

Characteristics of children and adolescents presenting to accident and emergency departments with deliberate self harm

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Abstract

Objectives—The aim of this study was to provide a description of the characteristics of children and adolescents presenting to the accident and emergency (A&E) department with deliberate self harm.

Method—Descriptive analysis of data collected by reviewing the notes of all children and adolescents aged 16 years and under, presenting during the period of study (1 January to 31 December) with a history of deliberate self harm.

Results—A total of 100 children (18 boys, 82 girls) were responsible for 117 episodes of deliberate self harm. Nine repeaters were responsible for 22% of the attendances; 38% had made use of emergency ambulance service and 6% were referred by their general practitioner (GP). Sixty nine per cent were accompanied by immediate family and 21% children presented alone. Seventy four per cent presented within three hours of the attempt and 37% presented between 6 pm and midnight; 77% presented during weekdays and 30% of attempts had occurred during spring. Ninety two per cent had used a pharmaceutical drug. Sixty five per cent had made the attempt at home and 12% in a public place. Twenty five per cent had prior or current contact with the child psychiatric services and a similar proportion had prior or current contact with social services.

Conclusions—Few of the children and adolescents presenting with deliberate self harm to the A&E department have been referred by their GP. They frequently present alone or are accompanied by people who are not family members making assessment and treatment difficult. Many already have other services involved in their care and thus the gathering and dissemination of information can become quite lengthy. The time of presentation is usually out of hours, further complicating this process. A small number of young people present with repeated self harm, who are known to be most vulnerable for completing suicide.

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Deliberate self harm is one of the most common causes for presentation to the acci-

dent and emergency (A&E) department¹ and children and adolescents under 16 years of age account for around 5% of all episodes referred to hospital because of deliberate self harm.² This has placed a severe demand on the already stretched resources available to A&E departments across England and Wales. At the same time, these numbers probably represent only the tip of the iceberg and a study examining the possibility of this phenomenon discovered that three out of four cases of deliberate self harm do not lead to contact with services.³ Completed suicide and deliberate self harm differ quite markedly in terms of risk by age and sex, predisposing factors, and methods used. However, they also show considerable overlap and once a young person has made an attempt at deliberate self harm, the risk that he or she will eventually commit suicide is increased. Therefore, aftercare management is as important in the prevention of suicide, as detection of young people who may be predisposed to attempting suicide. The A&E department is likely to be the first point of contact with the primary care services for these disturbed young people and assessment and management of this group necessarily begins in this environment. Before the effectiveness of various models of aftercare of this population within the A&E department can be studied, it would be useful to know more about their characteristics. Although such studies have been conducted, they have tended to focus on information gathered during clinical assessment after referral to child mental health professionals. Guidelines have been issued⁴ recommending referral of all young people presenting with deliberate self harm to the local child and adolescent mental health service but this does not occur in all cases⁵ and therefore these studies have been limited in painting a true picture of this group. The aim of this study was to provide a description of children and adolescents presenting to the A&E department after deliberate self harm, including demographic details as well as the circumstances surrounding the attempt and contact with professionals.

Method

SETTING

The A&E department of the Leicester Royal Infirmary has a catchment area, with a balanced distribution between urban and rural, of 0.9 million people. Children and adolescents aged 16 years or under comprise 20% of the total population, and a third of this age

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group belong to various ethnic minorities. It has the advantage of being the only A&E department for the city of Leicester and the counties of Leicestershire and Rutland, although the population living along the county boundary are more likely to make use of the emergency services which happen to be the closest and most easily accessible. The A&E computerised record system provides information on patients referred to the department.

DESIGN

A retrospective case note study was undertaken. All attendances by children and adolescents, up to the age of 16 years, during the period between 1 January and 31 December 1996 were considered. The patient activity analysis system made it possible to identify retrospectively all patients attending who were discharged with a diagnosis of "deliberate self harm" during this 12 month period.⁶ The definition of deliberate self harm as suggested by Morgan was used.⁷ He described it as "an intentional self-injury (non-fatal), or deliberate ingestion of more than a prescribed amount of medical substances, or the deliberate ingestion of substances never intended for human consumption". This definition was used to determine inclusion in the study.

PROCEDURE

The A&E notes of those chosen for the study were accessed from the medical records section and scrutinised by using a standardised protocol devised by the authors. Information was collected with particular focus on the circumstances of the presentation to the A&E department, the assessment and management in A&E, as well as the eventual outcome. Additional data included demographic details, home background, circumstances of the attempt, and professionals involved before the attempt. The data were subjected to a descriptive analysis.

