

Suicide

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Suicide receives increasing attention worldwide, with many countries developing national strategies for prevention. Rates of suicide vary greatly between countries, with the greatest burdens in developing countries. Many more men than women die by suicide. Although suicide rates in elderly people have fallen in many countries, those in young people have risen. Rates also vary with ethnic origin, employment status, and occupation. Most people who die by suicide have psychiatric disorders, notably mood, substance-related, anxiety, psychotic, and personality disorders, with comorbidity being common. Previous self-harm is a major risk factor. Suicide is also associated with physical characteristics and disorders and smoking. Family history of suicidal behaviour is important, as are upbringing, exposure to suicidal behaviour by others and in the media, and availability of means. Approaches to suicide prevention include those targeting high-risk groups and population strategies. There are, however, many challenges to large-scale prevention, especially in developing countries.

Background and epidemiology

The estimated global burden of suicide is a million deaths per year,¹ and an international policy statement by WHO in response to the large burden² has prompted many countries to initiate suicide prevention policies. Estimated annual mortality is 14·5 deaths per 100 000 people, which equates to one death every 40 s.¹ Self-inflicted death accounts for 1·5% of all deaths and is the tenth leading cause of death worldwide.³ Suicide rates vary according to region, sex, age, time, ethnic origin, and, probably, practices of death registration.

In some countries many deaths (eg, 15% in China⁴) are probably unreported, and procedures for recording deaths as suicide are far from uniform. Countries differ in their death certification procedures for unexpected deaths and in their requirements for a death to be recorded as suicide. Certification of the cause of unexpected death is made by different bodies, including the police (eg, Finland), physicians (eg, China), coroners (eg, England and Wales), coroners and medical examiners (eg, USA), or equivalent officials (eg, Procurator Fiscal in Scotland). The requirements for a death to be recorded as suicide also differ, with external evidence of intent, such as a suicide note being required in some countries (eg, Luxembourg); in others a verdict

of suicide can be reached on a basis of judgment of intent, as long as there is certainty that the death was self-inflicted (eg, England and Wales). The decision about the cause of death will be made in private in most countries where police or physicians are responsible for the verdict and in the case of the Procurator Fiscal in Scotland, although in England and Wales coroners' hearings happen in public.

Different procedures and cultural and social practices and values probably have profound effects on death records and lead to misclassification of suicide (eg, as undetermined death or death due to accident or illness). Some countries (eg, Finland, France, Portugal, and Sweden) have very high combined rates of suicide and undetermined death compared with rates of suicide, whereas other countries (eg, Belgium, Denmark, Germany, and the UK) have moderately high combined rates.⁵ Detailed independent investigation (verbal autopsy) of unnatural deaths in rural areas of India, where suicide is illegal, suggested a nine-fold to ten-fold underestimation of suicide in reported rates.⁶ Such findings suggest that official counts for the global burden of suicide¹ are substantial underestimates. In many Islamic countries, the view of suicide as a criminal offence might affect registration practices. Epidemiological data on suicide in Africa are scarce.

Rates of suicide vary substantially between regions and countries (figure 1). Within Europe, rates are generally higher in northern countries than in southern countries. An effect of latitude on suicide rates was found in Japan, suggesting an influence of the daily amounts of sunshine on suicide.⁷ However, countries at about the same latitude, such as the UK and Hungary, can have substantially different rates of suicide. Suicide is a major concern in former Soviet states.¹ More than 30% of suicides worldwide happen in China, where 3·6% of all deaths are by suicide.⁴ Few countries provide national suicide rates segregated by residence, and these data show no clear pattern; although, in China, suicide rates are three-times higher in rural than in urban settings.⁴

In developed countries, the male-to-female ratio for suicide is between two and four to one, and this seems

Search strategy and selection criteria

We searched the Cochrane Library, Psycinfo, Medline (January, 2003, to July, 2008), and Embase (January, 2003, to July, 2008). We used the search term "suicide" in combination with the terms "aetiology", "epidemiology", "prevention", and "psychological autopsy". Index terms were used in preference to free text search terms whenever possible; no language restrictions were applied to the search. We commonly referenced older publications. We also searched the reference lists of articles identified in this search strategy and selected relevant articles. Reviews and book chapters are cited to provide readers with further reading. Our reference list was modified on the basis of comments from peer reviewers.

