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Original Research Article

A study on psychiatric illness in self-poisoning patients in a tertiary care hospital

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ABSTRACT

Background: Self-poisoning, also known as self-ingestion or self-intoxication, refers to the deliberate ingestion of toxic substances with the intent of harming oneself. This study aimed to understand the close associations between self-poisoning patients and psychiatric illness, and to examine whether behaviour-based treatment was more effective than treatment as usual for people who harmed themselves.
Methods: This retrospective study was conducted on 574 patients who were admitted with a history of self-poisoning in Thanjavur Medical College Hospital during the period of 1 year from 2015 to 2016. Patient history included age, sex, type of psychiatric illness, and type of poisoning consumed. A psychiatric diagnosis based on the ICD 10 was made by a psychiatrist once the clinical picture was clear.
Results: Of 543 patients, 279 were female and 264 were male. A total of 184 (33.9%) patients consumed rat killer paste, 153 (28.2%) consumed OPC, 62 (11.4%) consumed ant killer powder, 38 (7%) consumed oleander, and 37 (6.8%) consumed tablets. Most patients had AD, ADS, AUD, IR, BPD, and acute psychosis for most poisons, such as ant killer powder poisoning, OPC, tablet poisoning, herbicide, kerosene, non-OPC, and rat killer paste poisoning.
Conclusions: Implementing rigorous measures such as enforcing anti-dowry laws, promoting marriage counselling and women's empowerment, identifying and referring individuals with psychosocial issues for psychiatric support, and providing assistance to those with adjustment disorder could effectively reduce the incidence of poisoning and its associated mortality and morbidity rates.

Keywords: Self-poisoning, Psychiatric illness, Deliberate self-harm, Suicide prevention

INTRODUCTION

The term suicide is derived from the Latin word 'suicidium', and denotes the act of intentionally causing one's death. It is an emergency condition which represents a person's wish to die.[1] Suicide is strongly associated with psychiatric illness, most commonly depressive disorders, and often requires both pharmacological and psychological interventions. The prevalence of suicide increases with age; women attempt suicide 10 times more than men, but men are 3 to 5 times more likely to complete suicide than women.[2] It is often difficult to establish the meaning of attempted suicide based on overt characteristics of the behaviour or a person's self-report.[3] Many people attempt suicide as an impulsive act, with a motive to change their circumstances.

Self-poisoning is defined as an intentional self-intake of more than the prescribed dose of any drug, including non-ingestible substances, as well as an overdose of drugs that are used for recreation and alcohol intoxication.

Self-poisoning is the most common mode of attempting suicide, hence considered to be a major social and medical

problem.[4] It is considered to be of great public health importance because the risk of completed suicide is very high for those with a history of voluntary self-poisoning.[5] These cases are very common among the young adult population, not only in Western Europe but also in our part of the country.

Assessment of risk factors is important to decide whether the possibility of suicide is of immediate concern or represents a long-term ongoing risk. The estimated lifetime rates of completed suicide by diagnosis are major affective disorder 10-15%, alcoholism 10-15%, schizophrenia 10%, and borderline and antisocial personality disorder 5-10%.[6]

Various studies have shown that living away from parents is associated with an increased prevalence of suicidal behavior. No association was found between the number of siblings and birth order.

Increased rates of self-harm have been associated with family conflict, criticism by and alienation from parents, single-parent families, physical abuse, sexual abuse, and parental mental health problems.[7] Good communication and family feelings have been associated with a lower prevalence of suicidal thoughts.

Following a suicide attempt, the highest short-term suicide risk was found in mood disorders and schizophrenia. This study focused on analysing the distribution of psychiatric diagnoses made immediately following recovery from self-poisoning suicide attempts in patients admitted for self-poisoning in a tertiary care hospital.

This study aimed to explore self-poisoning patients in the population in terms of epidemiology, longitudinal outcomes, and treatment, to understand the close associations between self-poisoning patients and psychiatric illness, and to examine whether behavior-based treatment was more effective than treatment as usual for people who harm themselves.

