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Research Trends

# Suicide and Self-Harm Related Internet Use

## A Cross-Sectional Study and Clinician Focus Groups

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**Abstract.** *Background:* The rise in Internet use adds a new dimension to suicide prevention. We investigated suicide/self-harm (S/Sh)-related Internet use among patients presenting to hospital with self-harm. *Method:* We asked 1,198 adult and 315 child and adolescent patients presenting to hospital following self-harm in a city in South West England about Internet use associated with their hospital presentation. Associations between Internet use and sociodemographic and clinical characteristics were investigated using multivariable logistic regression models. Focus groups with clinicians explored the acceptability and utility of asking about Internet use. *Results:* The prevalence of S/Sh-related Internet use was 8.4% (95% CI: 6.8–10.1%) among adult hospital presentations and 26.0% (95% CI = 21.3–31.2%) among children's hospital presentations. In both samples, S/Sh-related Internet use was associated with higher levels of suicidal intent. Mostly, clinicians found it acceptable to ask about Internet use during psychosocial assessments and believed this could inform perceptions of risk and decision-making. *Limitations:* It is unclear whether the findings in this study are applicable to the general self-harm patient population because only those who had psychosocial assessments were included. *Conclusion:* S/Sh-related Internet use is likely to become increasingly relevant as the Internet-native generation matures. Furthermore, Internet use may be a proxy marker for intent.

**Keywords:** suicidal intent, psychosocial assessment, hospital presentation, epidemiology

The rise in Internet use in recent years adds a new dimension to suicide prevention. Most recent data indicates that 90% of UK households have access to the Internet, as do at least 86% and 77% of households in Australia and the United States, respectively (Australian Bureau of Statistics, 2016; Office for National Statistics, 2017a; Ryan & Lewis, 2017). Use of the Internet within the previous 3 months was reported by 89% of adults and 99% of young adults in the UK (Office for National Statistics, 2017b).

In a recent population-based study of 21-year-olds in England, 22.5% reported suicide/self-harm (S/Sh)-related Internet use (Mars et al., 2015); this figure includes those who inadvertently came across the information as well as those who actively sought it. Cross-sectional studies using online surveys have varied in their findings but have shown higher rates of social anxiety, depression, or suicidal ideation in people who report S/Sh-related Internet use compared with those who do not (Bell, Mok, Gardiner, & Pirkis, 2017; Mok, Jorm, & Pirkis, 2016; Niederkrotenthaler, Haider, Till, Mok, & Pirkis, 2017). Furthermore, a

cohort study has demonstrated increasing suicidal ideation among people reporting S/Sh-related Internet use in the months following usage, compared with those who had not used the Internet in relation to their self-harm. (Sueki, Yonemoto, Takeshima, & Inagaki, 2014) Clinical reports indicate that S/Sh-related Internet use preceded 2% of suicides among people with mental illness in England between 2011 and 2013 (University of Manchester, 2015). A later study in England between 2014 and 2015, based on data from investigations carried out by a range of official bodies including Child Death Overview Panels, found that 23% of suicides among under-25-year-olds followed suicide-related Internet use (University of Manchester, 2016). Studies focusing on new and emerging high-lethality suicide methods have reported evidence that choice of method was influenced by Internet searching (Gunnell et al., 2015).

While some evidence indicates an increase in the accessibility of suicide-promoting information online (Biddle et al., 2016), the Internet also increases access to helpful

information such as links to support services and advice about managing mental health problems (Daine et al., 2013; Mars et al., 2015). Additionally, it provides opportunities to deliver suicide prevention interventions, particularly to populations that may otherwise be difficult to engage (Lai, Maniam, Chan, & Ravindran, 2014; Mewton & Andrews, 2015; van Spijker, van Straten, & Kerkhof, 2014, 2015).