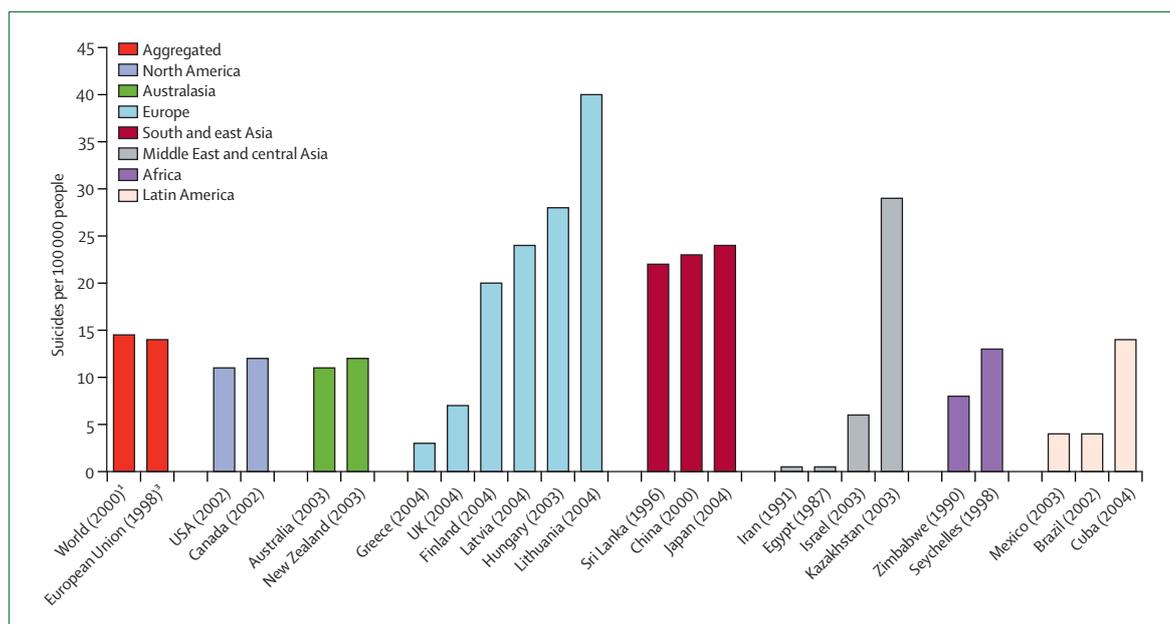


Figure 1: Suicide rates in selected regions and countries

to be increasing.¹ Asian countries typically show much lower male-to-female ratios, but these might also be increasing;⁸ although in China more women than men die by suicide.⁴

Suicide rates are highest in elderly people in most countries. However, over the past 50 years, rates have risen in young people, in particular in men,⁹ and decreased in elderly people.¹⁰ More recently, suicide rates in young males have decreased in some developed countries in which they had previously risen.¹¹

Suicide rates also vary with season, peaking in spring, particularly among men, although this association seems to change over time.¹² Suicide rates are also high among people, in particular women, born in spring and early summer.¹³

Clear ethnic patterns in suicide rates exist. These include lower rates of suicide in Hispanic and African Americans than in European Americans;¹⁴ although the historically large gap in suicide rates in black people compared with those in white people in the USA has narrowed because of a substantial increase in suicides in young black people.¹¹

Within countries, variations in rates are seen between different ethnic groups.¹⁵ In the UK, for example, young Indian women in London have a higher suicide rate than other women, whereas young Afro-Caribbean women have very low rates, and men of Indian and African origin have lower rates than do white men.¹⁶ There are also differences in methods of suicide, with women in south Asia commonly using setting fire to themselves as a method of suicide.¹⁷ Suicide rates within ethnic groups seem to vary inversely according to relative population density of each group, suggesting

that presence of cultural supports and networks might be protective.¹⁶ However, suicide rates in populations of immigrants also tend to co-vary with rates in country of birth.¹⁸

Indigenous populations in several countries have high suicide rates compared with the rest of the population, for example Native American people in the USA, Métis and Inuit in Canada, Australian Aborigines, and Maori in New Zealand all have high rates of suicide.¹⁵ Factors that might contribute include marginalisation, disintegration of traditional social support networks and cultural values, socioeconomic deprivation, and alcohol misuse.

