



## Research paper

# Exploring characteristics and risk of repetition in people who fail to report previous hospital presentations for self-harm: A case-control study using data from The Manchester Self-Harm Project



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## ABSTRACT

**Background:** As a risk factor for future self-harm and suicide, questions about past self-harm are typically included in assessments that help inform management of people who self-harm. However, little is known about people with a history of self-harm who do not report it. This study aimed to describe and compare (i) characteristics of people who did or did not accurately report previous self-harm, and (ii) 12-month repetition of self-harm.

**Methods:** Data on all self-harm presentations to three hospital emergency departments in England were collected from 2003 to 2015. A 1:5 matched case-control design included 374 cases where previous self-harm was not reported and 1,870 controls where previous self-harm was reported. Data were analysed using conditional logistic regression and survival analysis.

**Results:** Cases were more likely to be male (OR 1.42; 95% CI 1.13–1.77), middle-aged (OR 1.41; 95% CI 1.08–1.83), employed (OR 1.51; 95% CI 1.15–1.98), and less likely to be referred to psychiatric services (OR 0.53; 95% CI 0.35–0.80). Twelve-month repetition was similar in cases and controls (30% vs 31%).

**Limitations:** Self-harm not resulting in a hospital presentation could not be verified and individuals with a single episode in the study database were therefore excluded.

**Conclusions:** Previous self-harm is an important risk factor for repetition in people who accurately recall and report it and those who fail to report it. Those who do not report previous self-harm are less likely to be referred to psychiatric services, emphasising the need for careful assessment of every self-harm presentation to emergency departments.

## 1. Introduction

Self-harm is a public health priority and a key area within the Suicide Prevention Strategies (Department of Health, 2012, 2017; World Health Organisation, 2014). People self-harm for many reasons; often as a result of great emotional distress it may be used as a coping mechanism, a strategy to regulate emotions, a means to gain control, or as a method of self-punishment (Wadman et al., 2017; Nielsen et al., 2016; Edmondson et al., 2016). The impact of self-harm is widespread, causing distress to the individual and their family members and friends (Ferrey et al., 2016), with the potential for concomitant economic costs to the individual and society (Tsiachristas et al., 2017; Sinclair et al., 2011; Bateman et al., 2014).

There are over 200,000 presentations to general hospital emergency departments in England, each year, made by around 150,000 people

(Hawton et al., 2007). Repeat presentations are common with 16% re-presenting within 12-months (Carroll et al., 2014), and a step-wise increase in risk of further self-harm and suicide as the number of repetitions increases (Haw et al., 2007; Perry et al., 2012; Zahl and Hawton, 2004; Christiansen and Frank, 2007; Cooper et al., 2005; Larkin et al., 2014). Due to the link with future risk, assessments that help determine an individuals' care pathway are often influenced by the presence of previous self-harm (Cooper et al., 2006; Steeg et al., 2012; Waern et al., 2010), but not all past episodes will be accurately reported (Mars et al., 2016; Borschmann et al., 2017).

Negative experiences of healthcare services, state of intoxication, shame, or forgetting, may all play a role in why someone might not report previous self-harm to clinicians (Taylor et al., 2009; Wiklander et al., 2003). What remains unknown is whether people who do not report past self-harm are identifiable via shared characteristics

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that differ from those who accurately report past self-harm, and whether failure to report past self-harm has any impact on outcomes. Previous work has suggested that people who did not report past suicidal ideation and/or behaviour when questioned, had better health outcomes than people who did report it (Eikelenboom et al., 2014; Goldney et al., 2009; Klimes-Dougan et al., 2007). However, one study based on incarcerated adults found those who failed to self-report previous self-harm had worse outcomes compared to those who accurately reported no previous self-harm (Borschmann et al., 2017). Not reporting past self-harm could also be a marker of poor engagement with services and treatment, and may therefore lead to poorer outcomes and impact recovery in the long-term (Long et al., 2015).