Recent reviews, however, have highlighted that empirical research in this area is limited (Daine et al., 2013; Mok, Jorm, & Pirkis, 2015). Important information, such as the estimated proportion of people accessing suicide-related material online and the type of information accessed when feeling suicidal, is currently unknown. The aims of this cross-sectional study were to: (a) estimate the frequency of S/Sh-related Internet use among patients presenting to the emergency department (ED) who have self-harmed; (b) explore the sociodemographic and clinical characteristics of these patients; and (c) explore clinicians' views on the acceptability and utility of asking patients about S/Sh-related Internet use during psychosocial assessments. To our knowledge, this is the first study investigating S/Sh-related Internet use in a cohort of hospital-presenting self-harm patients. The study aims to inform suicide prevention policy as well as assist clinicians in assessing this group of patients when presenting to hospital.

## Method

### Sample

Information on individuals presenting following self-harm to the adult and children's EDs of the Bristol Royal Infirmary (BRI) and Bristol Royal Hospital for Children (BRHC) is recorded on a self-harm surveillance register (Carroll & Gunnell, 2015). All data from presentations that had a psychosocial assessment between January 2013 and December 2015 at the adult hospital and September 2013 and November 2015 at the children's hospital were analyzed. Only a patient's first hospital presentation during this period was included, so as to avoid our estimates being distorted by a small number of frequent attenders. Start dates were based on when information on S/Sh-related Internet use (see next section) began to be collected consistently in each hospital. End dates were the latest date for which data were available at the time of analysis. Throughout this paper we use the term *self-harm* to include all forms of self-harm regardless of suicidal intent.

## Internet Use

Information regarding Internet use was recorded during a psychosocial assessment by the Liaison Psychiatry team. A psychosocial assessment is performed on approximately 65% of SH presentations at the adult hospital and 82% of presentations at the children's hospital (Carroll & Gunnell, 2015). The most common reason for a lack of psychosocial assessment is self-discharge prior to the assessment being carried out. However, levels of psychosocial assessment in Bristol are higher than the national average (Cooper et al., 2013).

The psychosocial assessments involve face-to-face interviews using a standardized proforma, which also includes questions about sociodemographics, method of self-harm, and clinical characteristics. From November 2012 the proforma was updated to include the question, "In the period leading up to your attempt, did you use the Internet for any reasons associated with this episode (e.g., as a source of help or to investigate self-harm, suicide or suicide methods)? Y/N." A follow-up question allowed free text responses: "If yes, how?" This study therefore investigates patient-defined S/Sh-related Internet use.

## Clinical and Sociodemographic Characteristics

Sociodemographic and clinical characteristics investigated included: age (adults: 15–24, 25–34, 35+ years), employment, ethnicity, gender, past psychiatric history, and past self-harm. For children's hospital presentations we selected the age categories 8–12, 13–14, and 15–18 years in order to investigate trend in frequency of use while ensuring reasonable numbers in each category. However, when exploring associations, the lower two age categories were combined owing to a low number of children reporting S/Sh-related Internet use in these age groups.

The clinical features of the self-harm investigated were: nature of self-harm (method and Beck Suicide Intent Scale; Beck, Schuyler, & Herman, 1974); and severity of underlying mental health problem as indexed by Crisis Team referral and admission to a psychiatric hospital (adult patients only). Method data were categorized as self-poisoning, self-injury, self-poisoning and self-injury combined, and high-lethality method (drowning; hanging and suffocation; jumping; gassing). Children's hospital method data were not analyzed because of the very low number of high-lethality cases ($n = 3$).

## Data Analysis

Six records were excluded from the analysis owing to missing information on age and sex. The characteristics of people who did and did not have Internet data available were compared using chi-square tests. Multivariable logistic regression models controlling for age and sex were used to investigate the association between internet use and (a) sociodemographic and clinical characteristics, (b) clinical features of self-harm, and (c) repeat presentation within 6 months. When analyzing repeat presentations, data were only analyzed up until March 2015 at the adult hospital and December 2014 at the children's hospital to allow for a 6-month follow-up period. S/Sh-related Internet use was considered the outcome variable in the first two analyses, but the exposure in the final analysis. All analyses were carried out using Stata version 14 (StataCorp, 2015).

## Qualitative Methods

A focus group was carried out in November 2015 with members of the Liaison Psychiatry team at the adult hospital who had asked patients about S/Sh-related Internet use during psychosocial assessment. A second group was conducted with an equivalent team at a neighboring adult hospital who began asking about Internet use during the study period but had not collected data covering a sufficient period for quantitative analysis. All current team members with experience of asking about Internet use were invited to take part. Groups were held on site and run by the second and fourth authors.

