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Non-Suicidal Self-Injury and Suicidality in Borderline Personality Disorder (BPD): A Descriptive and Analytical Study

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Abstract **Original Research Article**

Background and objective: Borderline personality disorder (BPD) is characterised by emotional instability, identity disturbance, and marked impulsivity, which frequently manifest as self-injurious and suicidal behaviours. Non-suicidal self-injury (NSSI) constitutes one of the diagnostic criteria of BPD according to DSM-5-TR and represents a major risk factor for suicide attempts (SA). This study aimed to analyse, in a sample of patients with BPD, the associations between the presence of NSSI and the number of SAs, hospitalisations for SA, method used, psychiatric comorbidities, and family history of suicidal behaviour. ***Methods:*** A descriptive and analytical study was conducted on 65 patients diagnosed with BPD according to DSM-5-TR criteria. Patients were divided into two groups according to the presence (n = 47, 72.3%) or absence (n = 18, 27.7%) of NSSI. Comparisons were performed using the odds ratios (ORs). ***Results:*** Patients with NSSI showed significantly higher rates of SA history (89.4% vs 44.4%; $p < 0.001$), a greater number of SAs (median 3 vs 1; $p = 0.044$), an earlier age at first SA (16.8 vs 20.4; $p = 0.040$), a higher frequency of childhood trauma (89.4% vs 61.1%; $p = 0.009$), and severe depression (Beck grades 2–3: 89.4% vs 44.4%; $p < 0.001$). No significant difference was found for SA method, number of hospitalisations, addictive comorbidity, or family history of suicidal behaviour. ***Conclusion:*** Self-injury is strongly associated with more severe and earlier suicidality in BPD. It constitutes an essential clinical marker for risk stratification and for tailoring the intensity of therapeutic interventions.

Keywords: borderline personality disorder; self-injury; suicidality; suicide attempt; DSM-5-TR; childhood trauma; depression; risk factors.

1. INTRODUCTION

Borderline personality disorder (BPD) is one of the most complex psychiatric disorders, carrying a heavy burden of morbidity and mortality. Its prevalence is estimated at 1.6% to 5.9% in the general population, accounting for up to 20% of inpatients in psychiatric settings [1]. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR), BPD is defined by a pervasive pattern of instability in interpersonal relationships, self-image, and affect, combined with marked impulsivity, manifesting across various contexts since early adulthood [2].

Among the diagnostic criteria of BPD, self-mutilating and suicidal behaviours occupy a central position (criterion 5 of DSM-5-TR). Non-suicidal self-injury (NSSI)—defined as an intentional act of direct self-harm without intent to die—is reported in 70% to 80% of patients with BPD [3]. It frequently serves as a dysfunctional emotional regulation mechanism, aimed at relieving intense psychological tension or at feeling "alive" during dissociative states [4]. Although NSSI and suicide attempts (SA) are conceptually distinct, their frequent co-occurrence in BPD raises the question of their interrelationship: is NSSI an independent risk factor for SA?

Recent meta-analyses confirm that the presence of NSSI multiplies the risk of subsequent SA by two to six in the general population, and this risk appears even higher in BPD [5]. Nevertheless, the underlying mechanisms remain debated: do they represent a single psychopathological trajectory, or behaviours sharing common vulnerability factors (emotional dysregulation, early trauma, impulsivity) without a direct causal link?

In the Moroccan clinical context, to our knowledge no study has specifically explored the relationship between NSSI and suicidality in patients with BPD. The objectives of the present study were: (1) to describe the socioeconomic and clinical characteristics of the sample; (2) to compare patients with BPD with and

without NSSI on dimensions of suicidality (SA history, number of SAs, hospitalisations for SA, method used, context of the suicidal act); (3) to explore the associations between NSSI, psychiatric comorbidities, childhood trauma, and family history of suicidal behaviour.

2. Objectives

2.1 Primary Objective

To evaluate the association between the presence of non-suicidal self-injury and the severity of suicidality (SA history, number of SAs, hospitalisations for SA) in patients with borderline personality disorder.

2.2 Secondary Objectives

(1) To compare the method and context of SAs between the two groups (with and without self-injury); (2) to analyse the association between NSSI and psychiatric comorbidities (depressive disorder, bipolar disorder, substance use disorders); (3) to explore the relationship between NSSI, family history of SA, and childhood trauma; (4) to identify the variables most strongly associated with the presence of NSSI in BPD.

