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Accepted: 17 January 2005

Abstract Background It is important to identify trends in deliberate self-harm because of potential links both with complex mental health problems and with suicide itself, and because of its significant impact on resources in both mental health and acute health services. Method Patients presenting at the A&E department at Kidderminster General Hospital following an act of deliberate self-harm between the years 1981 and 2000 were assessed by the Parasuicide Counselling Group. These data were used to examine trends in deliberate self-harm and patient characteristics. Results The 20-year study examined 4,474 episodes of deliberate self-harm in the Kidderminster district. Rates of deliberate self-harm were higher in females throughout, although the difference between the genders narrowed in the second half of the 1990s. In both males and females, the rate of deliberate self-harm was highest in those aged 15–24. Since the mid-1990s, there have been increases in the rate of deliberate self-harm in males aged 45–54 and in females aged 25–44. Rates were highest in males and females who were separated. Although the most common method of deliberate self-harm in both males and females was overdose, males used cutting and other methods of deliberate self-harm proportionally more than females. There was a relentless rise in paracetamol use until a decline at the end of the study period following the introduction of a restriction on sales. Alcohol use at the time of deliberate self-harm rose markedly in both genders. There was a significant increase in deliberate self-harm repetition in both males and females over the study period. In males and females, psychiatric involvement or admission increased in the 1990s compared to the 1980s. Conclusions Higher levels of deliberate self-harm repetition and psychiatric involvement suggest increasing pressures on health services and a continuing need to develop understanding of deliberate self-harm.

Key words deliberate self-harm – parasuicide – Kidderminster – UK – trends – repetition – paracetamol

Introduction

The management of deliberate self-harm – otherwise termed parasuicide or attempted suicide – is a major problem affecting not only mental health services, but also acute and emergency services (Hawton and Catalan 1987; Wilkinson et al. 2002). The importance of psychosocial assessment of deliberate self-harm in reducing repetition risk has been stressed (Crawford and Wessely 1998; Kapur et al. 2002). A number of studies have looked at demographic, background, episode, social and personality variables (Kreitman and Schreiber 1979; Hawton and Fagg 1992; Schmidtkte et al. 1996; Michel et al. 2000; Hawton et al. 2000, 2001, 2003). Horrocks et al. (2003) looked specifically at self-injury, as opposed to self-poisoning. Risk of repetition has been examined (Zahl and Hawton 2004). There are no national data that record trends in the United Kingdom, although there is a valuable series of annual reports on data from Oxford (Hawton et al. 2002) and the Scottish SMR data set (McLoone and Crombie 1996; Platt et al. 1988). Suicidal behaviour and treatment implications have also been discussed (Campbell and Hale 1991; MacLeod et al. 1992; MacLeod 1995; Hawton and Van Heerington 2000).

Deliberate self-harm and suicide itself have played a significant role in shaping NHS policy, structurally as in the Health of the Nation (DoH 1992), Our Healthier Nation (DoH 1998), National Service Framework: Mental Health (DoH 1999), National Suicide Prevention Strategy for England (DoH 2002) and NICE Clinical Guideline on Self-Harm (2004) – and operationally in the area...
of risk assessment. Hawton et al. (2003) have looked at the risk of suicide following deliberate self-harm during a long follow-up period.

This paper focuses on trends in deliberate self-harm over a 20-year period from 1981 to 2000 in Kidderminster in north Worcestershire; suicide data are also included. The multi-disciplinary Parasuicide Counselling Group was established in 1981 to assess cases of deliberate self-harm referred to Kidderminster General Hospital; records of assessments were collected and computerised up until 2000 when the Accident and Emergency department, medical wards and ITU at the hospital were closed and moved to Worcester. This closure had a major, disruptive effect on the subsequent deliberate self-harm assessment service.

Kidderminster and the surrounding area served by the General Hospital has a mixed urban/rural population of around 110,000. The town itself, 18 miles west of Birmingham, is dominated by its carpet industry. The population is predominantly white with small Italian and Polish communities. The area has no specific socio-demographic variables that make generalisations to the wider population inappropriate.

This paper aims to add to the existing body of knowledge relating to deliberate self-harm by examining rates of deliberate self-harm over two decades using one of the largest sample sizes reported in the UK.

