). Coexisting bipolar disorder (in males, adjusted HR = 6.3; 95% confidence interval [CI], 3.810.3; in females, adjusted HR = 5.8; 95% CI, 3.49.7) and nonorganic psychotic disorder (in males, adjusted HR = 5.1; 95% CI, 3.57.4; in females, adjusted HR = 4.6; 95% CI, 2.87.7) implied the highest risk of suicide after previous self-harm. Hanging as index self-harm method was a strong predictor of later suicide in both males (adjusted HR = 5.3; 95% CI, 4.07.0) and females (adjusted HR = 4.5; 95% CI, 2.58.1). Of those with bipolar disorder who used a method other than poisoning at the index event, 20.4% had already committed suicide after 39 years.

Conclusion: Individuals with severe mental disorders (affective and psychotic disorders) have a poor prognosis in the first years after hospital admission due to self-harm. The risk of subsequent suicide is higher after attempts by hanging and other self-injury methods (vs self-poisoning). Aftercare for those with a self-harm episode should focus on treatment of the mental disorder present at the time of the episode.
What might interrupt men’s suicide? Results from an online survey of men
BMJ Open 5, e008172, 2015

Objectives: Men are almost two times more likely to die by suicide than women, yet little research has focused on what is required to prevent suicide among men. This paper aims to investigate what factors interrupt suicidal behaviour in men, and to examine differences according to known suicide risk factors.

Setting: Australia.

Participants: 251 Australian men aged 18 years and over who had made a suicide attempt 6-18 months prior to completing the survey.

Outcomes: The survey canvassed the language men use to describe their depression and suicidality, warning signs, barriers to accessing help and what is needed to interrupt a suicide attempt. ORs and chi2 were used to test for differences by age, geographic location and current depression severity.

Results: Of 299 men screened and eligible to participate, 251 completed all or part of the survey. Participants identified different words and warning signs for depression compared with suicidality. The most commonly endorsed barriers to accessing help were not wanting to burden others (66%) and having isolated themselves (63%). Men overwhelmingly endorsed ‘I thought about the consequences for my family’ as the factor which stopped a suicide attempt (67%). ‘I need support from someone I really trust and respect’ was also strongly endorsed. There were few differences by age, region or depression severity.

Conclusions: Participants were able to identify signs, albeit often subtle ones, that they were becoming depressed or suicidal. Similarly, most were able to identify active strategies to interrupt this downward spiral. Men wanted others to notice changes in their behaviour, and to approach them without judgement.
Trace lithium is inversely associated with male suicide after adjustment of climatic factors

*Journal of Affective Disorders* 189, 282-286, 2016

**Background:** Previously, we showed the inverse association between lithium in drinking water and male suicide in Kyushu Island. The narrow variation in meteorological factors of Kyushu Island and a considerable amount of evidence regarding the role of the factors on suicide provoked the necessities of adjusting the association by the wide variation in sunshine, temperature, rain fall, and snow fall.

**Methods:** To keep the wide variation in meteorological factors, we combined the data of Kyushu (the southernmost city is Itoman, 26°) and Hokkaido (the northernmost city is Wakkanai, 45°). Multiple regression analyses were used to predict suicide SMRs (total, male and female) by lithium levels in drinking water and meteorological factors.

**Results:** After adjustment of meteorological factors, lithium levels were significantly and inversely associated with male suicide SMRs, but not with total or female suicide SMRs, across the 153 cities of Hokkaido and Kyushu Islands. Moreover, annual total sunshine and annual mean temperature were significantly and inversely associated with male suicide SMRs whereas annual total rainfall was significantly and directly associated with male suicide SMRs.

**Limitations:** The limitations of the present study include the lack of data relevant to lithium levels in food and the proportion of the population who drank tap water and their consumption habits. Conclusions The present findings suggest that trace lithium is inversely associated with male but not female suicide after adjustment of meteorological factors.

