Suicide prevention and audit

Suicide is a devastating event and a major public health issue. On average one person dies every 2 hours in England as a result of suicide. It is the commonest cause of death in men under the age of 35 years. This article reviews the epidemiology, causal factors and prevention of suicide, and also briefly discusses the role of audit in this area.

Over the last two decades there has been increasing focus on suicide prevention and a number of countries have implemented suicide prevention strategies. In order for these to be focused and effective it is important to monitor, and take account of, trends in suicide and suicidal behaviour.

Epidemiology of suicide

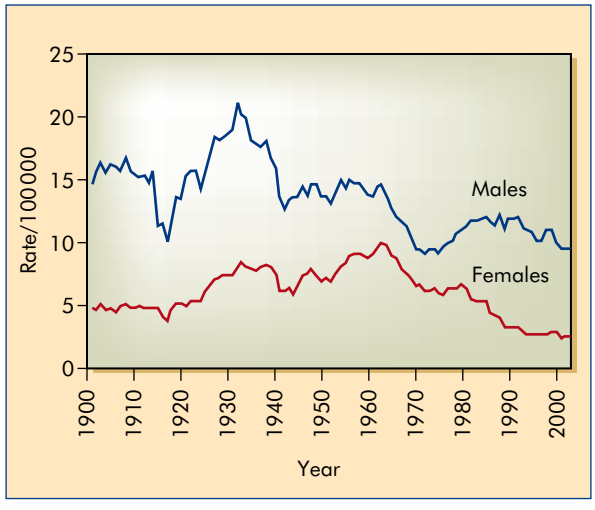
There have been some dramatic changes in suicide rates over the last 100 years (*Figure 1*). Suicide rates declined during the two world wars. During the socioeconomic depression of the late 1920s and early 1930s there was a marked increase in rates (especially in males). During the 1960s and early 1970s suicide rates declined in parallel with changes in domestic gas from toxic coal gas to non-toxic North Sea gas. Rates fell in both genders by approximately a third. This was because gas poisoning, usually via gas ovens in homes, had previously been the most common method of suicide (Kreitman, 1976).

Gender and age

At all ages men have higher rates of suicide than women. This gender difference is most marked between the ages of 15 and 44 years. Male suicide is often by more violent means and a first attempt by a man is more likely to end in death (Drever et al, 1996). Internationally, China is the exception to the predominance of male suicides; female suicides are more common, particularly in rural areas.

Three decades ago suicide rates increased steadily with increasing age in both genders. Since then suicide rates have decreased in older people of both genders and increased in males aged 15–44 years (*Figure 2a*). As a result suicide rates for males are similar across the age span. In females, rates are similar in those aged 25 years and above, with 15–24-year-olds having the lowest rates (*Figure 2b*).

Figure 1. Rates of suicide in England and Wales 1901–2003 (Office for National Statistics, 2003).



Geography

Suicide rates vary between countries in Europe, being highest in Eastern Block and Northern countries. In Asia, countries such as China and Sri Lanka also have high rates. While suicide rates are usually higher in urban than rural areas, recent increases in rates in young males have been marked in rural areas. Migrant status is also associated with higher rates of suicide. Countries where atheism and Christianity predominate appear to have higher rates of suicide.

Season and time

Suicide is found to occur more commonly in April, May and June and is least common in December, although this seasonal pattern has diminished in recent years in several countries. This seasonal variation is most marked in women. Mornings are common times for suicide in contrast with deliberate self-harm (DSH) which is more frequent at weekends and in the evening.

Marital status

Suicide rates are lowest in those who are married and highest in divorcees and widowers (Kreitman, 1988). Slightly higher rates are found among those in same sex relationships.

Employment

Higher rates of suicide are found in the unemployed, but the nature of the association has been disputed (Platt and Hawton, 2000). However, a number of professions also carry higher risk. These include doctors (especially females), farmers, pharmacists, dentists and veterinary surgeons (Office for National Statistics, 2003). This may be a result of the higher levels of stress and responsibility associated with these occupations and ease of access to lethal means.

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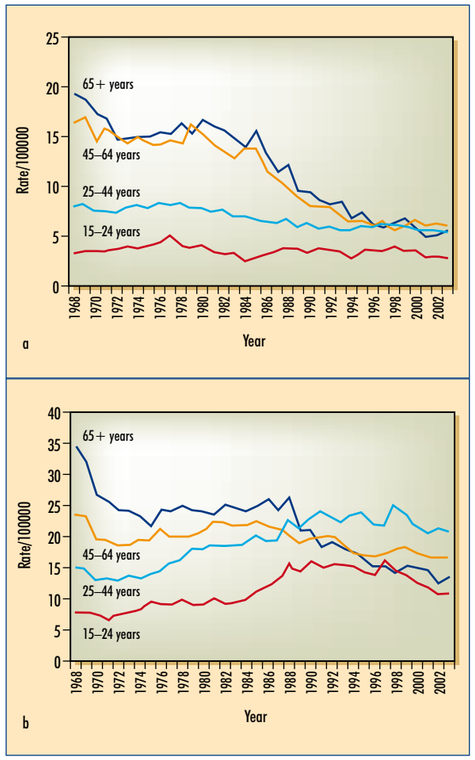

Figure 2. Rates of suicide and open verdicts in England and Wales 1968–2003. a. Females. b. Males. From Office for National Statistics (2003).

