Characteristics of Suicidal Patients Who Engaged in Suicide-Related Internet Use in the UK: Survey Findings

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Abstract

Background: Suicide-related internet use encompasses various online behaviours, including searching for suicide methods, sharing suicidal thoughts, and seeking help. Research suggests that suicide-related internet use is prevalent among people experiencing suicidality, but its characteristics among mental health patients remain underexplored.

Objective: This study examines the sociodemographic, clinical, and suicidality-related characteristics of suicidal mental health patients who engage in suicide-related internet use compared to those who do not.

Methods: A cross-sectional survey was conducted from June to December 2023, recruiting participants aged 18 and older with recent contact with secondary mental health services in the UK. The survey assessed sociodemographic characteristics, psychiatric diagnoses, suicidal thoughts and behaviours, and engagement in suicide-related internet use. Statistical analyses included chi-square tests, Wilcoxon tests, and multivariable logistic regression to identify predictors of engaging in suicide-related internet use.

Results: Of 696 participants, 75% engaged in suicide-related internet use in the past 12 months. Those who engaged in suicide-related internet use were almost three times as likely to have attempted suicide in the past year (32.5% vs. 9.2%, $p < .001$). They were more likely to have a diagnosis of personality disorder (34.4% vs. 18.5%, $p < .001$) and to disclose suicidal thoughts to someone (87.8% vs. 72.8%, $p < .001$). They also reported higher levels of suicidal ideation intensity (median VAS score = 6.6 vs. 5.1, $p < .001$). There were no significant sociodemographic differences between groups, including age.

Conclusions: The findings suggest that suicide-related internet use is a common behaviour among suicidal mental health patients across various age groups, challenging the notion that it is primarily a concern for younger populations. The association between suicide-related internet use and increased suicidality highlights the need for clinicians to incorporate discussions about online behaviours in suicide risk assessments. Given the high rate of disclosure of suicidal thoughts among suicide-related internet use users, clinicians may have an opportunity to engage in open, non-judgmental discussions about their patients' internet use.

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Introduction: Suicide-related internet use encompasses various online behaviours, including searching for suicide methods, sharing suicidal thoughts, and seeking help. Research suggests that suicide-related internet use is prevalent among people experiencing suicidality, but its characteristics among mental health patients remain underexplored. This study examines the sociodemographic, clinical, and suicidality-related characteristics of suicidal mental health patients who engage in suicide-related internet use compared to those who do not.

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Keywords: suicide-related internet use, suicidality, mental health patients, online behaviour, suicide prevention, mental illness

Introduction

For people experiencing suicidal thoughts and behaviours, suicide-related internet use can encompass a wide range of behaviours, including searching for information about suicide methods, sharing suicidal thoughts, and seeking help online [1]. Suicide-related internet use has become an important focus of research due to its potential influence on suicidal ideation and behaviour. Understanding how people who engage in suicide-related internet use differ from those who do not is important for designing interventions, such as targeted online resources to promote help-seeking, improving digital literacy programs, and enhancing clinical strategies for suicide prevention.

Due to the inherently private nature of suicide-related internet use, precise prevalence rates of engagement in this behaviour are not available; instead, estimates rely on cross-sectional and longitudinal studies. These studies reveal suicide-related internet use to be prevalent among suicidal people, with proportions of people engaging in it varying between 36% to 59%, depending on the population and timeframe studied, but often characterised by small sample sizes and focus on young people, often university students [2–5]. Therefore, the current literature does not fully represent the whole population of those who engage in suicide-related internet use. Previous research has consistently found differences between those who did and did not engage in suicide-related internet use, most notably that those engaging in suicide-related internet use tend to be younger and have higher levels of suicidal ideation [2–5]. This has also been reported among those who engage in suicide-related internet use only to seek help online [6].

Mental health patients, in particular, represent a vulnerable and under-researched group when it comes to using the internet for suicide-related purposes. This group has closer access to treatment and support due to their engagement with healthcare services, and they experience significantly higher rates of suicide compared to the general population [7]. Therefore, their engagement in suicide-related internet use warrants closer investigation to uncover unique factors associated with this behaviour and intervention opportunities. A 2018 UK study identified contrasting patterns of internet use between young people in the community and young self-harm patients [8]. Young community people ambivalent about suicide exhibited shifting between help-seeking and accidental exposure to pro-suicide content online, often seeking connection. In contrast, self-harm patients with stronger suicidal intent engaged in calculated, methodical searches for lethal means, avoiding support resources entirely. This behaviour aligns with the Interpersonal Psychological Theory of Suicide (IPTS), particularly the concept of acquired capability, suggesting that specific online behaviours, such as focused search or avoidance of help sites, may signal elevated risk and should be evaluated

by clinicians [9].