Information-seeking on the internet: An investigation of websites potentially accessed by distressed or suicidal adolescents

Singaravelui V, Stewart A, Adams J, Simkin S, Hawton K (United Kingdom)
*Crisis* 36, 211-219, 2015

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

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

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

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

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

Understanding women who self-harm: Predictors and long-term outcomes in a longitudinal community sample
Stanford S, Jones MP, Loxton DJ (Australia)
Australian and New Zealand Journal of Psychiatry. Published online: 26 February 2016. doi: 10.1177/0004867416633298

Objective: There is growing awareness of the range of psychosocial, lifestyle, and sociodemographic factors related to self-harm, however this research is often limited by using cross-sectional or convenience samples. And while we generally assume that young adults who self-harm experience poorer long-term outcomes, longitudinal research is needed. This paper builds on prior research using a large, representative, longitudinal sample.

Methods: 5765 Australian women completed 5 surveys (age 18-23 to 31-36). Six-month self-harm was measured by self-report. We had two aims: firstly to predict future self-harm, separately for women with and without prior self-harm. Secondly, to identify outcomes 3 and 6 years following self-harm.

Results: Six-month self-harm prevalence was 2.5%. Predictors among women without recent self-harm included depression, dieting behaviours, number of male sexual partners, and abuse. Among women with recent or current self-harm, predictors were number of dieting behaviours, tiredness of life, and stress. Women who self-harmed reported poorer outcomes, namely greater difficulties in relationships at 3- and 6-year follow-up.

Conclusions: Longitudinal risk factors for self-harm differed depending on prior self-harm status, and included depression, dieting behaviours, tiredness of life and stress. These factors may serve as warning signs for new or continued self-harm. This study offers new insight into long-term outcomes up to six years after self-harm, particularly with relationships.
Assisted and unassisted suicide in men and women: Longitudinal study of the Swiss population

Steck N, Egger M, Zwahlen M (Switzerland)
British Journal of Psychiatry 208, 484-490, 2016

Background: In Switzerland assisted suicide is legal if no self-interest is involved.
Aims: To compare the strength and direction of associations with sociodemographic factors between assisted and unassisted suicides.
Method: We calculated rates and used Cox and logistic regression models in a longitudinal study of the Swiss population.
Results: Analyses were based on 5,004,403 people, 1,301 assisted and 5,708 unassisted suicides from 2003 to 2008. The rate of unassisted suicides was higher in men than in women, rates of assisted suicides were similar in men and women. Higher education was positively associated with assisted suicide, but negatively with unassisted. Living alone, having no children and no religious affiliation were associated with higher rates of both.
Conclusions: Some situations that indicate greater vulnerability such as living alone were associated with both assisted and unassisted suicide. Among the terminally ill, women were more likely to choose assisted suicide, whereas men died more often by unassisted suicide.

Suicide prevention through online gatekeeping using search advertising techniques

Sueki H, Ito J (Japan)
Crisis 36, 267-273, 2015

Background: Nurturing gatekeepers is an effective suicide prevention strategy. Internet-based methods to screen those at high risk of suicide have been developed in recent years but have not been used for online gatekeeping.
Aims: A preliminary study was conducted to examine the feasibility and effects of online gatekeeping.
Method: Advertisement to promote e-mail psychological consultation service use among Internet users were placed on web pages identified by searches using suicide-related keywords. We replied to all emails received between July and December 2013 and analyzed their contents.
Results: A total of 139 consultation service users were analyzed. The mean age was 23.8 years (SD = 9.7), and female users accounted for 80% of the sample. Suicidal ideation was present in 74.1%, and 12.2% had a history of suicide attempts. After consultation, positive changes in mood were observed in 10.8%, 16.5% showed intentions to seek help from new supporters, and 10.1% of all 139 users actually took help-seeking actions.
Conclusion: Online gatekeeping to prevent suicide by placing advertisements on web search pages to promote consultation service use among Internet users with suicidal ideation may be feasible.
Problems with the coronial determination of ‘suicide’

