



Socio-demographic Profile of Female Engaging in Self-poisoning at a Tertiary Care Hospital

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Suicide is a prevalent form of unnatural death and a persistent social problem in Bangladesh. The act of self-poisoning is prevalent in our country, posing a significant medico-social challenge with approximately 300,000 cases and around 2,000 fatalities annually. The occurrence, causes, characteristics, affected age groups, and outcomes of self-poisoning in Bangladesh differ from those observed in Western countries. Notably, there is a concerning upward trend in the number of self-poisoning incidents among females in our nation.

Aim of the Study: This research aimed to assess the socio-demographic traits of adult females who engaged in self-poisoning.

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Methods: This descriptive cross-sectional study occurred at the Department of Medicine in Dhaka Medical College Hospital, located in Dhaka, Bangladesh, from January 2016 to June 2016. The study aimed to investigate self-poisoning among adult female patients, and 100 participants were included as subjects. Prior to data collection, informed consent was obtained from all the participants in accordance with ethical guidelines. The collected data were subsequently processed, analyzed, and managed using MS Excel and SPSS version 23.0 software, as required for the study.

Results: The average age of the participants in the study was 28.19 ± 9.84 years. Most participants resided in rural areas (62%), followed by 75% who identified as Muslim. About 55% of the participants came from joint families, and the occupation most frequently reported was "housewife" (30%). Around 51% of the cases belonged to the lower economic class, while 48% of the patients had completed primary-level education. Among the participants, 51% were married. Regarding the timing of self-poisoning incidents, the majority occurred between 6 am and 12 pm (42%). Insecticide was the most commonly used poison material, accounting for 43% of the cases. Notably, a significant majority (81%) of the self-poisoning patients did not have any previous illnesses.

Conclusion: Intentional self-poisoning is higher among females in younger age groups, particularly among homemakers and students. The majority of individuals affected by this issue come from disadvantaged socioeconomic backgrounds. Self-poisoning incidents are more likely to occur during the daytime, and insecticide is most commonly used for this purpose among females. The leading causes of deliberate self-poisoning in this demographic are familial conflicts and experiencing disappointment in romantic relationships.

Keywords: Socio-demographic characteristics; adult females; self-poisoning; social issue.

1. INTRODUCTION

Among individuals under 18, deliberate self-poisoning is a significant cause of mortality [1]. Compared to other age groups, self-poisoning is more commonly observed in suicide attempts within this younger population [2]. Self-poisoning can occur due to exposure to chemicals, drugs, or toxins [3]. Fortunately, according to a report from the World Health Organization (WHO), there has been a global decline in the standardized suicide rate [4,5]. A self-poisoning episode refers to the intentional ingestion or inhalation of a substance that can potentially cause significant harm [6]. Self-harm has often been associated with industrialized nations, but suicide is becoming a growing concern in many countries, affecting both adult males and females [7]. Females tend to be more inclined towards suicidal behavior than males [8]. Suicide and suicidal ideation present significant challenges in various countries [9]. In the United States, suicide ranks as the tenth leading cause of death among adults [10]. A large-scale epidemiological study in the US revealed that 19% of adults reported having suicidal thoughts, 15% made specific plans to attempt suicide, 8.8% reported a suicide attempt, and 2.6% required extensive medical attention [11]. Deliberate self-poisoning is reported as the primary method of suicide among adult males and females [11,12]. *Suicidal*

behaviour is an escalating issue, particularly among adult females, and represents a significant public health problem in Bangladesh. However, a limited number of studies have examined the attitudes towards suicide and suicidal behaviours, specifically among adult females in this population [13]. A Turkish study identified common factors associated with adult female suicides, including familial conflicts, spouse disputes, and psychiatric disorders [14]. Although the risk factors for self-harm tendencies among adult females are relatively consistent worldwide, the specific poisoning agents involved in self-harm may vary due to social structure, economic status, educational level, awareness, and the accessibility of toxic substances [15]. Agrochemical pesticides are recognized as a significant public health concern in developing countries [16]. Bangladesh, a developing nation heavily relying on agriculture, frequently employs organophosphorus compounds as insecticides in its farming sector. One study revealed that 7% of deaths among females aged 10-50 in Bangladesh were caused by poisoning, most of which resulted from intentional ingestion of pesticides [17]. Another study reported that 44% of deaths in the same demographic were due to poisoning, predominantly due to suicidal ingestion of pesticides [18]. In urban Bangladesh, deliberate self-poisoning among adult females is uncommon and usually involves sedative drugs

like benzodiazepines rather than insecticides. A study conducted at Dhaka Medical College Hospital 1994 found that benzodiazepines accounted for 36.3% of self-poisoning cases, but no fatalities were recorded from benzodiazepine poisoning [15].