Proportions of mental health patients who have engaged in suicide-related internet use vary from 8% in patients who died by suicide, to 27% of adult and 43% of adolescent psychiatric in-patients [10–12]. A case-control study on suicide-related internet use in mental health patients who died by suicide found those who engaged in this behaviour were more likely to be younger (under 25), have a diagnosis of autism spectrum disorder, and have a history of childhood abuse [10]. In samples of both adult and adolescent hospitalised patients with affective disorder, those who engaged in suicide-related internet use were more likely to be younger and to have a higher incidence of suicide ideation and suicide attempts [11,12]. Patients who were hospitalised for self-harm and who engaged in suicide-related internet use also disclosed higher levels of suicidality compared to those who did not [8]. These findings mirror trends seen in general population studies, suggesting that suicide-related internet use is also linked to higher suicidal intent among mental health patients.

Despite these insights, research on suicide-related internet use in mental health patients remains scarce. To develop effective interventions, both online and offline, it is important to explore the characteristics of patients who use the internet for suicide-related purposes and examine whether they differ from those who do not. Examining which patients turn to suicide-related internet use while remaining in contact with mental health services can provide valuable information for clinical risk assessment and reveal potential gaps in knowledge on this type of behaviour. Additionally, this can help inform targeted online interventions as well as policies aimed at protecting at-risk people and promoting safer online environments. Therefore, this study aims to compare the sociodemographic, clinical, and suicidality characteristics of suicidal mental health patients who engage in suicide-related internet use with those who do not.

Methods

Study design

This was a cross-sectional study utilising an online survey. The questionnaire was hosted on the Qualtrics platform from the 1st of June 2023 to the 31st of December 2023. All survey responses were anonymous. Ethical approval was obtained from the University of Manchester Research Ethics Committee 1 on the 3rd of April 2023 (ref: 2023-16133-28055).

Eligibility criteria

Inclusion criteria were presented at the start of the survey and consisted of (1) being aged 18 and over, (2) being in contact with secondary mental health services in the past 12 months, (3) experiencing suicidal thoughts/behaviours in the past 12 months, (4) using the internet, (5) living in

the UK, and (6) having a good command of the English language.

Recruitment

We recruited participants online, advertising the study on social media (X, Reddit, Facebook, BlueSky, Mastodon, TikTok, Instagram, LinkedIn), University of Manchester staff and student mailing lists, newsletters of mental health and social care charities, and through webpages of mental health and wellbeing-related organisations, and radio. The recruitment materials were commonly shared throughout platforms. For participating in this study, the participants were not offered any financial incentives, such as monetary compensation or vouchers. Finally, participants were not asked to disclose any identifiable data (i.e. name, email address, geographical location), nor were their IP address data collected.

Materials

The questionnaire was initially developed by the author LB, based on existing literature and the author's own experience of navigating online spaces. Coauthors IH, SF, SI, PT and two members of a Patient and Public Involvement Group (PPIE) with lived experience of suicidality provided input on the phrasing of survey questions and design of the recruitment materials. There were 45 questions in total, most in multiple-choice format with free-text options to provide additional information. Participants were asked about lifetime psychiatric diagnoses and those received in the past 12 months due to the potentially high level of distress, self-stigmatisation, and need for information following new diagnoses that might motivate patients to engage in suicide-related internet use [13,14]. For questions on the amount of support from family/friends/community, satisfaction with mental health service provision, how intense their thoughts of suicide were and the amount of planning involved in suicide attempt, participants provided answers using a visual analogue scale (VAS). VAS scores ranged from 0 to 10 and were interpreted as follows: 0–2 very low or minimal; 2.1–4.0 moderate low; 4.1–6.0; neutral or mixed effects; 6.1–8.0 moderate high; and 8.1–10.0 very high. There were four free-text questions relating to search terms to look for suicide-related information, disclosure of suicide-related internet use to clinicians, and any additional thoughts on suicide-related internet use participants might have had; qualitative findings from this free-text data will be presented elsewhere. To ensure data quality, the survey also included one attention-checking question. The full survey is available as part of the supplementary material (Appendix 1).

Procedure

Before commencing the questionnaire, participants were presented with the study information sheet, and informed consent was obtained. A list of resources, such as helplines and services they could

contact if they became distressed, was provided. The survey consisted of four sections (Figure 1). The first two sections covered sociodemographics and mental health history. The third section covered suicidal thoughts and attempts, adverse life events (i.e. relationship breakdown, financial difficulties) that may have contributed to their suicidality, and perceived support received from friends, family, and/or their community. Trigger warnings for questions related to suicidal thoughts and attempts were provided. The fourth section covered suicide-related internet use defined as: "*Suicide-related internet use is any internet use related to your thoughts, feelings and behaviours connected to suicide. This kind of use can be, for example, expressing suicidal feelings or thoughts on social media or using the internet to get help and support when feeling suicidal."* Participants were asked if they engaged in suicide-related internet use in the past 12 months. If they answered 'no', they were exited from the questionnaire. Those who answered 'yes' continued with section four on suicide-related internet use. All participants were provided with a list of helplines and services.