Results

EPISODES

There were a total of 105 738 attendances within this age group during the period of study and 484 had been discharged with the diagnosis of deliberate self harm. Of these, 367 were excluded from the study as they did not satisfy our inclusion criterion. Most commonly the episode involved accidental ingestion of pharmaceutical drugs or chemicals by pre-school or young children. Other episodes that were excluded involved young people presenting with accidental injury or suffering from the ill effects of drug misuse, where there was clearly no intention to self harm as recorded in the case notes. During the study period 100 children aged 16 and under presented to the A&E department of the Leicester Royal Infirmary after a total of 117 episodes of deliberate self harm. This represented 0.1% of total attendances by this age group to the department during the study period. During a similar period there were 101 referrals from the A&E department to the local child and adolescent

mental health service representing 5.6% of total referrals to this service.

QUALITY OF INFORMATION

The quality of information recorded depended on the diligence of record keeping as well as the legibility of the notes. None of the notes relating to episodes included in the study had to be rejected due to illegibility.

It was difficult to ascertain whether lack of information was a result of incomplete record keeping, lapses in the information gathering process, or based on the decision that it was not important. We felt that the time when the child was seen by the casualty officer, and whether they were accompanied by an adult, was important information and therefore should be recorded in every instance. The former is an indication of good practice and the latter is necessary when young people aged 16 and under are interviewed. We could not find any example where the time of first contact with the casualty officer was not recorded. Information about an accompanying adult was not recorded in eight case notes.

DEMOGRAPHIC DATA

Thus, the A&E case notes of 18 boys and 82 girls were examined. They ranged in age from 10–16 years (mean age 14.4), although there were only four children in the age group 10–12 years. Fifty four of the 100 children lived with either one or both parents and five lived with extended family or friends. Eighteen were living in a social services' children's home under a care order. Nine children (six girls and three boys) had repeated their self harm during the period of the study, resulting in 26 (22%) attendances at the A&E department. The six girls who were repeaters had presented with self harm on 19 (16%) separate occasions.

REFERRAL PROCESS

Altogether 54% (63 of 117 episodes) were self referred while 38% (45) had made use of the emergency ambulance service; 6% (7) had been referred by their general practitioner (GP). In 59 cases (69%) the child was accompanied by their immediate family, usually their parent(s) and in two of these cases the parent(s) did not have custody of the child. Fifteen (12%) were accompanied by a professional with "custodial" care or responsibility, usually a children's home care assistant, while 10 (8%) were accompanied by a "non-custodial" professional such as the police (four cases) or a school teacher (three cases). In 21% (25) of cases, after an attempt at deliberate self harm, the child had presented to the A&E department alone.

The data suggest that more cases present during spring (30%, 36) than during the other seasons. However there was no significant difference when seasonal variation ($df = 3, \chi^2 = 0.69$) or variation between months ($df = 11, \chi^2 = 9.48$) was examined (fig 1). Most of the episodes (77%, 90) occurred on week days, compared with the weekend (Saturday and Sunday) (fig 2), but there was no significant

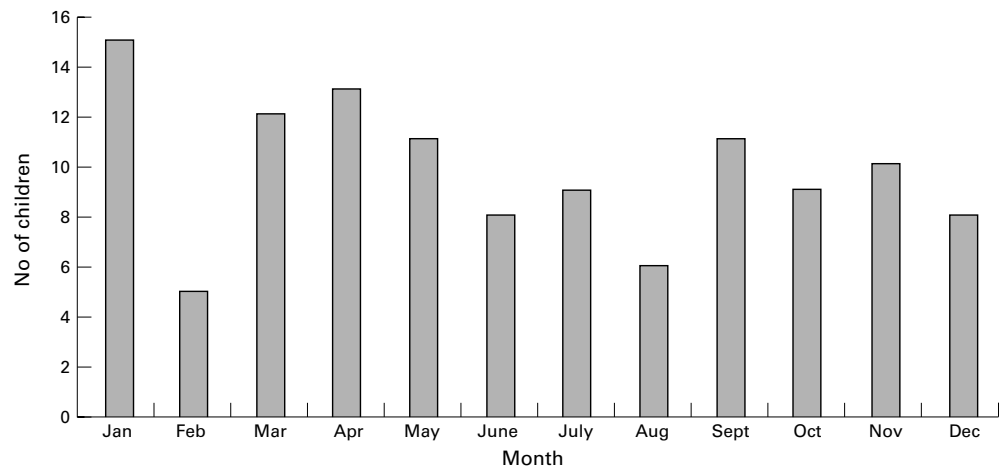


Figure 1 Monthly distribution.

difference between each day of the week ($df = 6, \chi^2 = 5.87$).

