

Deliberate self-poisoning in the Southern region of Saudi Arabia

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Introduction: Although deliberate self-poisoning (DSP) for suicide attempts has been described in the Eastern, Introduction: Although deliberate self-poisoning (DSP) for suicide attempts has been described in the Eastern, Western, and Central regions of Saudi Arabia, the Southern region populations remain unstudied. The aim of this study was to characterize the demographic features, medications used in self-poisoning, causes, and treatments of suicide attempts on a sample of patients who employed DSP for suicide in the Southern province of Saudi Arabia.

Materials and methods: A retrospective chart review study was conducted between March 2013 and June 2017 on patients who attended the Emergency Department (ED) of Khamis Mushait General Hospital (KMGH) after DSP for attempted suicide. The study included 22 DSP cases of suicide attempters.

Results: We noted all patients retrieved during the study period were found to be those of relatively young females with a mean age of 24.6

years. The sample was predominately Saudi nationals (95.5%), unemployed (95.5%), with a low-education level (68.2%). Abdominal pain (60%) was the top complication of DSP for suicide attempts. Gastric lavage and activated charcoal were common treatments for DSP for suicide attempts. Family conflict (50%) and depression (40%) were common causes of DSP for suicide attempts.

Conclusions: In the sample, DSP for suicidal purpose is characterized by female gender, young age, low-education level, unemployment, and Saudi nationality. Abdominal pain was the most common complication of DSP for suicide attempts. Family conflict and depression were the top causes of DSP suicide attempts. Gastric lavage and activated charcoal were the most common treatment for DSP suicide attempts. Community based study to DSP identify the prevalence and risk factors should be conducted and its magnitude.

Key Words: Suicide attempts, Self-poisoning, depression, family conflict, overdose

INTRODUCTION

Despite the fact that suicide is forbidden in Islam, it still exists in various Islamic populations [1-3]. In Saudi Arabia, variations in the suicide rate have been linked to gender,[4] racial groups, [3] age,[4] employment status,[5] seasonality, [5] and suicide methods [3]. Following hanging (55%), self-poisoning is one of the most common methods employed for suicide in Saudi Arabia, accounting for 23% and 26.4% of the suicide cases [3,6].

Although deliberate self-poisoning (DSP) is a commonly reported mode of suicide in newspapers and technical press communication in Saudi Arabia, there have been limited studies on DSP as a mode for suicide, and it is rarely reported in the literature. Drug overdose is the most frequent form of DSP employed in Saudi Arabia. [3,6] Recognizing the burden of DSP for suicide on the Saudi healthcare system could promote the application of preventive measures such as implementing modifiable factors associated with the high risk of DSP for suicide attempts.

Previous reports assess the characteristics of suicide attempters in the Eastern, [3] Western, [4,6] and Central [5] regions of Saudi Arabia. A large proportion of these populations are immigrants from various ethnic backgrounds[3]. Despite the fact that cultural differences in suicide rates exist, [3] DSP for suicide has not been studied in Southern Saudi Arabia, where that region has multi-racial and cultural communities due to its border with Yemen and its proximity to warfare and military intervention in Yemen since 2015. This study was conducted to analyze profile of DSP for suicide in Aseer region, Saudi Arabia.

MATERIALS AND METHODS

A retrospective chart review study was conducted during the period between March 2013 and June 2017 on all patients who were treated at emergency department (ED), Khamis Mushait General Hospital (KMGH)

after a DSP for suicide. The study obtained approval from the ethical committee at KMGH. The study population was defined as all patients involved in DSP for suicide attempts during the study period, regardless of poisoning subtype (medication overdose and medication overdose plus detergent). We retrieved all medical records with the following keywords: "drug poisoning," "poisoning exposure," "poisoning," "drug overdose," "overdose exposure," "overdose," and "suicide." The study excluded accidental self-poisoning (ASP) cases. The study also excluded methods of suicide other than poisoning such as hanging, jumping from a height, gunshot, self-cutting, etc.

Data were gathered using an electronic system (Medica Plus) from each patient's file and cases were traced and extracted from admission to the ED until discharge from the hospital. In addition, notes of social workers and police reports, psychiatrists' consultations, signs, symptoms, treatments, and demographic information were transcribed. The data included patient age, gender, marital status, nationality, education level, family size, employment status, history of chronic diseases problems; diabetes mellitus, asthma, sickle cell anemia, epilepsy, history of suicide attempts, and severity of suicide attempts. We retrieved data on self-poisoning information such as subtype of self-poisoning (drug overdose or chemical), causes of each suicide attempts, and the most common regimen to treat the cases.