Participants

Out of a total of 1,057 people who started the survey, 260 (25%) did not meet the inclusion criteria (72 did not answer inclusion criteria questions, 110 had no contact with secondary mental health services, 43 did not confirm suicidal thoughts or behaviours, and 35 failed to meet both inclusion criteria). Furthermore, 23 participants met the inclusion criteria but did not answer any questions. Of the remaining 797 participants, 23 were excluded based on missing data on all questions, 3 for failing the attention check question, and 5 for aberrant or joking answers. In total, 766 participants completed at least 3 sections of the survey (sociodemographic and clinical characteristics and suicidal thoughts/attempt, see Figure 1), including 70 participants who did not provide information on whether they had used the internet for suicide-related purposes. As there was no way to interpolate this data, these 70 participants were excluded from the analysis. There were no differences in the sociodemographic and clinical characteristics and suicidal thoughts or attempts between those who provided information about their suicide-related internet use and those who did not. Therefore, there were 696 participants in the final analysis. Those who reported that they only came across suicide-related content *accidentally* (n=50) were grouped with those who reported they did not engage in suicide-related internet use, as those who accidentally came across suicide-related content did not actively seek it out, similar to those who did not engage in suicide-related internet use at all. There were no differences in the sociodemographic and clinical characteristics and suicidal thoughts or attempts between those who did not engage in suicide-related internet use and those who only came across suicide-related content accidentally.

Statistical analysis

Frequencies and percentages were used to present a descriptive analysis of categorical data. For data obtained through a visual analogue scale, median and interquartile range were used for analysis as recommended [15]. The textual answers to open-ended questions were coded into existing variables or set up as new variables for quantitative analysis. The denominators in all estimates were the number of valid cases for the item, i.e., if an item of information was not known for a case, that case was removed from the analysis of that variable. Comparisons between those who did and those who did not engage in suicide-related internet use were examined using the chi-squared test for categorical variables and the Wilcoxon test for visual analogue scales. Multivariable logistic regression with all variables that differed significantly between participants who did and did not engage in suicide-related internet use as predictors was carried out. We performed multiple imputations for multivariable logistic regression using chained equations; the direction and significance of the results, albeit with narrower confidence intervals, were confirmed using this analysis (see Appendix 2). To compensate for multiple comparisons, Bonferroni correction was applied to all p-values; therefore, p-values less than .001 (.01/number of comparisons) were considered statistically significant. All analyses and designs of figures were carried out in RStudio, version 2024.12.0.467 [16].