Tait G, Carpenter B, De Leo D, Tatz C (Australia)

*Mortality* 20, 233-247, 2015

After over 100 years of constant dissatisfaction with the accuracy of suicide data, this paper suggests that the problem may actually lie with the category of suicide itself. In almost all previous research, ‘suicide’ is taken to be a self-evidently valid category of death, not an object of study in its own right. Instead, the focus in this paper is upon the presupposition that how a social fact like suicide is counted depends upon norms for its governmental regulation, leading to a reciprocal relationship between social norms and statistical norms. Since this relationship is centred almost entirely in the coroner’s office, this paper examines governmental, definitional and categorisational issues relating to how coroners reach findings of suicide. The intention of this paper is to contribute to international debates over how suicide can best be conceptualised and adjudged.

Self-harm and life problems: Findings from the multicentre study of self-harm in England


*Social Psychiatry and Psychiatric Epidemiology* 51, 183-192, 2016

**Purpose:** Self-harm is a major clinical problem and is strongly linked to suicide. It is important to understand the problems faced by those who self-harm to design effective clinical services and suicide prevention strategies. We investigated the life problems experienced by patients presenting to general hospitals for self-harm.

**Methods:** Data for 2000–2010 from the Multicentre Study of Self-harm in England were used to investigate life problems associated with self-harm and their relationship to patient and clinical characteristics, including age, gender, repeat self-harm and employment status.

**Results:** Of 24,598 patients (36,431 assessed episodes), 57% were female and with a mean age of 33.1 years (SD 14.0 years), 92.6% were identified as having at least one contributing life problem. The most frequently reported problems at first episode of self-harm within the study period were relationship difficulties (especially with partners). Mental health issues and problems with alcohol were also very common (especially in those aged 35–54 years, and those who repeated self-harm). Those who repeated self-harm were more likely to report problems with housing, mental health and dealing with the consequences of abuse.

**Conclusions:** Self-harm usually occurs in the context of multiple life problems. Clinical services for self-harm patients should have access to appropriate care for provision of help for relationship difficulties and problems concerning alcohol and mental health issues. Individualised clinical support (e.g. psychological therapy, interventions for alcohol problems and relationship counselling) for self-harm patients facing these life problems may play a crucial role in suicide prevention.
Cognitive vulnerabilities and development of suicidal thinking in children of depressed mothers: A longitudinal investigation.
Ttypes A, Gibb BE (United States)
Psychiatry Research 239, 99-104, 2016

Although children of depressed parents are at heightened risk for suicidal ideation, little is known about specific risk factors. This study focused on the relation between a broad range of cognitive vulnerabilities proposed by the leading cognitive theories and the development of suicidal ideation in children. Participants were 209 mothers (aged 24-55) and their 8-14 year old children. Children of depressed mothers who had previously experienced suicidal ideation themselves reported higher levels of brooding rumination than children of depressed mothers who had not experienced suicidal ideation as well as children of never depressed mothers who had not experienced suicidal ideation. Further, among children of depressed mothers with no prior history of suicidal ideation, higher levels of hopelessness and lower global self-worth predicted first onset of suicidal ideation over a 2-year follow-up. Importantly, these results were maintained even after taking the occurrence of major depressive disorder in children during the follow-up into account. The findings highlight specific cognitive vulnerabilities that could be targeted in early suicide prevention and intervention efforts.

Comparison of antidepressant classes and the risk and time course of suicide attempts in adults: Propensity matched, retrospective cohort study.
Valuck RJ, Libby AM, Anderson HD, Allen RR, Strombom I, Marangell LB, Perahia D (United States, United Kingdom)

**Background:** Placebo-controlled clinical trials have led to concern over possible increased risk of suicide-related events in some populations exposed to antidepressants.

**Aims:** To evaluate the risk of suicide attempts by antidepressant drug class and the presence or absence of depression.

**Method:** A retrospective propensity-matched new-user cohort study was used to compare participants with incident depression classified by antidepressant treatment with each other and with the general population.