3. MATERIALS AND METHODS

3.1 Study Design and Population

This was a descriptive, analytical, cross-sectional study conducted in an adult psychiatry inpatient unit at Ar-razi university psychiatric hospital Salé, over the period 2022–2024. The target population consisted of hospitalised patients with a diagnosis of BPD established according to DSM-5-TR criteria. The final sample comprised 65 patients.

3.2 Inclusion and Exclusion Criteria

Inclusion criteria:

age between 18 and 60 years, diagnosis of BPD according to DSM-5-TR. Exclusion criteria: severe cognitive impairment, acute psychotic state at the time of interview, and missing data exceeding 20% of variables of interest.

3.3 Variables Collected

Data were collected via a structured questionnaire administered by a clinician, including: (1) socioeconomic variables: sex, age, marital status, educational level, occupation, area of residence, and socioeconomic status; (2) grouping variable: presence or absence of non-suicidal self-injury; (3) suicidality variables: SA history (yes/no), number of SAs, number of hospitalisations for SA, method used, context (depressive vs impulsive), and age at first SA; (4) comorbidities: psychiatric diagnosis according to DSM-5-TR, substance use disorder, Beck and Pierce suicide intent scale (SIS), medical history, family psychiatric history, and family history of SA; (5) childhood trauma: presence, type, number, and age at occurrence.

3.4 Statistical Analysis

Descriptive statistics included frequencies and percentages for categorical variables, and means ± standard deviations or medians with interquartile ranges [IQR] for continuous variables. Between-group comparisons used Pearson's chi-square test (categorical variables) and the Mann-Whitney U test (non-parametric continuous variables). Crude odds ratios (OR) with 95% confidence intervals (95% CI) were calculated for significant variables. The significance threshold was set at $p < 0.05$. Analyses were performed using Python 3.10.

4. RESULTS

4.1 General Characteristics and Group Distribution

The sample comprised 65 patients with BPD: 47 (72.3%) presented self-injury (NSSI+ group) and 18 (27.7%) did not report self-injury (NSSI− group). Female predominance was observed overall (73.8%), but was significantly more pronounced in the NSSI+ group (85.1% vs 44.4%; $p < 0.001$). The majority of patients were young (86.2% under 30 years of age) and single (83.1%). The two groups were comparable with respect to age, socioeconomic status, and area of residence (Table 1).

Table 1. Socioeconomic characteristics according to the presence of self-injury (N = 65)

Variable	Self-injury + (n=47)	Self-injury − (n=18)	p
Sex			
Female	40 (85.1%)	8 (44.4%)	< 0.001
Male	7 (14.9%)	10 (55.6%)	
Age group			
< 20 years	18 (38.3%)	5 (27.8%)	NS
20–30 years	24 (51.1%)	9 (50.0%)	
31–40 years	3 (6.4%)	3 (16.7%)	
41–50 years	2 (4.3%)	1 (5.6%)	
Marital status			
Single	38 (80.9%)	16 (88.9%)	NS
Married	4 (8.5%)	0 (0.0%)	
Divorced	5 (10.6%)	2 (11.1%)	
Socioeconomic level			
Low	12 (25.5%)	3 (16.7%)	NS
Middle	29 (61.7%)	13 (72.2%)	
High	6 (12.8%)	2 (11.1%)	

Variable	Self-injury + (n=47)	Self-injury − (n=18)	p
Area of residence			
Urban	46 (97.9%)	17 (94.4%)	NS
Rural	1 (2.1%)	1 (5.6%)	

4.2 Association Between Self-Injury and Characteristics of Suicide Attempts

The analytical findings are summarised in Table 2. NSSI+ patients had a significantly higher proportion of SA history (89.4% vs 44.4%; $p < 0.001$). The median number of SAs was significantly higher in the NSSI+ group (median: 3 [IQR 1–5] vs 1 [IQR 1–2]; $p = 0.044$). The mean age at first SA was significantly earlier in the NSSI+ group (16.8 ± 4.2 years vs 20.4 ± 5.3 years; $p = 0.040$), with a minimum of 9 years in this group compared with 12 years in the NSSI− group.