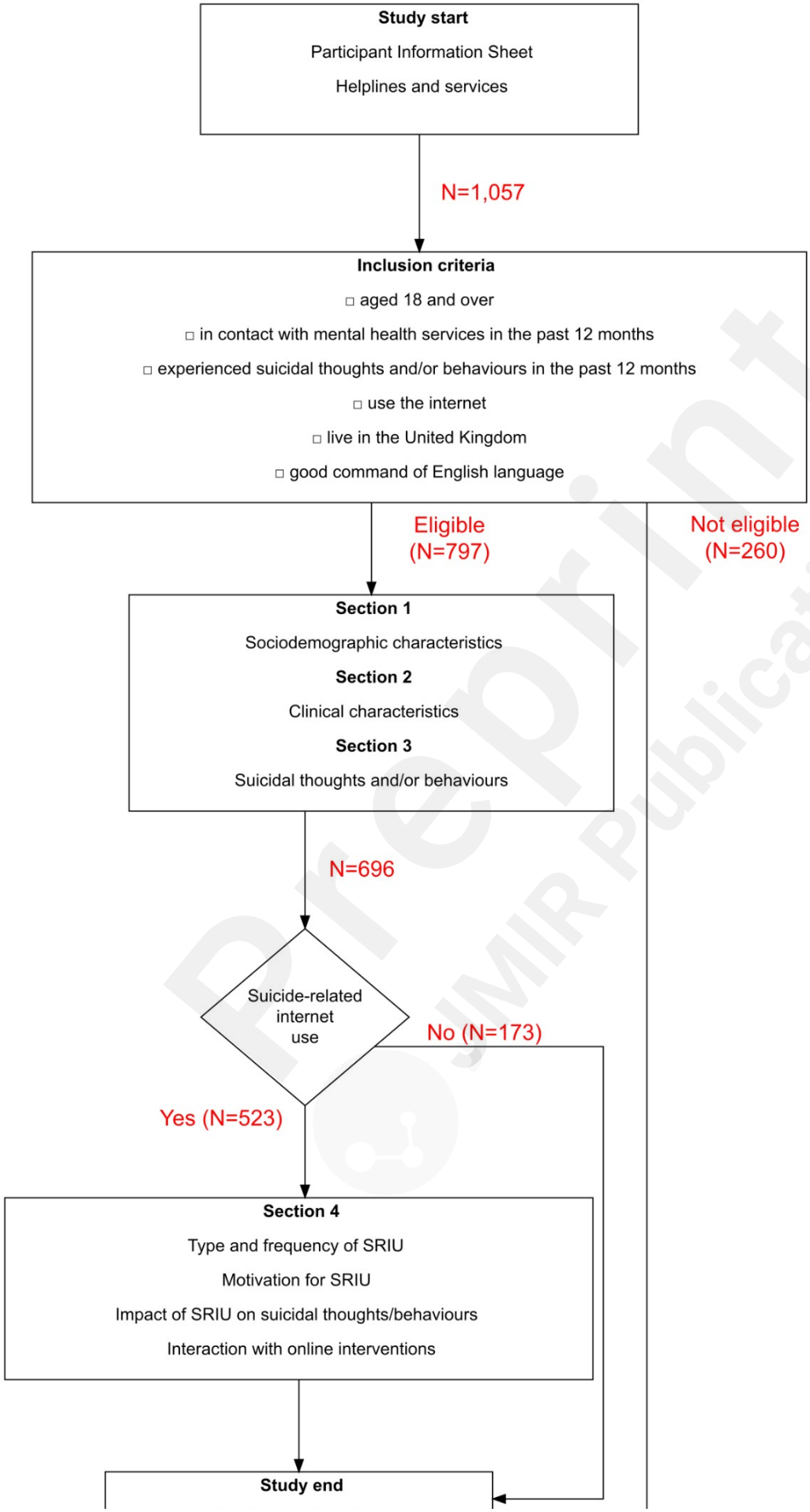

Figure 1. Study flowchart: inclusion criteria and assessment of sociodemographic, clinical, and SRIU characteristics (SRIU=suicide-related internet use)

Results

Sociodemographic characteristics

Of 696 participants, 523 (75.1%) had engaged in at least one type of suicide-related internet use in the past 12 months. Sociodemographic characteristics and comparisons of participants are presented in Table 1. Most were aged 25 and over (79.5%), with the most common age group being 25 to 34 (46.4%) followed by 35 to 44 (21.3%). Almost two-thirds (63.8%) were women, and 29.3% were men. For 103 (14.8%) participants, gender did not match the sex assigned to them at birth. Most participants were of white ethnicity (611, 87.8%). Over half (384, 55.2%) of all participants were non-heterosexual. Most participants held higher education qualifications, with over half having a university degree (392, 56.3%). There was no statistically significant difference in sociodemographic characteristics between participants who did and did not engage in suicide-related internet use, even though almost twice as many participants under 25 (23.1% v. 12.7%, p=.01) engaged in this behaviour.

Table 1. Sociodemographic characteristics of mental health patients who did and did not engage in suicide-related internet use

	Engaged in SRIU (N=523)	Did not engage in SRIU (N=173)	Total (N=696)	Chi-squared	p-value
Age group:					
18-24	121 (23.1%)	22 (12.7%)	143 (20.5%)	8.645	.013
25-34	239 (45.7%)	85 (49.1%)	324 (46.6%)	0.617	.735
35-44	105 (20.1%)	43 (24.9%)	148 (21.3%)	1.773	.412
45-54	41 (7.8%)	19 (11.0%)	60 (8.6%)	1.630	.443
55-74	17 (3.3%)	4 (2.3%)	21 (3.0%)	0.391	.822
Gender:					
Female	337 (64.4%)	107 (61.8%)	444 (63.8%)	0.376	.828
Male	149 (28.5%)	55 (31.8%)	204 (29.3%)	0.684	.710
Other/Prefer not to say	37 (7.1%)	11 (6.4%)	48 (6.9%)	0.104	.949
Gender matching birth sex:					
Yes	438 (83.7%)	155 (89.6%)	593 (85.2%)	3.526	.172
No, non-binary	45 (8.6%)	9 (5.2%)	54 (7.8%)	2.102	.350
No, transgender	29 (5.5%)	6 (3.5%)	35 (5.0%)	1.174	.556
Other/Prefer not to say	11 (2.1%)	3 (1.7%)	14 (2.0%)	0.090	.956
Ethnicity:					
Asian/Asian British	17 (3.3%)	3 (1.7%)	20	1.071	.585

	Engaged in SRIU (N=523)	Did not engage in SRIU (N=173)	Total (N=696)	Chi-squared	p-value
			(2.9%)		
Black/African/Caribbean/Black British	4 (0.8%)	4 (2.3%)	8 (1.1%)	2.739	.254
Mixed/multiple ethnic group	30 (5.7%)	11 (6.4%)	41 (5.9%)	0.091	.956
White/White British/White Irish	459 (87.8%)	152 (87.9%)	611 (87.8%)	0.001	.999
Other/Prefer not to say[a]	13 (2.5%)	3 (1.7%)	16 (2.3%)	0.327	.849
Sexual orientation:					
LGB	196 (37.5%)	60 (34.7%)	256 (36.8%)	0.436	.804
Heterosexual	219 (41.9%)	93 (53.8%)	312 (44.8%)	7.423	.024
Other/Prefer not to say	108 (20.7%)	20 (11.6%)	128 (18.4%)	7.156	.028
Highest level of education:					
A or AS Levels / Highers or Advanced Highers and less	165 (31.5%)	46 (26.6%)	211 (30.3%)	1.513	.469
University degree and above	291 (55.6%)	101 (58.4%)	392 (56.3%)	0.397	.820
Other/Prefer not to say[b]	67 (12.8%)	26 (15.0%)	93 (13.4%)	0.553	.759
Employment status:					
In paid employment (including part-time, self-employed)	264 (50.5%)	103 (59.5%)	367 (52.7%)	4.281	.118
Unemployed	100 (19.1%)	20 (11.6%)	120 (17.2%)	5.207	.074
Full-time student	48 (9.2%)	19 (11.0%)	67 (9.6%)	0.487	.784
On long-term sick leave	77 (14.7%)	18 (10.4%)	95 (13.6%)	2.057	.358