TIME OF PRESENTATION

Seventy four per cent (87) presented less than three hours after the self harm. However, 3% (4) took 3–6 hours, 7% (8) 9–12 hours, and

16% (18) more than 12 hours to present to A&E after the self harm.

There was no significant difference when presentation during each hour of the day was considered ($df = 23, \chi^2 = 54.082$). However, there were potential problems concerning small observed frequencies. When the 24 hour period was divided into the following four groups: midnight to 6 am (22, 18%), 6 am to midday (13, 11%), midday to 6 pm (38, 32%), and 6 pm to midnight (44, 37%), there were significantly more young people presenting in the evening and up to midnight ($df = 3, \chi^2 = 21.402, p < 0.011$) (fig 3).

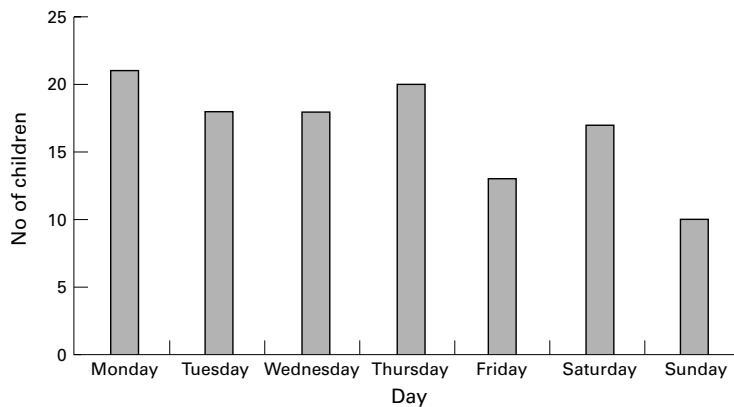


Figure 2 Weekly distribution.

METHODS AND CIRCUMSTANCES OF SELF HARM

The most common method used for self harm (92%, 108) was self poisoning with only one episode involving an agent other than a pharmaceutical drug. Nine per cent (11) involved self injury mainly by wrist slashing; 65% (76) of the attempts occurred at home or the current place of residence if other than home. Twelve per cent (15) made their attempt

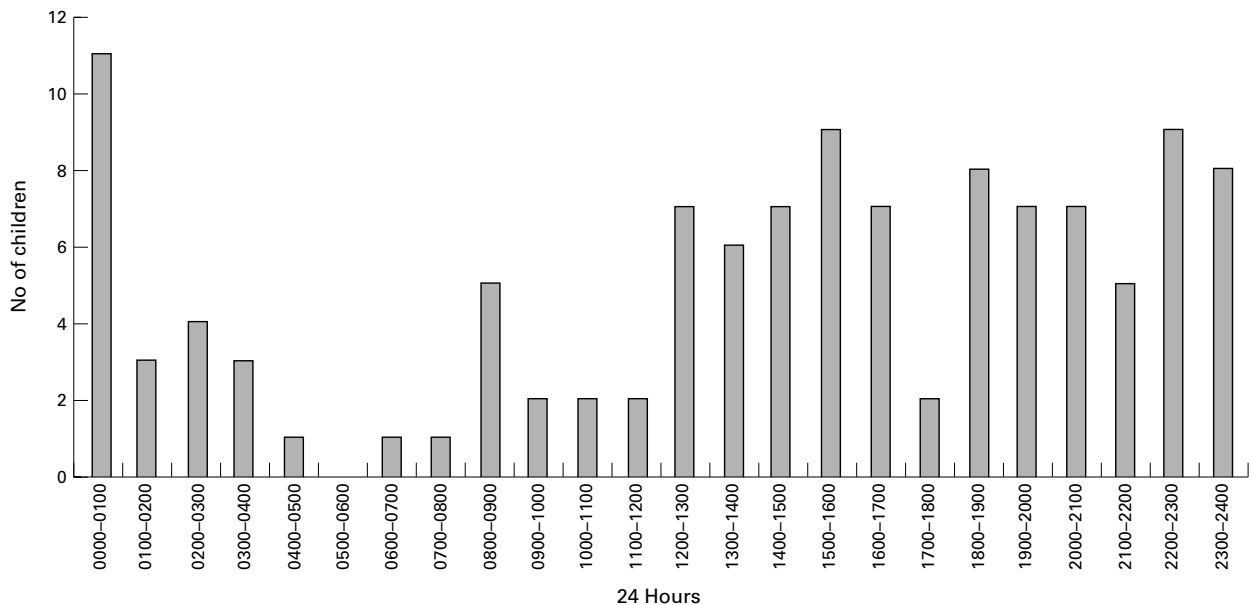


Figure 3 Arrival time.

in a public place other than school, 5% (6) at school, and one child attempted self harm at a friend's home.

