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Psychiatric Correlates of Deliberate Self-Harm: Clinical Insights from a Cross-Sectional Analysis

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ABSTRACT

Background: Deliberate self-harm poses a significant risk to both physical and psychological health. The behaviour occurs across age groups, with young adults being the most frequently affected. The aim of this research was to ascertain whether there was any association among Schizophrenia, Bipolar Affective Disorder (BPAD) and Attention Deficit and Hyperactivity Disorder (ADHD) with Deliberate Self Harm (DSH) among patients who reported at the psychiatry unit of the study setting and diagnosed with these conditions.

Methodology: The cross-sectional study employed a census approach in arriving at a sample population of 66. The participants were assessed through an interview using two instruments; Non-suicidal self-injury Assessment Tool (NSSI-AT) and Positive and Negative Syndrome Scale (PANSS) to ascertain acts of self-harm and presence of schizophrenia respectively. The results were analysed using frequencies and percentages; Chi-square was employed to assess the associations between the mental health conditions, correlation analysis explored the relationship between PANSS scores and self-harm behaviour.

Results: A significant association was found between sex and diagnosis, with males having a higher prevalence of schizophrenia with a statistical significance of ($p=0.004$). Schizophrenia was found to be common, accounting for 59.09% of cases in the sample. Disorganized thinking and delusions are more prevalent in Schizophrenia (61.5%) compared to BPAD (20.8%) and ADHD (0.0%), but not statistically significant ($p = 0.16$).

Conclusion: Schizophrenia shows an association with DSH rather than the other two psychiatric conditions. Psychiatric and personality disorders are profound in DSH and this underscores the need for proper assessment and diagnosis to support individuals and improve their quality of life.

Keywords: Delusion, Non-Suicidal Self-injury, Psychiatry Health conditions, Retrospective Study, Schizophrenia

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INTRODUCTION

Deliberate Self-harm (DSH), is defined as the intentional, self-inflicted injury without suicidal intent, often serving as a maladaptive coping mechanism in response to emotional distress (Kpeno et al. 2023), posing significant threat to physical and psychological health. This self-destructive behavior encompasses a wide range of acts, including self-cutting, burning, hitting, fighting, aggression, temper outbursts, and vandalism (Sinha et al. 2021). Annually, over 800,000 individuals die by suicide, and 10–20 million attempt deliberate self-harm globally (Shekhani et al. 2018). Asia accounts for a large proportion of global suicide deaths due to its population size, while the African region reports the highest age-standardized suicide rates per 100,000 population; cultural, socio-economic, and mental health disparities contribute significantly to self-harming behaviors in these settings (IASP, 2025).

DSH prevalence varies across socio-economic and age groups, notably among adolescents , making it a major public health challenge with severe impacts on individuals, families, and healthcare systems (Kpeno et al. 2023, Naz et al., 2021 & Shahwan et al. 2018). Studies indicate that self-harm behaviors often begin in early adolescence and remain prevalent during youth, with notable gender differences in methods and motivations (Rahman et al. 2021). In India, deliberate self-harm is often overlooked by families, communities, and healthcare systems due to stigma, lack of awareness, and limited mental health resources (Sinha et al. 2021). High socio-economic disparity increases self-harm among lower social class adolescents, influenced by socio-cultural norms (Sinha et al. 2021).

Mental health disorders play a crucial role in the etiology and maintenance of DSH behaviors. Depression, anxiety disorders, and borderline personality disorder (BPD) are strongly associated with self-harm, with BPD being particularly linked to recurrent and severe self-injurious behaviors (Rahman et al. 2021). Additionally, neurodevelopmental and psychotic disorders such as attention-deficit/hyperactivity disorder (ADHD), schizophrenia, and bipolar affective disorder (BPAD) exhibit complex interactions with self-harm tendencies, often mediated by impulsivity, emotional dysregulation, and cognitive distortions (Hooley & Franklin, 2018). Individuals with schizophrenia may engage in DSH due to command hallucinations, cognitive impairments, or distressing delusions, whereas those with bipolar disorder may experience self-harm during depressive or mixed episodes (Kristi et al. 2016).

Despite the significant burden of DSH in psychiatric populations, research exploring its clinical correlation with various mental health conditions remains limited, particularly in the Indian context. Understanding the relationship between psychiatric diagnoses and self-harm is crucial for developing targeted interventions, improving risk assessment, and

implementing effective preventive strategies. Therefore, this study aims to investigate the clinical associations between DSH and psychiatric disorders in youth attending a tertiary care hospital. By examining the prevalence, severity, and psychiatric correlates of DSH, this research seeks to enhance the understanding of its underlying mechanisms and contribute to more effective mental health interventions.

