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Hidden Struggles of Suicidal Youth: How Alexithymia and Depressive Symptoms Contribute to the Digital Self-Harm

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Abstract

Digital self-harm has evolved into a rising problem among teenage individuals who have previously attempted suicide. This behavior involves posting or sending hidden self-threatening content across digital platforms. The relationship between digital self-harm and emotional distress lacks clarity because of the unexplained roles of alexithymia and depressive symptoms. This research analyzes digital self-harm psychological processes through an examination of suicidal background relationships combined with the effects of alexithymia and depression in online self-harming activities. A research sample consisting of 284 suicide attempters used standardized self-report tools to evaluate digital self-harm conduct along with alexithymia levels, depressive symptoms, and suicidal attempts. The research indicated that depression and alexithymia enhance the relationship between digital self-harm and suicidal history in adolescents, since those who face increased emotional regulation issues perform digital self-harm more often. The study's evidence highlights the need to develop targeted interventions focusing on emotional development for at-risk young people. The identification of individuals experiencing severe alexithymia and depressive symptoms represents a crucial element to stop digital self-harm actions and prevent suicide events. Future studies need to survey the development of digital self-harm patterns and implement intervention programs to better understand this developing problem.

Keywords: Alexithymia, Digital Self-Harm, Adolescents, Suicidal Attempt, Depressive Symptoms.

Introduction

The psychological morbidities among young generations lead them towards teenage depression. Excessive use of social media has a detrimental impact on psychological functioning (Thorisdottir et al., 2020). Those affected by psychological functioning led to teenage depression (Wickersham et al., 2021). A lack of social support and frequent use of social media can lead people to think



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negatively about themselves. Teenage depression leads to suicidal ideation and attempts as well (Scardera et al., 2020). Self-harming or self-injurious through social media apps such as Snapchat and Instagram, and who discuss self-harm with friends they form online have a very high chance of attempting suicide in the future (Wang et al., 2024). Cyber-victimization is associated with self-harm and lower psychological well-being (Wu et al., 2022). Also, it has been explored that alexithymia relates to conditions linked to it, including delinquency, anxiety, depression, aggressive behavior, risk of problematic Internet use, and deliberate self-harm (Runcan, 2020).

Adolescence, spanning from 10 to 19 years, is not just a transition from childhood to maturity, but a crucial phase in human development. The groundwork for long-term health is laid during this time, making it a period of immense significance (World Health Organization, 2023). Puberty is characterized by physical, chemical, and mental transformations (Goddings, 2014). Exposure to screens, active and passive usage of Instagram and WhatsApp among teenagers, and overall use of social media lead to disturbed sleep patterns, disturbed or negative thinking, and depressive symptoms (Bayens et al., 2020).

Adolescent depression is widespread, yet it very often goes unobserved. After puberty, the prevalence increases gradually in girls. During the last year of teenage, the prevalence rises to 4%. Elevated depressive symptoms are more common in female adolescents than in male adolescents in the Middle East, Africa, and Asia (Johar & Truong, 2014).

Researchers and practitioners develop more gender-specific and culturally sensitive treatment programs. The whole world, 34% of teenagers between the ages of 10 and 19 are thought to be suffering from clinical depression, a number that is higher than the estimated number of those between the ages of 18 and 25. For patients in this age group, it is highly recommended that practitioners prioritize performing depression assessments and putting treatments into place (Shorey et al., 2022).

After puberty, the prevalence of depressive illnesses significantly rises. By 14, girls are more than twice as likely as boys to experience depressive disorders. Suicide is an outcome of depression, which also has a detrimental effect on peer or family relationships, academic achievement, and personal development (Bhatia & Bhatia, 2007). Teenagers with depression may do worse in school, while adults with similar symptoms may perform worse at work.

Depression may also lead to self-injurious behavior like suicide attempts (Glieb & Pine, 2002). About 1.3 million teenagers and early adults (aged 15 to 24 years) died in 2020, followed by an expectation of 11 adolescent deaths per 1000 teenagers in 2020 (World Health Organization, 2023). Depression and cyber victimization are prevalent among teenagers in Vietnam. Individuals who have been the target of cyberbullying are on the verge of having symptoms of depression. Given its possible negative impacts on the health of teenagers, these findings point to the urgent need for interventions and regulations targeting this new form of bullying in Vietnam and other similar countries (Thai et al., 2022).