METHODS

This retrospective study was conducted on 574 patients who were admitted with a history of self-poisoning at Thanjavur Medical College Hospital between 2015 and 2016 for one year. Patient history included age, sex, type of psychiatric illness, and type of poisoning consumed. After the patient stabilised, they were sent to the Department of Psychiatry for further evaluation. Ethical committee approval was obtained before commencement of the study. Informed consent was obtained from all patients.

Inclusion criteria

Patients admitted with a history of self-poisoning between January 2015 and January 2016 who recovered and underwent psychiatric evaluation were included in the study.

Exclusion criteria

All patients who had succumbed to poisoning, those with a history of accidental exposure to poisons, and those with a history of other methods of attempted suicide were excluded from the study.

The details of the patient and poison consumed were registered and maintained separately in the causality register. The initial screening of self-poisoning cases for the study was performed by going through this register and all cases during the same duration with a diagnosis of self-poisoning.

The assessment included the medical seriousness of the attempt, impulsivity, stated intent, inferred intent, evidence of premeditation, precipitant stress, and the patient's reaction to the attempt and recovery. A psychiatric diagnosis based on the ICD 10 was made by a psychiatrist once the clinical picture was clear. The data are presented as a pie chart, frequency, and percentage.

RESULTS

Of the 574 patients, only 543 were included in the study. The remaining patients had hung or drowned. Of the 543 patients, 184 (33.9%) consumed rat killer paste, 153 (28.2%) consumed OPC, 62 (11.4%) consumed ant killer powder poisoning, 38 (7%) consumed oleander, 37 (6.8%) consumed tablet, 26 (4.8%) consumed non-OPC, 14 (2.6%) consumed calotropis, and 12 (2.2%) consumed kerosene (Figure 1).

Based on the distribution of cases according to the type of psychiatric illness, 184 (33.9%) patients had AD, 114 (21%) had AD with DM, 100 (18.4%) had IR, 72 (13.3%) had ADS, 32 (5.9%) had BPD, and 18 (3.3%) had AUD (Figure 2).

Of the 543 patients, 279 (51.4%) were female and 264 (48.6%) were male. Based on the distribution of poison consumption by sex, of 279 female patients, 97 (34.8%) had consumed rat killer paste, 52 (18.6%) had consumed OPC poison, 43 (15.4%) had consumed ant killer powder, 26 (9.3%) had consumed tablet poison, 19 (6.8%) had oleander poisoning, and 16 (5.7%) did not.

Among 543 patients, 279 (51.4%) were female and 264 (48.6%) were male. Ages ranged from 9 to 70 years, with mean age 29.83±11.23 years for males and 24.17±7.50 years for females (Table 1).

Of the 264 male patients, 101 (38.3%) had consumed OPC poison, 87 (33%) had consumed rat killer paste, 19 (7.2%) had consumed both oleander poison and ant killer powder, 11 (4.2%) had consumed tablet poison, and 10 (3.8%) had consumed non-OPC poison (Table 2).