2. METHODOLOGY

This cross-sectional study was conducted at the Department of Medicine, Dhaka Medical College Hospital in Dhaka, Bangladesh, from January 2016 to June 2016. The study included 100 adult female patients who had intentionally poisoned themselves. Before data collection, informed consent was obtained from all participants per ethical guidelines approved by the hospital's ethical committee. The study adhered to the principles outlined in the Helsinki Declaration [19] and complied with relevant regulations, including the General Data Protection Regulation (GDPR) [20].

The inclusion criteria for this study encompassed adult female patients admitted to the medicine units of Dhaka Medical College Hospital who had a history of deliberate self-poisoning with various substances and either met the eligibility criteria themselves or had consent provided by their attendants. Conversely, the exclusion criteria included non-adults who had self-poisoned accidentally, homicidally, or due to travel-related incidents and those who were unwilling to provide informed consent, either by the patients themselves or their legal guardians. The demographic and clinical data of the participants were documented, and a pre-designed questionnaire was employed for data collection. Subsequently, all data were processed, analyzed, and presented using MS Excel and SPSS version 23.0 as necessary.

3. RESULTS

In this particular research, the participants' average age was 28.19±9.84 years. The most significant proportion of individuals involved in

the study belonged to the age group of 21-29 years (42%), followed by those aged ≤20 years (29%), 30-39 years (15%), 40-49 years (8%), and ≥50 years (6%). Among the cases of self-poisoning, the majority (62%) hailed from rural areas, while the remaining 38% resided in urban settings. Regarding religious affiliation, 75% of the self-poisoning patients identified as Muslim, while the remaining 25% were Hindu. The study also revealed that 55% of the patients belonged to joint families, whereas 45% came from nuclear families. Additionally, 17% of the patients reported having previously attempted suicide. Regarding the occupation of self-poisoning adult females, the study found that homemakers constituted the largest group (30%), followed by students (25%), unemployed individuals (13%), housemaids (12%), garment workers (8%), day labourers (7%), and individuals employed in the service sector (5%). In terms of socioeconomic status, the majority of self-poisoning patients fell into the lower economic class (51%), followed by the middle class (41%), and a smaller proportion (8%) belonged to the upper class. Regarding educational attainment, 48% of the patients had completed primary education, 24% had reached secondary level, 22% had no formal education, and 6% had attained a graduate degree or higher. In terms of marital status, the study found that the majority of self-poisoning patients were married (51%), followed by unmarried individuals (35%), divorced individuals (9%), and widowed individuals (5%). The study also examined the time of day when self-poisoning incidents occurred, revealing that the highest percentage of cases (42%) took place between 6 am and 12 pm, followed by 6 pm to 12 am (30%), 12 pm to 6 pm (20%), and 12 am to 6 am (8%). The most commonly employed poison substance in self-poisoning cases was insecticide (43%), followed by drug ingestion (30%), household detergent (13%), rodenticide (6%), and other substances (8%). Additionally, most self-poisoning patients (81%) had no history of illness, 11% had a previous psychiatric disorder, and 8% had a previous medical condition.