Alexithymia has been extensively studied in relation to various mental health conditions, including delinquency, anxiety, depression, dissociation, aggressive behavior, risk of problematic Internet use, and eating disorders. These studies, which span multiple disciplines such as behavioral, biological, communicational,



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and psychiatric, highlight the significant role of alexithymia in the development of these conditions (Runcan, 2020).

In recent studies, 7% of the boys and 10% of the girls were found to be alexithymic. In contrast, boys exhibited a higher mean value than girls when the alexithymia (TAS-20) score was examined as a continuous variable. Children between the ages of 15 and 16 had the same incidence of alexithymia as adults, albeit with a less noticeable gender difference. Living in a digital world, having a mother with less education, and having a dysfunctional childhood home were all linked to a high alexithymia score (Joukamaa et al., 2007).

Alexithymia is a multifaceted impairment in affect identification and self-regulation, and DSH has been linked to emotion regulation. Alexithymia may play a crucial role in these processes. Self-harmers have more difficulty recognizing, characterizing, comprehending, and expressing their own emotions. As a result, they are more likely to resort to unhealthy coping mechanisms, such as self-harming behaviors and suicide attempts, to deal with their emotions, raising the risk of self-harm, particularly when depression is also present (Bordalo & Carvalho, 2022).

This study establishes that digital self-harm, alexithymia, and depressive symptoms are related, especially so in adolescents with past suicide attempts. Being the victim of digital media disrupts social relationships. It enhances vulnerability to depression and suicidal thoughts because the feelings of isolation, rejection, and helplessness are some of the characteristics of adolescents (Hinduja & Patchin, 2017).

Alexithymia is also essential in the creation of an internationally identified phenomenon, digital self-harm, that involves teens posting a harmful message about themselves online, often anonymously. This behavior is an outgrowth of anger and emotional distress. It is also a dysfunctional way to gain attention or to voice distress because engaging in it is relatively safe online (Patchin & Hinduja, 2017).

Depression, in turn, is a comorbid factor for these problems and is a part of these problems as well. Depressive symptoms predict an increased risk of frequency and severity of retaliatory cyber aggression and cyber victimization because sadness, worthlessness, and hopelessness that characterize adolescent depression increase their susceptibility to the injurious impacts of cyber aggression (Tokunaga, 2010).

Blogger Boyd (2010) coined the term digital self-harm. In the virtual realm of social media, young people present themselves to attract attention, validation, and comments from users. One way to interpret digital self-harm is as a cry for assistance, a way to hold out for rescue, and a way to find comfort in support messages from colleagues.

When someone writes unpleasant remarks or non-suicidal threats about themselves online, it is known as digital self-harm. The scope of adolescents' digital self-harm was explored in this study (Patchin & Hinduja, 2017). The unknown randomly uploading, mailing, dispatching, or other displaying of harmful material about their own identity or self is known as digital self-harm. It is a type of cyberbullying. The main distinction is that you focus on yourself online rather than on someone else. It could harm your physical and emotional health. Nevertheless, little is known about the cultural context, lifestyle, and distressing life exposure to trauma linked to victimization, as well as the risk for



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boys who have been bullied in the past to self-harm. Victimization by school bullying is associated with self-harm and lower psychological well-being (McMahon et al., 2012).

Altogether, it is shown that these variables form a complicated and perilous environment for adolescents with prior suicide attempts. These contributory factors are best solved holistically. Psychological intervention, in conjunction with creating awareness through the proposed platforms, is incorporated alongside a call to certain aspects of the digital platforms to adopt preventive and responsible approaches towards risks and enhance resilience (Bauman et al., 2013).

The findings showed that 44.3% of the sample had self-injured online, most of them (74.8%) did so through social media apps such as Snapchat and Instagram, and that these behaviors were far more prevalent in young people who identified as sexual and gender minorities. Teens who discussed self-harm with friends they made online had a high chance of attempting suicide in the past (Nesi et al., 2021).