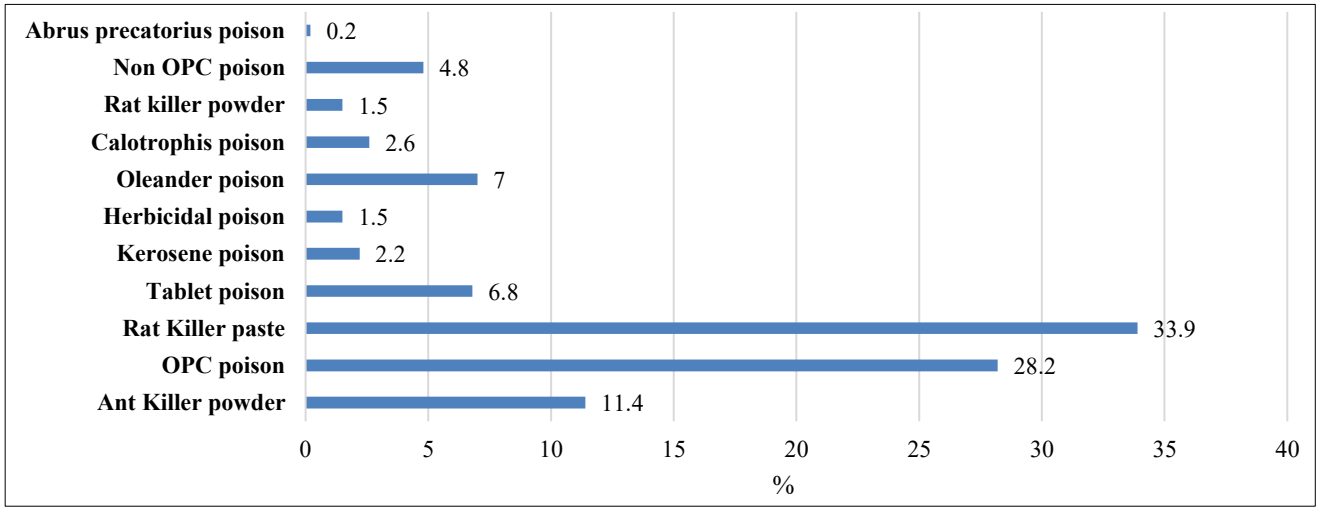

Figure 1: Poison consumption distribution of the cases.

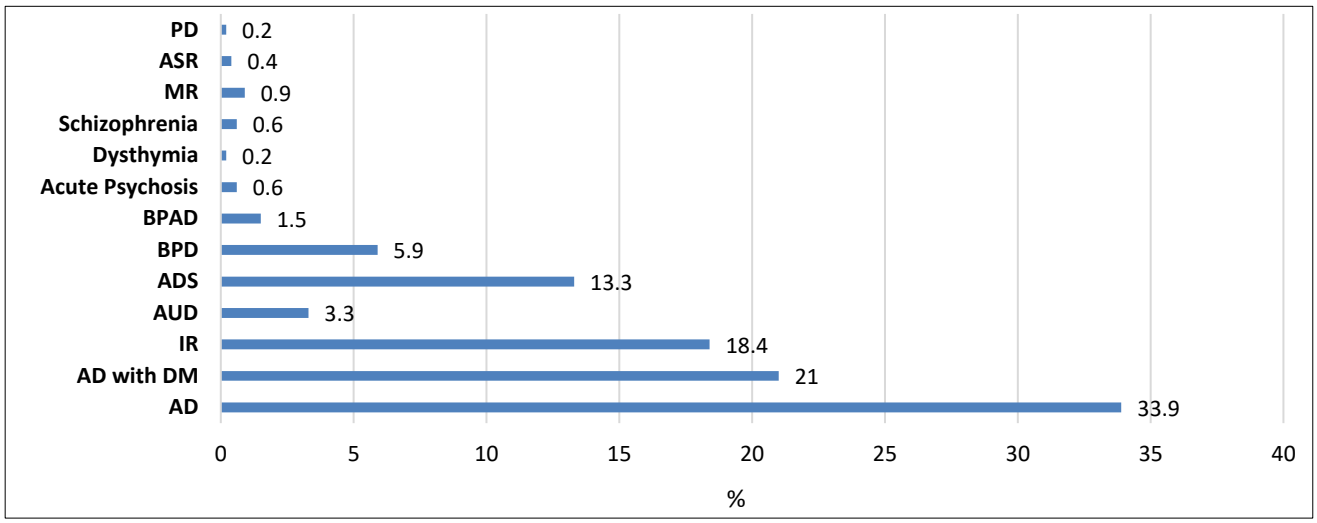

Figure 2: Psychiatric illness distribution of cases.

Table 1: Demographic characteristics.

Gender	Frequency	Age	
		Mean	Std. deviation
Male	264	29.83	11.23
Female	279	24.17	7.5

Based on the distribution of cases of psychiatric illness by sex, out of 279 female patients, AD was observed in 108 patients (38.7%), AD with DM in 75 patients (26.9%), IR in 65 patients (23.3%), BPD in 14 patients (5%), and ADS in five patients (1.8%). Of 264 male patients, 76 (28.8%) had AD, 67 (25.4%) had ADS, AD with DM was in 39 patients (14.8%), IR in 35 patients, 18 (6.8%) had AUD, and 18 (6.8%) had BPAD (Table 3).