Subjects and methods

Episodes and rates

This review is based on an analysis of patients aged 15 and over assessed by the specialist service between 1981 and 2000 following presentation to Kidderminster General Hospital after an act of deliberate self-harm. The vast majority of such cases were initially referred to the Accident and Emergency department at the hospital; other cases were from within the psychiatric unit at the hospital or referred by GPs. In all known cases of deliberate self-harm, patients were offered a psychosocial assessment by the hospital’s Parasuicide Counselling Group. Data were recorded on a four-page assessment form, and, from this, a number of variables were computerised and episode data were collected.

It is acknowledged that a proportion of A&E cases will fail to be passed on for psychosocial assessment, and that this non-assessed group is at higher risk of repetition (Crawford and Wessely 1998; Hickey et al. 2001; Runeson 2001; Kapur et al. 2002). Regular audits in Kidderminster suggest the non-assessed proportion in this study emanating from the A&E department was small. There was good liaison between the Parasuicide Counselling Group and the adjacent A&E department throughout, and referral criteria from A&E appeared to be stable over time. Provision of neighbouring A&E services was constant throughout the study period.

Rates of deliberate self-harm were calculated using both episodes and the number of individuals presenting to the hospital within each year (i.e. when an individual was involved in multiple episodes, they were only counted once within each 12-month period for the calculation of person-based annual rates). The mid-year population estimates for the Kidderminster area for each year between 1981 and 2000 provided by the Public Health Department (using data from the Office of National Statistics and the 2001 Census) were used to generate gender-specific and age-specific rates per 100,000. The official population figures in the district (age 15 and over) increased from 71,500 in 1981 to 79,100 in 2000; it is acknowledged that these figures will inevitably have some minor boundary variance with the population of the catchment area of the hospital.

Variables

Variables examined were those relating to demographic information, those relating to the actual episode, and those, including historical information, emanating from the assessment. These data have been shown in other studies to be relevant. The variables were: (i) Demographic: gender, age, marital status; (ii) Episode: date, method, use of paracetamol, use of alcohol at time of episode; and (iii) Assessment: psychiatric opinion involved, admission to psychiatric ward, previous history of deliberate self-harm, previous psychiatric history.

Data analysis

Data were analysed using chi-square ($\chi^2$) for trend on SPSS, version 10.0.7 (SPSS Inc. 1999). To account for the increased probability of Type I error due to multiple comparisons, the Bonferroni correction was applied, setting significance levels at $P < 0.001$. To meet the assumptions when calculating $\chi^2$ for trend for two of the variables – age and method – the date of attempt variable was collapsed into four larger 5-year categories. This gives a cruder, but valid, indication of changes over time for these variables. This data compression was not necessary for the other variables.

The data for 1981 (May–December only – service just getting underway) and 2000 (January–August only – as A&E service moved) were pro-rated to provide 3-year rolling averages for 1982 and 1999. Analysis of the overall data showed no significant variation between the first, middle and last 4-month periods of the year ($\chi^2 = 0.56$, $DF = 2$, $P = 0.76$) that would contaminate the pro-rating. Full data were available to calculate the 3-year figures for suicide.

Results

Episodes, rates and gender

The total number of episodes of deliberate self-harm and the rate of deliberate self-harm per 100,000 individuals in the Kidderminster district in the years 1981 to 2000 are shown in Table 1.

Over the 20-year study period, 3,151 separate individuals were involved in 4,474 episodes of deliberate self-harm (59% female, 41% male). Total episodes per year ranged from the lowest in 1982 and 1983 (181 in each of these years) to the highest of 289 in 1998, with an average of 224 episodes per year.

Trends of female and male individuals presenting each year were analysed for the period 1981–2000 (rate per 100,000), and no statistically significant changes were identified over time ($\chi^2$ for trend $= 5.45$, $P = 0.02$). Person-based rates of deliberate self-harm per 100,000 were calculated for males and females, and are shown in Fig. 1 as 3-year rolling averages. The rate of deliberate self-harm in females was consistently higher than that of males throughout the 20-year study period. The rates for each gender generally followed a similar pattern throughout the years, with a peak between the years 1985 and 1990, followed by a dip in the years 1991 to 1993. After a steady increase in both genders up until 1998, the female rate appeared to decrease again, while the male rate was at its highest point at the end of the study period.