	Engaged in SRIU (N=523)	Did not engage in SRIU (N=173)	Total (N=696)	Chi-squared	p-value
Other/Prefer not to say	34 (6.5%)	13 (7.5%)	47 (6.8%)	0.212	.899
Relationship status:					
Single	256 (48.9%)	67 (38.7%)	323 (46.4%)	0.056	.972
In a relationship (not co-habiting)	60 (11.5%)	21 (12.1%)	81 (11.6%)	5.459	.065
Married / co-habiting / civil partnership	166 (31.7%)	77 (44.5%)	243 (34.9%)	9.327	.009
Separated / divorced	23 (4.4%)	6 (3.5%)	29 (4.2%)	0.281	.869
Other/Prefer not to say	18 (3.4%)	2 (1.2%)	20 (2.9%)	2.433	.296

[a]includes asexual, pansexual, and questioning; [b]includes homemaker, training scheme, and retired; SRIU=suicide-related internet use

Clinical and mental health service characteristics

Those who engaged in suicide-related internet use were more likely to receive a diagnosis of personality disorder compared to those who did not (34.4% v. 18.5%, p<.001) (Table 2). Most participants had been prescribed psychotropic medication in the last 12 months (554, 79.6%), and 112 (16.1%) had been admitted for psychiatric in-patient care. When asked about their satisfaction with their mental health service provision, participants were, on average, moderately dissatisfied (VAS score median=4.0, IQR=2.0-6.3); this did not differ between those who did and did not engage in SRIU nor between different diagnoses.

Table 2. Mental health diagnoses of patients who did and did not engage in suicide-related internet use

	Engaged in SRIU (N=523)	Did not engage in SRIU (N=173)	Total (N=696)	Chi-squared	p-value
No diagnosis	108	43	151	1.301	.522

	Engaged in SRIU (N=523)	Did not engage in SRIU (N=173)	Total (N=696)	Chi-squared	p-value
	(20.7%)	(24.9%)	(21.7%)		
Schizophrenia and other primary psychotic disorders	41 (7.8%)	12 (6.9%)	53 (7.6%)	0.176	.916
Affective disorder[a]	378 (72.3%)	111 (64.2%)	489 (70.3%)	5.167	.076
Anxiety/Phobia/OCD	297 (56.8%)	102 (59.0%)	399 (57.3%)	0.144	.930
PTSD	191 (36.5%)	59 (34.1%)	250 (35.9%)	0.437	.804
Eating disorder	117 (22.4%)	29 (16.8%)	146 (21.0%)	2.657	.265
Alcohol/drug dependence	87 (16.6%)	19 (11.0%)	106 (15.2%)	3.389	.184
Personality disorder	180 (34.4%)	32 (18.5%)	212 (30.5%)	16.279	<.001 *
Autism spectrum disorder	137 (26.2%)	32 (18.5%)	169 (24.3%)	4.473	.107
ADHD	91 (17.4%)	40 (23.1%)	131 (18.8%)	2.617	.270
Other	87 (16.6%)	26 (15.0%)	113 (16.2%)	0.297	.862
First diagnosis received in the last 12 months	69 (13.2%)	31 (17.9%)	100 (14.4%)	2.244	.326

[a]depressive illness and bipolar disorder; OCD=obsessive compulsive disorder; PTSD=posttraumatic stress disorder; ADHD =attention deficit hyperactivity disorder; SRIU=suicide-related internet use; * p≤.001

Suicidal thoughts and behaviours

One of the inclusion criteria was having experienced suicidal thoughts in the past 12 months; therefore, all participants had contemplated suicide. However, 19 participants (2.7%) chose not to provide additional information about their suicidal thoughts. Twelve months prior to completing the survey, 507 (72.8%) participants had thoughts of suicide at least once a week, including 214 (20.7%) who had thoughts of suicide daily or almost daily. Participants who had engaged in suicide-related internet use were more likely to have thoughts of suicide every day or almost every day compared to those who did not engage in this behaviour (35.0% v. 17.9%, p<.001). The average intensity of thoughts of suicide for all participants was moderately high (median= 6.4, IQR=4.9-7.6); those who had engaged in suicide-related internet use were more likely to report higher intensity of suicide thoughts compared to those who did not engage in it (VAS score median=6.6, IQR=5.0-7.8, v. VAS score median=5.1, IQR=4.0-7.0, p<.001). A quarter of participants (111, 25.9%) had not disclosed their thoughts of suicide to anyone; those who had engaged in suicide-related internet use were significantly more likely to disclose this compared than those who had not engaged in this behaviour (87.8% v. 72.8%, p<.001). The majority of those who did (70%) disclosed their thoughts of suicide to a mental health professional.