Based on the distribution of psychiatric illness cases in each type of poison consumed by each sex, a total of 62 patients consumed ant killer powder poisoning. Of the 62 patients, 43 were female and 19 were male. Of the 43 female patients, 16, 14, and 9 had psychiatric AD, AD, and 9 had IR. Of the 19 patients, five had ADS, four had AD DM, and three had AD.

In total, 153 patients consumed OPC poison. Of 153 patients, 101 were males particularly, 35 had ADS, 24 had AD, 19 had AD DM, 9 had IR, 8 had AUD, 5 had BPD, 1 had MR, and 52 were females. Of these, 22, 15, and 8 had AD DM, and IR, respectively.

36 patients consumed tablet poison. Of the 36, 26 patients were female, 9 had AD, 7 had IR, 6 had AD DM, 3 had BPD, 1 had ADS, and 10 were male. Of these, six patients had AD, two had ADS, one had IR, and one had ADS.

Nine patients had kerosene poisoning. Of these, six were female, three had AD, two had IR, and one had acute psychosis; three were male, two had AD, and one had IR. Nine patients consumed herbicidal poison. Of these, 4 were female patients. In particular, 2 had AD, one had IR, one had acute psychosis, and four were male.

Table 2: Distribution of poison consumption cases by gender.

Gender and type of poison	Frequency	%
Male (264)		
Ant killer powder	19	7.2
OPC poison	101	38.3
Rat killer paste	97	36.7
Tablet poison	11	4.2
Kerosene poison	3	1.1
Herbicidal poison	4	1.5
Oleander poison	19	7.2
Calotrophis poison	7	2.7
Rat killer powder	3	1.1
Non-OPC poison	10	3.8
Female (279)		
Ant killer powder	43	15.4
OPC poison	52	18.6
Rat killer paste	97	34.8
Tablet poison	26	9.3
Kerosene poison	9	3.2
Herbicidal poison	4	1.4
Oleander poison	19	6.8
Calotrophis poison	7	2.5
Rat killer powder	5	1.8
Non-OPC poison	16	5.7
Arbus precatorius poison	1	0.4

In particular, 2 patients had ADS, 1 had AD, and 1 had AUD. 38 patients were diagnosed with oleander poisoning. Of these, 19 were male, 5 had ADS, 4 had AD, 3 had AD, 3 had IR, 2 had BPD, 1 had AUD, and 1 had BPAD, and 19 were female. In particular, nine had AD, four had AD DM, three had IR, one had BPD, one had BPAD, and one had dysthymia.

Fourteen patients experienced calotropis poisoning. Of these, seven patients were male, four had AD, one had AD DM, one had IR, one had AUD, and seven were female. Eight patients experienced rat killer powder poisoning. Of these, five were female, three had IR, one had AD, one had AD DM, and three were male. 26 patients had consumed non-OPC poisons. Of these, 16 were female, 8 had AD, 6 had IR, and 2 had AD DM. Ten patients were male, and four had AD (Table 4).

Table 3: Psychiatric illness distribution of cases by gender.

Gender and psychiatric illness	Frequency	%
Male (264)		
AD	76	28.8
AD with DM	39	14.8
IR	35	13.3
AUD	18	6.8
ADS	67	25.4
BPD	18	6.8
BPAD	6	2.3
Acute psychosis	1	0.4
MR	3	1.1
PD	1	0.4
Female (279)		
AD	108	38.7
AD with DM	75	26.9
IR	65	23.3
ADS	5	1.8
BPD	14	5.0
BPAD	2	0.7
Acute psychosis	2	0.7
Dysthymia	1	0.4
Schizophrenia	3	1.1
MR	2	0.7
ASR	2	0.7

Table 4: Distribution of cases by psychiatric illness in each type of poison consumed by each sex.

Type of poison consumed	Psychiatric illness	Gender	
		Male	**Female**
Ant killer powder	AD	3	14
	AD DM	4	16
	IR	2	9
	AUD	2	0
	ADS	5	1
	BPD	2	1
	BPAD	1	1
	ASR	0	1
OPC	AD	24	22
	AD DM	19	15
	IR	9	8
	AUD	8	0
	ADS	35	2
	BPD	5	2

Continued.