METHOD AND METERIALS

Study design

This cross-sectional study which was aimed at examining the association between deliberate self-harm behaviours and three other mental health conditions (Schizophrenia, BPAD and ADHD) among adolescents in eastern India.

The files of the individual patients, who visited the psychiatric department of the tertiary care were taken into consideration. Both visits to the Out Patients Department (OPD) and In-Patient wards (IP) were included in the study. This cross-sectional study was employed to investigate the association between the three mental health conditions (schizophrenia, BPAD, ADHD) with deliberate self-harm behaviour among adolescents over a specific time period. Steps were taken to safeguard participant identities and sensitive information obtained during the interviews. Anonymity and confidentiality were prioritised to maintain the privacy of the participants.

Semi-structured Interview

All the identified participants were invited for a semi-structured interview. These interviews were conducted by two members of the research team one physician and a Clinical Psychologist conducted the interviews using a standardized script. Once participants agreed, they were provided with a brief explanation of the structure of the study's aims and objectives and informed consent obtained. Interviews were conducted in a private setting within the hospital, scheduled at a time convenient for each participant.

Data on non-suicidal self-injury (NSSI) and deliberate self-harm behaviors were collected using a semi-structured interview guide adapted from school-based NSSI assessment protocols (System, 2024). These protocols draw on established research-informed tools, such as those developed by Whitlock et al. (2014), and have been modified for practical application in educational or clinical support contexts. The guide consists of nine major questions, with question 2 including sub-questions (A–W) designed to elicit the functions of self-harm. In this functions section, participants rate items on a Likert scale ranging from "strongly disagree" to "strongly agree."

This adaptation provided a structured framework to systematically explore participants' NSSI thoughts, behaviors, methods, frequency, and functions. The interviews were primarily qualitative in nature, allowing for in-depth probing of individual experiences, with responses informing thematic analysis rather than quantitative scoring. The full interview guide is provided in appendix.

Additionally, the PANSS (Kay et al. 1982) was also administered to measure the symptoms severity of Schizophrenia. It has 30-items clinician administered rating scale which requires between 45-50 minutes to be administered by the subject expert. The PANSS consists of three subscales: the Positive Scale, the Negative Scale, and the General Psychopathology Scale. Each item on these subscales is rated on a 7-point severity scale, ranging from 1 (absent) to 7 (extreme). The scale is mostly used to take inventory, grade and monitor the symptoms of schizophrenia. It quantifies positive symptoms which are referred to as excess or distortions of normal functions (hallucination and delusion) and negative symptoms referred to as diminution or loss of normal functions (Medscape, 2024).

Regarding the measurement of ADHD and BPAD of the participating patients, some of those physicians who diagnosed the patients during the study period using the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (5th ed.; DSM–5; American Psychiatric Association, 2013 & Ham et al, 2013) for the ADHD and BPAD are integral team members of this research. Their involvement in both the diagnosis process and the research study lends significant credence to the reliability and the diagnosis. The adherence to the standardized DSM criteria ensured that the diagnostic procedures were consistent and systematic, enhancing the validity of our findings. This rigorous approach supports the credibility of our study in investigating the correlation between self-harm and psychiatric conditions in youth. To minimise subjectivity, reassessments followed standardised diagnostic guidelines and the semi-structured interview guide (see Appendix A). However, complete blinding to prior clinical diagnoses was not possible.

Inclusion and Exclusion criteria:

The study includes patients who have been categorised as youth as per the definition of youth given by the Commonwealth and the India National Youth Policy in 2014, (Sethuramalingam 2017) aged 15 to 29 years who received diagnoses of schizophrenia, BPAD, or ADHD during the specified timeframe. This age category was chosen because it is a critical developmental period for mental health related concerns. Patients outside the defined age range, those with incomplete records, and individuals who declined participation in the interview were excluded.

Validation of Diagnosis

Although the patients were initially diagnosed by physicians, additional assessments were performed to validate these diagnoses and ensure the reliability of our findings. The involvement of some of those same physicians in both the initial diagnosis and the research study, along with the use of standardized DSM criteria, enhanced the study's credibility. This

rigorous approach ensured consistent and systematic diagnostic procedures, supporting the validity of our investigation into the correlation between self-harm and psychiatric conditions in youth.

Statistical Analysis:

Statistical analysis was conducted using SPSS version 27, (IBM Corporation, Armonk, USA). Descriptive statistics, including frequencies and percentages, were used to summarize the occurrence of self-harm behaviour within each mental health condition. Chi-square test was employed to assess associations between mental health conditions (schizophrenia, BPAD, ADHD) and self-harm behaviour. Chi-square test was also employed to test the association between the chief complains and the diagnosed mental health conditions. Additionally, correlation analysis was conducted to explore the relationship between PANSS scores and self-harm behaviour, providing insight into potential connections between symptom severities and self-harm.