Causes and risk factors

Past history of deliberate self-harm

This is the most important risk factor for completed suicide. A study by Hawton et al (2003) found those who self-harm were 56 times more likely to die from suicide in the year following their DSH. Their 10-year risk was 2.4%. The risk is much higher in males than females, although the risk increases markedly in females over the age of 55 years (Hawton et al, 2003). Within DSH patients suicide is also increased in those who repeat self-harm (Zahl and Hawton, 2004) and in those who carry out DSH with high suicidal intent (Harriss et al, 2005).

Mental health problems

It is thought that up to 95% of individuals who commit suicide have some form of mental disorder (Harris and Barraclough, 1998). Approximately 70% are thought to have depressive symptoms at the time of suicide and those who are receiving treatment for mood disorder are 30 times more likely to commit suicide. It is often when people are in the initial stages of recovering from depression that they are thought to be most at risk. Suicide accounts for 10% of deaths in those suffering from schizophrenia, the majority of these being young men with recent diagnoses who have predominantly affective symptoms and a history of self-harm. Those who have alcohol and drug dependencies, early dementia, and personality disorders all have higher than average risk of suicide. Co-morbidity of psychiatric and personality disorders is associated with particularly elevated risk.

In the 4 weeks following discharge from hospital for the treatment of a psychiatric disorder there is a 100–200-fold increase in the risk of suicide (Goldacre et al, 1993). People currently or previously in the care of psychiatric services are ten times more likely to die from suicide. Approximately a quarter of people dying by suicide have either been in current psychiatric care at the time or have been in such care in the previous year.

Psychological factors

Many suicide attempters have difficulties in problem solving, particularly in dealing with difficulties in interpersonal relationships (Williams and Pollock, 2000). These difficulties are often more marked in suicide attempters than in patients with psychiatric disorders who have not carried out a suicidal act. There is a strong link between suicidal behaviour, impulsivity and aggression. Pessimism regarding the future or feelings of hopelessness are important and are thought to be the key link between depression and suicidal acts. Hopelessness is also an important predictor in repetition of suicidal acts and for eventual suicide (Beck et al, 1989). Low self-esteem is another important factor and is likely to be linked to feelings of hopelessness. Poor compliance with treatment and other motivational issues are also common among suicide attempters.

Genetic and neurobiological factors

Suicide often aggregates in families (Baldessarini and Hennen, 2004). Suicidality may be a familial trait that is independent of mental disorder. Adoption studies suggest that genetic factors are more important than environmental factors. Identical twins have a higher concordance for suicide than non-identical twins. Most of the neurochemical evidence, particularly that obtained from the brains of suicide victims, points to the involvement of the serotonergic system in suicidal behaviour. It has been proposed that aggression (and possibly impulsivity) and suicidal behaviour are linked to hypofunction of brain serotonergic systems. The noradrenergic and dopaminergic systems have also been implicated, but the evidence is more fragmentary (Mann, 1998).

Physical health

Severe physical illness increases the risk of suicidal behaviour, especially if the illness has a chronic debilitating course. This is particularly true in the elderly. In younger age groups respiratory disease correlates most notably with suicidal behaviour (Viilo et al, 2005).

Other correlates of suicide

Other risk factors include being detained in prison, recent loss events, exposure to certain types of media portrayal or reporting of suicide, exposure to self-harm or suicide by other people, and social isolation.

Prevention

Many countries have initiated national suicide prevention strategies in the past 10–15 years. There has, however, been some debate over how prevention should be approached strategically. Prevention can be addressed in two ways:

1. Population (or universal) approaches, where the aim is to instigate general initiatives to decrease the suicide rate in the population as a whole
2. High-risk group (or targeted) strategies, where the focus is on specific groups at high risk of suicide.

Effective national strategies should include both types of approach. Population strategies involve education of the general public as well as, for example school children and those in primary care, addressing the economic factors associated with suicidal behaviour, and restricting availability of means for suicide. Provision of crisis lines and befriending agencies are also important.

High-risk strategies are more appealing and straightforward, but risk factors are widespread across the population. This approach often means that those classified as medium risk are excluded and so such strategies may be less effective than anticipated in reducing suicide rates.

Prevention of suicide in the UK has been brought to the fore with the publication of the National Suicide Prevention Strategy for England in September 2002 (Department of Health, 2002). Its aim is to reduce the death rate from suicide by 20% by the year 2010. The advantages of having such a target are that it provides a focus, numerical impact and a time perspective, as well as ensuring ongoing assessment of progress. The strategy includes six goals:

1. To reduce the suicide risk in high-risk groups
2. To promote mental wellbeing in the wider population
3. To reduce the availability of the means to commit suicide
4. To improve reporting of suicidal behaviour in the media
5. To promote research on suicide and suicide prevention
6. To improve the monitoring of suicide.

Some examples of the specific measures proposed within each goal are outlined below.