A quarter of participants reported attempting suicide in the last 12 months (186, 26.7%); this was more prevalent among those who had engaged in suicide-related internet use than those who did not (32.5% v. 9.2%, p<.001). Of those who had attempted suicide, over half (105, 56.5%) had done so more than once and 113 (60.8%) had subsequently been hospitalised. Participants who attempted suicide had, on average, reported moderately high levels of planning involved in the attempt (VAS score median=6.7, IQR=4.0-8.25). Most of those who attempted suicide did not disclose their plans to anyone (112, 60.2%).

Life events that were reported as contributing to suicidality were most commonly relationship difficulties with a partner or family (230, 36.7%), serious financial difficulties (193, 30.8%), and insomnia (180, 30.2%). There were no significant differences in reported life events between those who did and did not engage in suicide-related internet use, even though it seems that more patients who engaged in suicide-related internet use experienced insomnia (32.9% v. 21.9%, p=.01) and violence as victims (24.4% v. 13.5%, p=.01). When asked about the support for their mental health they had received from their friends, family, and community, participants overall reported a mixed level of support (VAS score median=5.8, IQR=3.1-8.0); there was no significant difference in perceived levels of support between

those who did and did not engage in suicide-related internet use.

Logistic regression

All significant variables from the descriptive comparisons were entered together in a multivariable logistic regression model with engagement in suicide-related internet use as the outcome. Patients who engaged in suicide-related internet use were twice as likely to have received a diagnosis of personality disorder and to disclose their thoughts of suicide to someone, and almost three times as likely to attempt suicide compared to patients who did not engage in this behaviour (Table 3).

Table 3. Logistic regression model of predictors of engaging in suicide-related internet use among mental health patients (N=652)

	Adjusted ORs (95%CI)	p-value
Diagnosis of personality disorder	1.94 (1.22 - 3.08)	.004
Thoughts of suicide every day	1.63 (1.03 - 2.58)	.033
Disclosed thoughts of suicide to someone	1.99 (1.22 - 3.25)	.007
Attempted suicide within the last 12 months[a]	2.81 (1.55 - 5.11)	<.001
Intensity of suicidal thoughts	1.11 (1.01 - 1.23)	.033

[a]continuous variable, OR= odds ratio, CI= confidence intervals

Discussion

Main findings

In our UK sample, three-quarters of participants with suicidal thoughts and/or behaviours who were over 18 and in contact with mental health services in the past 12 months had engaged in suicide-related internet use. This suggests that suicide-related internet use is a common behaviour among suicidal mental health patients who use the internet. There were no differences in sociodemographic factors between those who did and those who did not engage in suicide-related internet use; this provides additional evidence that suicide-related internet use is not a behaviour present in young people only [10], underlying the need for clinicians to be aware of the potential for patients of all ages to engage in this behaviour. Further findings

indicate an association between suicide-related internet use and suicide attempts, personality disorder diagnosis, and disclosure of suicidal thoughts. Multivariable logistic regression revealed that suicide-related internet use was associated with a diagnosis of personality disorder, disclosure of suicidal thoughts, and suicide attempts in the past year.

Our observed proportion of suicide-related internet use is notably higher than what has been reported in similar studies [2–5]. There are several potential reasons for this finding. One possibility is that the usage of the internet increased over time, further boosted by the widespread adoption of smartphones and an increase in the time spent online since the COVID-19 pandemic [17,18]. This has made internet access more prevalent and immediate, particularly when compared to studies conducted nearly a decade ago. Alternatively, and perhaps more critically, our sample is unique in that it comprises people who had contact with mental health services. Unlike earlier studies that generally did not include mental health patients, our participants may have been more inclined to engage in suicide-related internet use as a means of supplementing their ongoing mental health care or during periods of distress. This difference could be a key factor contributing to the higher observed prevalence of suicide-related internet use in our study.

Although sociodemographic characteristics did not differ between those who did and those who did not engage in suicide-related internet use, our findings provide important insights into the characteristics of patients who engaged in this behaviour. The majority of those who have engaged in suicide-related internet use were women, likely due to their higher survey participation rates [19,20] and the gender paradox in suicide, where women experience more suicidal ideation despite lower suicide mortality rates. Nonetheless, the higher prevalence of women in our sample could also be due to women engaging more frequently in suicide-related internet use. Similarly, our sample was also highly educated, with over half holding a university degree. While those who engage in suicide-related internet use may be more educated, survey participation is generally higher among highly educated people [21]. Despite 85% of all participants aged under 25 engaging in suicide-related internet use, the overall age distribution demonstrates the presence of this behaviour in all age groups. This supports the notion that suicide-related internet use is not limited to younger age groups [10]. Additionally, a notable proportion of participants identified as gender and/or sexual minorities. This may be because LGBTQ people have higher rates of suicidality compared to their heterosexual and cisgender peers [22]. LGBTQ people are often more reliant on online platforms for mental health support due to systemic barriers in traditional care settings. These barriers include pervasive experiences of discrimination, microaggressions, and a lack of culturally competent

care within mental health systems [23,24]. Consequently, many turn to the internet not only for information but also to find community, validation, and anonymity, which can be particularly important in navigating sensitive topics such as suicidality. Specifically, transgender and nonbinary people often encounter additional barriers such as being misgendered, denied care, or subjected to pathologisation in clinical settings, which can further drive them to seek alternative support online [25]. Additionally, participation in surveys may be viewed by some LGBTQ people as a form of advocacy or community contribution: an opportunity to shed light on mental health disparities affecting their communities [26]. Most participants in the study identified as white, with a notable minority of those with a mixed heritage background; this mirrors the ethnic composition of suicide rates in both general and patient populations [27,28]. However, suicidality among ethnic minority groups in the UK remains under-researched [28], and this gap seems to also extend to suicide-related internet use.