Groups explored: (a) the acceptability of asking about Internet use during psychosocial assessment, and the clinical usefulness of this; (b) clinicians' beliefs and knowledge surrounding suicide-related content online and how this is used by those who are suicidal. Topics were explored openly and with minimal prompting; participants were encouraged to talk freely and interactively with each other around these topics and, where relevant, to ground their viewpoints by referring anonymously to patients they had seen. A case vignette of an Internet user was also introduced at a strategic point in the discussion and participants were asked for their reactions to it. The vignette was an anonymized account of the suicide-related Internet behavior of a 17-year-old male obtained during an in-depth interview carried out as part of the broader study. The behavior described included searching for least painful methods, researching dosage information, and purchasing drugs online. The interviewee had looked for help online but had experienced numerous barriers to access: long waiting times for assessment and suggestions of private help, which was too expensive.

Groups were audio-recorded, with consent, and transcribed verbatim for analysis. The data were analyzed by the second author using a thematic approach, transcripts being examined in detail and descriptive codes used to identify key emergent themes and ideas. Codes were amalgamated into higher-order concepts or subdivided as understanding progressed. Descriptive accounts were produced exploring the content of key codes and comparing data across groups and individuals. Double coding was performed by the fourth author to check for reliability.

## Ethical Approval

The Bristol Self-Harm Surveillance Register has ethical approval from the South West Research Ethics Committee (Central Bristol) and the qualitative component of the study was approved by the Frenchay NHS Research Ethics Committee.

# Results

## Adult Hospital Presentations

Over the study period there were 1,758 first presentations to the adult ED following self-harm who had a psychosocial assessment; 1,198 (68%) had information on Internet use recorded. People with data recorded on Internet use tended to be older (35.3 vs. 33.8 years, $\chi^2 = 7.7$, $p = .02$), more likely to be in employment (26.4% vs. 21.3%, $\chi^2 = 20.8$, $p < .01$), less likely to have a psychiatric history (58.5% vs. 59.8%, $\chi^2 = 24.9$, $p < .01$) and to have previously self-harmed (73.0% vs. 77.7%, $\chi^2 = 8.0$, $p = .02$) compared with people without data on Internet use recorded. There was also some evidence that this group were less likely to have had a previous admission to a psychiatric hospital (2.8% vs. 4.6% $\chi^2 = 3.8$, $p = .05$). The groups were similar with respect to other clinical and sociodemographic characteristics.

Of those with data recorded on Internet use, the mean age of adult hospital presentations was 35.3 years ($SD = 14.7$) and 57.6% were female. The prevalence of S/Sh-related Internet use was 8.4% ($n = 100/1,192$; 95% CI = 6.8–10.1). Table 1 shows the associations between sociodemographic and clinical characteristics and S/Sh-related Internet use adjusted for age and sex. Those aged 35 years or over were less likely to use the Internet in relation to their self-harm compared with those aged under 25 years ($OR = 0.47$, 95% CI = 0.29–0.76). The prevalence of S/Sh-related Internet use among those under 25 years was 11.1% ($n = 40/360$). Adults who were

**Table 1.** Associations between sociodemographic and clinical characteristics and S/Sh-related Internet use among adult hospital presentations, adjusted for age and sex