The aim of this study was to describe the typical characteristics of people who did not report a previously recorded episode of self-harm (i.e. demographics, methods used, psychiatric history, and referrals for aftercare from the emergency department), and to identify any unique risks (i.e. outcome in terms of repetition of self-harm) and care needs of this group using nested case-control analysis to systematically compare this group with people who did accurately report previous episodes of self-harm.

## 2. Methods

### 2.1. Data source

Prospective cohort data from the Manchester Self-Harm Project was used. Self-harm is defined as any instance of intentional self-poisoning or self-injury, irrespective of motivation or suicidal intent (Hawton et al., 2003). Data were collected on all emergency department presentations for self-harm to three general hospitals in the City of Manchester, UK. Age, gender, date of self-harm, and method of self-harm (using broad primary categories; self-poisoning, self-injury, both self-poisoning and self-injury, and detailed secondary categories such as substances taken in overdose, and specific method of injury – including hanging, cutting/stabbing, drowning, traffic related, jumped from a height, etc.) were collected on all other presentations via scrutiny of emergency department electronic records systems by experienced data collectors. More detailed data were collected via assessment by psychiatric liaison or emergency department staff during routine clinical care (e.g. details of mental state, risk, clinical history, and life problems that precipitated self-harm). Collection of these additional variables relies on a combination of patient self-report and clinician knowledge of the patient and circumstances of the self-harm (e.g. there may be additional context provided by relatives or friends who may be present, details provided by ambulance staff, or previous patient records for the individual) and how these are reported in the assessments.

Data were available from September 1997, however prior to 2003 only data on individuals who received an assessment included. Therefore, the current study used complete cohort data covering the 13-year period, 2003 to 2015 (inclusive).

### 2.2. Case ascertainment for reported and non-reported previous self-harm

Accuracy of self-reported history of self-harm could only be examined in people who had multiple self-harm presentations recorded on the study database. This necessitated exclusion of individuals with only a single episode recorded. Where there were multiple episodes for an individual, the first episode was also excluded as the veracity of self-reported previous self-harm could not be determined. The remaining individuals were then allocated to the case group, if they had inaccurately reported no previous self-harm (where a past episode of self-harm was recorded on the study database) at any presentation recorded on the database, or to the pool of potential controls if they had always accurately self-reported previous self-harm at all presentations. For cases and controls the first presentation with verifiable non-reported/reported previous self-harm was selected as the index episode for

analyses. The ‘self-reported previous self-harm’ variable was essential to establishing who did not report previous self-harm. Only cases with valid ‘yes’ or ‘no’ responses for this variable could be included. Methods of collection have been described above and the majority of cases will be from assessments where this question is specifically asked, or in some cases this may be collected directly from patient records where a clinician has included a history of self-harm in the clinical notes.

### 2.3. Case-control sample

Cases were matched to controls 1:5 based on date of self-harm. Where an exact date-match could not be achieved, cases were matched to the next available control after that date. Date matching ranged from 0 to 97 days after the cases’ presentation. Eighteen percent of controls were matched exactly by date of self-harm, and 63% ( $n = 1,179$ ) were matched within 48 h of the cases’ date of self-harm. No other matching criteria were specified to allow exploration of all possible factors (e.g. age, gender) associated with non-reporting of previous self-harm.

### 2.4. Ethics

Systematic monitoring of self-harm in Manchester is conducted as part of a local clinical audit. It is fully compliant with the European Union General Data Protection Regulation 2016, and the UK Data Protection Act 2018. The Manchester Self-Harm Project’s use of patient identifiable information without patient consent is supported under Section 251 of the NHS Act 2006 and approved by the NHS Confidential Advisory Group.

## 3. Statistical analysis

Analyses were carried out using STATA/IC 15.0 for Windows (StataCorp LP, USA).

