Journal of Affective Disorders 208 (2017) 399–405

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Age-related differences in self-harm presentations and subsequent management of adolescents and young adults at the emergency department

Emma Diggins*, Rachael Kelley, David Cottrell, Allan House, David Owens

University of Leeds, United Kingdom

ARTICLE INFO

Keywords:
Self-harm
Suicide
Young people

ABSTRACT

Background: Characteristics of self-harm differ across ages, but there is little work identifying age-related differences in younger people. Young people entering adolescence face emotionally and developmentally different challenges to those entering adulthood. This study investigates how Emergency Department (ED) presentations and management of self-harm differ through adolescence and early adulthood.

Methods: 3782 consecutive self-harm episodes involving 2559 people aged 12–25 years were identified from an existing database of Leeds ED attendances from 2004 to 2007. Odds ratios for each of four age bands were compared to the remaining young people.

Results: The female to male ratio was 6.3:1 at 12–14 years old, decreasing with successive age groups to 1.2:1 at 22–25 years old. Self-poisoning was commoner in those under 18 years old. 18–25 year olds were more likely to self-poison with prescribed medications, mixed overdoses, alcohol or recreational drugs. 18–25 year olds more often required medical treatment for the effects of the self-harm. 12–14 year olds were more often seen urgently by ED medical staff and offered high intensity mental health aftercare. Repetition of self-harm was commonest in 12–14 year olds, although multiple repetition of self-harm was commonest in 22–25 year olds.

Limitations: Data were not collected on whether the aftercare offered was received. The study sample included hospital attenders only.

Conclusions: The large excess of females over males in young people's self-harm is only true at the younger age range. Older adolescents present with more severe acts of self-harm, yet receive the lowest intensity of assessment and after care.

1. Introduction

Self-harm is a common problem in young people, with an estimated lifetime prevalence of 7–14% (Evans et al., 2005; Hawton and James, 2005). It is associated with increased risk of suicide (Gibb et al., 2005) and a number of adverse outcomes in young people, including low educational attainment and poor mental well-being (Mars et al., 2014). Rates and characteristics of self-harm differ with age, with younger adolescents showing more frequent use of self-poisoning than do young adults (Hawton and Harriss, 2008b). Self-harm studies typically view young people as a single group–defined for example as under 18 years or under 26 years old; little work has been done to identify age-related differences in self-harming behaviour and its management within adolescence and young adulthood. Self-harm presentations to hospital become increasingly common from age 12 onwards (Hawton et al., 2012) and, although there is no agreed definition of adolescence, the upper limit used to define adolescence and young people in self-harm studies varies between 18 and 25 years (Hawton et al., 2012). There is little evidence that there is a single effective intervention for young people who self-harm and the focus of treatment is usually on the difficulties underlying the acts of self-harm (Hawton et al., 2015b). Some key characteristics of 12–14 year olds who self-harmed have been reported (Hawton and Harriss, 2008b) as showing a higher female preponderance and higher rates of self-poisoning than in adolescents taken as a whole. Adolescence is a time of rapid social and emotional development. Young people just entering adolescence can face different challenges to the ones encountered by those entering adulthood, which might be reflected in their self-harming behaviour. The purpose of this study is to identify and describe how patterns of self-harm behaviour presenting to the emergency department (ED) vary in adolescence and early adulthood, and to determine whether immediate hospital management reflects these differences.

* Correspondance to: Child and Adolescent Mental Health Services, Fieldhead House, 2-8 St Martins Ave, Bradford BD7 1LG, United Kingdom.
E-mail address: emma.diggins@nhs.net (E. Diggins).

http://dx.doi.org/10.1016/j.jad.2016.10.014
Received 20 June 2016; Received in revised form 3 October 2016; Accepted 17 October 2016
Available online 21 October 2016

2. Method

2.1. Participants

Data were analysed from an existing dataset of self-harm attendances to emergency departments, collected as part of a multi-centre self-harm monitoring project in three major cities (Hawton et al., 2007). For the present study, data were from Leeds hospitals alone and were collected from the EDs of the two large teaching hospitals that cover the whole Leeds population; few people travel to hospitals in nearby towns to receive treatment.

The data include all self-harm attendances to the two emergency departments in Leeds between 1st October 2004 and 30th September 2007. Data were also collected for a few patients (N=22) who attended local Minor Injury Units (MIU). A hospital attendance occurred when a patient was booked into ED at the reception desk. Self-harm was defined as any non-fatal injury or poisoning reported by the patient or judged by a clinician to be self-inflicted, irrespective of whether there was an intention to die (Hawton et al., 2003b). People who died during their admission were not included. Included (although all of the following categories are rare) is self-poisoning with non-ingestible substances, and overdose of 'recreational' drugs and severe alcohol intoxication where clinical staff thought that the self-harm was intentional. Cases were identified from the ED and self-harm team records, with data then gathered from patient records held by the ED, medical wards, and the self-harm team.