| Factor | Categories | No. reported Internet use n* (%) | Total no. with Internet data available n | OR (95% CI) |
|---|---|---|---|---|
| Age (years) | <25 | 40 (11) | 360 | 1.00 |
| | 25–34 | 29 (10) | 281 | 0.90 (0.54–1.49) |
| | 35+ | 31 (6) | 551 | 0.47 (0.29–0.76) |
| | | | | p < .01 |
| Gender | Male | 45 (9) | 506 | 1.00 |
| | Female | 55 (8) | 686 | 0.85 (0.56–1.28) |
| | | | | p = .43 |
| Ethnicity | White | 88 (9) | 1,024 | 1.00 |
| | Non-White | 3 (4) | 85 | 0.35 (0.11–1.13) |
| | | | | p = .09 |
| Employment status | Employed | 43 (14) | 315 | 1.00 |
| | Unemployed | 33 (6) | 532 | 0.44 (0.28–0.72) |
| | Retired | 1 (2) | 43 | 0.23 (0.03–1.77) |
| | Full-time student | 12 (9) | 139 | 0.46 (0.22–0.95) |
| | Other | 3 (6) | 53 | 0.44 (0.13–1.5) |
| | Sickness benefit | 2 (4) | 57 | 0.27 (0.06–1.14) |
| | | | | p = .02 |
| Past psychiatric history | Yes | 65 (9) | 699 | 1.00 |
| | No | 32 (7) | 451 | 0.71 (0.46–1.11) |
| | | | | p = .29 |
| Past self-harm | Yes | 79 (9) | 871 | 1.00 |
| | No | 17 (6) | 274 | 0.71 (0.41–1.23) |
| | | | | p = .45 |
| Method | Self-poisoning and self-injury | 9 (10) | 92 | 1.00 |
| | Self-poisoning | 83 (9) | 946 | 0.99 (0.47–2.05) |
| | Self-injury | 6 (5) | 124 | 0.46 (0.16–1.36) |
| | High lethality | 2 (7) | 30 | 0.77 (0.15–3.83) |
| | | | | p = .29 |
| Beck Suicide Intent Scale | 0–8 (low) | 25 (7) | 375 | 1.00 |
| | 9–20 | 41 (14) | 292 | 2.34 (1.38–3.97) |
| | 21–30 (high) | 7 (23) | 30 | 4.94 (1.89–12.92) |
| | | | | p < .01 |
| Admission to psychiatric hospital | No | 95 (8) | 1,158 | 1.00 |
| | Yes | 5 (15) | 34 | 2.46 (0.91–6.64) |
| | | | | p = .10 |
| Crisis team follow-up | No | 70 (7) | 976 | 1.00 |
| | Yes | 30 (14) | 216 | 2.18 (1.38–3.46) |
| | | | | p < .01 |

*Note.* Due to missing data, the number of patients who reported Internet use for each risk factor varies from 73 (for Beck Suicide Intent) to 100.
S/Sh = suicide/self-harm.

**Table 2.** Associations between patient and self-harm characteristics and S/Sh-related Internet use among children's hospital presentations, adjusted for age and sex

| Factor | Categories | No. reported Internet use $n^*$ (%) | Total no. with Internet data available $n$ | OR (95% CI) |
|---|---|---|---|---|
| Age (years) | ≤14 | 41 (24) | 173 | 1.00 |
| | >14 | 40 (29) | 139 | 1.30 (0.78–2.16) |
| | | | | $p = 0.31$ |
| Gender | Male | 10 (26) | 38 | 1.00 |
| | Female | 71 (26) | 274 | 0.95 (0.44–2.05) |
| | | | | $p = .89$ |
| Ethnicity | White | 69 (27) | 257 | 1.00 |
| | Non-White | 2 (9) | 22 | 0.27 (0.06–1.20) |
| | | | | $p = 0.12$ |
| Past psychiatric history | Yes | 25 (27) | 94 | 1.00 |
| | No | 52 (26) | 202 | 0.99 (0.57–1.74) |
| | | | | $p = .99$ |
| Past self-harm | Yes | 44 (30) | 149 | 1.00 |
| | No | 31 (22) | 139 | 0.70 (0.41–1.19) |
| | | | | $p = .41$ |
| Beck Suicide Intent Scale | Low intent (0–8) | 32 (33) | 98 | 1.00 |
| | High intent (9–30) | 18 (49) | 37 | 1.99 (0.92–4.34) |
| | | | | $p = .08$ |

*Note.* S/Sh = suicide/self-harm.

employed were more likely to report use than those in the other employment categories. There was no association between S/Sh-related Internet use and gender.

Clinical variables indicated an association between clinical assessment of the severity of the episode and S/Sh-related Internet use. There was an approximately twofold increase in the likelihood of use amongst those who received follow-up with the Crisis Team. Patients with high intent on the Beck Suicide Intent Scale were almost five times more likely to have used the Internet in relation to their self-harm compared with those with low intent.