Table 1. Distribution of the study participants by age (N=100)

Age (In the year)	Frequency (n)	Frequency (%)
≤20 yrs.	29	29.0
21 -29 yrs.	42	42.0
30 -39 yrs.	15	15.0
40- 49 yrs.	8	8.0
≥50 yrs.	6	6.0
Mean ±SD age	28.19 ± 9.84	
Age range	18-55 years	

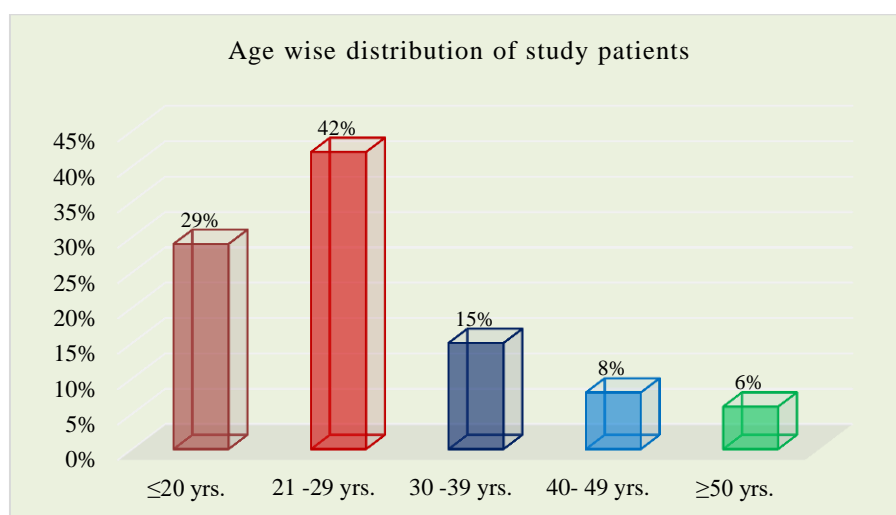


Fig. 1. Age-wise distribution of the study patients (N=100)

Table 2. Distribution of the study participants by residence (N=100)

Residence	Frequency (n)	Percentage (%)
Rural	62	62.0
Urban	38	38.0

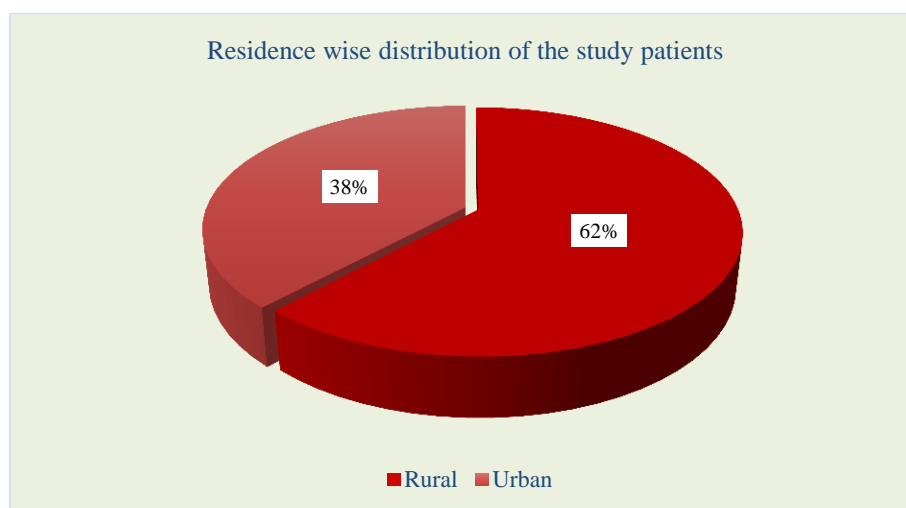


Fig. 2. Residence-wise distribution of the study participants (N=100)

Table 3. Distribution of the study participants by religion (N=100)

Religion	Frequency (n)	Percentage (%)
Muslim	75	75.0
Hindu	25	25.0

Table 4. Distribution of the study participants by type of family (N=100)

Type of family	Frequency (n)	Percentage (%)
Joint	55	55.0
Nuclear	45	45.0

Table 5. Distribution of the study participants by occupation (N=100)

Occupation	Frequency (n)	Percentage (%)
Student	25	25.0
Housewife	30	30.0
Unemployed	13	13.0
Housemaid	12	12.0
Garment worker	8	8.0
Day labor	7	7.0
Service holder	5	5.0