**Results:** Among the treated group, the suicide attempt rate peaked in the month prior to diagnosis then decreased steadily over the next 6 months. Among the pharmaco logically untreated group, the highest rate was seen in the second month after diagnosis. Cohorts with depression had significantly higher suicide attempt risk than the general population, but the treated group did not differ significantly from the untreated group.

**Conclusions:** Patients on antidepressants did not have significantly higher risk compared with untreated patients. No significant differences were observed for patients treated with individual serotonin-noradrenaline reuptake inhibitors (SNRIs) or selective serotonin reuptake inhibitors (SSRIs) or by class (SSRI v. SNRI cohorts).
Exploring the validity of the fantastic lifestyle checklist in an inner city population of people presenting with suicidal behaviours

Wilhelm K, Handley T, Reddy P (Australia)

*Australian and New Zealand Journal of Psychiatry* 50, 128-134, 2015

**Purpose:** Although patients demonstrate a range of problematic health-related lifestyle behaviours preceding suicidal behaviour, there is little research that routinely measure these behaviours. This paper seeks to establish the utility of health-related lifestyle measure (Fantastic Lifestyle Checklist) in people presenting to a major inner city Emergency Department with a range of suicidal behaviours.

**Methods:** From 2007-2014, data from the 366 patients who had completed the Fantastic Lifestyle Checklist, after referral by the Emergency Department to a service for people with deliberate self-harm or suicidal ideation, were included in the analysis study. A Maximum Likelihood factor analysis was performed to assess the factor structure of the Fantastic Lifestyle Checklist and the resultant factors were explored in relation to measures of health; namely the Depression, Anxiety and Stress Scale and the 12-item Short-Form Health Survey.

**Results:** A three-component factor structure emerged comprising Component 1 'positive life investments', Component 2 'poor emotional regulation' and Component 3 'poor health behaviours'. There was a significant negative correlation between 'positive life investments' and each of the Depression, Anxiety and Stress scales subscales and significant positive associations with 'poor emotional regulation' and Short Form Health Survey-12 mental health scores. Only the Short Form Health Survey-12 physical health subscale was weakly correlated with 'poor health behaviours', in females.

**Conclusion:** Our findings support the construct and concurrent validity of the Fantastic Lifestyle Checklist measure. The three factors obtained for the Fantastic Lifestyle Checklist were coherent and seem useful for research and clinical practice.

Permissive beliefs and attitudes about older adult suicide: A suicide enabling script?

Winterrowd E, Canetto SS, Benoit K (United States)

*Aging and Mental Health*. Published online: 23 October 2015. doi: 10.1080/13607863.2015.1099609

**Objectives:** In the United States, suicide rates are highest among European American older adults. This phenomenon calls attention to cultural factors, specifically, the suicide beliefs and attitudes of European Americans. Beliefs and attitudes matter in the vulnerability to suicide. As predicted by cultural scripts of suicide theory, suicide is most likely among individuals and in communities where it is expected and is most acceptable. This study examined beliefs about the precipitants of, and protectors against older adult suicide, as well as suicide attitudes, in a predominantly European American community.

**Design and Methods:** Two hundred and fifty-five older adults (86% European American) who lived in a predominantly European American community were recruited through homes for the elderly and community health care facilities.
American) and 281 younger adults (81% European American) indicated what they thought were the most likely older adult suicide precipitants and protectors, and their opinion about older adult suicide, depending on precipitant.

**Results:** Health problems were the most endorsed older adult suicide precipitants. Suicide precipitated by health problems was also rated most positively (e.g. rational, courageous). Older adults, persons with more education, and persons who did not identify with a religion expressed the most favorable attitudes about older adult suicide, across suicide precipitants. Men viewed older adult suicide as more admissible, and women, with more sympathy. Perceived suicide protectors included religiosity among older adults, and supportive relationships among younger adults.