In all, 172 (14.4%) patients presented to hospital with a repeat episode of self-harm within 6 months of their first presentation. There was no evidence that S/Sh-related Internet use at first presentation was associated with repeat presentation (OR = 1.06, 95% CI = 0.55–2.06).

Of the 100 adults who reported S/Sh-related Internet use, 74 also had free-text data recorded regarding the nature or purpose of their self-defined use: researching methods (*n* = 55; 74.3%), being bullied on social media (*n* = 7; 9.5%), purchasing medications for overdose (*n* = 6; 8.1%), searching for help (*n* = 4; 5.4%), and searching for both methods and help (*n* = 2; 2.7%).

## Children's Hospital Presentations

There were 384 first presentations of self-harm at the children's hospital between September 2013 and November 2015 who had a psychosocial assessment. Information on S/Sh-related Internet use was recorded for 315 (82%) presentations. Children with data recorded on Internet use were less likely to have a psychiatric history (30.2% vs. 64.8%, $\chi^2$ = 60.9, *p* < .01) but more likely to have previously self-harmed (47.6% vs. 44.8%, $\chi^2$ = 33.6, *p* < .01) than those without such data. The groups were similar with respect to all other clinical and sociodemographic characteristics.

The prevalence of S/Sh-related Internet use was 26.0% (*n* = 82/315; 95% CI = 21.3–31.2). The prevalence by age group was: 8–12 years (11.8%; *n* = 2/17), 13–14 years (25.2%; *n* = 40/159), 15–18 years (28.8%, *n* = 40/139).

There was no strong evidence of associations between any of the clinical and sociodemographic characteristics investigated and S/Sh-related Internet use among children's hospital presentations (Table 2). However, there was some evidence of an association with suicide intent. In this case the Beck Suicide Intent Scale was divided into low (scores: 0–8) and high (scores: 9–30) intent only due

**Table 3.** Focus group findings

| Theme | Data extract (I = interviewer; P = participant) |
| --- | --- |
| Acceptability | P2: It's not, "do you ever use the Internet," they're [questions] just sort of feeding in…and just sort of building into that question.<br>I: So, you would sort of gradually…<br>P1: Depends on the client and how the interview's going and you just sort of ask the question at the appropriate point.<br>P4: … the way I ask is whether…people have used the Internet to look up, you know, means of support, positive resources so I ask them, you know, I asked it both ways whether she'd [reference to patient seen previous week] used the Internet to either look for help or as a way of thinking about working out how she might try to end her life.<br>I: Overall do you feel comfortable asking the question?<br>P4: Yes.<br>P3: It's no more uncomfortable than any of the other questions we ask. |
| Risk | P3: Sometimes when I asked the question I sort of warn people against, um, you know, looking too deeply on the Internet because there are sites that are actively encouraging people to kill themselves… and I think if people start looking they're more likely to come across these things, but at the same time I'm saying you can get help online and get support and advice, you know, peer support… I think it's in my mind that if you're asking the question you could be alerting somebody to another possibility they hadn't considered. |
| Clinical usefulness<br>Supporting decision-making | P4: I can't think of an example where [knowing about a patient's Internet use] really made me change my impression or management plan… maybe if there was a degree of planning where they'd actually gone on the Internet and researched it in detail, that kind of adds an element to the nature and degree of how much it was planned…<br>P1: Yeah, I agree with that actually, just thinking about – that's another thing on the list of many things that will worry me… just lends to that kind of decision I suppose.<br>P2: Again it's adding, looking at the risk, it adds to that maybe, adds to the knowledge of the person. |
| Benefits of probing | P1: [referring to case vignette] It strikes me actually the detail of [online] research… I guess I haven't necessarily explored – like today, I haven't asked her [patient just seen] many questions about how much she is looking at the Internet… but actually when you look at how much – I would be just more concerned, I suppose….<br>P3: … Yeah, makes me think maybe I need to explore it a little bit more…<br>P4: Yeah, and maybe probe it a bit more isn't it, like you say, there is a lot of info there which I probably wouldn't have weaned out of them.<br>I: How would that probing help?<br>P4: Well I guess it would help formulate your risk assessment… for someone like this [case vignette], if we had all the right information as part of that risk assessment it would probably, you know, certainly ring a few alarm bells. |
| Informing treatment plans | P6: It helps you when you come to do your plan about what might be helpful, knowing what might be available to them, different ways different people learn or access information. |
| Barriers<br>Scope of psychosocial assessment | P8: Given that we only have an hour or two to assess someone and that's crammed with lots of other domains… I wouldn't want to sacrifice the detailed discussion about mental state for a more in-depth discussion of Internet use. I mean if you were working with someone over a longer period of time and you thought there was something about their history of their use of the Internet had evolved in a way, healthily or unhealthily, that seems like something you might explore with someone but in a one-off assessment, I think that's pushing it… |
| Knowledge | I: We've found people going on [name of popular non-suicide information site] to look up methods and how to use methods of suicide.<br>P6: Really? On [name of site]? ….<br>I:…. In fact one of you mentioned [name of popular medical site] and recommending this to patients but we've interviewed people who have looked on there for information on how to do it [suicide]<br>P6: Really? That's new to me. |

