

## Personality disorders in adult population with deliberate self-harm

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### Abstract

**Background:** Personality disorders (PD) are common among patients with deliberate self-harm (DSH). They are linked as unique contributors to suicide related outcomes and reflect important individual differences in predicting DSH.

**Objectives:** To evaluate PD in adult population with DSH and in apparently healthy persons.

**Methods:** This was a cross-sectional, comparative study carried out in Sylhet MAG Osmani Medical College Hospital from 1st September 2016 to 31st August 2018. By purposive sampling technique, 69 patients with history of DSH, aged 18 years and above were enrolled as cases and 69 apparently healthy subjects of similar age, having no history of DSH and no biological relationship with DSH patients were enrolled as controls. Socio-demographic data were collected in a predesigned semi-structured questionnaire and Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II) was applied for screening of PD. Data analysis was performed using SPSS version 22.

**Results:** Mean age of the cases were 21.9 (SD, 4.6) years and controls were 23.0 (SD, 4.2) years. Prevalence of PD was significantly higher in DSH group (37.7%) compared to healthy control group (11.6%); ( $p=0.001$ ). Borderline personality disorder (BPD) was the most frequent type of PD in DSH group [13 (18.8%) vs. 0 (0.0%),  $p=0.001$ ].

**Conclusions:** This study revealed significantly higher frequency of PD among patients with DSH and BPD was the most frequent type of PD. Findings of this study will encourage health professionals to develop adequate psychiatric service for PD patients with DSH to prevent repetition of self-injurious behavior and suicide.

**Declaration of interest:** None

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**Keywords:** Personality disorders; deliberate self-harm; borderline personality disorder; adult population

### Introduction

Deliberate self-harm (DSH) is a major public health problem and one of the important risk factors of committing suicide. Various terms like 'attempted suicide', 'deliberate self-poisoning', 'deliberate self-injury' and 'parasuicide' have been used interchangeably to define subjects who present with self-harm. The most accepted term in recent times to describe such behavior is 'Deliberate Self-Harm', which is defined as self-poisoning or injury, irrespective of the purpose of the act.<sup>1</sup> Approximately 4% adults in the general popu-

lation report a history of DSH and up to 1% report frequent involvement in such behaviors.<sup>2,3</sup> Deliberate self-injuries were found in about 20% of the adults and 40–80% of the adolescents with psychiatric disorders and among them, 74.2% were female and 25.8% were male.<sup>2,4</sup> A study in Bangladesh estimated that more than 10,000 people die every year due to suicide.<sup>5</sup> Both suicidal attempt and death were more common among females reporting 432.<sup>8</sup> suicidal attempts and 183.<sup>1</sup> deaths per 100,000 population.<sup>6</sup> In Bangladesh, Hussain et al carried out a study among patients with

DSH where 60.6% were in the age range of 17-28 years, 57.5% respondents were females, 89.3% were Muslims, 46.9% were students and 30.3% were housewives. Organophosphorous compound (OPC) poisoning was the most common adopted method of DSH (59.0%) followed by ingestion of drugs (30.3%).<sup>7</sup> Persons who attempt DSH may have various intentions among which manipulation, threats and suicidal intentions are important. A study in Bangladesh detected PD among most of the DSH patients and also found that they were more introvert and hostile than controls.<sup>8</sup> Comorbidities in psychiatric disorders and PD are also frequent in patients with DSH. PD were identified in about 50% of the patients with DSH in two different studies.<sup>9,10</sup> BPD has been reported as the most common type of PD among patients with DSH in several studies.<sup>9,11</sup> One study in clinical population found PD in 40% of the suicide attempters and in 50% of the psychiatric outpatients who died committing suicide. Suicidal attempt was found in 60-70% of the patients with BPD. Antisocial, histrionic, avoidant and dependent PD have also been presented as independent risk factors for DSH.<sup>12</sup> Haw et al found that 92.0% of the DSH patients had at least one psychiatric disorder, 45.9% had PD and 44.1% had both psychiatric disorder and PD.<sup>13</sup> Another study noted 58.0% PD among patients with DSH.<sup>11</sup>

A study in rural Bangladesh found PD in 44.3% of the cases in parasuicide group and 5.3% in control subjects ( $p=0.001$ ). Most common types of PD included emotionally unstable (impulsive and borderline) (27.5%), followed by hysteric (8.8%) and dependent (6.2%) in the parasuicide group.<sup>14</sup> Cluster BPD were the predominant type in suicide attempters, where BPD were 28.0%, dissocial were 17.0%, and histrionic were 15.0% in a study.<sup>15</sup> Among DSH patients, PD increase the rate of repetition of such behaviors and markedly elevate the risk of suicide.<sup>16</sup> Few studies have been conducted to recognize PD among DSH patients in Bangladesh. So, this study attempted to determine PD in adult population with DSH and encourage health professionals and policy makers to provide adequate psychiatric care to prevent DSH behaviors among this vulnerable group. Therefore, this study was an attempt to fill up the evidence-based knowledge gap in this area.