Digital self-harm, also known as fictional online victimization or FOV, is a new type of virtual self-harm that primarily affects young people. It is characterized as both cyberbullying oneself and using online platforms in a way that is harmful to one's mental health. Adolescents have recently developed a type of digital behavior that is unsettling and unexpected. The most popular term for this behavior is digital self-harm, or DSH, in which the sufferer uses digital platforms to portray oneself as the object of interpersonal hostility. She discovered that 9% of people have been cyberbullied or had a cruel remark posted about themselves without permission. Similarly, a study found that 6% of teenagers in New Zealand had published or posted hurtful or unpleasant content about themselves online within the previous year (Soengkoeng & Moustafa, 2022).

Additionally, it has been noted that teens who self-harm have higher internet usage rates than their counterparts who use it less frequently (Wang, 2020). The multivariate studies show that longer sleep durations are associated with lower rates of digital self-harm occurrence. Hence, sleep patterns are inversely proportional to the occurrence of digital self-harm (Semenza et al., 2022).

Study Rationale

Digital self-harm represents a rising online challenge for youth who previously made suicide attempts because they post self-harm content without revealing their identity. This behavior presents a link to both emotional distress and suicidality, though the psychological reasons behind it have not been clearly understood. The risk factors, Alexithymia together with depression, are associated with self-harm behavior and require further investigation when studying digital self-harm activities.

The study relies on two accepted theories that show difficulty regulating emotions, together with insufficient social links between people, leads to self-harm behaviors. The research investigates how both depression and alexithymia affect electronic self-harm links with past suicide attempts to reveal risk-enhancing psychological pathways. The research findings will have significant implications for both early disease recognition and the clinical management of mental health conditions and digital healthcare strategies. The identification of adolescents at high risk through assessments of their emotional regulation



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capabilities would guide specific therapy and school-based programs and internet monitoring tools to prevent suicides and strengthen mental health assistance for adolescents.

Hypotheses

1. Alexithymia is likely to be positive and significantly associated with digital self-harm and depressive symptoms.
2. Digital Self-Harm is likely to moderate the association between alexithymia and depressive symptoms significantly.
- 3.

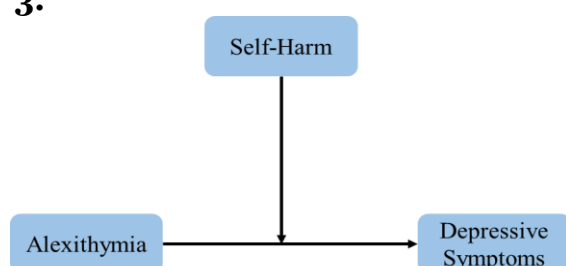


Figure 1: *Proposed Moderation Model*

Method

Participants and Sampling Strategy

The study plans to employ meticulous purposive sampling techniques to construct a sample of adolescents with a history of suicidal attempts, ensuring a diverse and representative group. This purposive selection procedure guides the selection process from various locations in Punjab and Lahore colleges, strictly adhering to ethical considerations. In the current study, participants ranged in age from 12 to 19 years, from early to late adolescence. The mean age was 16.35 years, with a standard deviation of 1.59 years. The total sample for this study consisted of 284 participants, with 178 boys and 106 girls. The mean education level was $M = 10.87$, $SD = 1.03$. The sample comprises students from both government and private schools in Lahore, Punjab.

Inclusion and Exclusion Criteria

The study included only adolescents with a history of suicidal attempts. This criterion was chosen to focus on a group particularly vulnerable to the effects of alexithymia. Moreover, students from colleges are selected. This study excluded adults or early adults and adolescents with a history of other psychiatric or psychological disorders or physical disability, as these factors could potentially confound the results.

Tools for Assessment

In the current study, the following measurement tools were used.

Depression, Anxiety, and Stress Scale–21

The DASS-21 was developed by Lovibond and Lovibond (1995). DASS consists of 3 subscales, each with 7 items. The total number of items in the DASS is 21. The original DASS comprised 42 items. Internal consistency coefficients (Cronbach's alpha and omega) were calculated for the subscales measuring stress, anxiety, and depression. Participants were asked to rate on a 4-point Likert-type scale. Ratings on the scale were labeled as follows: not at all (0), to a very small degree



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(1), to a considerable degree (2), and a very high degree (3). The DASS-21 ($\alpha = 0.72-0.93$) had coefficients ranging from good to exceptional. All scales showed a high degree of internal consistency. The test-retest reliability of the depression subscale correlation coefficients, as measured by the DASS-21, is quite strong (Dwight et al., 2024).

