Suicide: rates, risk factors and future directions for prevention

Suicide is a leading cause of death worldwide. Approximately 3000 people die by suicide every day, equating to over 1 million deaths per year globally (World Health Organization, 2002). The average global suicide rate is 14.5 (per 100 000 population) although rates vary substantially by country and geographical region (Hawton and van Heeringen, 2009). In the UK, suicide accounts for approximately 6000 deaths per year although numbers of suicide deaths have decreased throughout most of the UK over the last decade (Appleby et al, 2006, 2008). Suicide rates vary within the UK, with overall rates lowest in England and Wales (10.2 per 100 000 population) (Appleby et al, 2006) and highest in Scotland (18.7 per 100 000 population) (Appleby et al, 2008).

What causes suicide?

Suicide is a complex, multi-faceted phenomenon. Suicide risk is affected by a myriad of factors including demographic (e.g. sex, age), socioeconomic and cultural (e.g. marital status, ethnicity, religion, migration, unemployment, political regime), temporal (e.g. seasonality, significant dates), psychological (e.g. personality traits, cognitive variables) and biological factors (e.g. genetics) (Hawton and van Heeringen, 2009).

The two factors most commonly associated with increased suicide risk are mental illness and previous self-harm. Mental illness is present in approximately 90% of individuals who die by suicide although there is some variation internationally (Cavanagh et al, 2003; Phillips, 2010). Suicide risk is increased by approximately 11-fold in the context of mental illness (Kapur, 2004) compared to the general population, although the magnitude of risk varies between individual psychiatric diagnoses (Harris and Barraclough, 1997). Self-harm (and repeated self-harm) is one of the strongest risk factors for subsequent suicide. Suicide risk increases 50–200-fold in the year following an episode of self-harm when compared to individuals who have not self-harmed (Cooper et al, 2005) and risk is even greater in individuals who repeatedly self-harm (Zahl and Hawton, 2004). Some risk factors for self-harm overlap with risk factors for suicide (e.g. mental disorder) suggesting these behaviours are related.

Suicide in different health-care settings

Between 20 and 76% of individuals are in contact with primary care services in the month before death, rising to between 57 and 90% in the year before death (Luoma et al, 2002). Similarly, a substantial proportion of patients are in contact with emergency departments before suicide (39%) (Gairin et al, 2003). Approximately 25% of all individuals who die by suicide are in contact with mental health services in the 12 months before suicide (Appleby et al, 2006). High rates of contact with primary care (91%) (Pearson et al, 2009) and emergency departments (43%) (Da Cruz et al, 2009) are also characteristic of this patient population. Patients' contacts with health services suggest points for suicide prevention in the health-care pathway.

In contrast, very little is known worldwide about suicide occurring in a general hospital setting (Ballard et al, 2008a). The only national study to date has been carried out in Finland in which 1.9% of all suicide deaths had occurred on a general hospital ward (Suominen et al, 2002). Features associated with suicide risk in the general psychiatric population (e.g. younger age, social adversity and isolation, history of self-harm, hanging) (Appleby et al, 2006) may be different to characteristics of general hospital suicide cases (e.g. being older, married, employed, jumping from a height, dying on hospital grounds).

The different risk profile in the general hospital patient population may be a consequence of the type and severity of the physical illness and/or undiagnosed mental illness (Ballard et al, 2008a). Further, suicide in this patient population may occur through agitation and impulsivity and, consequently, by the most readily accessible means (Bostwick and Rackley, 2007). Further research is required to determine the rates and factors associated with suicide risk in different health-care settings.

Assessment and management of risk

Assessment of suicide risk is an important clinical skill, and is integral to good risk management in any health-care setting. UK guidance states that individuals presenting to emergency departments following a self-harm episode should receive a psychosocial assessment, including an assessment of risk and need (National Collaborating Centre for Mental Health, 2004).

However, risk assessment remains difficult – even in high-risk populations – because the factors associated with risk are common, and completed suicide is relatively rare. For example, individuals who died by suicide who had been in recent contact with mental health services were characterized by high rates of mental illness and self-harm. In contrast, clinical assessments of immediate and long-term risk of suicide in this patient population by psychiatrists, mental health teams and GPs were generally viewed as low (Appleby et al, 2006, 2008). Further, there is poor agreement in the assessment of risk between primary and secondary care indicating variability in the factors or processes used to assess risk (Pearson et al, 2009).

Assessment tools with high levels of sensitivity (i.e. identifying high-risk individuals at initial presentation who then go on to repeat self-harm) and specificity (i.e. accurately assessing an individual as low risk at initial presentation who does not go on to repeat self-harm) remain elusive. However, the development of a brief decision-making tool to improve risk assessment is promising, showing high levels of sensitivity (Cooper et al, 2006). Added benefits of this tool include that it is

resource efficient and may be generalizable to other health-care settings although further validation is required.

Suicide prevention

In a systematic review Mann and colleagues (2005) reviewed specific preventative interventions: education and awareness, screening for high-risk people, treatment of psychiatric disorders, restricting access to lethal means, and media reporting of suicide. Education and awareness training, and method restriction resulted in significant declines in the percentage of annual suicide rates. However, determining the effectiveness of suicide prevention strategies are hampered by ethical, methodological and logistical difficulties (Goldney, 2005).

Despite a lack of gold-standard randomized controlled trials, there is a wealth of convincing data to indicate which measures might usefully be implemented to prevent suicide. Such a pragmatic approach to suicide prevention is adopted by many countries including all four nations in the UK. Suicide prevention strategies usually combine preventative strategies aimed at the general population, high-risk groups and high-risk individuals (Windfuhr, 2009).

Conclusions and future directions for prevention

Although the evidence base for preventative measures is generally good, there are at least two areas where further research is required to advance the development of suicide prevention strategies. First, suicide prevention should be a priority for all patients given their close proximity to health-care services. In the UK, much of what we know about suicide occurring in patients under mental health care is the result of the National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (Appleby et al, 2006). In contrast, we know little about suicide occurring in the general hospital in the UK and internationally. Consequently, there are few evidence-based suicide prevention strategies for this health-care setting (Ballard et al, 2008b).

Second, there is still relatively little understanding about the suicidal process. Suicide prevention activities need to be driven by a better understanding of the suicidal process through further theoretical development and empirical testing (Johnson et al, 2008; Van Orden et al, 2008) to better inform preventative measures aimed at the individual who is at risk of suicide, in addition to developing our understanding of generic risk factors. BJHM

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KEY POINTS

- Suicide is a complex phenomenon affected by many and varied factors although increased suicide risk is most commonly associated with mental illness and previous self-harming behaviour.
- A substantial proportion of individuals have contact with primary care and emergency departments, as well as mental health services, suggesting various points for suicide prevention in the health-care pathway.
- Little is known about suicide occurring in the general hospital setting and more research is required to inform suicide prevention measures in different health-care settings.
- Although risk assessment is difficult, it is an important clinical skill and integral to good risk management in any health-care setting.
- Further research is required to identify effective suicide prevention measures; a better understanding of the suicidal process may help to inform the development of these strategies.