In contrast, the number of hospitalisations for SA (median: 2 vs 1; $p = 0.186$) and use of highly lethal methods (hanging, defenestration, jumping, toxic ingestion) did not differ significantly between the two groups (38.1% vs 25.0%; $p = 0.479$). The most frequent SA method in both groups was drug overdose (42.9% in NSSI+ vs 37.5% in NSSI−), with no significant difference. An impulsive context tended to be more common in the NSSI+ group (33.3% vs 12.5%), although this did not reach statistical significance.

Table 2: Characteristics of suicide attempts according to the presence of self-injury

Variable	Self-injury + (n=47)	Self-injury − (n=18)	p
History of SA, n (%)	42 (89.4%)	8 (44.4%)	< 0.001
Median number of SA (IQR)	3 [1–5]	1 [1–2]	0.044
Mean age at first SA (years)	16.8 ± 4.2	20.4 ± 5.3	0.040
Median hospitalisations for SA	2 [1–3]	1 [1–1]	NS (0.186)
SA method			
Drug overdose	18 (42.9%)	3 (37.5%)	NS
Phlebotomy / cutting	8 (19.0%)	3 (37.5%)	
Hanging	5 (11.9%)	1 (12.5%)	
Defenestration	5 (11.9%)	1 (12.5%)	
Jumping from height	2 (4.8%)	0 (0.0%)	
Ingestion of toxic substances	2 (4.8%)	0 (0.0%)	
Other (drowning, train...)	2 (4.8%)	0 (0.0%)	
Context of the act			
Depressive	28 (66.7%)	7 (87.5%)	NS
Impulsive	14 (33.3%)	1 (12.5%)	
Highly lethal methods*			
Yes	16 (38.1%)	2 (25.0%)	NS
No	26 (61.9%)	6 (75.0%)	

** Hanging, defenestration, jumping from height, ingestion of toxic substances, drowning.*

4.3 Psychiatric Comorbidities, Trauma, and Family History

Depressive disorder was the primary comorbidity in both groups (85.1% in NSSI+ vs 72.2% in NSSI−), with no significant difference. Addictive comorbidity (substance use disorder) was present in 78.7% of NSSI+ patients and 77.8% of NSSI− patients, with no statistical difference ($p = 0.934$). Family history of SA (4.3% vs 5.6%) and psychiatric disorders (36.2% vs 50.0%) did not differ significantly between groups.

In contrast, childhood trauma was significantly more frequent in the NSSI+ group (89.4% vs 61.1%; $p = 0.009$). Severe Beck score (grades 2–3) was also significantly more common in the NSSI+ group (89.4% vs 44.4%; $p < 0.001$; OR = 10.50).

Table 3: Psychiatric comorbidities, childhood trauma, and family history according to the presence of self-injury

Variable	Self-injury + (n=47)	Self-injury − (n=18)	p
Primary psychiatric comorbidity			
Depressive disorder	40 (85.1%)	13 (72.2%)	NS
Bipolar disorder	5 (10.6%)	2 (11.1%)	
Schizoaffective disorder	1 (2.1%)	0 (0.0%)	
Anxiety disorder	0 (0.0%)	1 (5.6%)	
Schizophrenia	0 (0.0%)	1 (5.6%)	
Substance use disorder	37 (78.7%)	14 (77.8%)	NS
Family history of psychiatric disorder	17 (36.2%)	9 (50.0%)	NS
Family history of SA	2 (4.3%)	1 (5.6%)	NS
Childhood trauma	42 (89.4%)	11 (61.1%)	0.009
Severe Beck score (grades 2–3)	42 (89.4%)	8 (44.4%)	< 0.001

4.4 Summary of Associations: Crude Odds Ratios

Table 4 summarises the crude odds ratios for the main variables analysed. Factors significantly associated with the presence of NSSI in BPD were: SA history (OR = 11.25), severe Beck score (OR = 10.50), female sex (OR = 7.14), childhood trauma (OR = 5.45), and high number of SAs (OR = 3.87). Substance use disorder, family history of SA, and use of highly lethal methods were not significantly associated with NSSI.

Table 4: Crude odds ratios of variables associated with the presence of self-injury (NSSI+)

Variable	Crude OR (95% CI)	p
History of SA	11.25 (2.90 – 43.58)	< 0.001
Number of SA (median ≥ 3 vs < 3)	3.87 (1.04 – 14.39)	0.044
Early age at first SA (< 18 years)	3.21 (0.88 – 11.70)	0.077
Childhood trauma	5.45 (1.53 – 19.40)	0.009
Severe Beck score	10.50 (2.71 – 40.65)	< 0.001
Female sex	7.14 (2.14 – 23.82)	< 0.001
Substance use disorder	1.05 (0.30 – 3.68)	NS
Family history of SA	0.76 (0.06 – 9.04)	NS
Family psychiatric history	0.56 (0.18 – 1.73)	NS
Highly lethal methods	1.85 (0.36 – 9.60)	NS

NS: not significant. 95% CI: 95% confidence interval. ORs calculated by univariate logistic regression.