Suicide rates are high in unemployed people,¹⁹ although the reasons for this association are complex. In part, high rates are associated with mental illness, which contributes to risks of both unemployment and suicide.²⁰ Among people in employment, some occupational groups are at increased risk of suicide. Medical practitioners have a high risk in most countries, but female doctors are generally most at risk.^{21,22} Nurses also have a high risk.²³ In both these professional groups, access to poisons seems to be an important factor in determining the high rates.²³ Among doctors, anaesthetists are particularly at risk, with anaesthetic drugs being used in many suicide deaths.²¹ Several other high-risk occupational groups (eg, dentists, pharmacists, veterinary surgeons, and farmers) also have easy access to means for suicide.²⁴

Suicide rates are high in prisoners in countries that release data.²⁵ Major risk factors are being confined to a single prison cell, previous attempted suicide, recent suicidal ideation, and psychiatric disorder or history of

Panel: Risk factors for suicide**Distal**

- Genetic loading
- Personality characteristics (eg, impulsivity, aggression)
- Restricted fetal growth and perinatal circumstances
- Early traumatic life events
- Neurobiological disturbances (eg, serotonin dysfunction and hypothalamic-pituitary axis hyperactivity)

Proximal

- Psychiatric disorder
- Physical disorder
- Psychosocial crisis
- Availability of means
- Exposure to models

alcohol problems.²⁶ Rates of attempted suicide in homosexual and bisexual men and women are high, but evidence is lacking for suicide.²⁷

Methods of suicide

When a person is contemplating suicide, access to specific methods might be the factor that leads to translation of suicidal thoughts into action. The danger of available methods might determine whether the outcome is fatal or not. In general, men tend to choose more violent means (eg, hanging or shooting) and women less violent methods (eg, self-poisoning).²⁸

Availability of specific means for suicide affects national patterns in the methods used. In the USA, firearms are used in most suicides, with risk of their use being highest where guns are kept in households.²⁹ In rural areas of many developing countries, ingestion of pesticides is the main method of suicide,³⁰ reflecting toxicity, easy availability, and poor storage. As many as 30% of global suicide deaths might involve ingestion of pesticides.³⁰

Contributory factors

Numerous factors contribute to suicide, which is never the consequence of one single cause or stressor. These factors can be categorised as state-dependent or trait-dependent, or as distal or proximal factors (panel). The relation between risk factors can be described in explanatory models of suicide, such as the stress–diathesis model (figure 2).

Acute psychosocial crises and psychiatric disorders are commonly the proximal stressors leading to suicidal behaviour, while pessimism or hopelessness and aggression or impulsivity are components of the diathesis for suicidal behaviour. Familial or genetic factors, childhood experiences, and other factors, including cholesterol concentrations, influence the diathesis.³¹ The stress–diathesis model is compatible with recent gene–environment interaction models,³² but prospective studies of its predictive value are needed.

Psychiatric disorders

The classic method of investigating characteristics of individuals who have died by suicide is through psychological autopsy, involving interviews with key informants and examination of official records.³³ This approach has shown that psychiatric disorders are present in about 90% of people who kill themselves and contribute 47–74% of population risk of suicide.³⁴ Such studies have mostly been done in developed countries. Similar findings have come from India.³⁵ In China, however, a much lower proportion of people who die by suicide seem to have psychiatric disorders, especially women and girls in rural areas.³⁶ Affective disorder is the most common psychiatric disorder, followed by substance (especially alcohol) misuse and schizophrenia. Comorbidity of disorders greatly increases risk of suicide.³⁴

The mortality risk for suicide associated with depression is many times the general population risk.³⁷ More than half of all people who die by suicide meet criteria for current depressive disorder;³⁴ although the association seems weaker in Asia. About 4% of depressed individuals die by suicide, but the risk is greatest in males and in those who have needed psychiatric hospitalisation, especially for suicidality.³⁸ Clinical predictors of suicide in people with major depressive disorder also include a history of attempted suicide, high levels of hopelessness, and high ratings of suicidal tendencies.³⁸ Suicide in major depressive disorder is most likely to occur during the first episode, and this seems to be related to alcohol misuse and impulsive-aggressive personality traits. The effect of impulsive-aggressive traits is present in child and adolescent suicide and decreases with age.³⁹

10–15% of patients with bipolar disorder die by suicide, commonly early in the illness course.⁴⁰ Risk factors for suicidal behaviour include previous self-harm, family history of suicide, early onset and increasing severity of the disorder, depressive symptoms (including hopelessness), mixed affective states, rapid cycling, comorbid psychiatric disorder, and misuse of alcohol or drugs.⁴¹