Clinically, most participants were diagnosed with affective or anxiety disorders, similar to the general patient population[29]. Among those who attempted suicide, over half were subsequently hospitalised, highlighting the severity of suicidal intent in our sample. Additionally, our participants were moderately dissatisfied with the mental health service provision they received, which may have contributed both to the higher prevalence of suicide-related internet use and participation in our survey, as those dissatisfied with care provision might have been more inclined to engage in suicide-related internet use and to participate in the study. A similar was true for support for their mental health they had received from their friends, family, and community; mixed levels of perceived support may have contributed to the higher prevalence of suicide-related internet use in our sample. Notably, even though not significant due to a more stringent significance cut-off value, almost a third of patients who have engaged in suicide-related internet use experienced insomnia and a further quarter experienced violence as a victim: these characteristics warrant further investigation.

In general, our sample was highly suicidal, with almost three-quarters of participants experiencing thoughts of suicide every day, and we found a greater likelihood of suicide attempts in the past year and an increased intensity of suicidal thoughts among mental health patients who engaged in suicide-related internet use. This supports findings from studies conducted on both general [2–6] and clinical populations [12,30]. A high intensity of suicidal thoughts can point to a higher risk of suicide attempts among patients who have engaged in suicide-related internet use, but it can also show how increasing suicidality can lead people to seek new help resources and ways to cope online [2,4,6]. Indeed, findings from another piece

of research informed by this dataset show that for participants in our sample, the most common motivations for engaging in suicide-related internet use were searching for help and searching for suicide methods [31]. Therefore, the higher prevalence of engaging in suicide-related internet use in those with more frequent and intense thoughts of suicide may indicate help and support-seeking intentions. On the other hand, there is a possibility that suicide-related internet use engagement may have informed participants' suicide attempts; previous research has shown that suicide attempts of mental health patients were often shaped by their online searches [10,30], with evidence showing that online searches were directly connected to suicide attempts in 58-65% of patients [32,33]. This underscores the potential role of the internet in planning and facilitating suicide attempts, a significant concern given the influence online searches can make in the selection of novel and highly fatal suicide methods [10]; however, this was not examined in the current study.

Those who engaged in suicide-related internet use were more likely to have received a diagnosis of personality disorder compared to those who did not engage in suicide-related internet use. While, to the authors' knowledge, there is currently no research on personality disorders and suicide-related internet use, research on personality disorders and internet use, in general, has shown a higher incidence of internet addiction and problematic social media use, such as using social media as a distraction from interpersonal problems, reassurance seeking, and self-confidence issues in people meeting criteria for personality disorder [34,35]. This may indicate that people with personality disorders are more vulnerable to developing maladaptive online behaviours, including suicide-related internet use. Given that personality disorders are often characterised by difficulties in emotional regulation, impulsivity, and unstable self-image [36], it is plausible that these people may turn to suicide-related internet use as a coping mechanism, to manage distress, or to seek validation. Additionally, while no differences in satisfaction with services were found between diagnostic groups in our sample, overall satisfaction with service provision was low. Research has shown that patients with personality disorders often experience challenges in mental health service provision [37] due to the commonly present stigma associated with these diagnoses and the tendency for it to obscure the individual needs of the patient [38,39]. As a result, mental health patients diagnosed with personality disorders may turn to the internet for suicide-related purposes when they do not feel adequately supported by services. Future research should explore the specific mechanisms underlying the relationship between personality disorder diagnosis and suicide-related internet use to better understand its potential risks and implications.

Mental health patients who used the internet for suicide-related purposes were more likely to

disclose their thoughts of suicide to someone compared to those who did not, most often a mental health professional. A recent meta-analysis showed that less than half (44%) of mental health patients who have experienced suicidal thoughts or behaviours disclosed this to someone [40]; the prevalence of disclosure of suicidal thoughts was much higher in our sample (84%). One reason for this might be the self-selection of our participants, i.e. those who were more likely to disclose their suicidal thoughts and behaviours by participating might also be more likely to disclose this to others. However, two studies reported that those who were motivated by seeking help to engage in suicide-related internet use were less likely to disclose their issues with suicide or self-harm and to seek treatment offline [2,41]. As both of these studies concerned this behaviour in young people, our results offer potential evidence that the interaction between suicide-related internet use and disclosure may be different in adults.

Strengths and limitations

To the authors' knowledge, this is one of the first national studies to focus on suicide-related internet use in suicidal adults in recent contact with mental health services. While previous research has predominantly examined this behaviour in younger populations, this study brings more insight into the suicide-related internet use of adults. A further strength of this study lies in the comparatively large sample of participants; notably, our sample size is three to five times larger than in previous studies, potentially enhancing the representativeness of our findings.

