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Is there a difference between hospital-verified and self-reported self-harm? Implications for repetition

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ABSTRACT

Objective: Repeated intentional self-harm (SH) is associated with economic costs and increased risk of suicide. Estimates of repetition vary according to method of data capture and are limited by short periods of follow-up observation. Some sources use hospital records and others self-reported SH (SRSH). Our aim was to examine the relationship between SRSH and hospital-verified SH (HVSH) and later repetition of SH (predictive validity). We also aimed to examine whether rates of SH repetition differ between first-time presenters and non-first-time presenters using either definition of SH.

Method: We conducted a large prospective study tracking SH attempts through an Accident and Emergency (A&E) department within the United Kingdom. We took a representative sample of 774 patients (30% of total who reported SH) and followed them for 5.6 years on average. The index episode of SH was recorded at the time of referral to staff in A&E. Prior episodes of SH were determined from an electronic search of A&E patient database, and in addition, recollection of prior SH as reported by the patient to their clinician at the time of index presentation was recorded.

Results: Across the whole sample 32.0% of patients repeated SH within 1 year, which rose to 54.1% at completion of follow-up. Repetition rates were considerably higher in patients with a prior SH history than those presenting with a first SH episode after 1 year (47.9% vs. 19.6%) and by the end of follow-up (73.8% vs. 39.4%) ($P<.001$). Of 411 with self-reported first presentations, 45.2% repeated over the study period. In terms of predictive validity, 65.2% of those with previous SRSH repeated vs. 73.8% with previous HVSH ($P<.001$). There was low agreement between SRSH and HVSH (Kappa=0.353, 95% confidence interval 0.287–0.419, low).

Conclusions: We found relatively poor agreement between hospital-defined and self-reported SH. A total of 62.8% of those who denied SH actually had a hospital-verified previous episode. Patients with recorded prior SH and those who recall previous SH have significantly higher rates of repetition, but the two samples imprecisely overlap and predictive validity is stronger for HVSH.

1. Introduction

Self-harm (SH) is the intentional act of self-poisoning or injury and is one of the leading causes of acute medical admissions for both men and woman [1–3]. Repeated SH not only contributes to significantly greater health care costs [4] but is also associated with an increased risk of suicide [5]. The relative risk of suicide increases greatly with every act of SH [6,7]. In older adults who report to hospital following SH, 1.5% die by suicide within 12 months [8]. Furthermore, approximately 40%–60% of people who die by suicide will have presented with at least one episode of SH, making it a strong predictor of suicidal intentions [9].

The prevalence of SH has increased in recent times, and statistics demonstrate that the United Kingdom has one of the highest rates of SH across Europe, with annual rate incidences of approximately 400 per 100,000 of the population [10]. Research has identified a number of risk factors associated with the incidence and repetition of SH including adverse social problems, problematic drug use [11] and psychiatric disorders [12,13]. SH is more common in women than men [14]. The strongest predictor of repeated SH is a previous attempt at SH [15];

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however, previous studies report that of patients who SH, only 10%–20% attend hospital following an attempt [16], therefore making it difficult to identify those highest at risk of repetition.

Risk of repeated SH is highest within the first few months of an index presentation of SH, with median repetition times ranging from 73 to 115 days [17,18]. A systematic review of SH repetition studies estimated rates of around 15% within the first year rising to 25% thereafter [10,19]. However, these estimates are approximate due to variations in method of data collection (case-ascertainment) and lack of clarity regarding previous SH at the time of index presentation. A more recent meta-analysis found a pooled estimate of repeated SH within 1 year of 16.3%, in keeping with earlier estimates [20]. In the samples included within this meta-analysis, cohorts with a higher proportion of patients with a history of SH were associated with an increased 1-year repetition rate of 19.6% compared to cohorts with low incidence of previous history of 15.2%. Within the studies, the method of recording SH explained significant variability in repeated SH estimates, that is, estimates were significantly larger when interpreted through patients' self-reporting compared to repeats defined by hospital administration records.

A further limitation in the literature is that studies of repetitions usually examine short-term and not long-term risk with typical follow-up over 1–3 years [21]. Furthermore, estimates are likely to be conservative given that those who repeat SH may not present to hospital, may choose not to wait for treatment, or may move areas [22,23]. Here we present a prospective study which investigates repeated SH attendances to a UK hospital covering a large population area. We collected data on self-reported SH (SRSH) as well as hospital-verified SH (HVSH). An extensive follow-up was conducted to examine rates of SH repetition over a long period of time.