to small numbers, which limited analysis; there were only three patients in the very high intent group, all of whom had used the Internet. There was an almost twofold increase in the likelihood of using the Internet in relation to self-harm among those with high intent compared with those with low intent.

## Focus Groups With Liaison Psychiatry Clinicians

Each group was attended by five clinicians (total $n = 10$) representing just over half (53%) of those invited. Participants were all clinical nurse specialists and included two men and eight women. Groups lasted approximately 1 hr. Participants agreed that the Internet poses significant problems for some patients and that, in addition to sui-

cide-related use, patients can be affected by online bullying and trolling, which may lead to self-harm. While noting the presence of help sites, they believed the balance of usage was tipped toward harm among patients they saw. Key themes are described here and illustrated with data extracts in Table 3.

Mainly clinicians found it acceptable to ask patients about S/Sh related-Internet use and that this did not compromise clinical rapport. Nevertheless, most weaved the topic into conversation, some describing occasions where they felt a need to ask in a roundabout way, or a fear that it could be risky to ask in case this prompted patients to go online and access "bad" content. One participant reported not always asking the question if she believed it would be unhelpful – for instance, if a patient was acutely distressed.

Knowledge of a patient's S/Sh-related Internet use was described as "a part of the jigsaw" (P8), which could support or confirm a general picture about a patient but would not on its own determine clinical decision-making. For instance, it contributed to perceptions of risk and intent and could make a clinician more concerned about a patient. Clinicians from one group had probed disclosures of use more deeply and were more specific about ways in which knowing about use could inform practice. These included: identifying individuals who were actively planning suicidal behavior; gaining insight (via online communications) into the motivations behind suicidal behavior, including disguised requests for help; and contributing toward treatment planning by indicating individuals who may be engaged by computer-orientated recommendations such as online sources of information and help. Conversely, clinicians in the other group, after viewing a case vignette detailing an individual's S/Sh-related Internet use, considered whether they had missed opportunities and should probe further. However, concerns were expressed about the extent to which there is scope for this within a one-off psychosocial assessment and some thought clinicians would require guidance about how and when to respond to disclosures of suicide-related Internet use. An incomplete knowledge of S/Sh-related Internet use was apparent in both groups – in particular, of the types of sites typically accessed by patients and how these are used.

## Discussion

### Main Findings

The prevalence of S/Sh-related Internet use was 8.4% among adult hospital presentations and 26.0% among presentations to the children's hospital. Younger age, employment, higher intent, and Crisis Team follow-up were all strongly associated with an increased likelihood of S/Sh-related Internet use among adult hospital presentations. There was some evidence of an association with higher intent among children's hospital presentations. This suggests S/Sh-related Internet use could be a proxy marker for intent in both adults and children. However, this hypothesis would need to be investigated further. Clinicians generally felt it was acceptable to ask about Internet use as part of the psychosocial assessment and believed that the information gained contributed to their perceptions of intent and therefore could benefit patient care.

## Strengths and Limitations

To our knowledge, this study is the first to investigate and provide a prevalence estimate of S/Sh-related Internet use among hospital presenting patients. The self-harm register was able to provide rich sociodemographic and clinical data, which enhanced the clinical relevance of the analysis. The qualitative component is also novel and provides exploratory information about the feasibility of asking patients about S/Sh-related Internet use during routine practice.