Goal 1: To reduce the suicide risk in high-risk groups

A number of measures relating to psychiatric services, including stringent follow-up of psychiatric patients, prescribing limits, crisis services and education of mental health professionals have been proposed.

The NICE guideline for the management of self-harm (National Institute for Clinical Excellence, 2004) sets out clear assessment and follow-up strategies for DSH patients, and the creation of a collaborative monitoring service. Risk assessment training is also included.

Young men are being targeted through health education including measures to reduce alcohol and substance misuse.

The key actions in achieving the targets within the prison service are new screening and risk management (e.g. removing means for suicide by hanging, ensuring there are no hooks, fixed curtain rails or accessible pipes in prisons), improved health screening in custody and the availability of prisoner listeners at all times.

Support networks are being provided for those in high-risk occupations. An example is Rural Minds, which aims to provide support within the farming community.

Goal 2: To promote mental wellbeing in the wider population

Target groups include those from ethnic minority groups, victims and survivors of abuse, young people, women during and after pregnancy, older people and those bereaved by suicide. Action being taken includes closer monitoring of these groups, education and the development of specific guidelines.

Goal 3: To reduce the availability of the means to commit suicide

One example of an initiative has been changes to the environment in psychiatric inpatient units, such as removal of ligature points and removal of non-collapsible curtain rails. This has reduced inpatient suicides by hanging. From September 1998 paracetamol and salicylate pack sizes were reduced from 100 to 32 for pharmacies and 24 to 16 for other outlets (and only one purchase up to the maximum on a single occasion). Four years after the legislation there was a reduction in the number of tablets taken in overdose and in large overdoses, a 30% reduction in admissions to liver units and a 22% reduction in deaths from paracetamol and salicylate poisoning (Hawton et al, 2004). The introduction of catalytic converters in motor vehicles has led to a reduction in the number of suicide by this method. Because of its toxicity and frequent use for suicide coproxamol is being gradually phased out in the UK. Monitoring of 'hotspots' on railways is being developed in order to develop guidance on action to be taken and posting of crisis phone numbers on bridges and high places has taken place.

Goal 4: To improve reporting of suicidal behaviour in the media

There are evidence-based guidelines for the media on the reporting of suicides and efforts are being made to train journalists appropriately. Experiences from subway suicides in Austria show that well-considered guidelines led to a change in the way such suicides were reported by the media which was followed by a marked decrease in subway suicides.

Goal 5: To promote research on suicide and suicide prevention

A national collaboration of experts in suicide research will oversee a programme of research to support the suicide prevention strategy, including investigation of uncertain areas and evaluation of specific prevention strategies.

Goal 6: To improve the monitoring of suicide

A large amount of data is already collected by the Office for National Statistics and the scope of information collected is to be expanded in order gather more information where it is lacking (e.g. risk of suicidal behaviour in ethnic minority groups), and to evaluate specific prevention strategies.

Audit of suicides

The purpose of suicide audit is to optimize clinical practise so that preventable suicides are avoided. Audit needs to be systematic, comprehensive and effective, as well as sensitive. In the context of local audit this means identifying specific local risk factors and targets for intervention. Local audit should not simply be aimed at reproducing risk factors that have already been established. Local population-based systems for suicide audit are now a requirement for all primary care trusts in England. However, there is no nationwide approach to suicide audit at present.

Audit should involve routinely collected information regarding suicide and unexpected death. Data can be collated on all unexpected deaths (a method which can lead to the collection of a lot of irrelevant data), or on information from the coroner or district health authorities. A process of data matching involving both hospitals and community teams is usually necessary. A number of procedural difficulties can complicate suicide audit. These include incomplete data, selective and incomplete discussion, tendency to criticize rather than evaluate, negative attitudes towards suicide prevention and fears of being blamed or humiliated.

The National Confidential Enquiry is an example of a large scale audit limited to suicides (and homicides) that occur in patients in current or recent care of mental health services in the UK (Department of Health, 1999). Critics suggest that this type of audit tends to lend too much weight to characteristics of those who commit suicide rather than focus on near misses. In Oxfordshire, attempts to include near misses have been made through the establishment of a serious incident rolling review process (Rose, 2000). This involves three critical incident meetings per year where all serious incidents that have occurred in the local trust undergo peer review in the context of local services and environment. Comparison to national patterns can be made and a number of local policies have been implemented: for example, raising the parapets on two local bridges and the design of three new acute adult inpatient wards.

KEY POINTS

- Suicide is a major public health issue.
- The National Suicide Prevention for England and Wales aims to reduce suicide by 20% by 2010.
- Modifying risk factors, reducing the availability of means and increasing awareness are essential if this is to be achieved.
- Audit plays an important role in identifying risk factors at a local level.

Conclusions

Suicide is an important cause of death worldwide, with a number of well-defined risk factors. National suicide prevention strategies such as that recently introduced in England outline a variety of measures aimed at reducing the death rate by modifying risk factors, reducing the availability of means, and increasing media and public awareness. Audit plays an important part in highlighting specific local factors which can be modified accordingly. **BJHM**

Conflict of interest: none.

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