## Methods

This was a cross-sectional, comparative study carried out in the Department of Psychiatry in Sylhet MAG Osmani Medical College Hospital from 1<sup>st</sup> September 2016 to 31<sup>st</sup> August 2018. Calculated sample size was 60 for each group. During this study period, 69 adult patients with DSH aged 18 years and above were included as case (Group A) by purposive sampling technique and 69 apparently healthy persons of similar age group, having no history of DSH and no biological relationship with DSH cases were taken as control (Group B). Those who failed to communicate with the researcher or were previously diagnosed with psychotic illness were excluded. Before commencement of this study, ethical approval was taken from the Ethical Review Committee and informed written consent was taken from all the participants. Socio-demographic data were collected in a predesigned semi-structured questionnaire and Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II) was administered for screening PD. Ethical aspects were strictly maintained in all procedures. Statistical analysis was performed by using SPSS 22. Quantitative data were summarized as mean and standard deviation and comparisons were made between two groups by unpaired t-test. Qualitative data were summarized as frequency and percentage and comparisons between two groups were done by chi-square ( $\chi^2$ ) and Fisher exact test. A probability ( $p$ ) value of  $<0.05$  was considered statistically significant.

## Results

In this study, a total of 138 participants were enrolled (69 participants from each group) and interviewed to find out the predetermined objectives of the study. Age ranged from 18 to 40 years among DSH patients with mean age of 21.9 (SD, 4.6) years and 18 to 38 years in control group with mean age of 23.0 (SD, 4.2) years ( $p=0.154$ ). There were 85.5% patients between 18 to 25 years and 63.8% patients were female in DSH group. Most of the patients were Muslims (85.5%), from rural areas (63.8%), completed secondary level of education (40.6%), unmarried (62.3%) and had monthly family income within 5,000–50,000 BDT (79.7%). Regarding occupation, 36.2% DSH patients

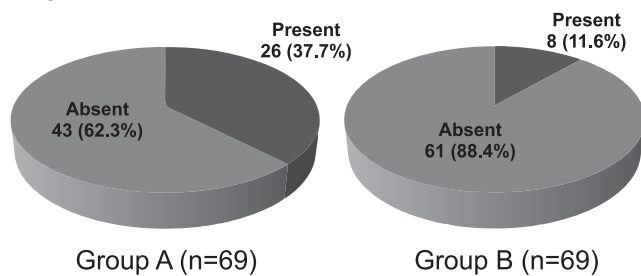
were students, 18.8% were unemployed and 15.9% were housewives. 13.0% had positive family history of psychiatric illnesses. The findings regarding socio-demographic data in DSH patients were almost similar with the relevant findings in control group (Table 1).

**Table 1: Distribution of respondents according to sociodemographic variables (N=138)**

	Group A (n=69) n (%)	Group B (n=69) n (%)	p value
<b>Age group (years)</b>			
18-25	59 (85.5)	56 (81.2)	0.493
26-40	10 (14.5)	13 (18.8)	
Mean (SD)	21.9 (4.6)	23.0 (4.2)	0.154
<b>Sex</b>			
Male	25 (36.2)	26 (37.7)	0.860
Female	44 (63.8)	43 (62.3)	
<b>Religion</b>			
Islam	59 (85.5)	65 (94.2)	0.091
Hinduism	10 (14.5)	4 (5.8)	
<b>Residence</b>			
Rural	44 (63.8)	31 (44.9)	0.298
Urban	25 (36.2)		
<b>Educational status</b>			
Illiterate	6 (8.7)	16 (23.2)	0.144
Primary	10 (14.5)	20 (29.0)	
Secondary	28 (40.6)	25 (36.2)	
Higher secondary	18 (26.1)	7 (10.1)	
Graduate or above	7 (10.1)		
<b>Marital status</b>			
Unmarried	43 (62.3)	42 (60.9)	0.861
Married	26 (37.7)	27 (39.1)	
<b>Family history of psychiatric illness</b>			
Present	9 (13.0)	8 (11.6)	0.796
Absent	60 (87.0)	61 (88.4)	

PD were identified in 26 (37.7%) of the respondents in the DSH group and 8 (11.6%) of the respondents among control group and this was significantly higher in patients with DSH compared to control group (p=0.001) (Figure 1).