Ethical Consideration

Prior to data collection, the study protocol was reviewed and given approval by the Institutional Ethics Committee (IEC) of (Anonymised institution). Informed consent was obtained from all participants after explaining to them the study objectives, procedure, how to maintain their confidentiality assurance and their right to withdraw from the study at any point in time without penalty. For participants aged between below 18 years, assent was obtained alongside written parental/guardian consent in accordance with institutional ethical guidelines.

RESULTS

A total of 66 patients were included in the study. The mean age was found to be 24 years. The majority of them were unmarried and well-educated, with a significant proportion being graduates. Most of them were unemployed, and the family income predominantly was Rs 30,000/- and above per month. For international readers, a monthly household income of ₹30,000 (approximately US$360 at 2025 exchange rates) is considered relatively higher in the Indian context, as national data indicate that the median household income is below ₹15,000–₹20,000 per month, and a substantial proportion of households earn less than this amount. We observed a higher prevalence of self-harm in females (n=17, 72.7%) compared to males (n=23, 52.3%). However, there was no statistically significant association between gender and self-harm.

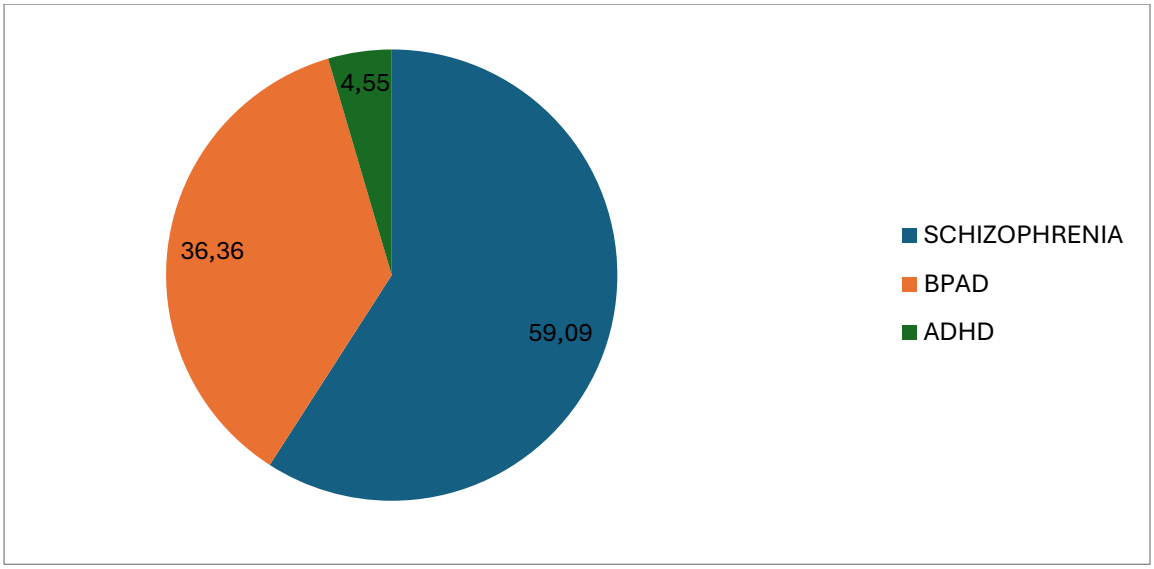
Table- 1: Demographic Characteristics and Distribution of Disease conditions among study population

Variables		SCHIZOPHRENIA N (%)	BPAD N (%)	ADHD N (%)	Total N (%)	p-value
Sex	MALE	21 (53.8)	22 (91.7)	1(33.3)	44(66.7)	
	FEMALE	18 (46.2)	2 (8.3)	2 (66.7)	22(33.3)	0.004
Education	INTERMEDIATE	16 (41.0)	10 (41.7)	2 (66.7)	28(42.6)	0.68
	GRADUATE	23 (59.0)	14 (58.3)	1(33.3)	38 (57.4)	
Occupation	EMPLOYED	5 (12.8)	1(4.2)	0 (0.0)	6 (9.1)	0.43
	UNEMPLOYED	34 (87.2)	23 (95.8)	3 (100)	60(90.9)	
Family income	< 10,000	0 (0)	1(4.2)	0 (0)	1 (1.5)	0.32
	10,000 to 30,000	2 (5.2)	4 (16.7)	0 (0)	6 (9.1)	
	> 30,000	37 (94.9)	19 (79.2)	3 (100)	59 (89.4)	
Hurting self without suicidal intend?	YES	25 (64.1)	12 (50.0)	2 (66.7)	39 (59.1)	0.52
	NO	14 (35.9)	12 (50.0)	1(33.3)	27 (40.9)	