### 3.1. Characteristics

Analyses were conducted at an individual-level. Single-variable conditional logistic regression was used to examine the relationship between demographic, clinical history, clinical presentation, and referral variables between cases and controls. Frequency and proportion were presented for each variable, along with odds ratios (ORs), 95% confidence intervals (95% CIs), and  $p$  values. A significance level of  $p \leq 0.05$  was used for all statistical tests. A complete-case analysis approach was used to handle missing data e.g. unknown or missing responses were removed and only valid responses to any data item included. To further explore the relationship between reporting/non-reporting of previous self-harm and key clinically relevant factors, variables recognized in the broader self-harm literature as associated with repetition of self-harm were specified a priori (i.e. gender, self-cutting as the main method of self-harm, alcohol consumption, employment status, previous and current psychiatric care, suicidal thoughts, hopelessness and depression, suicide risk, substance misuse, relationship problems, and mental health problems) and entered into a multiple-variable conditional logistic regression (Carroll et al., 2014; Murphy et al., 2012; Ness et al., 2015).

### 3.2. Repetition of self-harm

Repetition rates were calculated based on the index episode and followed up for 12 months. Chi-square tests of association examined the relationship between repetition and cases and controls. Cox proportional hazard models generated hazard ratios (HR) for risk of repetition, which was adjusted for age and gender. Variables that were significant in the multiple-variable conditional logistic regression (see Supplementary Table S1) were also included in a Cox regression model.

**Table 1**  
Single-variable conditional logistic regression comparison of socio-demographic characteristics of cases and controls.

Variable	Cases <i>N</i> = 374n(valid%)	Controls <i>N</i> = 1870n(valid%)	Odds ratio (95% CI)	<i>P</i> value
<b>Male</b>	<b>184 (49.20)</b>	<b>759 (40.59)</b>	<b>1.42 (1.13–1.77)</b>	<b>&lt;0.05*</b>
<b>Female</b>	<b>190 (50.80)</b>	<b>1,111 (59.41)</b>	<b>0.71 (0.57–0.88)</b>	<b>&lt;0.05*</b>
<b>Age</b>				
<b>24 and under</b>	<b>94 (25.13)</b>	<b>612 (32.73)</b>	<b>0.69 (0.54–0.89)</b>	<b>&lt;0.05*</b>
<b>25 to 44</b>	<b>178 (47.59)</b>	<b>872 (46.63)</b>	<b>1.04 (0.83–1.30)</b>	<b>0.73</b>
<b>45 to 64</b>	<b>95 (25.40)</b>	<b>365 (19.52)</b>	<b>1.41 (1.08–1.83)</b>	<b>&lt;0.05*</b>
<b>65 and over</b>	<b>7 (1.87)</b>	<b>21 (1.12)</b>	<b>1.70 (0.71–4.06)</b>	<b>0.24</b>
<b>Ethnicity</b>				
<b>White</b>	<b>335 (90.05)</b>	<b>1685 (90.59)</b>	<b>0.93 (0.64–1.36)</b>	<b>0.72</b>
<b>Black</b>	<b>11 (2.96)</b>	<b>51 (2.74)</b>	<b>1.08 (0.56–2.07)</b>	<b>0.83</b>
<b>Indian/Bangladeshi/Pakistani</b>	<b>16 (4.30)</b>	<b>74 (3.98)</b>	<b>1.11 (0.64–1.92)</b>	<b>0.72</b>
<b>Marital status</b>				
<b>Single</b>	<b>229 (62.06)</b>	<b>1184 (64.52)</b>	<b>0.90 (0.72–1.14)</b>	<b>0.39</b>
<b>Separated/divorced</b>	<b>51 (13.82)</b>	<b>208 (11.34)</b>	<b>1.23 (0.89–1.71)</b>	<b>0.21</b>
<b>Married/partner</b>	<b>79 (21.41)</b>	<b>408 (22.23)</b>	<b>0.95 (0.73–1.25)</b>	<b>0.73</b>
<b>Living arrangements</b>				
<b>Living alone</b>	<b>107 (32.82)</b>	<b>425 (25.84)</b>	<b>1.36 (1.05–1.76)</b>	<b>&lt;0.05*</b>
<b>Hostels/other lodgings</b>	<b>27 (8.28)</b>	<b>193 (11.73)</b>	<b>0.71 (0.47–0.09)</b>	<b>0.12</b>
<b>Living with family</b>	<b>131 (40.18)</b>	<b>695 (42.25)</b>	<b>0.91 (0.71–1.16)</b>	<b>0.46</b>
<b>Employment status</b>				
<b>Employed</b>	<b>91 (25.28)</b>	<b>330 (18.69)</b>	<b>1.51 (1.15–1.98)</b>	<b>&lt;0.05*</b>
<b>Unemployed</b>	<b>175 (48.61)</b>	<b>915 (51.81)</b>	<b>0.85 (0.68–1.07)</b>	<b>0.18</b>
<b>Registered sick</b>	<b>35 (9.72)</b>	<b>212 (12.00)</b>	<b>0.79 (0.53–1.17)</b>	<b>0.23</b>
<b>Student</b>	<b>23 (6.39)</b>	<b>197 (11.16)</b>	<b>0.55 (0.35–0.86)</b>	<b>&lt;0.05*</b>
<b>Homemaker/ carer</b>	<b>21 (5.83)</b>	<b>47 (2.66)</b>	<b>2.28 (1.34–3.88)</b>	<b>&lt;0.05*</b>

