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Review

Hospital management of self-harm patients and risk of repetition: Systematic review and meta-analysis

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ABSTRACT

Background: Self-harm is a common reason for hospital presentation; however, evidence to guide clinical management of these patients to reduce their risk of repeat self-harm and suicide is lacking.
Methods: We undertook a systematic review to investigate whether between study differences in reported clinical management of self-harm patients were associated with the risk of repeat self-harm and suicide.
Results: Altogether 64 prospective studies were identified that described the clinical care of self-harm patients and the incidence of repeat self-harm and suicide. The proportion of a cohort psychosocially assessed was not associated with the recorded incidence of repeat self-harm or suicide; the incidence of repeat self-harm was 16.7% (95% CI 13.8–20.1) in studies in the lowest tertile of assessment levels and 19.0% (95% CI 15.7–23.0) in the highest tertile. There was no association of repeat self-harm with differing levels of hospital admission ($n=47$ studies) or receiving specialist follow-up ($n=12$ studies). In studies reporting on levels of hospital admission and suicide ($n=5$), cohorts where a higher proportion of patients were admitted to a hospital bed reported a lower incidence of subsequent suicide (0.6%, 95% CI 0.5–0.8) compared to cohorts with lower levels of admission (1.9%, 95% CI 1.1–3.2).
Limitations: In some analyses power was limited due to the small number of studies reporting the exposures of interest. Case mix and aspects of care are likely to vary between studies.
Discussion: There is little clear evidence to suggest routine aspects of self-harm patient care, including psychosocial assessment, reduce the risk of subsequent suicide and repeat self-harm.

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1. Introduction

Over 200,000 people present to hospital with self-harm a year within England and this population is estimated to have a subsequent risk of suicide 100 times greater than that of the general population (Hawton and Fagg, 1988). The national suicide prevention strategy for England highlights self-harm patients as a key focus for suicide prevention efforts (Department of Health, 2012) and a range of interventions to reduce the risk of subsequent repeat self-harm and suicide in hospital presenting patients have been investigated (O'Connor et al., 2013). Problem solving therapy (Hvid et al., 2011), particularly in patients with a history of self-harm (Hatcher et al., 2011) and cognitive behavioural therapy (CBT) (Brown et al., 2005) have shown promising results and are recommended in the UK's NICE guidelines (National Institute for Clinical Excellence, 2004). However, several aspects of the routine management of patients who self-harm lack a clear evidence base. For example it is unclear whether all self-harm patients should be admitted to a hospital bed as recommended in previous UK guidance (Central and Scottish Health Services Councils, 1968). Furthermore, whilst a number of individual-level studies have shown that patients who receive a psychosocial assessment are at reduced risk of repeat self-harm (Kapur et al., 2013), this may be due to selection biases and there is no clear evidence that services where a high proportion of patients are assessed have lower rates of repetition.

Not only is there a lack of evidence supporting these aspects of clinical care but there is considerable variation in their use across health care settings. In the UK, the proportion of patients receiving a psychosocial assessment has been found to vary between hospitals from 32% to 86% (Bennewith et al., 2004; Cooper et al., 2013), and rates of admission to a medical bed were found to vary 4 fold (22–83%). The extent to which variations in patient care influence patient outcomes is uncertain. This systematic review aims to utilise this heterogeneity in service provision, as encountered in prospective (cohort and control arms of RCTs) studies, to investigate elements of self-harm patient care that have an impact on risk of both fatal and non-fatal repeat self-harm. Specifically, we use meta-analysis and meta-regression to investigate whether heterogeneity in study estimates of the risk of repeat self-harm is associated with the levels of psychosocial assessment, admission to a hospital bed, and outpatient follow-up in different studies.

2. Method

2.1. Search strategy

The search strategy (see Appendix A) was designed to identify prospective studies that reported the rate of subsequent fatal or non-fatal repeat self-harm in a patient cohort as well as describing the clinical management of those patients. The search strategy (see Appendix A) was performed in OvidSP and identified papers from Medline, Embase and PsycINFO. There was no restriction on language of publication. Checks of references in identified papers, a forward citation search of key papers (Owens et al., 2002; Hawton et al., 2003, 1997; Schmidtke et al., 1996) using Google Scholar and hand searching of authors' personal collections were also undertaken.

The search focused on papers published between 2000 and 2012. Ninety papers identified in a previous systematic review (1970–1999) were included (Owens et al., 2002). Therefore, papers in the review included those published from 1970 to 2012. Both cohort studies and control arms of randomised controlled trials (RCTs) were included. All studies that described the number of patients that went on to repeat self-harm or die by suicide following an initial hospital presentation for self-harm were included. Studies were excluded if: (a) the sample size, before loss to follow-up, was less than 50, (b) The focus was on a cohort with a specific psychiatric diagnosis (e.g. psychosis), or a specific age group (e.g. adolescence/elderly). All full text versions of papers highlighted as potentially eligible for inclusion were reviewed by at least two of the authors. Any discrepancies in data extraction were discussed and agreed by consensus.

A number of papers reported on repeat self-harm in multiple cohorts or centres/time periods/countries (Bergen et al., 2010a; Eudier et al., 2006; Hawton et al., 1997; Henriques et al., 2004; Mehlum et al., 2010; Morgan and Coleman, 2000). When data were recorded separately for each centre, each estimate was recorded separately and included in subsequent analysis. If the rate of repetition for the same cohort was reported in more than one paper, only the paper that included the most information on patient management was used for this analysis.

2.2. Statistical analysis

The incidence of repeat self-harm was recorded as the number of people who repeated within one year of their index attempt. We chose this period as it is a timeframe within which further suicidal behaviour could reasonably be related to the initial care of the index self-harm episode. Furthermore, it is the most frequently reported length of follow-up (Carroll et al., 2014). Some studies reported a risk of repetition (i.e. the proportion of patients repeating within one year), while others presented estimates of the rate of repetition (i.e. the number of patients repeating divided by the person years at risk, where individuals are removed from the risk set once they have experienced an event). In some instances, numerical data on repeat events was not reported; where possible these estimates were taken from survival plots.

Information on the characteristics of the care patients received during their index self-harm presentation was recorded as well as their subsequent outcomes. The aspects of care investigated were (a) the proportion of patients admitted to a hospital bed, (b) the proportion receiving a psychosocial assessment, (c) the proportion being referred to specialist outpatient follow-up (i.e. the proportion of patients referred to psychiatric services in the community e.g. a Crisis service) and (d) the proportion discharged home without follow-up (i.e. not referred to any specialist mental health services). Other cohort characteristics including the mean age of patients in the study, the study setting (continent) and the proportion using overdose or cutting as the main method of self-harm were also recorded. Study quality was assessed using the same criteria as the previous Owens review in this area (Owens et al., 2002). The criteria used to evaluate studies included assessment of whether the study specified a specific catchment