Results from Table 1 were evaluated using a significance threshold of $p < 0.05$. There was a significant association between sex and diagnosis, with a higher prevalence of SCHIZOPHRENIA among males compared to females. Similarly, BPAD shows a higher

prevalence among males compared with females, and ADHD exhibits an equal distribution between male and females shows statistical association between gender and diagnosis (p=0.004) (Table-1). Regarding self-harm without suicidal intent, the prevalence is relatively high across all conditions, with no significant difference among Schizophrenia, BPAD, and ADHD. Educational attainment is similarly distributed across all three conditions, with no significant difference between those with intermediate and graduate levels of education.

Figure 1: Disease conditions in Percentages



This pie chart represents the percentage of the three mental health conditions where schizophrenia had the highest percentage with ADHD represented by a marginal percentage.

Table 2: Chief complaints presented by respondents during admission

VARIABLES		SCHIZOPHRENIA N (%)	BPAD N (%)	ADHD N (%)	Chi-square value	p-value
Irritability	Absent	24 (61.5)	10 (41.7)	1 (33.3)	2.84	0.24
	Present	15 (38.5)	14 (58.3)	2 (66.7)		
Anger, Aggressiveness & Violence Behaviour	Absent	19(48.7)	13(54.2)	0 (0)	3.13	0.20
	Present	20(51.3)	11(45.8)	3 (100)		
Talkativeness, Muttering, Tall claims, Laughing & Crying	Absent	13(33.3)	6(25.0)	0 (0)	1.77	0.41
	Present	26(66.7)	18(75.0)	3 (100)		
Suspiciousness & Fear	Absent	25 (64.1)	20(83.3)	2 (66.7)	2.71	0.25
	Present	14 (35.9)	4 (16.7)	1 (33.3)		
Self-Harm	Absent	14(35.9)	12(50.0)	1(33.3)	1.29	0.52
	Present	25 (64.1)	12(50.0)	2 (66.7)		
Loss of Appetite, Loss of Sleep, Hearing voices	Absent	19 (48.7)	19 (79.2)	1 (33.3)	6.56	0.03
	Present	20 (51.3)	5 (20.8)	2 (66.7)		
Disorganised Thinking, Delusion	Absent	24 (61.5)	19 (79.2)	3 (100.0)	3.55	0.16
	Present	15 (38.5)	5 (20.8)	0 (0.0)		
Suicidal Thoughts	Absent	28 (71.8)	22 (91.7)	3 (100.0)	4.48	0.10
	Present	11 (28.2)	2 (8.3)	0 (0.0)		

From Table 2, no significant differences were observed between diagnostic groups for most symptoms (all $p > 0.05$; significance threshold $p < 0.05$), with the exception of loss of appetite, loss of sleep, and hearing voices ($p = 0.03$). In terms of irritability, Schizophrenia patients exhibit a higher prevalence compared to BPAD and ADHD, but the non-significant p-value of 0.24 indicates no statistical association. Patients diagnosed with ADHD show a higher percentage of anger, aggressiveness, and violent behaviour, while Schizophrenia and BPAD patients display similar frequencies, with a non-significant p-value of 0.20. For talkativeness, muttering, tall claims, laughing, and crying, Schizophrenia patients present a higher occurrence compared to BPAD and ADHD, but the p-value of 0.41 indicates no significant association. Similarly, no significant associations are found for suspiciousness and fear, and self-harm tendencies.

However, for symptoms like loss of appetite, loss of sleep, and hearing voices, Schizophrenia patients report more compared to BPAD and ADHD (33.3%), with a significant p-value of 0.03. Disorganized thinking and delusions are more prevalent in Schizophrenia compared to BPAD and ADHD, but the p-value indicates no significant association. While Schizophrenia patients report a higher occurrence of suicidal thoughts compared to BPAD and ADHD, the not statistically significant p-value is 0.10.