5. DISCUSSION

The prevalence of NSSI in our sample (72.3%) is consistent with international literature, which reports rates ranging from 65% to 80% among patients with BPD [3,6]. This frequency underscores the near-systematic nature of NSSI in BPD and confirms its value as a central clinical marker of this disorder. The markedly greater female predominance in the NSSI+ group (85.1%) is also consistent with epidemiological data: women more frequently use NSSI as an emotional regulation mechanism, whereas men tend to express distress through externalising behaviours (aggression, addictive conduct) [7].

The most salient finding of this study is the strong association between NSSI and SA history (OR = 11.25; p < 0.001). This result aligns with a growing body of research that conceptually distinguishes NSSI from SA while documenting their frequent co-occurrence. According to Nock's model (2010), NSSI and SA share common vulnerability factors (emotional dysregulation, impulsivity, early trauma) but differ in intentionality: NSSI aims to regulate a painful emotion, whereas SA seeks to end one's life [8]. In BPD, this distinction is particularly complex owing to the dissociative states frequently associated with self-injurious acts.

The higher median number of SAs in the NSSI+ group (3 vs 1; p = 0.044) suggests a more active and repetitive suicidal trajectory in these patients. This finding is consistent with the conclusions of Bracken-Minor and McDevitt-Murphy (2014), who demonstrated that BPD patients with NSSI have a more burdened SA history, independently of other risk factors [9]. Suicidal recurrence in BPD is indeed one of the major causes of suicide mortality, estimated at 8–10% over the lifetime [10].

The earlier age at first SA in the NSSI+ group (16.8 vs 20.4 years; p = 0.040) is particularly concerning and highlights the need for early detection of self-injurious behaviours during adolescence. The literature shows that early age at first SA is an independent predictor of long-term suicide mortality [11].

Contrary to our initial hypothesis, no significant difference was found regarding the method used for SAs between the two groups (p = NS). Drug overdose remained the most common method in both groups, in line with international data reporting a predominance of pharmacological methods in female and young populations. The absence of a significant difference for highly lethal methods (38.1% vs 25.0%; p = 0.479) suggests that NSSI does not determine the lethality of the suicidal act. This finding is discordant with certain studies suggesting that NSSI+ patients use more violent methods [12], and may be explained by the prevailing Moroccan cultural context in which access to firearms is limited, directing individuals towards pharmacological or cutting methods.

The prevalence of childhood trauma was significantly higher in the NSSI+ group (89.4% vs 61.1%; OR = 5.45; p = 0.009). This result confirms the central role of early adverse experiences in the genesis of NSSI and suicidality in BPD. According to Linehan's biosocial model (1993), BPD results from the interaction between an innate biological emotional vulnerability and an invalidating environment, often characterised by traumatic experiences [13]. Sexual abuse, identified in 39.6% of the overall sample, is particularly associated with NSSI in the literature, through the dissociation, bodily shame, and emotional regulation difficulties it generates [14].

The strong association between NSSI and severe Beck score (p < 0.001) underscores the intensity

of depressive suffering in the NSSI+ group. In BPD, depression is frequently atypical, presenting as severe dysphoria, and constitutes the primary driver of self-injurious behaviours. These data support the systematic assessment of depressive severity in any BPD patient presenting with NSSI.

Addictive comorbidity was highly frequent in both groups (approximately 78%) and did not differentiate NSSI+ from NSSI− patients. This finding suggests that substance use disorders represent a transnosographic vulnerability factor in BPD, not specific to NSSI. Likewise, family history of SA (4.3% vs 5.6%) and psychiatric disorders (36.2% vs 50.0%) did not differ between groups. The absence of an association between family SA history and NSSI is consistent with literature suggesting that familial transmission of suicidal risk operates primarily through psychiatric disorders rather than through a specific direct familial effect [15].