\*significant at *p* = 0.05

#### 4. Results

From 1st January 2003 to 31st December 2015, 4,740 eligible individuals (with at least one previous episode and information on both self-reported and hospital recorded presentations) were identified. There were 374 individuals (cases) who had not accurately self-reported previous self-harm, the remaining 4366 formed the pool of potential controls who had accurately self-reported previous self-harm. After matching on date of self-harm, 374 cases and 1,870 controls were retained.

Of those, 49% (*n* = 184) of cases were men and 51% (*n* = 190) were women, whilst 41% (*n* = 759) of controls were men and 59% (*n* = 1,111) were women. The majority of both cases and controls were aged 25 to 44 years (48% v 47%).

##### 4.1. Comparison of characteristics

Table 1 shows the sociodemographic characteristics of cases and controls. Cases were significantly more likely to be male, aged 45 to 64 years, to live alone, and were more often in employment or classed as a homemaker/carer compared to controls.

Details of the self-harm and precipitating factors are presented in Table 2. Self-poisoning was the more frequently used method of harm overall, but was more common in cases than controls. Self-harm was less likely to have been premeditated or to have intended to die in cases. Alcohol was more often involved at the time of the self-harm for cases than controls; however alcohol use was high in both groups (66% vs. 59%). Cases less often reported mental health problems compared to controls. Clinical characteristics are presented in Table 3. Cases were less likely to have current or previous psychiatric care, were less likely to have current substance misuse, to feel depressed, to feel hopeless, or to have current suicidal thoughts and plans in comparison to controls. Cases were more likely to be assessed as low risk for suicide. In terms of referral from the emergency department, cases were more commonly referred to their GP or self-discharged, than controls (who were more likely to be referred to psychiatric services).

Additional clinically relevant variables specified a priori were

entered into a multiple-variable conditional logistic regression. Being male (OR 2.11; 95% CI 1.26–3.52), feeling hopeless (OR 2.15; 95% CI 1.09–4.22), and being assessed as at low risk of suicide (OR 2.02; 95% CI 1.14–3.59) were more common among cases. Whereas being under current psychiatric care (OR 0.50; 95% CI 0.30–0.83), having received psychiatric care in the past (OR 0.23; 95% CI 0.13–0.42), and current substance misuse (OR 0.46; 95% CI 0.23–0.92) were less common in cases than controls.

##### 4.2. Repetition

Within 12 months, 30% (*n* = 113) cases and 31% (*n* = 579) controls presented again for self-harm to one of the study hospitals, and did not significantly differ. The number of days until repetition was approximately the same for both cases and controls, and the HR of 0.99 for non-reporters did not reach statistical significance (95% CI 0.83–1.17, *p* = 0.87). Adjusting for age and gender made little difference to the result. When additional factors related to reporting status in the previous multiple-variable conditional regression were included the HR for cases increased but did not reach statistical significance (Table 4).

#### 5. Discussion

This study used a case-control design to examine characteristics and outcomes for people who failed to report a history of past self-harm when presenting to the emergency department for a current episode of self-harm. People who did not disclose previous self-harm (non-reported cases) typically had a lower risk profile compared to people who did report previous self-harm (reported controls), including being more likely to be in employment and having less indicators of severe mental illness or substance use. Despite this, cases and controls showed similar rates of repetition at 12 months, which were both elevated compared to general rate of repetition found in previous studies (Carroll et al., 2014).

