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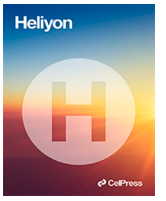

Research article

Psychiatric disorder and life-event in self harm: A cross-sectional study among clinical population in Bangladesh

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ABSTRACT

Background: Mental illness is an important risk factor for self-harm behavior. However, the association between self-harm behavior and psychiatric disorders has been poorly studied in Bangladesh.
Aims: To determine the prevalence of psychiatric disorders and life-events among patients with a self harm behavior.
Methods: This cross-sectional study was conducted between March 2022 and November 2023. We collected data from 100 patients with self harms from two tertiary care hospital of Dhaka by semi-structured interviews.
Results: Of the 100 cases, 72 were females, 63 % came from semi-urban background. Hanging was the commonest method (31 %) followed cutting and piercing instrument (22 %), and ingestion of Benzodiazepines (20 %). Among the cases, 71 % had at least one psychiatric disorder (Axis I 49 % and Axis II 35 %). In case of life events, 52 % had life-events within immediate 48 h, 15 % in the last one month and 17 % in the last year. Family conflict (30 %) was the commonest risk factor and increased argument with resident family members (38 %) was the commonest life event.
Conclusions: This study revealed a similar proportion of psychiatric disorders revealed in previous studies among suicide attempts. It also unveiled life events in suicide attempts indicating a potential role of life events in suicide attempts in Bangladesh. However, a prudential interpretation is warranted while considering the study results as it was conducted among clinical samples.

1. Introduction

Self-harm and suicide are preventable global crises. Every year more than 700,000 people die by suicide in the world [1]. Among them, more than two-thirds of suicides happen in low-and middle-income countries (LMICs). Self-harm events are more than 20 times common than suicides [2,3] and past self-harm attempt is the most important risk factor for suicide among the general population [4]. Due to its complex nature, there is still no specific factor that can attributed to a suicide attempt. Every self-harm attempt is an outcome of psychological pain derived from a complex interaction among several risk factors like the presence of psychiatric disorders, immediate life events, personality characteristics, and social issues [3–5]. Available evidence indicates that the prevention of self-harm is an important area of suicide prevention.

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Bangladesh is a lower-middle-income country in South Asia with a huge (about 170 million) population and poor-quality suicide data. The country lacks a self-harm surveillance system and a nationwide study of the prevalence of self-harm behavior. Therefore, available rates of suicide have been challenged due its wide variations among different reports and studies [6]. Risk factors and interactions among different risk factors for self-harm behavior have been poorly studied in Bangladesh. Previous studies identified a prominent role of social factors and life-events in suicide [7]. Several previous studies assessed psychiatric morbidity in self-harm behaviors in Bangladesh (see Ref. [8–13]). The evidence revealed the rate of psychiatric disorders was 45–65 % in self-harm with predominance in depressive disorders and personality disorders [8]. However, the proportion of life events in self-harm behavior has not been attempted. On this background, we aimed to systematically assess the psychiatric morbidity and proportion of life events among patients with self-harm irrespective of intent.

2. Method

2.1. Study design

This cross-sectional study was conducted between March 2022 and November 2023. Data were collected by face to face semi-structured interviews from 100 conveniently selected patients with self harm attempts. Interviews were performed by psychiatrists. A usual interview took 1–1.5 h.

2.2. Cases

We collected the cases from patients attended for clinical consultation after a self harm attempt irrespective of intent within one month. We collected the cases conveniently from both inpatient and outpatient services from the *Enam Medical College and Hospital* (EMCH), and the *Holy Family Red Crescent Medical College and Hospital* (HFRCMCH), Dhaka. These are two private medical colleges in Bangladesh. HFRCMCH is located at the center of the Dhaka city whilst EMCH is about 20 km away from the city. Among the 100 respondents, 67 were collected from EMCH and the 33 were collected from HFRCMCH. We found a rejection rate of 37 % for this study.

Table 1
Demography of respondents.