CONTACT WITH PROFESSIONALS

Twenty five per cent (30) of the cases had prior or current contact with the child and family psychiatric service, 25% (29) with social services, 7% (9) with the police, and 15% (18) with their GP or another health professional. Of the nine children who had repeated self harm, seven were known to the child and family psychiatric service, six to the social services, and three had prior involvement of the police.

LEGAL STATUS

Nine per cent (11) were recorded in the case notes as being under a care order while one child had been accommodated with the social services voluntarily.

Discussion

In this population, girls outnumbered boys 4:1. This gender distribution is found in almost all studies of deliberate self harm in young people, with ratios ranging from 3:1 to 9:1.⁸ Less than a 10th of the children involved were responsible for more than a fifth of the cases because of repetition of self harm. This further emphasises the importance of providing appropriate assessment and intervention including follow up care. The number of children repeating self harm within the frame of this study was of a similar magnitude to figures quoted by follow up studies that suggest that 10%–15% are likely to make further attempts within a year.^{8,9} Although the majority of children lived with either one or both parents and were accompanied by them when presenting to the A&E department, a large proportion presented alone, giving an indication of their social isolation or reflecting family problems. Few had been referred by their GP and a large number had used the emergency ambulance service. This dependence on the ambulance service, while placing an unnecessary burden on an already stretched service, had resulted in three quarters of the cases presenting within three hours of the attempt, which is important for effective medical management. Studies looking at GP contact after self harm have produced conflicting results with some suggesting that they are rarely the first point of contact¹⁰ and others showing that attempted suicides reported to their GP more often than the general hospital.¹¹

Just under a third of the self harm episodes occurred in spring, reflecting the seasonal distribution seen in adult suicide.¹² Unlike another study, which looked at all poisoning cases presenting to the A&E department, including accidental poisoning, and showed a concentration of cases during the weekend,¹³ most cases in this study presented during week days. The time of attendance was similar to that found in another study looking at adult self harm with a significant majority presenting between 6 pm and midnight.⁶ In the case of this latter group, an assessment of the child or adolescent's mental state has to be made soon after a

distressing experience, in an unsuitable environment, and late at night. These conditions make the validity of such an assessment questionable but future psychiatric management is based on it. Presentation out of hours also makes it difficult to obtain relevant information from professionals who are already involved with the child's care, further reducing the usefulness of such an assessment.

Self poisoning remains the most common method of self harm in this age group and rarely involves an agent other than a pharmaceutical drug.¹⁴ The most common place chosen for the attempt was the young person's home or the current place of residence if other than home. A number of children were accompanied either by the police or a school teacher reflecting the tendency for some to make the attempt in a public place including school, implying that they did not wish to be alone and isolated at the time of the attempt. This may be due to the fact that very often the attempt is a means of communicating distress, when it is perceived by the child that other carers are not receptive.¹⁵ It also reflects the ambivalence of suicidal children related to the act of self harm and their conflicting attitudes towards life.¹⁶

Children and adolescents who have attempted suicide have frequently had contact with other services before the attempt and a quarter of the cases in this study had been known to the child and family psychiatric service and social services, respectively. A small proportion were under a care order reflecting the tendency for these children to come from a background of social problems such as broken homes or difficulties in relationship with their parents. Of the group with prior contact with care services, those of most concern were the repeaters who had felt compelled to self harm again in spite of receiving help from child psychiatric or social services. The involvement of these services is a strong indication of the vulnerability of this group as a history of psychiatric disorder, previous attempts, and family breakdown increases the risk of completed suicide.¹⁷

This study provides detailed epidemiological information about a group that has been the focus of attention because of increasing numbers and the public health priority given to a reduction in the national suicide rate.¹⁸ However it is entirely hospital based and therefore cannot comment about cases occurring in the community, which can be twice as many in number compared with hospital referrals.¹⁹ Another limitation of this study is inherent in the method of reviewing case notes where the information can be inconsistently recorded and vary in quality.²⁰ The quality of information recorded could be improved if a standardised protocol was available for junior medical staff to assist in their assessment and the authors are currently in the process of preparing a standardised protocol in the A&E department. However, the epidemiology of children presenting to the A&E department with deliberate self harm informs the effective use of available resources.