In the present analysis all episodes undertaken by people aged 12–25 years who attended ED because of self-harm were identified from the existing dataset: 3782 of 11,243 all-age episodes. These age boundaries were chosen because self-harm episodes leading to hospital attendance are infrequent before age 12, and 25 has been the conventional upper age limit for adolescence and young people in self-harm studies (Hawton et al., 2012). Variables recorded included demographics and patient history, features of the episode of self-harm, aspects of management, follow-up arranged for medical and mental health professionals, and non-fatal repetition of self-harm within the study period. A variety of medical and surgical interventions was used in the ED: we combined them into one "treatment" group which included simple first aid or sutures for self-injury, medical treatment with acetylcysteine or activated charcoal for self-poisoning, referral on to a specialist medical or surgical team, and treatment in the resuscitation room. As young people were offered various, and sometimes multiple, types of follow-up on discharge from hospital, we grouped the aftercare arrangements according to intensity. The category of "high intensity" is an amalgamation of inpatient admission to a psychiatric hospital and outpatient follow up with specialist mental health services, to include other secondary care services such as the crisis team and addiction services; "low intensity" is an amalgamation of the categories of: advice to self-refer to another agency, discharge to care of GP, and discharge without psychosocial assessment.

As data were collected from all self-harm attendances to the ED, repeat attendances for the same young person could be identified through hospital number and other identifiers such as name, address and date of birth. Length of follow-up from the index episode of self-harm ranged from one day (for people attending on the last day of the study) to 3 years (for those attending on the first day of the study); the average time of follow up was, consequently, 18 months. When investigating repetition by age band, a person's age band was taken to be that in which they first presented with their index episode, even if they would have crossed into an older age band on their repeat presentation. The data for patients aged 12–25 years were taken from a dataset containing patients of all ages. We included subsequent events for patients who had passed their 26th birthday during the follow-up period; there was no ascertainment bias consequent on the relation between age and follow up.

2.2. Analysis

Analysis was carried out using SPSS version 22. Young people were divided into four age-bands (12–14 year olds, 15–17 year olds, 18–21 year olds, 22–25 year olds). We chose the split at 17–18 years as the point at which Child and Adolescent Mental Health Services handed over the role of assessment and aftercare to adult mental health services; each division of the data (ages 12–17 and 18–25 years) was then halved in order to produce four age-bands that would allow us to look for and illustrate the development of any age-related patterns or trends. People in these age bands were compared on a number of recorded variables. The main comparisons were set out as odds ratios. For each variable, the odds of the variable for each age-band (eg. 12–14 year olds) was compared with the odds of the variable for the remaining young people (in this example, 15–25 year olds). Mantel-Haenszel tests for linear association were used to identify significant trends throughout the age range under scrutiny. Odds ratios are represented in the Figures using a logarithm to base 2 scale so that a positive increment represents a doubling of the odds ratio and a negative increment represents halving of the odds ratio.

Where we deemed a confounding factor, such as gender, to be likely, we undertook a stratified analysis for the confounder by calculating the Mantel-Haenszel summary odds ratio (Daly and Bourke, 2000). The adjustment involved calculating a weighted average of the odds ratios for age group against the variable in question across the gender strata, thus adjusting for the confounding variable. The dataset was mostly complete: missing data items were excluded from the analysis of each variable and the number of missing data points reported along with the results, unless negligible (< 1% of total).

2.3. Ethical approval

Ethical approval for the data collected and ensuing analysis was granted by the Leeds West Research Ethics Committee and approval to collect data without individual patient consent was obtained from the national regulator, the then Patient Information Advisory Group (PIAG).

3. Results

3.1. Patient characteristics

In total 2559 young people aged 12–25 years, median age 20 years, were included in the study. As some participants repeated self-harm, these 2559 young people accounted for 3782 ED episodes of self-harm. One of the most striking findings was that of gender distribution. The female to male ratio was 1.8:1, but this ratio differed across the age range, with females greatly over-represented in younger age groups. At 12–14 years old the female to male ratio was 6.3 (6.3:1), falling sharply to 3.5 by 15–17 years old, 1.7 by 18–21 years old and then to 1.2 by age 22–25 years old.

There were also marked differences in mental health history across the age ranges, with those aged 12–14 years significantly less likely, and those aged 22–25 years significantly more likely, to report previous mental health problems (age 12–14 OR (95% CI) 0.68 0.50–0.92); age 22–25 OR 1.6 1.3–1.9)) (missing data n=472) or a previous history of self-harm (age 12–14 OR 0.70 (0.52–0.95)); age 22–25 OR 1.3 (1.1–1.5)) (missing data n=591). By contrast at the age of 12–14 years, significantly more young people were currently involved with mental health services at the time of presentation to the ED (OR 1.4 (1.1–1.9)), whilst those aged18–21 years were less likely than other age-bands to have current mental health input (OR 0.65 (0.55–0.77)).

3.2. Methods of self-harm

In all age-groups self-poisoning was the commonest method used,