**Figure 1: Distribution of respondents with personality disorders**



In patients with DSH, BPD was found to be the most

common type consisting of 13 (18.8%) individuals; whereas none of the respondents had BPD in control group (p=0.001). Other types of PD did not differ significantly between two groups (Table 2). Two or more PD in the same individual were significantly higher in DSH group compared to control group [13 (18.8%) vs 2 (2.9%), p=0.003] and incidence of having a single PD was almost similar in both groups (Table 3).

**Table 2: Distribution of respondents by type of personality disorders (N= 138)**

Personality disorder	Group A (n=69) n (%)	Group-B (n=69) n (%)	p value
Avoidant	6 (8.7)	2 (2.9)	0.274
Dependent	3 (4.3)	1 (1.4)	0.690
Obsessive- compulsive	5 (7.2)	2 (2.9)	0.441
Passive-aggressive	5 (7.2)	2 (2.9)	0.441
Depressive	3 (4.3)	1 (1.4)	0.690
Paranoid	3 (4.3)	1 (1.4)	0.690
Histrionic	2 (2.9)	2 (2.9)	
Narcissistic	2 (2.9)	1 (1.4)	1.000
Borderline	13 (18.8)	-	0.001
Antisocial	2 (2.9)	-	0.496

**Table 3: Distribution of respondents by number of personality disorders (N= 138)**

Number of personality disorders	Group A (n=69) n (%)	Group-B (n=69) n (%)	p value
Single PD	13 (18.8)	6 (8.7)	0.084
Two or more PDs	13 (18.8)	2 (2.9)	0.003

In DSH patients, PD were found among 37.3% of the cases in the age group ranged from 18-25 years and 40.0% of the cases in the age group ranged from 26-40 years, 40.0% were males, 40.0% were Muslims, 52.0% were urban habitants, 39.5% were unmarried individuals and 40.0% were middle income group participants which did not vary significantly in relation to age group, sex, religion, habitant and marital status of control group. Significantly higher PD were detected in illiterate patients with DSH (83.3%) and in DSH patients with positive family history of psychiatric illness (77.8%) (Table 4).

**Table 4: PD according to educational status and family history of psychiatric illness in patients with DSH**

	Personality disorder		p value
	Present	Absent	
<b>Educational status</b>			
Illiterate (n=6)	5 (83.3)	1 (16.7)	0.016
Literate (n=63)	21 (33.3)	42 (66.7)	

Family history of psychiatric illness			
Present (n=9)	7 (77.8)	2 (22.2)	0.008
Absent (n=60)	19 (31.7)	41 (68.3)	

OPC poisoning was found to be the most frequent mode of DSH consisting of 33.3% of the cases followed by ingestion of sedatives (24.4%), taking household cleansers (23.2%), self-cutting (7.2%), hanging (7.2%) and by other methods (4.2%).

## Discussion

Incidence of PD was significantly higher in group A than in group B [(37.7% vs. 11.6%),  $p=0.001$ ] in this study. Several other studies found PD in 45.9%, 44.3%, 52% and 31.3% of the patients with DSH which were similar to the findings of the present study.<sup>13,14,17,18</sup> Another study in Bangladesh reported PD or conduct disorders to be very low (9.1%) in suicide attempters.<sup>19</sup> In this study, BPD was the most frequent type of PD consisting of 13 (18.8%) patients with DSH whereas it was absent among controls ( $p=0.001$ ). BPD was detected as the most common type of PD in different studies.<sup>9,11,14,15</sup> A study carried out in Malaysia found 56% paranoid PD and 14% BPD in the DSH cases; whereas 24% paranoid PD and no BPD in controls ( $p=0.001$  and  $p=0.019$  respectively).<sup>20</sup> Wide differences in number and types of PD in these studies may be due to variation in study populations and diagnostic tools used. Single PD was 18.8% among self-harmed group and 8.7% among control which did not differ significantly ( $p=0.084$ ) but statistically significant difference was noted in subjects having more than one PD among DSH group compared to control group in this study [18.8% vs 22.9%, ( $p=0.003$ )]. This finding correlated with the study finding of Haw et al, who observed that 17.1% patients with DSH had single PD and 28.8% patients with DSH had more than one PD.<sup>13</sup> Other types of PD such as avoidant (8.7%), obsessive-compulsive (7.2%), passive-aggressive (7.2%), dependent (4.3%), depressive (4.3%), paranoid (4.3%), histrionic (2.9%), narcissistic (2.9%) and antisocial (2.9%) PD were in patients with DSH and did not vary significantly compared to the corresponding PD in control group and this correlated with the findings of two other studies done by Feroz et al. and Nabi and Ghildiyal.<sup>6,15</sup> In this study, mean age was 21.9 (SD, 4.6) years in