Recent estimates suggest that lifetime suicide risk in schizophrenia is 4–5%, the risk being highest relatively early after onset of the disorder.⁴² Risk is associated less with the core symptoms of schizophrenia, such as delusions and hallucinations, but more with depression and specific affective symptoms (eg, agitation, sense of worthlessness, and hopelessness). Other factors include previous suicide attempts, drug misuse, fear of mental disintegration, recent loss, and poor adherence to treatment.⁴³

Alcohol misuse, particularly dependence, is strongly associated with suicide risk.⁴⁴ The severity of the disorder, aggression, impulsivity, and hopelessness seem to predispose to suicide. Key precipitating factors are depression and stressful life events, particularly disruption of personal relationships.⁴⁴

Suicide is a common cause of death in people with eating disorders, in particular anorexia nervosa.¹¹ The risk of suicide is increased in adjustment disorder,⁴⁵ and anxiety disorders and panic disorder are also associated with increased risk.^{45,46} However, comorbid mood and substance-misuse disorders are common in anxiety disorders and it is unclear how much these disorders mask anxiety in psychological autopsy studies or to what extent they are responsible for the increased suicide rate in patients with anxiety disorders.⁴⁷ The effect of anxiety disorders on suicide could therefore be either underestimated or overestimated. Findings on post-traumatic stress disorder are inconclusive.⁴⁸

Attention deficit hyperactivity disorder seems to increase the risk of suicide in males via increasing severity of comorbidities, in particular conduct disorder and depression.⁴⁹ Psychopathology, including body dysmorphic disorder probably explains, at least in part, the surprisingly increased risk of suicide after cosmetic breast augmentation, reported in six epidemiological studies.⁵⁰ 30–40% of people who die by suicide have personality disorders.^{51,52} The risk of suicide seems to be particularly increased in borderline and antisocial personality disorders.^{52,53} However, nearly all individuals with personality disorders who die by suicide have concurrent depressive symptoms, substance-use disorders, or both.^{51,52} The concept of personality disorder might be less relevant in developing countries, where suicidal acts often seem to be impulsive.⁵⁴

About 10% of individuals who die by suicide in most countries have no apparent psychiatric disorder. However, psychological autopsy study of such people indicates that most have psychiatric symptoms and personality characteristics similar to those in individuals with psychiatric disorder who have died by suicide.^{55,56} Thus, in most countries (except China) suicide seems rarely to occur in the absence of psychiatric disorders or symptoms.

Physical health

Suicide is associated with poor physical health and disabilities. An association between raised body-mass index and increased risk of depression but reduced risk of suicide (15% decrease in suicide risk for each 5 kg/m² increase in body-mass index) is intriguing.⁵⁷ The association between low body-mass index and increased risk of suicide cannot be explained by weight loss caused by mental illness, but low cholesterol concentrations might play a part.⁵⁷ Increased risk of suicide is associated with smoking. The relation seems to be dose related,⁵⁸ and an underlying biological mechanism is possible,⁵⁹ but depression and alcohol or drug disorders might confound the association.⁶⁰

Suicide is also associated with several physical disorders, including cancer (head and neck cancers in particular), HIV/AIDS, Huntington's disease, multiple sclerosis, epilepsy, peptic ulcer, renal disease, spinal-cord

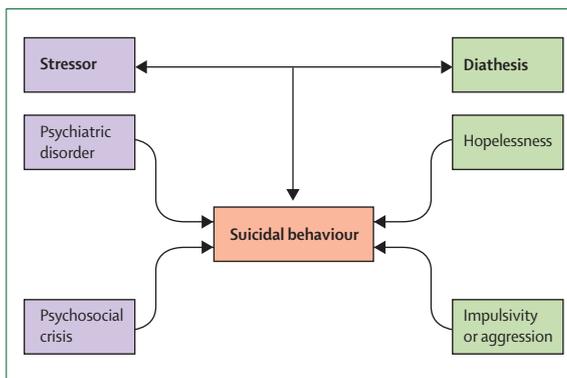


Figure 2: A stress–diathesis model of suicide
Adapted from Mann 2003.³¹

injury, systemic lupus erythematosus,^{61,62} and pain.⁶³ However, many studies of associations between physical illness and suicide have methodological problems.⁶²