During the study period, we identified 27 DSP cases for suicide, in which we excluded 5 cases due to the insufficiency of their files, as suicide information had been removed from the hospital system.

Data analysis

Data analysis was conducted using the IBM SPSS version 25 (IBM Corp., Armonk, NY, USA). Suicide attempters' characteristics and self-poisoning subtypes were presented as count and percentage. The most common

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complications/signs and symptoms, treatments, and causes of suicide attempts were presented as count and percentage.

RESULTS

A total of 22 DSP cases of suicide attempters were analyzed, all were females, and mean age was 24.6 ± 8.0 four years and an age range

between 14 and 45 years. Suicide attempters' characteristics were presented in Table 1. A majority of the sample (95.5%) was of Saudi nationality, 95.5% were unemployed, 68.2% had a education level (high school or less), 31.8% had a large family size (8 siblings or more), 9.1% had a history of suicide attempts, and 13.6% were severe suicide attempts. We noted two DSP subtypes in our sample: 86.4% had drug overdose and 13.6% had detergent (Clorox(R)).

TABLE 1 Profile of suicide attempters female, Aseer region (N=22)

Characteristics	Levels	n	%
Marital status	Married	10	45.5
	Single	9	40.9
	Divorced	2	9.1
	Missing	1	4.5
Nationality	Saudi	21	95.5
	Non-Saudi	1	4.5
Education level	Yes (High school or less)	7	31.8
Employment status		21	95.5
Large family size	Yes (8 siblings or more)	7	31.8
Diabetes mellitus		1	4.5
Asthma		1	4.5
Sickle cell anemia		1	4.5
Epilepsy		2	9.1
History of suicide		2	9.1
Severity of suicide attempts		3	13.6
Deliberate self-poisoning (DSP)	Drug overdose	2	9.1

TABLE 2 Complications/signs and symptoms, and causes of suicide attempts

Complications/sign and symptoms	n	%
Abdominal pain	13	60
Unconsciousness	1	4.5
Vomiting	10	45.5
Dizziness	6	27.3
Causes	n	%
Family conflict	11	50.0
Violence by family member	7	31.8
Sexual assault by brother	1	4.5
Seeking attention	4	18.2
Depression	9	40.9
Temporary sadness	6	27.3

Table 2 summarizes complications/signs and symptoms, treatments, and causes of suicide attempts. No deaths were reported in our sample. Abdominal pain (60%) was the most common complication. The most common regimens to treat DSP for suicide were gastric lavage (63.6%) and activated charcoal (50%). Reasons for suicide attempts were as follows: half of the sample (50%) involved family conflict, (40.9%)

experienced depression, (31.8%) involved violence by a family member, (27.3%) experienced temporary sadness, and 18.2% were seeking attention.

The most common drug used for DSP for suicidal purpose by overdose was paracetamol 8 (36.4%), the lowest ingested 6g and the highest ingested 20g, and in a few cases they ingested paracetamol mixed with additives such as codeine, chlorpheniramine, pseudoephedrine, and caffeine or mixed with other medications, as seen in Figure 1.

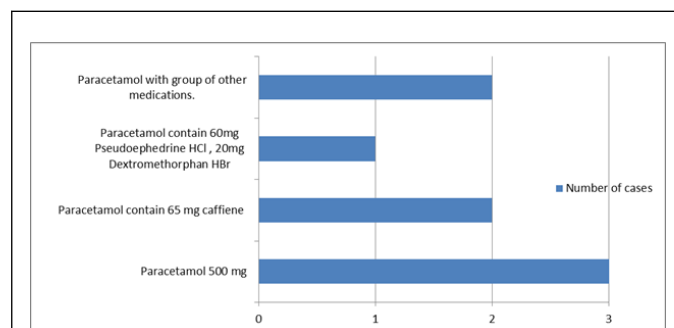


Figure 1) Number of attempted suicide cases with paracetamol and paracetamol combinations

Three cases (13.6%) attempted suicide by ingesting antidiabetic medications: (1) A single girl 25 years old with a history of sickle cell anemia, ingested two tablets of unknown antidiabetics mixed with two tablets of aspirin and two tablets of analgesics, after a family conflict; (2)

A single 20-year-old female who ingested 20 to 30 tablets of Metformin 1000 mg, but there were no reports of any social or violence problems; (3) A housemaid from Sri Lanka who is 32 years old, married, a diabetic on Metformin 500 mg, who was brought to the hospital after ingesting 30 tablets of her medication. Furthermore, three other cases (13.6%) ingested detergent for attempting suicide and two cases (9.1%) ingested antipsychotics.