Non-reporters were less likely to be under current or past psychiatric care, to express suicidal intentions or ongoing suicidal thoughts, to

**Table 2**  
Single-variable conditional logistic regression comparison of methods of self-harm and precipitating factors for cases and controls.

Variable	Cases <i>N</i> = 374n(valid%)	Controls <i>N</i> = 1870n(valid%)	Odds ratio (95% CI)	<i>P</i> value
<b>Method of self-harm</b>				
Self-poisoning, drugs	306 (82.04)	1392 (74.44)	1.58 (1.19–2.10)	< 0.05*
Self-poisoning, other	5 (1.34)	18 (0.96)	1.40 (0.51–3.81)	0.51
Self-injury	47 (12.60)	327 (17.49)	0.68 (0.49–0.94)	< 0.05*
<b>Circumstances of self-harm act</b>				
Alcohol involved	215 (66.15)	946 (58.98)	1.37 (1.06–1.77)	< 0.05*
Premeditated	44 (13.33)	345 (21.34)	0.56 (0.39–0.79)	< 0.05*
Wanted to die	144 (48.98)	912 (60.16)	0.64 (0.50–0.83)	< 0.05*
<b>Precipitants of self-harm</b>				
Relationship problems	212 (61.99)	1042 (59.68)	1.07 (0.84–1.37)	0.57
Victim of a crime	9 (2.63)	77 (4.41)	0.57 (0.28–1.16)	0.12
<b>Mental health problems</b>	31 (11.52)	263 (19.41)	0.52 (0.34–0.78)	< 0.05*
Bullying/intimidation	14 (4.09)	116 (6.64)	0.62 (0.35–1.09)	0.10
Bereavement	43 (12.57)	229 (13.12)	0.93 (0.65–1.32)	0.67
Problems with housing	50 (14.62)	309 (17.70)	0.80 (0.58–1.11)	0.18
Employment/study problems	46 (13.45)	227 (13.00)	1.03 (0.73–1.46)	0.87
Legal problems	24 (7.02)	126 (7.22)	0.96 (0.61–1.53)	0.87
Physical health problems	47 (13.74)	198 (11.34)	1.25 (0.88–1.77)	0.21
Miscarriage/stillbirth	3 (0.88)	28 (1.62)	0.53 (0.16–1.76)	0.23
Financial problems	46 (13.45)	235 (13.46)	0.98 (0.69–1.38)	0.90
<b>Mental health symptoms (e.g. psychosis)</b>	34 (9.94)	355 (20.33)	0.44 (0.30–0.64)	< 0.05*
<b>Abuse</b>	21 (6.14)	183 (10.49)	0.53 (0.33–0.86)	< 0.05*
Alcohol misuse	72 (26.77)	340 (25.09)	1.10 (0.81–1.50)	0.54
Substance misuse	17 (6.32)	129 (9.52)	0.65 (0.38–1.12)	0.12

\*significant at *p* = 0.05

feel depressed, and were twice as likely to be rated as at low risk for suicide by psychiatric specialists. This may reflect a group that are less psychiatrically unwell than those who do report a history of self-harm. This is consistent with previous work that found people with no current psychopathology were less likely to report previous suicidal behaviour (Mars et al., 2016). A lack of indicators of premeditation and the presence of alcohol consumption prior to the act, may indicate that self-harm in non-reporters is more impulsive and more influenced by transient negative life events than by enduring psychiatric problems.

Results of the survival analyses and the lack of significant difference in rates of repetition indicates that while cases present with typically

less severe indicators of mental health problems, repetition rates are similar to those who do report previous self-harm. This is consistent with a study that found individuals that did not disclose previous self-harm but had a verified episode were also at an increased risk of self-harm repetition (Borschmann et al., 2017).