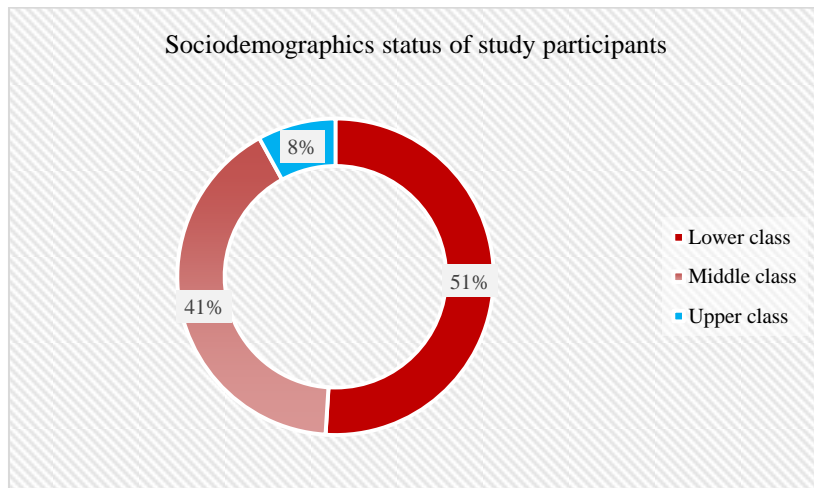


Fig. 3. Sociodemographic status of the study participants (N=100)

Table 6. Distribution of the study patients by educational status (N=100)

Educational status	Frequency (n)	Percentage (%)
Illiterate	22	22
Primary level completed	48	48
Secondary level completed	24	24
Graduate or above	6	6

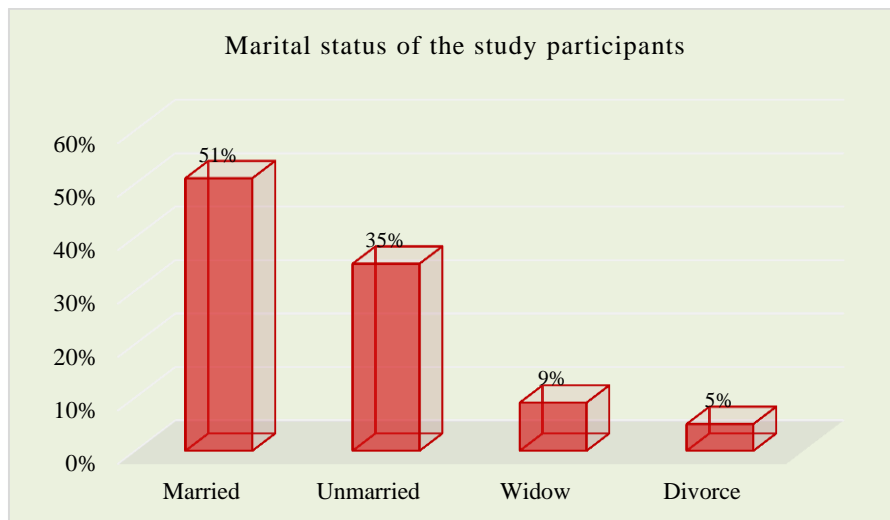


Fig. 4. Marital status of the study participants (N=100)

4. DISCUSSION

This study examined the socio-demographic characteristics of adult women who engaged in self-poisoning. The results indicated that the highest percentage of self-poisoning victims belonged to the 21-29 age group (42%), followed by those under 20 years old (29%), 30-39 years old (15%), 40-49 years old (8%), and over 50 years old (6%). Younger women were found to be more prone to self-poisoning compared to older women. The age range of patients in the study was between 18 and 55 years, with a mean age of 28.19 ± 9.84 years. These findings are consistent with similar studies conducted both domestically and internationally. For instance, a cross-sectional study conducted in a teaching hospital in Peradeniya, Sri Lanka [21] revealed that the median age of self-poisoning patients was 22 years, with 61% of participants below 25 years old. Therefore, younger women were found to be more involved in self-poisoning compared to older women. Regarding occupation, the majority of patients in the study were housewives (30%), followed by students (25%), unemployed individuals (13%), housemaids (12%), garment workers (8%), day labourers (7%), and service holders (5%). These findings are similar to a study by Dewan [22], where 18.3% of patients were students, 16.7% were homemakers, 11.7% were unemployed, and 1.7% were service holders. In terms of economic class, the study showed that the majority of self-poisoning cases were from the lower economic class (51%), followed by the middle class (41%), and the upper class (8%). These findings align with other studies conducted in Bangladesh, where 48% of cases were from the low-income group, 47% from the middle-income group, and 5% from the high-income group [23]. Education level was also examined in the study, with the highest percentage of patients having primary education (48%), followed by secondary education (24%), illiteracy (22%), and graduation or higher education (6%). A report by the World Health Organization (WHO) [24] demonstrated that educational status impacts suicidal tendencies, with illiterate and low-level educated women being more vulnerable to suicide. These findings were consistent with the current study. In terms of marital status, the majority of self-poisoning patients were married (51%), followed by unmarried (35%), divorced (9%), and widowed (5%). These findings agreed with a study by Howlader et al. [25] conducted at Sir Salimullah Medical College Hospital in 2007, which showed that 62% of patients were married,