patients with DSH and 23.0 (SD, 4.1) years in controls ( $p=0.154$ ). The mean age of DSH patients was found to be 24.5 (SD, 9) years by Nojomi et al. and 26.9 (SD, 10.6) years by Sreelatha et al. which were consistent with the findings of this study.<sup>21,22</sup> Among patients with DSH, 85.5% were in the age range of 18-25 years and 14.5% were 26-40 years. Almost similar findings were reported by Haw et al. where 41.3% patients with DSH were in the age range of 15-24 years and 24.0% in the age range of 25-34 years. Qusar et al found 75.0% of suicide attempters were below the age of 30 years.<sup>13,19</sup> Conclusions can be made that this age group (18-30 years) is highly vulnerable for this type of problems and it markedly affects their productivity of life. PD were detected in 37.3% participants in the 18-25 age group and 40.0% participants in the 26-40 age group among DSH patients in this study, which was consistent with a comparative study of PD among DSH patients, which found 58.5% PD patients were younger (15-24 years) and 62.1% PD patients were older (45-74 years).<sup>23</sup> The higher number of PD in elderly subjects may be due to less number of patients included in the elderly group in that study. On the other hand, no patients with DSH in 45-74 year age group was found in this study.

Among the patients with DSH, 40.0% males and 36.4% females had PD in the present study ( $p=0.764$ ). This finding was relevant to the findings of a study that reported 51.3% male and 43.1% female patients with DSH had PD.<sup>13</sup> PD was identified in 37.3% Muslims and 40.0% Hindus ( $p=0.870$ ), 48.0% students and 31.8% from other occupations ( $p=0.182$ ), 39.5% unmarried and 34.6% married ( $p=0.683$ ); 50.0% belonged to high income group, 40.0% middle income group and 20.0% from low income group ( $p=0.501$ ) in patients with DSH in this study. This indicates that religion, occupation, marital status and income did not affect the incidence of PD in patients with DSH. Further studies are needed in these areas to make a more justifiable comment.

This study also revealed that, PD were significantly common in illiterate patients (83.3%) with DSH compared to literate patients ( $p=0.016$ ). The reason may be that very low number of illiterate patients with DSH were found in this study. Positive family history of psychiatric illness in DSH patients with PD (77.8%) were also significantly high ( $p=0.008$ ) in comparison

to DSH patients who had no family history of psychiatric illness. So it may be concluded that positive family history of psychiatric illness increases vulnerability to self-harm in patients with PD in some way. This study also showed that OPC poisoning was the most frequent way of causing DSH (33.3%), followed by sedative overdose (24.4%), ingestion of household corrosive cleansers (23.2%), self-cutting (7.2%), hanging (7.2%) and other methods (4.2%). These findings correlated with the study findings done by Krishna et al. who found that 37.0% cases of self-harm were OPC poisoning, 21.5% were ingestion of household chemicals, 37.5% consumed tablets and 4% used other methods (drowning, hanging and self cutting). Rao et al. reported that OPC poisoning was the most frequent method of suicidal attempt.<sup>17,24</sup> The reason could be that significantly higher number of subjects with DSH came from rural population and these populations had sufficient stock of insecticides to protect their cultivation. So they had easy access to OPC. Sedative poisoning held second position may be due to the fact that these drugs are easily found from drug sellers as they are over the counter products.

There were some limitations in this study like this was a cross-sectional study so the causal link could not be established, purposive sampling technique was used and a relatively small sample size was taken.

### Conclusions

Significantly higher frequency of PD were found among patients with DSH in this study and BPD was the most frequent type of all PD. Due to lack of awareness about the maladaptive symptoms, PD patients do not report it to physicians and as a consequence, PD mostly remain undiagnosed. Medical health professionals, researchers and policy makers should come forward with a view for active assessment and planned interventions for PD among DSH patients to prevent such acts. Further large scale multicenter studies are required to evaluate PD in DSH patients to reach more justifiable conclusions and recommendations. Finally, we hope that findings of this study will encourage health professionals to develop adequate psychiatric services for DSH patients.

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