Causes of non-reporting could not be identified in this observational study, but there are a number of possible reasons why a person may not accurately self-report previous self-harm. The potential for encountering negative attitudes and reactions from emergency department staff is high, especially toward those who present repeatedly (Saunders et al., 2012), and failure to report previous self-harm may be

**Table 3**  
Single-variable conditional logistic regression comparison of psychiatric, clinical state and disposal characteristics, for cases and controls.

Variables	Cases <i>N</i> = 374n(valid%)	Controls <i>N</i> = 1870n(valid%)	Odds ratio (95% CI)	<i>P</i> value
<b>Psychiatric care</b>				
Current psychiatric treatment	163 (48.22)	1187 (69.13)	0.40 (0.31–0.51)	< 0.05*
Previous psychiatric treatment	156 (49.68)	1304 (79.17)	0.22 (0.17–0.30)	< 0.05*
<b>Clinical characteristics</b>				
Current alcohol use	120 (37.62)	632 (39.04)	0.95 (0.74–1.22)	0.68
Current substance misuse	45 (13.85)	347 (21.30)	0.56 (0.40–0.80)	< 0.05*
Feeling depressed	205 (59.59)	1241 (70.75)	0.60 (0.47–0.77)	< 0.05*
Hopelessness	120 (34.48)	709 (40.75)	0.78 (0.61–0.99)	< 0.05*
Sleep disturbance	194 (55.11)	1101 (62.10)	0.75 (0.59–0.94)	< 0.05*
Hallucinations/delusions	24 (7.00)	194 (10.97)	0.61 (0.39–0.95)	< 0.05*
Suicidal thoughts	119 (33.33)	837 (46.55)	0.57 (0.45–0.72)	< 0.05*
Suicidal plans	43 (12.11)	341 (19.10)	0.58 (0.41–0.82)	< 0.05*
<b>Risk of suicide</b>				
Low	234 (62.57)	857 (45.83)	2.01 (1.60–2.54)	< 0.05*
Moderate	94 (25.13)	731 (39.09)	0.52 (0.40–0.67)	< 0.05*
High	20 (5.35)	169 (9.04)	0.57 (0.35–0.92)	< 0.05*
<b>Disposal from ED</b>				
Referred to GP	13 (7.14)	27 (3.20)	2.74 (1.24–6.07)	< 0.05*
Told to see GP	17 (9.34)	47 (5.58)	1.79 (0.92–3.48)	0.09
No referral	11 (6.04)	51 (6.05)	1.06 (0.50–2.25)	0.87
<b>Self-discharge</b>	16 (8.79)	32 (3.80)	2.89 (1.38–6.07)	< 0.05*
Referred to psychiatry	64 (35.16)	389 (46.14)	0.53 (0.35–0.80)	< 0.05*
Referred to medical	90 (49.45)	409 (48.52)	0.95 (0.67–1.35)	0.79
General hospital admission	80 (51.61)	389 (52.36)	0.85 (0.58–1.26)	0.43

\*significant at *p* = 0.05

**Table 4**

Cox's proportional hazards multiple-variable model for time to first repeat based on reporting/non-reporting of previous self-harm and factors independently related to reporting status.

Variable	Hazard ratio (95% CI)	P value
Non-reporting of previous self-harm	1.12 (0.91–1.38)	0.28
Male	1.07 (0.92–1.24)	0.37
Age	1.00 (0.99–1.01)	0.81
Hopelessness	1.27 (1.08–1.48)	< 0.05
Current psychiatric treatment	1.22 (1.03–1.45)	< 0.05
Previous psychiatric treatment	1.32 (1.09–1.59)	< 0.05
Substance misuse	0.85 (0.70–1.04)	0.12
Low risk of suicide	0.91 (0.78–1.07)	0.26

an attempt to avoid perceived threats and potential humiliation from medical staff due to past self-harm (Taylor et al., 2009). Issues around stigma and worries about repercussions for employment may also have a role, especially as non-reporters were more likely to be men—who are thought to seek help less often than women—and more likely to be employed than those who did report past self-harm (Taylor et al., 2009; Wiklander et al., 2003).