		Psychiatric disorder		Life events in 48 h	
Variable	**Total n**	**Present n(%)**	Absent **n(%)**	**Present n(%)**	**Absent n(%)**
Sex					
Male	28	20(71.4)	16(57.1)	16(57.1)	12(42.9)
Female	72	51(70.8)	36(50.0)	36(50.0)	36(50.0)
Age					
≤19 years	45	27(60.0)	26(57.8)	26(57.8)	19(42.2)
20–39 years	50	41(82.0)	24(48.0)	24(48.0)	26(52.0)
40+ years	5	3(60.0)	2(40.0)	2(40.0)	3(60.0)
Educational attainment					
Illiterate/Primary	19	10(52.6)	7(36.8)	7(36.8)	12(63.2)
Secondary/Higher secondary	70	50(71.4)	42(60.0)	42(60.0)	28(40.0)
Bachelor's degree	11	11(100.0)	3(27.3)	3(27.3)	8(72.7)
Marital status					
Ever married	44	35(79.6)	25(56.8)	25(56.8)	19(43.2)
Unmarried	56	36(64.3)	27(48.2)	27(48.2)	29(51.8)
Religion					
Muslim	88	64(72.7)	12(60.0)	46(52.3)	42(47.7)
Hindu/Christian	12	7(58.3)	12(70.6)	6(50.0)	6(50.0)
Occupation					
Employed	12	7(58.3)	46(52.3)	5(41.7)	7(58.3)
Unemployed/Household duties	39	33(84.6)	6(50.0)	21(53.9)	18(46.1)
Student	49	31(63.3)		26(53.1)	23(46.9)
Area of residence					
Rural	5	2(40.0)	21(53.9)	4(80.0)	1(20.0)
Semi-urban	63	44(69.9)	26(53.1)	41(65.1)	22(34.9)
Urban	32	25(78.1)		7(21.9)	25(78.1)
Accommodation					
Owned/Rented house	47	34(72.3)	20(64.5)	25(53.2)	22(46.8)
Parental house	47	32(68.1)	15(40.5)	24(51.1)	23(48.9)
Hostel or other institution	6	5(83.3)		3(50.0)	3(50.0)
Living with					
Parents and siblings	62	42(67.7)	41(65.1)	33(53.2)	29(46.8)
Spouse and children	28	20(71.4)	7(21.9)	14(50.0)	14(50.0)
Alone/Friends/Other	10	9(90.0)		5(50.0)	5(50.0)

2.3. Instruments

We used a modified instrument from Dhaka Suicide Study, a psychological autopsy study [14]. The instrument contains several parts such as-items for demographic variables, tool for Axis I psychiatric diagnosis, tool for the diagnosis of personality disorders (Axis II disorders), tool for assessing life-events [14]. We used the *Structured Clinical Interview for DSM-IV Axis-I Disorders (SCID-I)* [15] to determine the Axis I psychiatric disorder and the *Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II)* to assess personality disorders [16]. We identified the life-events according to the *Paykel's Life Events Schedule* [17]. We determined the risk-factors by interviewing the persons presented with self-harm.

2.4. Statistical analysis

Data analysis was performed using Stata version 17.0 (StataCorp, Texas, USA). Frequencies and percentages were used to describe the socio-demographic characteristics, psychiatric disorders, and life events of the study sample. We used the chi-square test of independence to determine bivariate associations between categorical independent variables. If any of the categorical variables showed expected frequency less than 5 observations in any of the cells, Fisher's exact test was performed. All statistics were tested using a two-sided test, and a p-value of <0.05 was considered statistically significant.

2.5. Ethics statement

This study was approved by the ethical review committee of *Enam Medical College* on March 02, 2022 (EMC/ERC/2022/03-1). We collected informed written consent from the patients and their legal guardians in case of adolescents before conducting the interview for data collection.

3. Results

3.1. Demographic characteristics

We found the mean (±SD) age of the respondents was 23.1 (±7.7) years with a range between 14 and 50 years. Among the 100 respondents, 28 were males, 45 % were adolescents, 63 % came from semi-urban background, 44 % were ever married, and 88 % were Muslims (Table 1). Among the cases, 54 % had previous self-harm attempts.

Table 2
Methods, motives and risk factors for self-harm.

Variable	Category	n	%
Methods	Benzodiazepines	20	20
	cutting and piercing	22	22
	Hanging	31	31
	Jumping from high place	3	3
	Poisoning by corrosive agents	3	3
	Poisoning by Organo Phosphorus Compounds	8	8
	Poisoning by psychotropic agents	12	12
	Others	1	1
Motives	Demand fulfillment	1	1
	Impulsive act	17	17
	Anger Control	4	4
	To control others behvaior	5	5
	to die	49	49
	To get out of the situation	12	12
	To put pressure on family	12	12
Risk factors	Early marriage	1	1
	Exam study job issues	8	8
	Extramarital affair	6	6
	Family conflict	30	30
	Financial	2	2
	Marital problems	12	12
	Premarital affair	6	6
	Problems with boy friend or girl friend	9	9
	Psychiatric Illness	11	11
	Social Bullying	1	1
	Unfullfillment of demand	12	12
	Other	2	2