An important limitation is our inability to differentiate between types of Internet use such as whether patients were actively searching for information or stumbling upon it, whether it was harmful or helpful information, how the patients interpreted the content accessed, and its impact on them. However, free-text responses from adult hospital patients indicate that most of their use focused on methods rather than support-seeking. This finding was strongly reinforced in semistructured qualitative interviews also conducted with a sample of these patients as part of the wider project where the nature and outcomes of S/Sh-related Internet use were explored in depth and found to be largely negative – most purposefully seeking methods information while avoiding online help. Such insights are unavailable for the children's hospital, which makes it difficult to interpret the higher prevalence of use observed among this group (Biddle, Derges, Goldsmith, Donovan, & Gunnell, 2017). It might, for example, refer to broader, more varied use as young people engage with social media, rather than increased use of the same nature as seen in adult patients.

Some difficulties also exist in relation to how data about S/Sh-related Internet use were collected. Focus group findings indicate that clinicians often integrated the question into conversation rather than ask this in a uniform way, which may have introduced some variation in the reporting of use across clinicians, patient type, and hospitals. This further hampers the ability to directly compare adult and children's hospital data. Only those who had psycho-

social assessments were included, and of these only 68% of adult hospital presentations and 82% of children's hospital presentations had data recorded on Internet use. Furthermore, only 59% and 43% of adult and children's hospital presentations, respectively, had data recorded on the Beck Suicidal Intent Scale. Patterns of use may have differed among those who did not have data recorded. Focus group findings hint that some clinicians may have made a judgment about the appropriateness of asking particular patients and not always asked those they considered vulnerable or acutely unwell. Data collection was also reliant on patient self-report. We have no means of validating findings, but expect, if anything, this may have led to an underestimate of S/Sh-related Internet use.

It should also be noted that the study measured S/Sh-related Internet use in relation to the presenting episode of self-harm only. Finally, the small sample size for the children's hospital may have meant we were underpowered to detect some associations.

## Findings in Context of Wider Literature

The National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (NCE) found 2% of suicides occurred after S/Sh-related Internet use (University of Manchester, 2015). This figure is lower than our estimated prevalence of 8.4% among adult hospital presentations but relates to completed suicides, and may be an underestimate due to the difficulty of obtaining evidence of Internet use following a suicide. Our estimate of a prevalence of 26% among children's hospital presentations is relatively similar to the NCE finding that S/Sh-related Internet use preceded 23% of suicides in under-20-year-olds (University of Manchester, 2016). A cross-sectional study, which investigated S/Sh-related Internet use among a community sample of 21-year-olds in the South West of England, found 22.5% reported S/Sh-related Internet use (Mars et al., 2015). However, it is difficult to draw comparisons as the study considered lifetime Internet use rather than a single episode directly related to subsequent actions of self-harm. Otherwise, data on S/Sh-related Internet use among those who are actively considering self-harm are sparse.

The association between age and S/Sh-related Internet use is likely to reflect cohort effects on use of, or familiarity with, the Internet; the most recent national UK statistics indicate that 99% of 16–34-years-olds had used the Internet in the previous 3 months, compared with only 41% of older adults (Office for National Statistics, 2017b).

In view of the potential impact of the Internet on suicidal behavior, it has been suggested that clinicians should take an Internet history during suicide risk assessments (Coon-

ey & Morris, 2009). Our study has served as a preliminary exploration of this suggestion by gauging clinicians' experiences of the process. We are unaware of any other studies that consider the integration of this topic into psychosocial assessments.

## Implications

Patients who self-harm may commonly turn to the Internet, and our findings indicate that S/Sh-related Internet use is likely to become more relevant as the Internet-native generation matures. Furthermore, S/Sh-related Internet use may be a proxy marker for intent. The inclusion of questions about Internet use in clinical psychosocial assessments could thereby provide an alternative means to identify those with elevated suicide risk, although this would require careful framing to avoid inadvertently introducing patients to harmful material. Replication of our findings using a larger sample would be helpful and would enable the inclusion of suicide as an outcome.

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