Type of poison consumed	Psychiatric illness	Gender	
		Male	Female
	Schizophrenia	0	1
	MR	1	1
	ASR	0	1
Rat killer paste	AD	28	38
	AD DM	9	26
	IR	18	24
	AUD	4	0
	ADS	15	1
	BPD	7	6
	BPAD	3	0
	Acute psychosis	1	0
	Schizophrenia	0	1
	MR	2	1
Tablet	AD	6	9
	AD DM	0	6
	IR	1	7
	AUD	1	0
	ADS	2	1
	BPD	0	3
Kerosene	AD	2	3
	IR	1	2
	Acute psychosis	0	1
Herbicidal	AD	1	2
	IR	0	1
	AUD	1	0
	ADS	2	0
	Acute psychosis	0	1
Oleander	AD	4	9
	AD DM	3	4
	IR	3	3
	AUD	1	0
	ADS	5	0
	BPD	2	1
	BPAD	1	1
	Dysthymia	0	1
Calotrophis	AD	4	2
	AD DM	1	1
	IR	1	2
	AUD	1	0
	BPD	0	1
	Schizophrenia	0	1
Rat killer powder	AD	0	1
	AD DM	2	1
	IR	0	3
	ADS	1	0
Non OPC	AD	4	8
	AD DM	2	2
	IR	0	6
	ADS	2	0
	BPD	1	0
	BPAD	1	0
Abrus precatorius	AD DM	0	1

DISCUSSION

Suicidal attempts refer to non-fatal self-inflicted destructive acts with explicit or inferred intent to die. The majority of patients in our study admitted with a history of self-poisoning had attempted suicide. Most cases are diagnosed as having various psychiatric disorders. Of the 543 patients, 279 were female and 264 were male. This result was matched with the study done by Srivastava et al who reported that females were more common among suicide attempt cases, but in contrast, the statistics of completed suicide are common in males which is described as the gender paradox.[8]

Another similar study by Yadav et al reported a higher suicide rate among females (279 cases, 51.4%) than among males (264 cases, 48.6%).[9] The minimum patient age in our study was 9 years, and the maximum age was 70 years. The mean age and standard deviation for male and female patients were 29.83±11.23 and 24.17±7.5 respectively. Sharma et al concluded that having seriously considered or attempted suicide was more likely among the higher-age groups. They had been mentioned that suicide is rare before puberty, but the rate begins to rise sharply after the age of 14 years.[10]

In our study, based on the distribution of cases by the type of poison consumed, the most frequently consumed poison was rat killer paste (n=184), followed by OPC poison (n=153). The least consumed poisons were herbicides (n=8) and rat killer powder (n=8). The uncommon poison consumed was Abrus precatorius (n=1).

Our results contrast with those of Maharani and Vijayakumari, who reported the incidence of organophosphorus was found to be high in other studies done in South India.[11] The study done by Jesslin et al also reported that organophosphorus incidence was found to be high.[12]

In our study, based on the distribution of cases by type of psychiatric illness, the most frequent type of psychiatric illness was adjustment disorder (n=184), followed by adjustment disorder with depressive disorder (n=114), and impulsive reaction (n=100).

The least frequent types of psychiatric illness were dysthymia and personality disorder (n=1). The most common reason for attempting suicide was adjustment order. Haw et al concluded that high prevalence of both psychiatric (92%) and personality (45.9%) disorders, the most common psychiatric disorders being depression, substance use and anxiety disorders.[13]

In our study, based on the distribution of cases of psychiatric illness in each type of poison consumed, most patients had AD, ADS, AUD, IR, BPD, and acute psychosis for most poisons, such as ant killer powder poisoning, OPC, tablet poisoning, herbicide, kerosene, non-OPC, and rat killer paste poisoning.

CONCLUSION

The incidence of poisoning and its mortality and morbidity can be reduced by developing and implementing effective prevention strategies, such as strict implementation of anti-dowry laws, marriage counselling, and women empowerment, which will help to decrease the day-to-day tension in married life and decrease the incidence of poisoning among housewives. People with psychosocial problems should be identified at the earliest and should be referred for psychiatric counselling. Help patients diagnosed with adjustment disorder to gain perspective on the stressor, establish relationships, attend support groups, manage themselves, and stressors. Strengthening family and community support systems may help reduce adjustment-related stress.

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