Toronto Alexithymia Scale

Bagby et al. (1994) devised this scale, a self-report instrument that assesses the difficulty in identifying and articulating emotions, a major component of alexithymia. Those sub-scales of TAS are difficulty identifying feelings, the problem in explaining feelings, and external-oriented thinking. Participants were asked to rate on a 5-point Likert-type scale. Ratings on the scale were labeled as follows: strongly agree (1), agree (2), neither agree nor disagree (3), disagree (4), and strongly disagree (5). The test-retest reliability of TAS was 0.74, with a range of 0.57 to 0.87. Test-retest reliability was also demonstrated, with a correlation coefficient of 0.77 ($p < 0.01$), and internal consistency (Cronbach's $\alpha = 0.81$) was established.

Digital Self-Harm Scale

Xu et al. (2023) developed a digital self-harm inventory consisting of two separate groups. 1) Eternal self-image items 1, 2, 3, 4, and 8; and Inner self-image items, including 5, 6, and 7. Confederates were asked to rate their agreement on a 5-point Likert-type scale. Ratings on the scale were labeled as follows: Never (1), Rarely (2), Sometimes (3), Often (4), and Always (5). There are a total of 8 items on this scale. The scale demonstrated split-half reliability of 0.834-0.920 and test-retest reliability of 0.983-0.991. Cronbach α coefficients for the overall scale were 0.93-0.96. The convergent validity of the scale was 0.95 and 0.93. Moreover, 73.47% of the variance overall was explained. According to the findings, a range of correlation coefficients, from 0.667 to 0.86, was observed between each item and the overall score (Xu et al., 2023).

Procedure

In the research, we employed a thorough data collection process, using purposive sampling to gather participant responses from various government and non-government schools. The data was collected individually, ensuring each participant's unique perspective was captured. The participants were selected based on age, and the school administration and online confederates were fully informed about the study's objectives, benefits, and findings. Informed consent was obtained from the participants, followed by the provision of required information about the subject on the Demographic Information Form. Firstly, the participants were given informed consent forms and the Demographic Information Form. After that, the participants were given the assessment tools to screen out their responses. The participants were informed that the researcher would brief and assist them with any questions. The participants were appreciated, and we sincerely thank them for their cooperation and participation in the research process. The data were then processed and analyzed using SPSS 26, ensuring a comprehensive and reliable analysis.

Statistical Analysis



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The studies used descriptive and inferential statistics to process and analyze the collected data. The study employed SPSS-26 as the statistical software to analyze the data collected from the sample of referred adolescents with suicidal attempts. Pearson's correlational analysis was used to examine the strength and direction of the association between the aforementioned variables. Model No. 1 for moderation analysis was run to examine the moderating role of digital self-harm on the relationship between alexithymia and depressive symptoms, using Hayes' Process Macro (2022) in SPSS version 26.

Result

Table 1 displays the descriptive characteristics of the sample. In the current study, Participants ranged in age from 12 to 19 years, from early to late adolescence.

Table 1: Descriptive Characteristics of Study Participants

Variable	<i>M</i>	<i>SD</i>	<i>Min-Max</i>	<i>f</i>	%
Age (years)	16.35	1.59	12-19		100%
Gender					
Girls				106	37.3%
Boys				178	62.7%
Grades					
8 th				6	2.1%
9 th				33	11.6%
10 th				58	20.7%
11 th				82	29.3%
12 th				105	37.0%
Birth Order					
1 st Born				81	28.5%
Middle Born				147	51.8%
Last Born				45	15.8%
Only Child				11	3.9%
Socioeconomic Status					
Lower Class				13	4.6%
Middle Class				215	75.7%
Upper Class				56	20.6%
Family Structure					
Joint Family				142	50.0%
Nuclear Family				142	50.0%

Table 2: Cronbach's Alpha Reliability of Study Variables

Variable	<i>M</i>	<i>SD</i>	<i>α</i>	<i>Rane</i>		<i>S</i>	<i>K</i>	<i>2</i>	<i>3</i>
				Observed	Actual				
Alexithymia	35.17	6.22	.70	24-60	20-100	.71	.94	.30**	.23**
Digital Self-Harm	20.90	4.38	.75	8-32	8-40	-.62	.48	-	.27**
Depressive Symptoms	14.38	2.81	.68	4-20	0-21	-.53	.19	-	-