**Conclusions:** The belief, in this study's predominantly European American community, that older adult suicide is triggered by health problems, together with favorable attitudes about older adult suicide, suggest an enabling older adult suicide script, with implications for suicide risk and prevention.

---

Does psychosis increase the risk of suicide in patients with major depression? A systematic review

Zalpuri I, Rothschild AJ (United States)

*Journal of Affective Disorders* 198, 23-31, 2016

**Objective:** Over the years studies have shown conflicting results about the risk of suicide in psychotic depression (MD-psych). To understand this association, we undertook a comprehensive review of the literature to ascertain whether individuals with MD-psych have higher rates of completed suicides, suicide attempts or suicidal ideation compared to those with non-psychotic depression (MD-nonpsych).

**Methods:** We searched Pubmed, PsycINFO and Ovid in English language, from 1946-October 2015. Studies were included if suicidal ideation, attempts or completed suicides were assessed.

**Results:** During the acute episode of depression, patients with MD-psych have higher rates of suicide, suicide attempts, and suicidal ideation than patients with MD-nonpsych, especially when the patient is hospitalized on an inpatient psychiatric unit. Studies done after the acute episode has resolved are less likely to show this difference, likely due to patients having received treatment.

**Limitations:** Diagnostic interviews were not conducted in all studies. Many studies did not report whether psychotic symptoms in MD-psych patients were mood-congruent or mood-incongruent; hence it is unclear whether the type of delusion increases suicide risk. Studies did not describe whether MD-psych patients experienced command hallucinations encouraging them to engage in suicidal behavior. Only 24 studies met inclusion criteria; several of them had small sample size and a quality score of zero, hence impacting validity.

**Conclusions:** This review indicates that the seemingly conflicting data in suicide risk between MD-psych and MD-nonpsych in previous studies appears to be related to whether one looks at differences during the acute episode or over the long-term.
Suicide is one of the leading causes of maternal mortality in many countries, but little is known about the epidemiology of suicide and suicidal behavior among pregnant women in the USA. We sought to examine trends and provide nationally representative estimates for suicidal behavior (including suicidal ideation and suicide and self-inflicted injury) among pregnant women from 2006 to 2012 in the USA. Pregnant women aged 12-55 years were identified through pregnancy- and delivery-related hospitalization records from the National (Nationwide) Inpatient Sample. Suicidal behavior was identified by the International Classification of Diseases, Ninth Revision, Clinical Modification codes. Annual, nationwide estimates and trends were determined using discharge and hospital weights. The prevalence of suicidal ideation more than doubled from 2006 to 2012 (47.5 to 115.0 per 100,000 pregnancy- and delivery-related hospitalizations), whereas the prevalence of suicide and self-inflicted injury remained stable. Nearly 10 % of suicidal behavior occurred in the 12-18-year group, showing the highest prevalence per 100,000 pregnancy- and delivery-related hospitalizations (158.8 in 2006 and 308.7 in 2012) over the study period. For suicidal ideation, blacks had higher prevalence than whites; women in the lowest income quartile had the highest prevalence. Although the prevalence of suicidal behavior was higher among hospitalizations with depression diagnoses, more than 30 % of hospitalizations were for suicidal behavior without depression diagnoses. Our findings highlight the increasing burden and racial differences in suicidal ideation among US pregnant women. Targeted suicide prevention efforts are needed for high-risk pregnant women including teens, blacks, and low-income women.
Citation List
Citation List

**FATAL SUICIDAL BEHAVIOR**

**Epidemiology**


Sahoo AK, Sastry AS, Rauta S, Patanaik AMM, Mahapatra SC (2014). Study of organophosphorus poisoning cases at Maharajah Institute of Medical Sciences, AP. *Journal of Evolution of Medical and Dental Sciences* 3, 9201-9206.


Risk and protective factors


Prevention


Postvention and Bereavement


NON-FATAL SUICIDAL BEHAVIOR

Epidemiology


Risk and protective factors


Choi JM, Yang JB (2015). Structural equation model to determine the relationship between economic hardship, depression, family relationships and suicide ideation in elderly South Koreans. Information 18, 3889-3895.