The findings of this study have several major clinical implications. First, NSSI should be systematically assessed and documented in every patient with BPD, as it constitutes a robust marker of active and repetitive suicidality. Second, BPD patients with NSSI should receive intensive management including a specific psychotherapy: Linehan's Dialectical Behaviour Therapy (DBT) remains the current gold standard (evidence level A) for reducing NSSI and suicidality in BPD [16]. Third, detection and treatment of childhood trauma should be integrated into the management plan. Fourth, the early age of SAs in the NSSI+ group argues for intervention from adolescence onwards, within child and adolescent psychiatry services.

The main limitations of this study are: the modest sample size (n = 65), limiting statistical power, particularly for multivariate analyses; the cross-sectional design, which precludes establishing temporal causal relationships; the single-centre design, which may introduce selection bias; the retrospective collection of data on childhood trauma, susceptible to recall bias; and the absence of a non-BPD control group.

6. CONCLUSION

This descriptive and analytical study of 65 patients with BPD demonstrates a strong and clinically significant association between non-suicidal self-injury and a more severe, earlier, and more repetitive suicidality. BPD patients with NSSI present an eleven-fold greater risk of having a history of SA, a higher number of attempts, and a first SA occurring nearly four years earlier than patients without NSSI. Childhood trauma—particularly sexual abuse—and depressive severity are the other factors significantly associated with NSSI in our sample.

These results confirm that NSSI cannot be reduced to a "minor" or suicidality-unrelated behaviour: on the contrary, it is both a marker and an amplifier of suicidal risk. It calls for an integrated clinical response, including DBT, trauma-focused management, and close follow-up to prevent suicidal recurrence. Prospective multicentre studies are needed to confirm these associations and to develop predictive tools adapted to the Moroccan clinical population.

REFERENCES

1. Leichsenring F, Leibing E, Kruse J, *et al.,*Borderline personality disorder. Lancet. 2011;377(9759):74–84.
2. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR). Washington, DC: APA; 2022.
3. Zanarini MC, Frankenburg FR, Reich DB, *et al.,* Time to attainment of recovery from borderline personality disorder and stability of recovery: a 10-year prospective follow-up study. Am J Psychiatry. 2010;167(6):663–667.
4. Linehan MM, Comtois KA, Brown MZ, *et al.,* DBT skills training manual. New York: Guilford Press; 2015.
5. Klonsky ED, Victor SE, Saffer BY. Nonsuicidal self-injury: what we know, and what we need to know. Can J Psychiatry. 2014;59(11):565–568.
6. Black DW, Blum N, Pfohl B, Hale N. Suicidal behavior in borderline personality disorder: prevalence, risk factors, prediction, and prevention. J Personal Disord. 2004;18(3):226–239.
7. Bjärehed J, Lundh LG. Deliberate self-harm in 14-year-old adolescents: how frequent is it, and how is it associated with psychopathology, relationship variables, and styles of emotional regulation? Cogn Behav Ther. 2008;37(1):26–37.
8. Nock MK. Self-injury. Annu Rev Clin Psychol. 2010; 6:339–363.
9. Bracken-Minor KL, McDevitt-Murphy ME. Differences in features of non-suicidal self-injury according to borderline personality disorder screening status. Arch Suicide Res. 2014;18(1):88–103.
10. Paris J. Suicidality in borderline personality disorder. Medicina (Kaunas). 2019;55(6):223.
11. Hawton K, Zahl D, Weatherall R. Suicide following deliberate self-harm: long-term follow-up of patients who presented to a general hospital. Br J Psychiatry. 2003; 182:537–542.
12. Stanley B, Winchel R, Molcho A, *et al.,* Comparison of self-mutilation in patients with borderline personality disorder and depressed patients with psychosis. Am J Psychiatry. 1992;149(11):1537–1540.
13. Linehan MM. Cognitive-behavioral treatment of borderline personality disorder. New York: Guilford Press; 1993.

14. Van der Kolk BA, Perry JC, Herman JL. Childhood origins of self-destructive behavior. Am J Psychiatry. 1991;148(12):1665–1671.
15. McGuffin P, Marusic A, Farmer A. What lies on the other side of the genetic relationship between suicidal behaviour and depressive illness? Psychol Med. 2001;31(7):1–8.
16. Panos PT, Jackson JW, Hasan O, Panos A. Meta-analysis and systematic review assessing the efficacy of dialectical behavior therapy (DBT). Res Soc Work Pract. 2014;24(2):213–223.