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Note: α = Cronbach alpha reliability, n = Number of item=Mean, SD = Standard Deviation, k =Kurtosis, S = Skewness

Table 2 shows Cronbach's alpha reliability, the number of items, mean, standard deviation, internal consistency, actual and observed maximum and minimum scores of the variables, skewness, and kurtosis. Alpha Reliability was conducted to assess the Alpha coefficients for all scales and subscales, as well as to measure internal consistency. The internal consistency is acceptable to excellent; however, the selected scales, most notably those related to father trust, show directions that may require improvement (Table 2). Table 2 also shows positive and significant correlation between alexithymia $r=.23^{**}$, digital self-harm= $.30^{**}$ and depression $r=.27^{**}$

Table 3: Moderation Analysis Between Alexithymia, Digital Self-Harm, and Depressive Symptoms

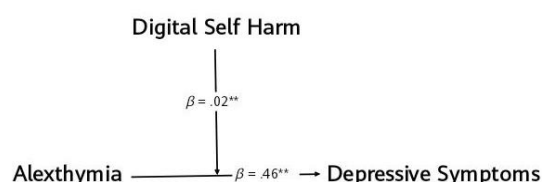
Variable	Depressive symptoms				
	β	<i>SE</i>	95% CI(LL-UL)	R^2	ΔR^2
Constant	4.33 ^{**}	0.23	0.12-0.21		
Alexithymia	0.46 ^{**}	0.15	0.17-0.76		
Digital Self-Harm	0.14	0.48	-1.08, 0.80		
ALX \times DHS	0.02 ^{**}	0.01	-0.04, 0.01	.35	.12

Note: $*$ = $p<.05$, $**$ = $p<.01$, $***$ = $p<.001$.

Moderation Analysis

The statistical relationship between alexithymia and depressive symptoms shows a positive correlation with a value of $\beta = 0.46$ ($p < 0.01$). More severe alexithymia leads to higher depressive symptoms in adolescents with prior suicidal attempts. The relationship between Digital Self-Harm (DHS) and depressive symptoms shows minimal statistically insignificant effects ($\beta = 0.14$; $p = 0.44$). DHS has minimal impact on depressive symptoms since it does not create a strong link to the symptoms. A significant positive effect ($\beta = 0.02$, $p < 0.01$) now emerges between the interaction of these variables (ALX \times DHS). Depressive symptoms manifest more strongly between alexithymia and depressive symptoms among individuals practicing digital self-harm. Digital self-harm makes the impact of alexithymia more powerful for depressive symptoms.

Digital self-harm serves as an unhealthy coping mechanism that expands the link between alexithymia and depression. Digital self-harm creates a negative effect on depressive symptom risk levels for adolescents with alexithymia tendencies, in contrast to the prior study findings, which showed a weakening of the alexithymia impact.





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Figure 2. Moderation of Digital Self-Harm, with Alexithymia, and Depressive Symptoms

Discussion

This research investigated how alexithymia is linked with digital self-harm activities as well as depressive symptoms in young people who attempted suicide. The study findings show that alexithymia acts as a leading factor in depressive symptom development, just like research from Norman et al. (2020) has already established. The joint presence of alexithymia substantially moderated the effect of digital self-harm practices and depressive symptoms. However, digital self-harm alone did not measure as a strong depressive symptom indicator. The relationship between alexithymia and depressive symptoms becomes stronger when adolescents conduct digital self-harm activities, which reveals that these students struggle more with depressive symptoms.

The results indicate that digital self-harm works as an unhealthy coping approach, which intensifies the psychological problems caused by alexithymia. Existing studies have established that digital self-harm exists as a complicated form of behavior that scientists link to self-criticism alongside emotional dysregulation and mental health problems (Patchin & Hinduja, 2017). The present study demonstrates that digital self-harm produces negative effects on depression in adolescents who have previously made suicide attempts beyond simply coexisting with depressive symptoms.

