The timing of acts of deliberate self-harm: is there any relation with suicidal intent, mental disorder or psychiatric management?

Paul Blenkiron*, Allan House, David Milnes

Division of Psychiatry and Behavioural Sciences, University of Leeds School of Medicine, 15 Hyde Terrace, Leeds LS2 9LT, UK

Abstract

Objective: To investigate the common perception that more serious suicide attempts tend to occur earlier in the day. **Methods:** Prospective study of 158 adults referred for psychiatric assessment from the general hospital following an episode of deliberate self-harm. The main outcome measures used were Beck's Suicide Intent score, ICD-10 psychiatric diagnosis, alcohol consumption at the time of the attempt, and follow-up decision recorded by the interviewing duty psychiatrist. The patient also completed a checklist of current precipitating problems. **Results:** A marked circadian variation in timing of the act was found, peaking between 2200 and 2400 h. "Early" acts (0300–1459 h) were significantly less likely to involve alcohol consumption, more likely to lead to admission to a medical ward, and involved more patient-identified problems than "late" acts. People who took overdoses early in the day were more likely to have concerns about their own mental health. Compared to earlier acts of self-harm, late evening (2200–2359 h) cases were less likely to be diagnosed as depressed or offered psychiatric follow up. No relation was found between time of day of self-harm and Beck's Suicide Intent score. **Conclusions:** Implications arise regarding clinical risk assessment and current staffing levels in the accident and emergency department. The interviewing psychiatrist could concentrate on excluding depression and teaching problem solving to those who self-harm in the morning or afternoon, and on the detection and treatment of alcohol dependence for late evening cases. © 2000 Elsevier Science Inc. All rights reserved.

Keywords: Deliberate self-harm; Diurnal; Psychiatric management; Suicide intent; Time of day

Introduction

There is a circadian pattern to the frequency of deliberate self-harm and suicide. For self-harm, the highest rate is between 1600 and 0200 h [1–3]. The evening peak may be less evident in those aged over 40 years [4]. Those choosing violent methods tend to harm themselves earlier in the day [5]. No overall sex difference has been reported, although women may be more likely to present during normal working hours [6]. In a 10-year retrospective analysis of Italian mortality statistics, Williams and Tansella [7] found a clear diurnal pattern amongst 25 987 successful suicides, death occurring most commonly between 0600 and 1600 h.

Two studies have examined the association between diagnosis and the timing of the act in self-harm populations.

Caracciolo et al. [5] found a trend, which was not statistically significant, towards a late morning peak in self-harm for those given a diagnosis of depression. However, Buckley et al. [2] found no clear pattern for this subgroup.

The significance of the timing of deliberate self-harm episodes is seldom mentioned in psychiatric textbooks, and is absent from most rating scales estimating suicidal risk or repetition [8,9]. Nevertheless, a popular conception exists amongst mental health professionals that more serious suicide attempts occur earlier in the day. Conversely, evening episodes, especially when associated with alcohol use, are often regarded as being of low suicide intent, and less likely to be associated with depressive disorders.

Because these beliefs have been under-researched, we undertook this study to investigate the hypotheses that deliberate self-harm occurring earlier in the day (between 0300 and 1459 h), when compared with episodes occurring later in the day, is associated with: higher suicidal intent; higher rates of coexisting mental disorders, such as depression; lower rates of alcohol use around the time of deliberate

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* Corresponding author. Tel.: +44-1904-610777; fax: +44-1904-453794.

E-mail address: paul.blenkiron@excha.yhs-tr.northy.yhs.uk (P. Blenkiron).
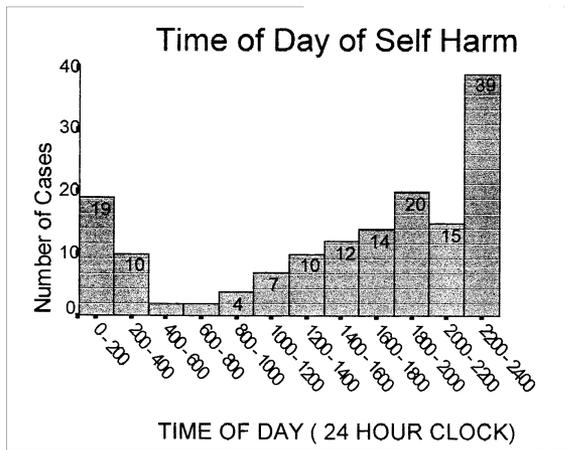
Fig. 1. Timing of the act of deliberate self harm in 158 cases presenting to hospital.

self-harm; and, lower rates of a past history of deliberate self-harm. We also wanted to determine whether psychiatric management decisions were related to the time at which an act of self-harm had taken place.

Method

The setting was York District Hospital, which has 805 adult inpatient beds serving a population of 280 000 in the North of England. A prospective study was undertaken, of all self-harm cases aged 16 and over, who were referred to the hospital's psychiatric service during a 5-month period (March to July 1997). Cases occurring at weekends or outside normal working hours were included, but those where a self-harm attempt involved alcohol excess alone, or who left before psychiatric review were not.

Junior psychiatric staff assessing such patients in the accident and emergency department, or on the short stay, medical and surgical wards, were asked to complete a brief questionnaire. Information was requested on whether alco-

hol was used around the time of the parasuicide attempt, the number of previous self-harm episodes, the psychiatric diagnosis according to the 10th edition of the International Classification of Diseases [10] and psychiatric management decision made. The timing of the act of self-harm (not of attendance) was identified from the original record made by the accident and emergency triage nursing staff, who were informed about the study. Further corroboration from ambulance records, or retrospective accounts from the patient, relatives or friends was obtained in cases of doubt. Doctors could specify a time range when exact timing of the self-harm act remained unclear, and the midpoint was used for the analysis. In the case of complex episodes involving several acts of self-harm over a period of hours, the timing of the first act was used for data interpretation.

At the time of the assessment, the interviewing psychiatrist completed the Beck Suicide Intent Scale [11], and the patient was asked to fill in a checklist of his or her presenting problems, such as relationships, money, housing or physical health.

Data analysis was performed using the Windows 6.1 version of the Statistical Package for Social Sciences (SPSS). To simplify analyses of time of day of self-harm, cases were split into two 12-h periods (early = 0300 to 1459 h, late = 1500 to 0259 h). Continuous variables were analysed using the Mann–Whitney U test. For dichotomous variables, the difference in proportions with 95% confidence limits was calculated using standard formulae [12].

Ethical approval for the study was obtained from the local research ethics committee.

Results

Questionnaires recording both the time of self-harm and a Beck Suicide Intent score were returned for 158 out of 185 (86%) cases of deliberate self-harm referred for psychiatric assessment. The patient had completed a problem list in 123/158 (78%) cases. Fig. 1 shows the frequency distribution of

Table 1
Characteristics of early and late acts of deliberate self harm

	Early time period, 0300 to 1459 h (n = 33), no. (%)	Late time period, 1500 to 0259 h (n = 125), no. (%)	Difference in proportions (95% confidence interval)	χ^2 (p value)
Sex (no. of males)	12 (37.5)	59 (49.2)	11.7 (−7.1 to 30.5)	1.38 (0.24)
Past history of deliberate self harm	13 (39.4)	61 (52.6)	13.2 (−5.8 to 32.1)	1.79 (0.18)
Alcohol used around time of self harm	13 (39.4)	77 (64.7)	25.3 (6.5 to 44.1)	6.85 (0.01)
Acts not involving drugs overdose	5 (15.2)	13 (10.7)	4.5 (−8.9 to 17.9)	0.49 (0.15)