Other factors

In most studies of risk factors for suicide, a history of self-harm or suicide attempts is the strongest factor, present in at least 40% of cases.³⁴ In prospective studies of individuals who present to hospital after non-fatal self-poisoning or self-injury, 1–6% die by suicide in the first year, although the proportion varies among countries.⁶⁴ The risk is higher in older people, men,⁶⁵ people who repeatedly self-harm,⁶⁶ those whose acts of self-harm involved high suicidal intent (ie, apparent wish to die),⁶⁷ people who misuse alcohol, and those not living with relatives.⁶⁸ Although there is debate over whether attempted suicide should be distinguished from non-suicidal self-harm,⁶⁹ the risk of suicide is mainly related to whether or not an intentional act of self-poisoning or self-injury has occurred, and less to the degree of suicidal intention.⁶⁸

Suicide is commonly preceded by notable life events, in particular interpersonal or health-related events.⁷⁰ Major events affecting whole populations, such as earthquakes⁷¹ or deaths of famous people,⁷² can be followed by increased suicide rates. By contrast, wars can be associated with a decline in suicide rates, possibly because of greater cohesion and shared sense of purpose in a society, although the effect of war might not apply to civil wars.⁷³

Physical and, in particular, sexual abuse during childhood is strongly associated with suicide. The effects of childhood maltreatment and its relation to suicide are compounded by intergenerational transmission of abuse. Familial transmission of suicidal behaviour is most likely if the person attempting suicide had been sexually abused as a child.⁷⁴ Abuse is, thus, not only a risk factor for suicidal behaviour for individuals abused as children, but also for their offspring.¹¹

Risk of suicidal behaviour can be influenced by exposure to similar behaviour by other people. People

bereaved by suicide have an increased risk of themselves dying by suicide.⁷⁵ Clusters of suicidal acts can occur in a community, particularly in young people,⁷⁶ with evidence of specific connections (eg, newspaper cuttings, text messages) in some cases. Some multiple deaths by suicide involve suicide pacts,⁷⁷ with a recent development being meeting of suicidal individuals through internet websites before death.⁷⁸ Some websites might encourage suicide and provide detailed information about methods that may be used in a suicidal act.⁷⁹

A substantial body of evidence indicates that certain types of media reporting and portrayal of suicidal behaviour can influence suicide and self-harm in the general population.^{80,81} Newspaper reporting of suicides can be particularly influential if it is sensational, if it includes dramatic headlines and pictures, if it reports methods of suicide in detail, and if the subject is a celebrity.^{80,82} Suicide in television dramas can influence risk and nature of subsequent suicidal behaviour.⁸³

Pathophysiology

Early studies suggested involvement of neurobiological dysfunction in attempted and completed suicide.^{84,85} Several biological systems might be involved in suicidal behaviour. Post-mortem studies have shown changes in central neurotransmission functions in association with suicide, particularly with regard to the serotonin and noradrenalin systems, and in postsynaptic signal transduction.³¹ Furthermore, dysfunction of the hypothalamic-pituitary-adrenal axis might predict suicide in patients with depression, whether or not they have attempted suicide.^{86,87} Low cholesterol concentrations are associated with an increased risk of suicide,⁸⁸ but the greater effect on the risk of suicide of cholesterol lowering by diet than by treatment with statins is unexplained.³¹

Family history of suicide increases the risk at least two-fold, particularly in girls and women, independently of family psychiatric history.⁸⁹ Concordance rates of suicide are higher among monozygotic twins than among dizygotic twins.⁹⁰ Genetic factors account for 45% of the variance in suicidal thoughts and behaviours, and candidate genes include those encoding for tryptophan hydroxylase and the serotonin transporter.⁹⁰ The phenotypic association with suicide is, however, unclear; disturbances in the serotonergic system are associated with suicide-related characteristics including aggression, impulsivity, dysfunctional attitudes about the future, hopelessness,^{91,92} and impaired decision making.⁹³ Poor neuropsychological function after exposure to particular stressors⁹⁴ might explain the association between disturbed serotonergic prefrontal brain function and an increased risk of suicidal behaviour, and thus constitute an endophenotype for suicidal behaviour. Evidence is accumulating that such behaviour results from interaction between genes and

environmental stressors.³² Discussion of nature versus nurture is fuelled by findings of associations between suicide, young maternal age, and restricted fetal and childhood growth.⁹⁵⁻⁹⁷ Although social factors might help to explain such associations, environmental stressors can include intrauterine determinants of a diathesis for suicide.⁹⁸