Figure 2: A comparative analysis of clinical parameters across different psychiatric diagnoses: Schizophrenia, BPAD, and ADHD

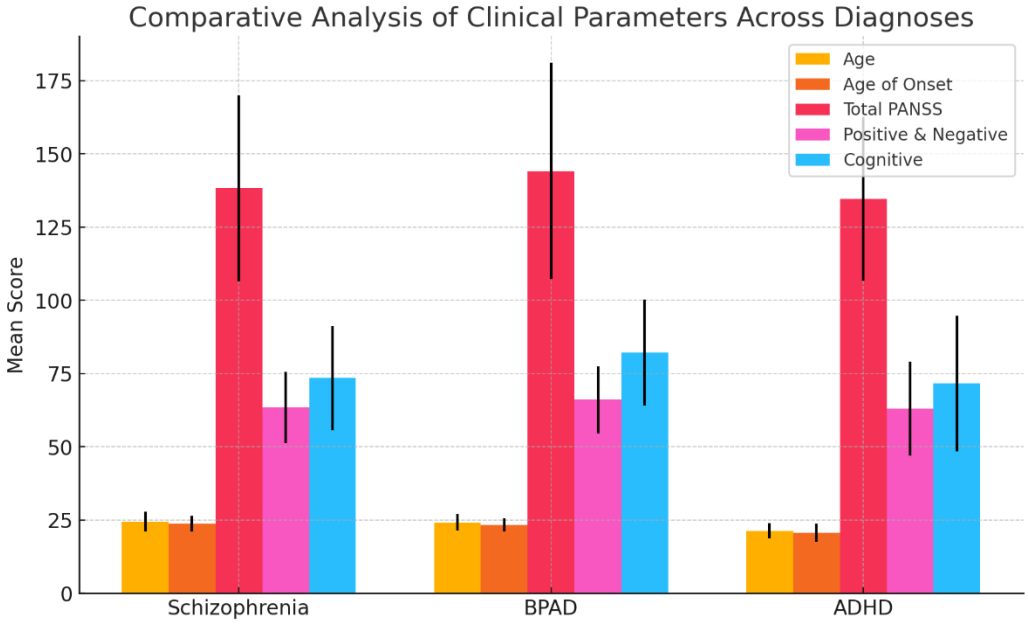


Figure 2 presents a comparative analysis of clinical parameters across three psychiatric diagnoses. The table includes measures such as age, age of onset, Total PANSS, and cognitive scores. The mean age and age of onset for individuals with Schizophrenia and BPAD are very similar, indicating that these conditions tend to manifest around the same period in early adulthood. In contrast, individuals with ADHD tend to be younger both in terms of current age and age of onset, reflecting the developmental nature of this disorder, which often begins in childhood. The PANSS scores, which assess the severity of symptoms, are comparable across Schizophrenia and BPAD, suggesting similar levels of symptom severity in these conditions. ADHD shows a considerable range in PANSS scores, likely due to the varied presentation of symptoms in this disorder.

DISCUSSION

The demographic characteristics of our sample are detailed in Table 1, highlighting significant differences in gender across diagnosis. Self-harm often emerges during adolescence and young adulthood, peaking in late adolescence (System, 2024). Younger individuals are more susceptible to impulsivity and emotional dysregulation, which are risk factors for self-harm. However, self-harm can also occur in adults, often in the context of underlying mental health conditions or life stressors (Steinhoff et al. 2020).

The gender distribution among our respondents showed a higher prevalence of males (66.7%). This aligns with a study done by Steinhoff et al. in 2021 indicating that males are more likely to engage in aggressive self-harm or substance abuse, while females use methods like cutting or self-poisoning. The relationship between education level and self-harm is complex. Low education levels may increase risk for self-harm due to low economic resources, socioeconomic stressors, or a lack of coping skills (Leffa et al. 2022). However, higher education levels are not necessarily protective, as individuals with advanced education can also experience mental health challenges and stressors (Bjerrum et al. 2017). Socioeconomic status, including income level, impacts self-harm risk. Low-income individuals may face financial difficulties and lack access to healthcare, contributing to self-harm behaviours. Conversely, higher-income individuals may experience pressure to maintain success leading to mental health issues and self-harm (Bjerrum et al. 2017).

The high unemployment rate in our sample, despite relatively higher family incomes and education levels, merits exploration. Severe mental illnesses such as schizophrenia, BPAD, and ADHD are known to cause substantial occupational impairment, contributing to unemployment rates of 75–90% among affected individuals in India. Conversely, intense parental and societal expectations for academic/professional success prevalent in middle- to upper-income families can generate significant stress, potentially precipitating or worsening mental health issues and self-harm. In this tertiary care context, unemployment may reflect both the disabling effects of illness and the pressures of unmet expectations in a competitive environment. Future longitudinal studies are needed to disentangle these bidirectional influences.

Theoretical Perspectives

The findings of this study can be better interpreted in light of known psychological theories of accounting for self-harm in the context of psychiatric illnesses. Two such theoretical models, Stress Vulnerability Model (Howe et al. 1999) and Linehan's Biosocial

Theory of Emotional Dysregulation (Kandeger et al. 2018) explain the interaction among psychiatric illnesses, emotional dysregulation, and self-injurious behaviors with high accord.