3.2. Methods, motives and risk factors of attempts

The revealed methods of self-harm are mentioned in Table 2. The major methods were hanging (31 %), Benzodiazepines (20 %), cutting and piercing (22 %), and poisoning by different agents (23 %). Some cases used more than one methods or initially took sedatives and then used the primary methods. Of the cases, 31 % used Benzodiazepines; among which Clonazepam (27 %) was the most commonly used drug followed by Bromazepam (2) and Diazepam (2). Dying (49 %) was the major motive of self-harm attempts, followed by out of impulse (17 %), to get out of the situation (12 %), and to put pressure on family (12 %) (Table 2). Risk factors were mention as family conflict (30 %), marital problems (12 %), unfullfillment of demand (12 %), psychiatric illness (11 %), problems with boy friend or girl friend (9 %), failure in exam, study and job (8 %), extramarital affair (6 %), premarital affair (6 %), early marriage (1 %), financial (2 %), others (2 %), and social bullying (1 %) (Table 2).

3.3. Psychiatric disorders

A total of 71 % cases had at least one psychiatric disorder, 49 % had Axis I disorder, 35 % had personality disorder, 41 % had psychiatric disorder, and 17 % had substance related disorder (SRD) (Table 3). There were comorbidities among the patients such as 5 % of them had mental disorder, SRD and personality disorder, 13 % both Axis I and Axis II, 9 % had psychiatric disorder and SRD, and 8 % had personality disorder and SRD. Among the psychiatric disorders, the most common disorder was major depressive disorder (MDD, 19 %), followed by adjustment disorder (11 %), bipolar 1 disorder (3 %), psychosis (2 %), oppositional defiant disorder (ODD, 2 %), game addiction 1 %, gender dysphoria 1 %, intellectual disability 1 %, and obsessive compulsive disorder (OCD) 1 %. Among the personality disorders, borderline personality disorder (BPD) was the most common diagnosis (30 %) followed by anti-social personality disorder (2 %), anxious dependent personality disorder (1 %), narcissistic personality disorder (1 %), and schizoid personality disorder 1 %. Psychiatric disorders were significantly higher among the cases with relationship problems with parents ($\chi 2 = 5.66$; $p = 0.017$), and among adults then adolescents ($\chi 2 = 4.81$; $p = 0.028$).

3.4. Life events

Among the cases, 84 % had life events. Among them, 52 % had life events within 48 h, 15 % had in last one month and 17 % had life

Table 3
Psychiatric disorders and life-events in self-harm.

Variable	Category	n	%
Psychiatric Disorders	Mental disorder	41	41
	Substance Related Disorder	17	17
	Axis I disorder	49	49
	Personality disorder	35	35
	At least 1 psychiatric disorder	71	71
	Both Axis I and II disorder	13	13
Life event in 48 h	Academic failure	3	3
	Begin extramarital affair	1	1
	Business failure	1	1
	Child marriage against respondents wishes	1	1
	Divorce	1	1
	Increased argument with resident family members	29	29
	Increased argument with spouse	8	8
	Increased arguments with fiance	3	3
	Major personal physical illness	1	1
	Marital Separation	1	1
	Spouse unfaithful	3	3
Life event in last month	Academic failure	2	2
	Begin extramarital affair	1	1
	Increase argument with non resident family members	1	1
	Increased argument with resident family members	4	4
	Increased arguments with fiance	2	2
	Major financial difficulties	1	1
	Marital Separation	1	1
	Spouse Unfaithful	1	1
	Unemployment for 1 month	2	2
Life event in last year	Academic failure	6	6
	Death of Close family member	2	2
‘	Increased argument with resident family members	3	3
	Increased argument with spouse	1	1
	Increased arguments with fiance	1	1
	Major financial difficulties	1	1
	Major personal physical illness	1	1
	Marital Separation	1	1
	Spouse unfaithful	1	1

events in the last year (Table 3). Academic failure (11 %), begin extramarital affair (2 %), business failure (1 %), child marriage against respondents wishes (1 %), death of close family member (2 %), divorce (1 %), increased argument with non resident family members (1 %), increased argument with resident family members (38 %), increased argument with spouse (9 %), increased arguments with fiance (6 %), major financial difficulties (2 %), major personal physical illness (2 %), marital separation (4 %), spouse unfaithful (7 %), unemployment for 1 month (2 %). Life-events were significantly higher among cases with personality disorder ($\chi 2 = 8.14$; $p = 0.004$) whiles significantly lower among cases with Axis I psychiatric disorder ($\chi 2 = 4.81$; $p = 0.028$).