By contrast with non-fatal self-harm, few studies have investigated personality-related correlates of completed suicide.⁹⁹ High levels of lifetime aggression³⁹ are associated with high risk of suicide, while most, though not all, studies suggest impulsivity also affects the risk of suicide.^{55,100} Hopelessness is a strong predictor of suicide.¹⁰¹

Suicide in young and elderly people

Suicide rates rise throughout the teenage years, especially in males. Many factors associated with suicide in adults are also present in younger people. Family transmission of suicide risk is important, especially when suicide occurs on the maternal side.¹⁰² Most young people who die by suicide have psychiatric disorders, with affective disorders, substance-related disorders, and disruptive behaviour disorders being most frequent, and, as in adults, comorbidity of disorders being common.¹¹ Other important contributory factors include previous suicide attempts, family disruption and discord, loss events, physical and sexual abuse, homelessness, and homosexual and bisexual orientation.^{11,103} Media influences seem important in young people,¹⁰⁴ and some suicides also seem to happen in clusters.⁷⁶

In elderly people in developed countries, suicide is strongly linked to psychiatric disorder, with depression being the main contributor.¹⁰⁵ A similar pattern was found in Hong Kong.¹⁰⁶ Alcohol misuse might be an important factor in elderly people.¹⁰⁵ Cognitive rigidity and obsessional traits seem to affect suicide risk,^{107,108} probably because they undermine elderly people's ability to cope with challenges of ageing, which often call for substantial adaptations. Physical illness,¹⁰⁹ bereavement, and loss of independence¹¹⁰ are also important factors.

Prevention

Several countries have established national suicide prevention strategies. Some strategies include specific targets for reduction in suicides. Although the value of these steps has not been proven, they do seem to help focus attention on the problem of suicide. Prevention of suicide can best involve strategies that focus on individuals in known high-risk groups and strategies aimed at general reduction in population risk of suicide.

Strategies targeting high-risk groups

Although overall groups at risk can be identified, prediction of suicide in individuals is difficult because

individual risk factors account for a small proportion of the variance in risk and lack sufficient specificity, resulting in high rates of false positives.¹¹¹

The management of people at risk of suicide is challenging because of the many causes and poor evidence base. Each person with depression should be screened for suicide risk by specifically asking about suicidal thoughts and plans. If suicidal ideation is present or if suicidal intentions are suspected, risk factors for suicide (panel) should be assessed. If suicide risk is present, further assessment should address the imminence of suicidal behaviour. Intention to die (explicitly expressed or inferred from behaviour), cogent plans, and high levels of hopelessness might indicate imminent risk. This risk is likely to be heightened by alcohol misuse and easy access to methods by which to carry out a suicidal act. In cases of high or imminent suicide risk, immediate action is needed, including vigilance and supervision of patients, perhaps through hospitalisation, removal of potential methods of suicide, and initiation of vigorous treatment of associated psychiatric disorder.

In cases of a mood disorder, treatment options include antidepressants, mood stabilisers, and psychotherapy. Diagnosis and treatment of depression plays a pivotal part in prevention of suicide. However, the relation between antidepressants and risk of suicidal behaviour is debated,^{112,113} particularly in young people.^{114,115} Regulatory agencies have issued warnings that use of selective serotonin-reuptake inhibitors poses a small but significantly increased risk of suicidal ideation or non-fatal suicide attempts for children and adolescents.¹¹⁶ Guidelines therefore recommend that antidepressants should be given only to moderate or severely depressed adolescents and only with psychological therapy.¹¹⁷ The benefits of adding cognitive behavioural therapy are debated, but might include attenuation of the risk of suicidality during medication treatment.^{118,119} Careful monitoring of symptoms, side-effects, and suicide risk should be routinely done in all patients, especially when initiating antidepressant medication.¹¹⁷ Although electroconvulsive therapy is commonly the last resort in the treatment of depression, it might have immediate benefit on expressed suicidal intent in patients with depression.¹²⁰ A recent meta-analysis of randomised trials suggested that the risk of death and suicide in people with mood disorders was reduced by 60% in those taking lithium.¹²¹ Possible mechanisms of antisuicidal action include its effects on mood stabilisation, impulsivity, and aggression, and a non-specific effect arising from long-term close monitoring.