Non-reporting may not always be a conscious decision on the part of the patient. There are indications in psychological literature that forgetting painful memories and events can be an effective self-preservation strategy or adaptive defense mechanism, which protects the individual against further distress (Goldney et al., 2009; Klimes-Dougan et al., 2007). People who forget past suicide ideation have been shown to have better mental health than those who recall previous suicide ideation (Goldney et al., 2009), possibly via less rumination on the negative events/circumstances that precipitated the self-harm (Lyubormirsky, Caldwell and Nolen-Hoeksema, 1998; Watkins and Teasdale, 2001). That non-reporters tend to have less severe mental health problems compared to reporters of past self-harm, might then be compatible with ideas conceptualized in contemporary psychological therapies—such as mindfulness—rooted in letting go of negative thoughts and suicide ideation by not attributing significance to a difficult memory (Frewen et al., 2008).

Although this work showed that non-reporting of previous self-harm during a psychosocial assessment is comparatively rare it is important due to the potential impact on clinicians' estimates of future self-harm and suicide risk, as well as on decisions about the prospective clinical management of the patient (Stegg et al., 2012; Waern et al., 2010). Non-reported cases were less likely to be referred to psychiatric services, and were more often referred to their GP, which may indicate reliance on patient self-report of previous self-harm in referral decisions.

## 6. Limitations

The study was limited to using recorded episodes of self-harm in our database to assess the veracity of self-reported previous self-harm. This has some implications for the number and type of individuals included in the case-sample as those who received an assessment would be more likely to have a valid response for the 'previous self-harm' variable as this is part of the assessment procedure conducted by emergency department clinicians and/or psychiatric specialists. Therefore it is likely that some individuals who should have been included in the case-sample were not included, especially if they did not receive an assessment at presentation to hospital. Past episodes of self-harm which did not result in a hospital presentation to one of the three study sites (e.g. self-harm in the community or a presentation to a hospital outside the city area) could not be included as there was no way of reliably identifying non-reporters in these groups. However, individuals with only one episode recorded on the database were excluded, therefore while the characteristics of these potential non-reporters remain unknown, there was no direct impact on the current analyses.

People with no reported or recorded history of self-harm were not included in the comparative analysis as the focus of this study was in exploring differences between reporters and non-reporters of previous self-harm. Including comparisons with people who have no previous history of self-harm would have enabled comment on risk factors for repetition of self-harm but these have been reported extensively elsewhere (Larkin et al., 2014; Carroll et al., 2014; Witt et al., 2018; Murphy et al., 2012).

The conclusions drawn in this study may also be limited geographically. Data were drawn from hospitals that serve the population of the City of Manchester and may not be generalizable to other locations with different socioeconomic and demographic profiles.

## 7. Clinical implications

Not reporting past self-harm may be a reflection of baseline differences in characteristics, the protective effect of forgetting, or a decision not to report – possibly due to stigma. Non-reporters appeared to have a lower risk profile, however almost a third did go on to repeat self-harm, emphasizing the need for careful enquiry and a thorough psychosocial assessment to identify areas of risk and to meet the current needs of each individual. Previous negative experiences with clinical staff has been proposed as a possible reason for non-reporting of previous self-harm, and more routine training on self-harm to combat stigma and reduce misconceptions around self-harm could help. There are many potential reasons why someone would fail to report previous episodes of self-harm, and further work is needed to investigate the possible causes, as well as potential positive and negative consequences, of not reporting previous self-harm.

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### CRedit authorship contribution statement

**Caroline Clements:** Conceptualization, Formal analysis, Writing - original draft, Writing - review & editing, Data curation. **Bushra Farooq:** Formal analysis, Writing - review & editing. **Harriet Bickley:** Writing - review & editing. **Nav Kapur:** Conceptualization, Writing - review & editing.

### Declaration of Competing Interest

N.K. is a member of the Department of Health's National Suicide Prevention Advisory Group, and chaired the NICE guideline development group for the longer-term management of self-harm and the NICE Topic Expert Group which developed the quality standards for self-harm services. N.K. also chairs the NICE guideline committee for the management of depression. All other authors declare no conflict of interest.

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## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jad.2019.10.052.

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