However, the results should be considered in light of certain limitations, most of which are common for cross-sectional survey studies in general. Firstly, the cross-sectional design means we cannot establish causality. Secondly, our study sample consists of UK-based people in contact with secondary mental health services. Therefore, the generalisability of our findings to other nations is limited by differences in internet infrastructure, suicide prevention resources, and access to mental healthcare. The results may also not be generalisable to primary care patients and people without diagnoses of mental illness. Thirdly, the self-selection bias of our participants, manifesting in over- and under-representation of certain groups, potentially impacted several aspects of the results. Therefore, we are unable to generalise our results to all suicidal mental health patients. Specifically, the comparisons between those who did and those who did not engage in suicide-related internet use were impacted by unequal group sizes (3:1 ratio), which was partially addressed using Bonferroni correction. Overall, results suggest that suicide-related internet use is a common behaviour

among suicidal mental health patients who use the internet, though it is important to interpret the findings with caution as this prevalence is based on participants' self-report. The study's retrospective design could have introduced recall bias. However, we attempted to mitigate this by focusing on events within a consistent and short time frame (the past 12 months). While the lack of standardised measures in our study limits comparability, we believe that it brings additional strengths by reducing recall bias and socially desirable responding. However, we could not verify participants' reported mental health histories against official records.

Another limitation is the lack of measurement regarding the temporal relationship between suicidal thoughts and/or attempts and suicide-related internet use, namely, whether suicide-related internet use preceded, coincided with, or succeeded suicidal thoughts and/or attempts. For instance, suicide-related internet use may precede a suicidal attempt. This temporal pattern would suggest a critical window for early intervention, where identifying and responding to such online behaviours could help mitigate the progression toward more severe mental health crises. Early detection through digital trace data could enable mental health professionals, platforms, or support systems to offer timely resources or outreach before suicidal ideation fully develops. Alternatively, if suicide-related internet use *follows* a suicide attempt, it may reflect a person's need to seek understanding, share their experiences, or make sense of what happened. This could also indicate post-attempt distress, confusion, or a continued risk of harm. However, suicide-related internet use is often not a single event; rather, it tends to occur repeatedly over time as people may engage in multiple instances and types of this behaviour [30]. Furthermore, suicidal people may engage in suicide-related internet use during varying stages of distress, sometimes as a means of coping or information-seeking and at other times as a response to immediate crises. Consequently, this complexity makes it challenging to determine which behaviours precede or succeed others, suggesting the need for alternative study designs, such as longitudinal or ecological momentary assessment methods, to capture the temporal aspect of this behaviour.

A recent scoping review called for the increased use of validated questionnaires in the field of suicide-related internet use research [42]. While we agree that using validated questionnaires increases reliability and comparability across studies, there is currently no validated tool that comprehensively addresses suicide-related internet use, especially not for our target population of adult mental health patients[42]. Consequently, we maintain that the current questionnaire, developed with input from Patient and Public Involvement and Engagement (PPIE), meets rigorous standards of scrutiny for this study.

Conclusion/Implications

By recognising suicide-related internet use as a prevalent behaviour among high-risk groups, mental health professionals can be better equipped to identify it and engage with patients. As recommended in previous work by this group [10,43], a direct, non-judgmental inquiry on whether and why a patient has engaged in suicide-related internet use should be a part of the assessment in mental health services. Our findings on high levels of suicidal ideation disclosure, particularly to clinicians, suggest a possible pathway for suicide-related internet use inquiry; once a patient discloses suicidal thoughts to a mental health professional, a follow-up inquiry about suicide-related internet use could be beneficial. An open discussion about suicide-related internet use and the role it fulfils in a patient's life, whether as an additional coping mechanism or a supplement to service provision, may help clinicians discover any unmet needs. Through a collaborative approach, clinicians and patients can explore effective ways to address these needs. This approach has the potential to enhance therapeutic outcomes, reduce suicide risk, and improve the quality of mental health care for vulnerable people.

Our previous findings underscore the importance of ensuring that people engaging in suicide-related internet use encounter supportive, educational, and appropriately tailored content online [31]. Given the widespread nature of such searches, suicide prevention results (SPR) represent a critical first line of defence. However, their effectiveness may depend on algorithmic sensitivity, as well as the integration of multimodal crisis services and educational materials. Furthermore, our previous study revealed that many users lack awareness of how to navigate suicide-related content safely, highlighting the need to improve digital literacy. This aligns with prior work identifying mental health literacy gaps as barriers to effective online help-seeking and suggests a dual approach: integrating adaptive online interventions while empowering clinicians to address suicide-related internet use directly and constructively in care settings [31].

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Supplementary Files

Sensitivity analysis: multivariable logistic regression with the imputed missing values.
URL: http://asset.jmir.pub/assets/948067f74e1942a7535d929ad0eede4b.docx

Multimedia Appendixes

Questionnaire.
URL: http://asset.jmir.pub/assets/2bb53889f79a50d7adb39e7cfa212562.docx