Excess mortality in schizophrenia is mostly seen in patients who are not taking antipsychotic drugs.¹²² Although studies of the effect of treatments on suicidal behaviour are rare and findings inconsistent, clozapine may have an antisuicidal effect. In a randomised trial in

patients with schizophrenia or schizoaffective disorder at risk of suicide, patients treated with clozapine had fewer suicide attempts and rescue interventions to prevent suicide than did those receiving olanzapine.¹²³

Because most suicides associated with psychiatric hospitalisation happen shortly after admission (mostly through hanging) or after discharge, safer services, intensive clinical care, and ongoing care beyond the point of clinical recovery are important to reduce the risk of suicide in patients with psychiatric disorders.¹²⁴

The high risk of suicide after self-harm or attempted suicide means that individuals with such behaviours, especially those with characteristics indicating higher risk, such as repeated self-harm,^{66,125} should be targeted in prevention programmes. Specific psychological treatments, especially cognitive behaviour therapy, can reduce repetition of self-harm.¹²⁶ Voluntary agencies, including crisis self-help lines, provide a very substantial resource for helping suicidal people, although their effect on suicide prevention is difficult to assess.¹²⁷

Population strategies

Removal of means used for suicide is important in management of individuals, and modification of general access to dangerous means can also be effective in suicide prevention at the population level.¹²⁸ Substitution of one method with another does happen, but is rare.¹²⁹ One striking example of the effect of availability of a common means of suicide was the large reduction in suicides following the change of the UK gas supply from toxic coal gas, the most common method used for suicide during the early 1960s, to non-toxic North Sea gas.¹³⁰ More recent examples include reduction in use of vehicle exhaust for suicide since catalytic converters have been introduced in cars,¹³¹ fewer suicides by jumping from bridges and other sites popular for this method of suicide have resulted from the addition of safety barriers,¹³² and, although to a variable extent, the results of gun-control laws in countries where firearms are often used for suicide.²⁹ The major problem of intentional pesticide poisoning in rural areas of many developing countries could be reduced by restriction of access to pesticides through safer storage and stopping sales of more toxic preparations.⁵⁴ Hanging, which has become more common as a method of suicide in several countries, presents particular challenges for prevention because of the ready availability of the means by which to do it.¹³³

Up to 40% of individuals who die by suicide have visited a family doctor within weeks of death.¹³⁴ An initial study of an educational primary care programme to improve detection and management of depression on the Swedish island of Gotland that showed promising effects on suicide rates¹³⁵ had methodological problems, but similar results from German and Hungarian studies have also had positive effects on rates of non-fatal suicide attempts¹³⁶ and suicide.¹³⁷

School programmes aimed at improving psychological wellbeing have the potency to contribute to suicide prevention in young people.¹³⁸ Programmes in school curricula might increase knowledge of psychological symptoms and help-seeking behaviour,¹³⁹ but also hopelessness and maladaptive coping.¹³⁸ Curriculum-based programmes might thus be used only as part of more broadly based comprehensive prevention programmes including gatekeeper training and suicide screening. Parents and friends might be an appropriate target for gatekeeper training. Another approach is the use of school-based screening strategies, such as the Columbia Suicide Screen, to identify individuals at risk who should receive a second-stage clinical assessment. This approach seems to be reasonably reliable, valid, and safe,¹⁴⁰ although a high rate of false-positive cases might be a drawback.

Evidence of media influences on suicide resulted in production of guidelines for the reporting and portrayal of suicidal behaviour.¹⁴¹ Consultation with editors has changed the reporting of suicides in newspapers.¹⁴² In Austria, for example, voluntary restriction on newspaper reporting of subway suicides in Vienna was followed by a reduction in suicides,¹⁴³ and guidelines for newspapers might have helped to lower suicide rates.¹⁴⁴ The internet might promote suicide,⁷⁹ but it could also serve as a source of treatment-related information for preventing suicide and supporting survivors, with chat rooms taking the place of telephone help lines.

Future prospects

Because suicide is a complex problem, no single approach is likely to contribute to a significant substantial decline in suicide rates. Clinical studies of suicide prevention are hindered by methodological and ethical problems, especially since many people at risk do not have contact with clinical care. Knowledge about who is at risk of suicide has nevertheless increased substantially, and a number of interventions show promising effects. Future research must focus on the development and assessment of empirically based suicide-prevention and treatment protocols. The challenges of preventing suicide in developing countries need particular attention, because most research comes from developed countries, but most deaths by suicides happen in developing countries.

Contributors

Both authors contributed equally to this Seminar.

Conflicts of interest

We declare that we have no conflicts of interest.

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