Frey LM, Hans JD, Cerel J (2016). Suicide disclosure in suicide attempt survivors: Does family reaction moderate or mediate disclosure's effect on depression? *Suicide and Life Threatening Behavior* 46, 96-105.


Izci F, Findikli EK, Zincir S, Zincir SB, Koc MI (2016). The differences in temperament-character traits, suicide attempts, impulsivity, and functionality levels of patients with bipolar disorder I and II. *Neuropsychiatric Disease and Treatment* 12, 177-184.


Kim DH, Han K, Kim SW (2016). Relationship between allergic rhinitis and mental health in the general Korean adult population. Allergy Asthma and Immunology Research 8, 49-54.


McKenna Á E, Gillen AMC (2016). Direct and indirect effects of maltreatment typologies on suicidality in a representative Northern Irish sample: Psychopathology only partially mediates the relationship. *Journal of Psychiatric Research* 72, 82-90.


Millings A, Carnelley KB (2015). Core belief content examined in a large sample of patients using online cognitive behaviour therapy. *Journal of Affective Disorders* 186, 275-283.


Montoro R, Thombs B, Igartua KJ (2015). The association of bullying with suicide ideation, plan, and attempt among adolescents with GLB or unsure sexual identity, heterosexual identity with same-sex attraction or behavior, or heterosexual identity without same-sex attraction or behavior. Sante Mentale Au Quebec 40, 55-75.


Rogers ML, Joiner TE, Jr. (2016). Borderline personality disorder diagnostic criteria as risk factors for suicidal behavior through the lens of the interpersonal theory of suicide. *Archives of Suicide Research.* Published online: 8 March 2016. doi: 10.1080/13811118.2016.1158681.


Zhang QE, Sha S, Ungvari GS, Chiu HFK, Ng CH, He HB, Forester BP, Xiang YT (2016). Demographic and clinical profile of patients with dementia receiving electroconvulsive therapy: A case-control study. Journal of ECT. Published online: 8 March 2016. doi: 10.1097/YCT.0000000000000314.


Prevention


Fisher G, Foster C (2016). Examining the needs of paediatric nurses caring for children and young people presenting with self-harm/suicidal behaviour on general paediatric wards: Findings from a small-scale study. *Child Care in Practice*. Published online: 11 January 2016. doi: 10.1080/13575279.2015.1118013


Care and support


Andreasson K (2015). Dialectical behaviour therapy with skills training seems to be more effective in reducing non-suicidal self-injury. *Evidence Based Mental Health* 18, e10.


CASE REPORTS


MISCELLANEOUS


Coffitt-Hall DJ, Gauthier JM, Davis MT, Witte TK (2016). College students' responses to suicidal content on social networking sites: An examination using a simulated Facebook newsfeed. Suicide and Life-Threatening Behavior. Published online: 21 March 2016. doi: 10.1111/sltb.12241.


Hildebrand MJ (2016). The masculine sea: Gender, art, and suicide in Kate Chopin’s the awakening. *American Literary Realism* 48, 189-208.


Large M (2016). Suicide risk and intervention in mental illness study on suicide risk assessment in mental illness underestimates inpatient suicide risk. *BMJ*. Published online: 9 November. doi: 10.1136/bmj.h4978.


Lester D (2016). The death effect—is there a suicide effect? A comment on Green and Mohler. *Omega*72, 360-361.


Sheikh S (2016). Response to comments on "poisonings with suicidal intent aged 0-21 years reported to poison centers 2003-12". *Western Journal of Emergency Medicine* 17, 94-96.


Stone M (2016). Suicidality and aggression during antidepressant treatment: Authors misinterpreted earlier paper from the FDA. BMJ 352, i906.


Wise J (2015). Suicide screening should be given to patients who have bariatric surgery, study recommends. BMJ 351, h5367.