DISCUSSION

This study examined suicide attempts by deliberate self-poisoning in the Southern region of Saudi Arabia. We retrospectively studied the medical charts of individuals who attended ED KMGH during the period between March 2013 and June 2017. We found that drug overdose was the most common subtype used for DSP for suicidal purposes. This finding is consistent with two national studies that were conducted in other regions of Saudi Arabia. [3,6]

In this study, over-the-counter drugs such as paracetamol and its combination with other medications constitutes a large proportion of our sample. Townsend et al. noted significant increases in using paracetamol and antidepressants for self-poisoning. [7] The increased use of medications in our population could be due to easy accessibility of paracetamol and the prescribing patterns of other medications.

This study did not observe suicide attempts using DSP among males during the study period March 2013 to June 2017. The findings show that the probability of DSP for suicidal purposes is higher for females than males in this population. This is in line with a number of studies where reported DSP was more common in females than males [5,8,9]. Williams-Johnson et al. [8] reported a female-to-male ratio of 3:1 and Al-Jahdali et al. reported a ratio of 4:1 [5]. These two studies along with our study investigating DSP are not consistent with the findings of Elfawal, who reported a larger ratio for male as compared to female: "male-to-female ratio was 4:1 [5]." on different suicide methods (hanging, jumping from heights, self-cutting/stabbing, self-poisoning, etc.). Explanations for inconsistency between these studies could be attributed to the choice of method for suicidal purpose, as violent methods are not common among females, but males are likely to choose more violent methods for suicidal purposes [9].

We found that our sample was relatively young, with a mean age of 24.6 and an age range between 14 and 45 years. In many other investigations, young age groups were at high risk of DSP compared to those older age groups [5,7,8].

Most of our sample reported an unemployed status and low-education level. In a previous study, unemployment and low-education level were found to be positive predictors of suicide attempts. [10,11] Unemployment and low-education level may be used as modifiable factors to reduce and prevent suicide attempts among females in Saudi Arabia.

In agreement with Bakhaider et al., [6] this study detected no deaths in the sample studied. Elfawal [3] also noted a low death rate (6%) from self-poisoning compared to the violent methods of suicide. In our study, depression is a major cause of suicide attempts by self-poisoning. Similar findings have been reported in the Finkelstein et al. study, [12] where depression was found to be positively associated with a high risk of suicide following DSP. A Korean study reported that depression is the most common psychiatric disorder in 388 suicide attempters by self-poisoning. [13] Interventional national study is urgently needed to implement a program for routine screening for depression among females and to address the link between depression and self-poisoning.

Family conflict was reported to be an important motive for DSP. In this study similar finding has been shown in Dedić [14]. An Iranian study reported that physical abuse or violence was one of the top motives for DSP among females [15]. This study is in line with the Iranian study that violence was noted in a large portion of our sample. Interventional studies are needed to address these factors by implementing related policies and regulations.

The authors noted the following limitations: Since the findings were based on a chart review and a single hospital in the Southern region of Saudi Arabia, the results may not be representative of the entire region or country. Despite the lengthy period of the investigation, the study is limited by the small sample size and this is due to the low suicide rate in Saudi Arabia [3]. It is possible that the small sample size of suicide attempts during the study period could be due to not all suicide attempt cases being recorded in the system, as some family members request that their patient files and suicide information be removed from the hospital system. There is a need to implement strict regulations in hospitals to prevent release of privacy and confidentiality of suicide attempt information by not disclosing information except to the patients. Despite the limitations mentioned, this research represents the first analysis of DSP for suicidal purpose among individuals from Southern Saudi Arabia.

CONCLUSION

In the sample, DSP for suicidal purpose was observed of female gender, younger age, low-education level, unemployment, and Saudi nationality. Abdominal pain was the most common complications of DSP suicide attempts. Depression and family conflict were the top causes of DSP suicide attempts. Gastric lavage and activated charcoal were the most common treatment for DSP suicide attempt. Females in the Southern province of Saudi Arabia should be targeted by implementing modifiable factors to reduce and prevent DSP. Community based study to DSP identify the prevalence and risk factors should be conducted and its magnitude.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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