4. Discussion

4.1. The major findings of the study

The current study revealed that 71 % of the self-harm patients had at least one psychiatric disorder, 49 % had Axis I disorder, 35 % had personality disorder, and 17 % had SRD and 89 % had life-events (52 % within 48 h, 15 % in the last one month and 19 % in the last year). Among the psychiatric disorders, MDD was found in 19 % of cases and among the personality disorders BPD was found in 30 % of the cases. For life-events, 47 % of the events related to argument with family members and spouse. Along with hanging, cutting and piercing instrument, Clonazepam was an important method. Family and marital conflict consisted 42 % and premarital and extra-marital relationship consisted 21 % of risk actors. The rate of psychiatric disorders are similar to previous studies conducted in Bangladesh [8–13,18]. Islam and his colleagues assessed 120 patients (9–40 years of age) at Comilla Medical College in 2017 and found 65 % of patients had psychiatric disorders where affective disorders were found in 15.4 % and BPD was found in 25.6 % patients [9]. Roy and his colleagues assessed 101 patients (11 years and above) at Rangpur Medical College in 2017 and found the same prevalence where MDD was found in 18 % and personality disorder was found in 7 % [12]. A study with 44 patients (14–65 years) admitted at intensive care unit after a suicide attempt in 2008 in Dhaka found 77.3 % of patients had psychiatric illness [10]. Uddin and his colleagues studied 51 clinical sample and psychiatric disorder was found in 45 % of cases where MDD was 23.5 % and BPD was 12 % [11]. Our study followed robust methods of diagnosing the psychiatric disorders as we used structured instruments and face to face semi structured interview was conducted by psychiatrists. The rate of psychiatric disorder is higher than the rate revealed in a systematic review (55 %, 95 % CI 43–67 %) [19]. Another study from assessing the self-harm registry found the rate 58.5 % [20]. On the other hand the rate is lower than another study (90 %, [21]) and a systematic review that revealed the prevalence 83.9 % (95 % CI 74.7–91.3 %) in adults and 81.2 % (95 % CI 60.9–95.5 %) in of adolescents [22]. These differences could be due the income background of the country as the prevalence of psychiatric disorders is lower in low and middle income countries than high income countries [19].

Our study revealed life-events and risk factors closely linked to the family and social events. Previous multiple studies revealed similar risk factors those are closely linked to family members, spouses, and partners (see Ref. [6,7,11–14].

4.2. Implications

The findings indicate the necessity of clinical care for self-harm in Bangladesh as more than 7 in ten persons had at least one psychiatric disorder. However, being suicide attempt a criminal offense, care-seeking behavior is covert, neglected, and avoided. Additionally, the available clinical services is grossly inadequate [8]. Creating awareness among general population, psychiatrists, and policy makers is warranted to have policy level implications. Decriminalization of suicide attempt has been recommended and should be prioritized.

The current study indicates family and emotional relationship as a major domain of self-harm prevention in Bangladesh. Previous studies also indicate the areas and recommended focusing on family centric prevention strategies like creasing awareness among family members, providing gate-keeper training to the family members, healthy communication and availability of marital therapy, and initiatives to ensure continuity of care for mental illness [23].

4.3. Ways forward

We recommend further studies to understand the pathways between family related life events and self-harm attempts as well as to utilize the family capital to prevent self-harm in Bangladesh. Additional studies with case-control would help to identify the risk factors precisely. A nationwide community based study would help to understand the burden of self-harm in the country.

4.4. Strengths and limitations

To authors' best knowledge, this is the first attempt that systematically assessed proportions of life-events in self-harm. However, several limitations should be considered while considering the study results. We did not assess the intent of suicide with any structured instrument that may raise concerns of recall biases. The cases were collected from clinical sample (patients attended for clinical services) that may be a reason of over-representation of psychiatric disorders. Samples from the community may reflect different scenario. The samples were chosen conveniently which can be a source of biases. The current study assessed point prevalence of psychiatric disorders that may under represent the proportion when compared to the lifetime rates.

5. Conclusion

The current study determined a similar rate of psychiatric morbidity and life-events revealed in other studies among suicide attempts in Bangladesh. Therefore, it indicates likewise the suicide, there may have potential roles of life events in suicide attempts in the country. From the preventive point of view, primarily the results indicate the importance of dedicated clinical services for self-harm in the country. However, a cautious interpretation is warranted while considering the study results as it was conducted among clinical samples and urban settings. Further studies with case-control design may help assess the role of individual factors in suicide attempts.

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Data availability

The data that support the findings of this study are available on request from the corresponding author, [SMYA].

Ethics approval

This study was approved by the ethical review committee of *Enam Medical College* on March 02, 2022 (EMC/ERC/2022/03-1).

Informed consent

We collected informed written consent from the patients and their legal guardians in case of adolescents before conducting the interview for data collection.

CRediT authorship contribution statement

S. M. Yasir Arafat: Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Farzana Rabin Shormi:** Writing – review & editing, Writing – original draft, Data curation. **Md. Golam Kibria:** Writing – review & editing, Writing – original draft, Formal analysis.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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