2. Methods

2.1. Study sample and setting

The sample was drawn from a large Accident and Emergency (A&E) department at the Leicester Royal Infirmary (LRI), United Kingdom. The LRI is unusual as it is the only major A&E department within a large county with a catchment area of over 1 million patients and thus has the advantage of a high likelihood of local reattendance and thus more extensive data capture compared to previous reports. The study was approved by the department of A&E medicine ethics board, University Hospitals of Leicester, as an audit of clinical practice.

We sampled a selection of adult patients aged 16 and over attending the Leicester A&E department with SH. Patients were included if they were risk assessed using the SH10 form (that is, the form was completed and data returned for collection). We aimed to obtain a 30% sample of all patients attending with SH which was clinically representative and without known bias. However, we excluded patients with accidental injury and accidental overdose. In these cases, the attending A&E physician/clinician would undertake a routine history on arrival but also complete a locally developed SH risk assessment form for all patients presenting with SH regardless of level of intervention needed. This form, the Leicestershire SH10 SH form, is available from http://www.slideshare.net/ajmitchell/leicestershire-sh10-selfharm-assessment-form. The SH10 was developed to provide not only risk assessment but also needs assessment and clinical feedback as per the The National Institute for Health and Care Excellence guidelines on SH, which suggests a broad-based evaluation of patients with SH [24]. It is a one-page form which asks for narrative and categorical responses with a checklist of 32 factors that may be important clinically. The SH10 form includes data on patient demographics, medical intervention required, recent stresses and social circumstances, previous clinical history, psychiatric signs and symptoms, mental state examination, patient's subjective outlook and outcome of the assessment. We defined predictive validity as the ability of that method to identify further SH.

2.2. SH definition

We used the World Health Organization definition of SH which is "an act with non-fatal outcome, in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognised therapeutic dosage, and which is aimed at realising changes which the subject desired via the actual or expected physical consequences." We included SH acts as those of self-poisoning and physical harm (e.g., self-laceration) of different types.

2.3. Data collection

The SH10 forms were collected as part of the diagnostic and treatment process and formed the basis for the initial assessment of the index episode of SH. We were able to cross-reference additional data for the index episode data extracted electronically from the Emergency Department Information System (EDIS) and cross-checked against the completed data on the paper SH10 form. Data were also collected on whether patients had presented with SH prior to the index episode, attendances following the (first) index presentation for both SH and non-psychiatric attendances and the nature of these SH attendances through EDIS. EDIS contains codes for SH, self-injury, hanging and self-poisoning entered contemporaneously by staff in the emergency room. Patient records were identified through the electronic database by using patient initials, the hospital number and date of birth. As individual patients may have multiple hospital numbers, each attendance record was manually cross-checked with the patient's address, name and date of birth to ensure that it was the same patient. In addition to the electronic data, previous SH as reported by the patient to their clinician at the time of index presentation was also recorded (SRSH). This allowed us to check on the accuracy of patient reporting of their SH and also the influence of self-reported prior harm on future repetition, that is, predictive validity. A previous SH episode was defined as attendance to the A&E department for any act of SH taken before the index episode regardless of outcome.

2.4. Follow-up

Sampling of index presentations took place for patients who presented with an episode of SH from 28th April 2004 to 19th September 2008, with a follow-up for final outcome in September 2013. The mean follow-up period was 7.4 years. Complete follow-up was attained up until year five, but not all subjects had longer scrutiny. A total of 728 subjects had follow-up at year 6 (5.9% missing), 520 had follow-up at year 7 (32.8% missing) and 261 had a final follow-up at year 8 (66.3% missing). Data attrition occurred mainly when patients presented toward the end of the recruitment period, reducing the length of time for follow-up. A total of 774 (43.5% male) unique attendees were included in the sample, with a mean patient age of 36.49 years (S.D.=13.92, range 16–88) at first attendance. According to emergency department information systems, the index presentation was the first known SH attempt for 429 patients.

3. Results

3.1. Overall SH repetition

Repetition of SH was measured at 8 time points (3, 6 and 12 months and then 2, 3, 4, 5 and 7.4 years) and presented in Fig. 1. At the first follow-up of 3 months, 19.1% of patients had presented to A&E with a repeated SH attempt; this increased to 32.0% by 1 year and 54.1% over 5 years of follow-up. The average (mean) time to repeat was 528 (S.D.=687) days, and the median was 222 days. Overall, 357 (45.9%) patients did present to A&E with repeated SH in our sample. In patients who presented with a repeated episode of SH within the study time