Conclusion

Children and adolescents presenting with deliberate self harm form a small proportion of this age group presenting to the A&E department but provide a significant challenge. They may present alone or may be accompanied by people who are not family members making assessment and treatment difficult. Few have been referred by their GP and thus the A&E department is the point of first contact. Many already have other services involved in their care and thus the gathering and dissemination of information can become quite lengthy. The time of presentation is usually out of hours, further complicating this process. A small number of young people present with repeated self harm, and are known to be at risk of completing suicide.

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Contributors

Amulya Nadkarni initiated the project, discussed the core ideas, participated in the design of the protocol and proforma, collected the data, participated in the analysis and interpretation of the data, and contributed to the paper. Andrew Parkin discussed the core ideas, participated in the design of the protocol and proforma, participated in the analysis and interpretation of the data, contributed to the paper, and is the guarantor for the paper. Nisha Dogra discussed the core ideas, participated in the design of the protocol and proforma, participated in the analysis and interpretation of the data, and contributed to the paper. David Stretch discussed the core ideas, participated in the design of the protocol and proforma, participated in the statistical analysis and interpretation of the data, and contributed to the paper. Philip Adrian Evans discussed the core ideas, participated in the design of the protocol and proforma, facilitated the data collection, and contributed to the paper.

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- 1 Hawton K, Fagg J. Trends in deliberate self poisoning and self injury in Oxford, 1976–90. *BMJ* 1992;**304**:1409–11.

- 2 Hawton K, Fagg J, Simkin S. Deliberate self-poisoning and self injury in children and adolescents under 16 years of age in Oxford, 1976–1993. *Br J Psychiatry* 1996;**169**:202–8.
- 3 Diekstra RFW. Epidemiology of attempted suicide in the EEC. In: Wilmotte J, Mendlewicz J, eds. *New trends in suicide prevention (1–16)*. Bibliotheca Psychiatrica. Basel: Karger, 1982.
- 4 Royal College of Psychiatrists. *Managing deliberate self-harm in young people*. (Council Report CR 64.) London: Royal College of Psychiatrists, 1998.
- 5 Nadkarni A. Management of children and adolescents presenting to accident and emergency with attempted suicide. *Proceedings of the Faculty of Child and Adolescent Psychiatry Annual Residential Meeting*, September 1998.
- 6 Dennis M, Beach M, Evans PA, et al. An examination of the accident and emergency management of deliberate self-harm. *J Accid Emerg Med* 1997;**14**:311–15.
- 7 Morgan HG. *Death wishes? The understanding and management of deliberate self-harm*. Chichester: John Wiley, 1979.
- 8 Hawton K. *Suicide and attempted suicide among children and adolescents*. London: Sage, 1986.
- 9 Kerfoot M, McHugh B. The outcome of childhood suicidal behaviour. *Acta Paedopsychiatrica* 1992;**55**:141–5.
- 10 Crawford M, Wessley S. The changing epidemiology of deliberate self-harm—implications for service provision. *Health Trends* 1998;**30**:66–68.
- 11 Diekstra RFW, van Egmond M. Suicide and attempted suicide in general practise, 1979–1986. *Acta Psychiatr Scand* 1989;**79**:268–75.
- 12 Kreitman N. Suicide and parasuicide. In: Kendell RE, Zealley AK, eds. *Companion to psychiatric studies*. 5th Ed. Edinburgh: Churchill Livingstone, 1993.
- 13 Thomas SHL, Bevan L, Bhattacharyya S, et al. Presentation of poisoned patients to accident and emergency departments in the north east of England. *Hum Exp Toxicol* 1996;**15**:466–70.
- 14 Otto U. Suicidal acts by children and adolescents. *Acta Psychiatr Scand* 1972;**233**(suppl):7–123.
- 15 White HC. Self-poisoning in adolescents. *Br J Psychiatry* 1974;**124**:24–35.
- 16 Orbach I, Carlson G, Feschbach S, et al. Attraction and repulsion by life and death in suicidal and normal children. *J Consult Clin Psychol* 1983;**51**:661–70.
- 17 Stoelb M, Chiriboga J. A process model for assessing adolescent risk for suicide. *J Adolesc* 1998;**21**:359–70.
- 18 Department of Health. *The health of the nation*. London: HMSO, 1992.
- 19 Whitehead PC, Johnson FG, Ferrence R. Measuring the incidence of self-injury: some methodological and design considerations. *Am J Orthopsychiatry* 1973;**43**:142–8.
- 20 O'Dwyer FG, D'Alton A, Pearce JB. Adolescent self harm patients: audit of assessment in an accident and emergency department. *BMJ* 1991;**303**:629–30.