20% were unmarried, and 12% were separated. Regarding background, most self-poisoning patients in the study were from rural areas (62%). This finding correlates with a report by the WHO [24], which demonstrated a higher percentage of self-poisoning cases in females from rural areas. Religiously, 75% of patients in the study were Muslim, while 25% were Hindu. A study by Rahman et al. [26] showed that 93.2% of respondents were Muslim, and 6.8% were Hindu. Family structure was also examined, with 55% of patients living in joint families and 45% in nuclear families. These findings were similar to those of Rahman et al. [26], who reported that 74.6% lived in joint families while 25.4% lived in nuclear families. However, these results differed from those of Narang et al. [27] and Srivastava et al. [28]. In terms of the timing of self-poisoning incidents, the study revealed that the majority occurred between 6 am and 12 pm (42.6%), followed by 6 pm and 12 am (30%), 12 pm and 6 pm (20%), and 12 am and 6 am (8%). Rahman et al. [26] also reported similar findings, with the majority of suicide attempts occurring between 6 am and 12 pm (45.5%), followed by 6 pm and 12 am (27.1%), 12 pm and 6 pm (22.0%), and 12 am and 6 am (5.1%). Insecticides were found to be the most common method of self-poisoning (43%), followed by drug ingestion (30%), household detergents (13%), rodenticides (6%), and other methods (8%). This result was supported by Dhanya et al. [29], who found that pesticides accounted for 37.3% of poisonings, followed by unspecified drugs at 17.9%. Regarding previous health conditions, most self-poisoning patients in the study had no previous illnesses (81%), 11% had a previous psychiatric disorder, and 8% had a previous medical illness. Sorodoc et al. [30] found previous psychiatric disorders in 13.81% of cases, while Rahman et al. [26] reported a history of psychiatric disorders in 11.2% of patients. These findings were consistent with a study by Ali et al. [31], where 16.2% of suicide attempters had a previous history of psychiatric disorder.

5. LIMITATION OF THE STUDY

This research was carried out in a single centre and utilized small-sized samples. Furthermore, the study was conducted within a limited timeframe. Therefore, it is essential to note that the results of this study may only partially represent the overall situation within the country.

6. CONCLUSION AND RECOMMENDATION

Based on the findings of this study, it has been observed that younger women are more susceptible to intentional self-poisoning. The majority of these individuals are either homemakers or students. Additionally, many participants come from disadvantaged socioeconomic backgrounds, lacking formal education and residing in rural areas. The analysis revealed that self-poisoning incidents are more likely to occur during the daytime, with insecticides being the most frequently used substances in these cases. The primary motives behind self-poisoning were identified as family conflicts and romantic disillusionment. Furthermore, a significant percentage of the female participants had a history of previous suicide attempts and psychiatric disorders. These results emphasize the importance of implementing various measures to address these issues and prevent deliberate self-harm. Timely detection and the prompt administration of appropriate treatment can significantly contribute to positive outcomes for individuals engaging in intentional self-poisoning.

CONSENT AND ETHICAL APPROVAL

Before data collection, informed consent was obtained from all participants per ethical guidelines approved by the hospital's ethical committee.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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