The Stress Vulnerability Model proposes that conditions of mental illness emerge due to an active interaction between intrinsic biological vulnerabilities (e.g., genetic and neurobiological vulnerabilities) and extrinsic stressors (e.g., traumatic history, socioeconomic issues, or insufficient social support). The model has implications for the findings of this study in the sense that self-harm was reported across psychiatric illnesses with little selectivity. Simply having conditions like schizophrenia, BPAD, or ADHD might not induce self-harm per se; rather, a build-up of stressors along with an individual's intrinsic vulnerabilities most likely plays an incredibly large role. For example, individuals of low socioeconomic status may face challenges in accessing appropriate mental health care primarily due to a shortage of specialised psychiatric facilities and trained professionals in India (particularly in rural and eastern regions), high out-of-pocket costs in the absence of comprehensive public insurance coverage, and persistent stigma that reduces help-seeking behaviour, thus leaving them vulnerable to maladaptive coping strategies like self-harm (Thompson et al. 2020; Rizvi & Chakraborty, (2025). This reflects a combination of supply-side barriers (limited availability of services) and demand-side barriers (financial and sociocultural deterrents), rather than solely a lack of insurance or facilities.

Linehan's Biosocial Theory provides another explanatory model by highlighting the contribution of emotional dysregulation to self-harm behaviour (Bemmouna & Weiner, 2023). We have retained the subsequent discussion of how the theory applies transdiagnostically to our findings (e.g., emotional dysregulation observed in ADHD, BPAD, and schizophrenia), as this is well-supported by contemporary research extending the model beyond BPD.

In accordance with this theory, self-injury results from the interplay between biological vulnerabilities, in other words, emotional hypersensitivity, and an invalidating environment that fails to facilitate the use of adaptive ways to regulate emotion. Our findings showed elevated irritability, anger, and aggression in ADHD patients, as well as evidence of emotional dysregulation across BPAD and schizophrenia. These observations are consistent with transdiagnostic extensions of Linehan's Biosocial Theory, which highlight emotional dysregulation as a common pathway to self-harm across various psychiatric conditions (Bemmouna & Weiner, 2023; Quaedflieg & Smeets, 2020). In addition, empirical evidence suggests that self-harm behaviors in psychiatric disorder individuals tend to serve as a maladaptive coping mechanism for dealing with intense emotions (Quaedflieg & Smeets, 2020). The association of self-harm with impulsivity, especially in younger populations,

further supports the role of emotional regulation deficits in the case of self-harm risk. These findings corroborate the need for interventions such as DBT that target strengthening emotion regulation skills to prevent self-harm behavior among psychiatric disorder individuals (Asarnow, et al, 2021).

Through the convergence of these theoretical models, the present study highlights the multi-dimensionality of self-harm acts, emphasizing that psychiatric disorders in themselves do not decide self-harm risk. Instead, self-harm can be regarded as a by-product of the interaction between individual vulnerabilities, environmental stressors, and emotion regulation deficits, thus underlining the need for multi-dimensional, holistic intervention strategies.

Notably, 59.1% reported a history of self-harm (Table 1). There was a significant correlation between sex and diagnosis, with schizophrenia and BPAD more prevalent among males, while ADHD was equally distributed between sexes. Statistical analysis showed a significant association between gender and diagnosis, highlighting the need for gender-sensitive approaches.

No significant associations were found between psychiatric conditions and self-harm behaviors as indicated in Table 2. Despite prevalence differences, the lack of statistical significance suggests these variations may be due to random chance. These findings align with previous studies showing diverse results on the relationship between psychiatric disorders and self-harm (Fox et al. 2018). Self-harm is influenced by complex factors not fully captured in our analysis, such as family dynamics, social support, trauma history, and access to mental health resources. Environments lacking emotional support may lead to self-harm as a maladaptive coping mechanism (Fox et al. 2018; Knipe et al. 2022).

Comorbidity can explain why youth may exhibit self-harm alongside conditions such as ADHD, BPAD, and Schizophrenia. Multiple psychiatric conditions can exacerbate distress, impair coping, and increase vulnerability to self-harm as a maladaptive coping strategy. For instance, someone with depression and borderline personality disorder may experience emotional dysregulation and impulsivity, contributing to self-harming behaviors (Knipe et al. 2019) as a way to alleviate distress.

Previous research on self-harm in patients with schizophrenia spectrum disorders has reported that nearly half of the sample experienced self-harm, with greater insight into one's mental illness associated with self-harm in men (but not women) and emotional dysregulation linked to self-harm particularly in women (Mork et al., 2012). These findings contribute to understanding mechanisms of self-harm in severe mental illness and support the value of

comprehensive, transdiagnostic exploration—even when, as in our study, no statistically significant direct association between specific diagnoses and self-harm emerged.