The process of making emotional pain visible leads adolescents with alexithymia toward digital self-harm as an alternative outlet. These negative actions end up deepening depressed feelings in affected individuals, causing the severity of depressive symptoms to grow more pronounced. The practice of digital self-harm puts adolescents at risk for encountering cyberbullies or negative interactions online, which intensifies their existing emotional challenges (Soengkoeng, 2022). Current research results oppose previous studies, which found that digital self-harm functions as a brief method to reduce emotional distress (Bailey et al., 2023). The unique participant group in this study comprised adolescents who made suicidal attempts, thus potentially explaining the different research results because they represent a vulnerable subgroup with amplified digital self-harm sensitivity. People with emotional regulation difficulties in adolescent populations tend to experience persistent emotional distress, so digital self-harm behaviors become more harmful instead of providing short-term emotional relief.

The impact of social reinforcement on digital self-harm behaviors stands out in past research, which indicates that people use such actions to get attention or validation or express emotional distress (Englander, E., 2021). Based on the study results, one can infer that adolescents with alexithymia use digital self-harm behaviors mainly to face their internal emotional conflicts rather than seeking social reinforcement.

Implications

The research delivers vital information about why digital self-harm happens in adolescents who have made suicide attempts. Early intervention methods that focus on emotional regulation need identification of both alexithymia and depressive symptoms to become the most important elements of detection.



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Healthcare practitioners who care for adolescent patients should develop emotionally focused intervention strategies to enhance the ability of young people to experience and manage their emotions effectively. Social institutions that run schools must implement emotional literacy programs as part of their educational framework to teach students healthier emotional management methods.

Online safety measures and monitoring systems must receive priority enhancements to detect self-harm behaviors through digital and policy requirements. In collaboration with social media platforms, mental health organizations should develop AI-based technologies and digital support tools to provide prompt assistance to at-risk adolescents. Policymakers should collaborate with mental health experts to develop digital well-being standards that safeguard against unsafe digital conduct and establish secure online environments for young people.

Likely Benefits

Early screening methods in medical facilities and educational settings can use depressive symptoms together with alexithymia for identifying patients at risk of digital self-harm. The study data support the application of personalized therapy models, including CBT, EFT, and DBT, in helping adolescents develop healthier emotional processing skills. The study supports the development of online mental health initiatives through the creation of real-time digital self-harm detection systems, which include algorithms for social media monitoring, chatbots, and digital self-help resources.

Research findings about alexithymia and depression establish useful instructions for mental health experts, teachers, and parents to identify child warning signs and encourage positive communication with adolescents. The research establishes an important basis to guide additional investigations of digital self-harm time patterns across cultures and the evaluation of programs designed to decrease self-harming conduct among vulnerable youth.

Limitations and Suggestions

The study depends on self-reported data through which participants might present distorted information because of social desirability bias and fear of being stigmatized for their self-harm and suicidal behavior. The research analyzes multiple variables within a single time frame but cannot verify cause-and-effect relationships between them. Studies following the same participants throughout time need to balance the development of digital self-harm conduct patterns. The study results demonstrate reduced applicability across various cultural groups and ethnic backgrounds, as well as different socioeconomic status populations, because emotional dysregulation shows population-specific manifestations. Future studies need to evaluate the relationships between different cultural populations.

The study only relies on self-reported data about digital self-harm, even though actual behavioral monitoring of online activities would create a more precise evaluation of self-harming behavior patterns. Other psychosocial aspects that might influence digital self-harm practices, including peer influence, exposure to cyberbullying, trauma experience, and family interaction patterns, were not the main targets of this research investigation. Multivariate analysis incorporating



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additional risk factors should be included in subsequent research. The research of digital self-harm requires examination of sensitive data, which creates ethical dilemmas about privacy, together with consent issues and the need for interventions. The primary concern here is to ensure both the confidentiality of digital interventions and the provision of necessary support, while upholding the privacy standards of adolescents.

Conclusions

The findings of this study provide essential knowledge about digital self-harm as well as psychological risk factors, despite its technical constraints during the research process. Research results underline the urgent requirement for intervention measures as well as therapy programs that focus on emotions to counteract the heightened digital self-harm behavior observed in suicidal teens. Further research requires maintaining long-term observation and live behavioral tracking, along with assessment of intervention effectiveness, to develop more effective preventive and supportive methods. The combination of psychological understanding with technological development allows mental health practitioners, together with educators and policymakers, to minimize cyber-self-harm dangers while supporting teen mental health.

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