Although our study found no statistically significant association between self-harm and any specific diagnosis (Table 2), previous research highlights important clinical patterns, particularly in BPAD. As summarised in Table 3, self-harm prevalence ranged from 50.0% (BPAD) to 66.7% (ADHD) in our sample, while suicidal thoughts were most common in schizophrenia (28.2%). Prior studies report that 65.3% of individuals with self-harm and BPAD are under 35 years, with a significant concentration under 25 years, and note strong links with family history of BPAD and depressive episodes (Taylor et al., 2014; Mork et al., 2012; Knipe et al., 2019). These patterns underscore the importance of considering age, family history, severe mood episodes, and suicidal ideation when assessing self-harm risk—even when overall diagnostic differences do not reach statistical significance.

Table 3: Summary of Self-Harm and Suicidal Behaviour Across Schizophrenia, BPAD, and ADHD

Aspect	Schizophrenia	BPAD	ADHD	Source
Self-harm prevalence	64.1%	50.0%	66.7%	Present study
Association with diagnosis	No significant association (p = 0.52)	No significant association (p = 0.52)	No significant association (p = 0.52)	Present study
Suicidal thoughts	28.2%	8.3%	0%	Present study
Key prior findings	Nearly half report self-harm; greater illness insight linked to self-harm in men; emotional dysregulation linked to self-harm in women	65.3% of self-harm cases <35 years; strong link with family history of BPAD and depressive episodes	Limited specific data; emotional dysregulation and impulsivity commonly implicated	Mork et al., 2012; Taylor et al., 2014; Knipe et al., 2019

The higher prevalence of irritability in schizophrenia patients compared to BPAD and ADHD as indicated in Table 2 aligns with existing literature. Irritability is a common feature in schizophrenia and is often linked to greater psychopathology and functional impairment (Wiggins et al 2018; Howe et al. 1999). In BPAD and ADHD, irritability is a core feature, associated with manic episodes and emotional dysregulation, respectively (Kandeger 2018). In schizophrenia, irritability is present but not a primary diagnostic criterion, explaining its lower prevalence in our sample. However, the lack of statistical significance suggests that irritability does not significantly differentiate between diagnoses. Irritability is often

associated with manic and hypomanic episodes in BPAD, as well as with the emotional dysregulation observed in ADHD.

Previous research on self-harm in patients with schizophrenia spectrum disorders has reported that nearly half of the sample experienced self-harm, with greater insight into one's mental illness associated with self-harm in men (but not women) and emotional dysregulation linked to self-harm particularly in women (Mork et al., 2012). These findings contribute to understanding mechanisms of self-harm in severe mental illness and support the value of comprehensive, transdiagnostic exploration even when, as in our study, no statistically significant direct association between specific diagnoses and self-harm emerged.

Again, from Table 2, Schizophrenia patients' higher occurrence of talkativeness, muttering, tall claims, laughing, and crying may be associated with the spectrum of positive and negative symptoms (Isometsä et al. 2014). The non-significant p-value suggests that these symptoms do not significantly differentiate among the three diagnoses. No significant associations are found for self-harm, suspiciousness, and fear suggesting similar distribution among these diagnosis.

For symptoms like loss of appetite, loss of sleep, and hearing voices, schizophrenia patients report more compared to BPAD and ADHD, with a significant p-value of 0.03. This indicates that these symptoms significantly differentiate schizophrenia from BPAD and ADHD. Examining the age of onset across the three mental health conditions reveal a potential developmental distinctions. This finding aligns with that of a previous study on BPAD where majority of patients experienced their first episode in their twenties (Wiggins et al. 2018). Notably, the average age at which the first symptom manifested in BPAD was reported to be 29.13 years (Isometsä et al. 2014).

Symptom severity varies significantly among schizophrenia, BPAD, and ADHD, as shown in Figure 2. Schizophrenia patients exhibited the most severe cognitive impairment on assessed measures, BPAD patients demonstrated relatively preserved cognitive function, and ADHD patients also showed notable cognitive impairment (though less severe than in schizophrenia). The earlier age of onset in ADHD is consistent with its neurodevelopmental nature. These differences in cognitive performance and age of onset highlight distinct developmental trajectories across the three conditions and underscore the importance of considering both clinical presentation and developmental factors in psychiatric diagnoses (Wiggins et al., 2018).

Limitations

The sample size limits the reliability and generalizability of its findings as a larger sample size would provide more robust data and potentially more significant statistical associations. The cross-sectional design of the study prevents establishing causality between psychiatric conditions and self-harm behaviors, highlighting the need for longitudinal studies.

Another potential limitation was the involvement of some of the same clinicians in both routine clinical diagnosis and research reassessment. This overlap could introduce anchoring bias, whereby prior diagnostic impressions influence confirmatory research evaluations. Although structured tools and DSM-5 criteria were used to standardize assessments, fully independent diagnostic validation (e.g., by external raters blinded to clinical history) was not feasible in this retrospective study design. Future prospective studies with blinded, independent raters would strengthen diagnostic reliability.

CONCLUSION

Overall, our findings highlight how complicated self-harm behaviours are in people with psychiatric conditions, highlighting the need for multifaceted and individualized approaches in treatment and intervention. The significant gender disparities, symptom profiles, and cognitive impairments observed in our study provide valuable insights for clinicians and researchers in developing targeted strategies to address self-harm and improve mental health outcomes in these populations.

Research Statement

Conflict of Interest: The authors declare that there is no conflict of interest for the study.

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Appendix A: Semi-Structured Interview Guide for Non-Suicidal Self-Injury (NSSI) Assessment

This is the full questionnaire used in the study to guide semi-structured interviews on NSSI and deliberate self-harm behaviors. It was administered by the research team (physician and clinical psychologist) in a hospital setting. Participants provided responses verbally or in writing, with probing for details as needed. The guide was adapted from school-based NSSI assessment protocols (System, 2024; originally from the Willamette Education Service District, adapted from The Cornell Research Program on Self-Injury and Recovery, www.crpsib.com). In our adaptation, Question 3 (functions) was treated as Question 2 with sub-items labeled A–W for analysis purposes.

Non-Suicidal Self-Injury (NSSI) Student Questionnaire

1. Have you ever done any of the following with the purpose of intentionally hurting yourself? (Check all that apply)

- Severely scratched or pinched with fingernails or other objects to the point that bleeding occurs or marks remain on the skin
- Cut wrists, arms, legs, torso or other areas of the body
- Dripped acid on to skin
- Carved words or symbols into the skin
- Ingested a caustic substance(s) or sharp object(s) (Drano, other cleaning substances, pins, etc)
- Bitten yourself to the point that bleeding occurs or marks remain on the skin
- Tried to break your own bone(s)
- Ripped or torn skin
- Burned wrists, hands, arms, legs, torso or other areas of the body
- Rubbed glass into skin or stuck sharp objects such as needles, pins, and staples into or underneath the skin (not including tattooing, body piercing, or needles used for medication use)
- Banged or punched objects to the point of bruising or bleeding
- Punched or banged oneself to the point of bruising or bleeding
- Intentionally prevented wounds from healing
- Engaged in fighting or other aggressive activities with the intention of getting hurt

2. Are there any other ways that you have physically hurt or mutilated your body with the purpose of intentionally hurting yourself?

- Yes – Please specify: _____
- No

3. How true are the following statements about WHY you hurt yourself?

I hurt myself ...	**Strongly Disagree(1)**	**Somewhat Disagree (2)**	**Somewhat Agree (3)**	**Strongly Agree (4)**
...to feel something				
...because my friends hurt themselves				
...as a self-punishment				
...to get a rush or surge of energy				
...to deal with frustration				
...to cope with uncomfortable feelings (i.e. depression, anxiety)				
...in hopes that someone would notice that something is wrong or so that others will pay attention to me				
...so I do not hurt myself in other ways				
...because it feels good				
...to deal with anger				
...to get control over myself or my life				
...to shock or hurt someone				
...to avoid killing myself				
...because I get the urge and cannot stop it				
...to relieve stress or pressure				
...to change my emotional pain into something physical				
...because of my self-hatred				
...because I like the way it looks				
...as a way to practice suicide				
...as an attempt to die				

Other, please describe: ……

4. When was the last time you intentionally hurt yourself in one of the ways listed above?

- Less than a week ago
- Between 1 week and 1 month ago
- Between 1 and 3 months ago
- Between 3 and 5 months ago
- Between 6 months and 1 year ago
- Between 1 and 2 years ago
- More than 2 years ago

5. How likely are you to intentionally hurt yourself again?

- Very likely
- Somewhat likely
- Not sure
- Somewhat unlikely
- Very unlikely

6. Who knows that you intentionally hurt yourself? [Open-ended response]

Note: Adapted from The Cornell Research Program on Self-Injury and Recovery (www.crpsib.com) via Willamette Education Service District (WESD/4.15.19/NSSI). In our study, this guide was used qualitatively to explore experiences, with thematic analysis of responses. Any minor adaptations (e.g., labeling functions as A–W) were for data coding purposes. The full original PDF is available from the corresponding author upon request.