

## DELIBERATE SELF-HARM PATIENTS VISITING PUBLIC AND PRIVATE EMERGENCY DEPARTMENTS OF KARACHI

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### ABSTRACT

#### OBJECTIVE

To study the mode of attempted deliberate self-harm (DSH) in patients presenting to the Emergency Departments (ED) of public and private hospitals of Karachi, Pakistan.

#### DESIGN

A cross sectional study.

#### PLACE AND DURATION OF STUDY

Aga Khan University Hospital Karachi, Jinnah Post Graduate Medical Centre Karachi and Civil Hospital Karachi; March 2011 to February 2012.

#### SUBJECTS AND METHODS

One hundred DSH cases from ED of a private sector hospital were compared with 101 patients from two public sector hospitals.

#### RESULTS

DSH patients in the private hospital were mostly females (70%), had higher level of education (32%), did not share their problems (67%) with someone and had more mental disorders (28%). Patients from public hospitals were treated more for physical illnesses compared to private facility. Organophosphorus poisoning (90%) was a common mode of DSH in patients presenting to public hospitals; however significant number of organophosphorus poisoning (40%) was also seen in private hospital besides the benzodiazepine overdose (32%).

#### CONCLUSION

Emergency Physicians working in the EDs, both public and private sector hospitals of Karachi, should have adequate knowledge of managing organophosphorus poisoning. As more and more cases are presenting to the EDs, there should be a public health initiative to control the illegal sale and availability of such compounds in Pakistan.

#### KEYWORDS

Deliberate self-harm. Emergency Departments. Hospitals. Karachi.

### INTRODUCTION

Deliberate self-harm (DSH) is defined as 'the intentional injuring to one's own body with or without apparent suicidal intent'.<sup>1</sup> DSH is currently a major public health problem in Pakistan.<sup>2</sup> The estimated number of DSH cases are more than 100000 per year.<sup>3</sup> It is important to address this problem since the number of DSH cases is 10-20 times higher than completed suicides.<sup>4</sup>

Karachi is the largest metropolitan city of Pakistan, with individuals coming to the city from all over the country for better jobs and educational opportunities. There are three big private hospitals; Aga Khan University Hospital (AKUH), Liaquat National Hospital (LNH) and Dr. Ziauddin Hospital cater to a large segment of society on the basis of fee for service at the point of contact. Additionally, public sector hospitals, like Civil Hospital Karachi (CHK), Jinnah Post Graduate Medical Centre (JPMC) and Abbasi Shaheed Hospital (ASH) are a referral hub for patients within the City and outside. The Emergency Departments (EDs) of these hospitals attend to the patients presenting with deliberate self-harm (DSH). Once the patients get their initial medical treatment from the EDs they are either admitted in the hospital, discharged with advice to follow-up in a clinic or they leave against medical advice.<sup>5</sup>

According to the law (prior to the Mental Health Ordinance, 2001) every DSH case should be taken to a government health facility designated as a Medico-legal Centre (MLCs), and registered by the police as a criminal offence. CHK, JPMC and ASH are MLCs. When DSH patients present to private sector hospitals the security officer calls the police for registering a case after the initial medical help has been given.

A systematic review of published literature on DSH (from Pakistan) reported the prevalence rates of attempted self-harm from private and public sector hospitals.<sup>6</sup> However, it is difficult to pool the results of those studies due to the differences in study designs, time frame of research, participants' age groups, sample sizes etc. The present study was designed against this background. The objective was to compare the demographics and the mode of attempted DSH in patients presenting to the EDs of public versus private sector hospitals of Karachi.

### SUBJECTS AND METHODS

This cross sectional study was carried out between March, 2011 to February, 2012 at AKUH, CHK and JPMC, Karachi. One hundred cases (100) were taken from AKUH while fifty (50) cases were taken from CHK and fifty one (51) cases recruited from JPMC. Since JPMC and CHK cater to patients with similar socioeconomic and demographic background, an equal number of cases were taken to match the private sector hospital enrollment. Ethical approval was obtained from AKUH (1312-EM/ERC-09), CHK (IRB/113/

DUHS-09) and JPMC before conducting the study.

AKUH is a 600-bed tertiary care, teaching, fee for service hospital with a 52-bed ED including two resuscitation rooms, minor operating room, front area designed mainly for (more) sick patients, the back area for less critical patients and clinical decision unit (CDU) where non critical patients can be admitted for up to 24 hours. CHK is a 1,750 bedded hospital with 50 beds in the ED. The JPMC has 1,240 beds, also with a 50 bedded ED. These public sector hospitals see more than 800 patients per day in their ED.

The DSH patients above the age of 16 years presenting to the EDs were asked to participate in the study through convenient sampling method. Written informed consent was taken from the participants as part of the ethical consideration governing human subject research as stipulated in the Helsinki Declaration. Demographic data including gender, ethnicity, education, marital status, house hold accommodation, employment status, problems at work, physical and mental illnesses during last one month, family system was collected on a predesigned proforma. The information on mode of attempted self-harm was also collected. The data collectors were given four days of training in a workshop setting. A high inter-rater reliability was noted among the individuals administering the questionnaire.<sup>7</sup>

## RESULTS

There were 201 cases of DSH from both the public sector and private sector hospitals. The distribution of DSH cases by demographic and educational characteristics stratified by public versus private hospitals is presented in Table 1. The gender disparity was apparent since there were 70 females in the private hospital group compared to 54 females in the public sector EDs. A large majority (53%) of cases belonged to Urdu speaking ethnic group in private hospitals compared to (35%) in public sector EDs. Around 59% were either engaged, married, separated, divorced, and widowed in the private sector group as compared to 47% in public hospital group. In terms of education, 32 patients had graduate or postgraduate qualification in the former group compared to only 3 individuals having the same level of education in the latter group. In terms of diagnosed mental disorder, 28 patients diagnosed to have mental disorders during last one month attempted DSH compared to 15 such cases in the public sector hospitals. When we asked if the patients had someone they can confide in or share their problems with, a high number of DSH patients (n=76) replied in the negative. The frequency was less in public sector hospitals.

When we analyzed the mode of DSH, organophosphorus poisoning came to be a major concern in public sector hospitals (n=90) compared to private hospitals (n=40). The tranquilizers from the Benzodiazepines group were the most commonly employed method of DSH in private hospital setting (Table 2).

## DISCUSSION

In our study more females than males were taken to a private sector hospital since the reporting requirements are more peripheral to the overall care. The same observation was also

**Table 1.** Distribution of DSH cases by demographic and educational characteristics according to public versus private hospitals.

Variable	Public Cases (n=101)	Private Cases (n=100)
<b>Sex</b>		
Male	47(46.5)	30 (30)
Female	54(53.5)	70 (70)
<b>Ethnicity</b>		
Punjabi	09(8.9)	05 (05)
Pushto	22(21.8)	05 (05)
Sindhi	07(6.9)	15 (15)
Urdu speaking	36(35.6)	53 (53)
Balochi	05(5.0)	02 (02)
Others	22(21.8)	20 (20)
<b>Education</b>		
Illiterate	28(27.7)	05 (05)
Primary	18(17.8)	10 (10)
Secondary	15(14.9)	09 (09)
Matric	25(24.8)	19 (19)
Intermediate	12(11.9)	25 (25)
Graduate/postgraduate	03(3.0)	32 (32)
<b>Marital Status</b>		
Single	54(53.5)	41 (41)
Engaged	02(2.0)	08 (08)
Married	40(39.6)	45 (45)
Separated/divorced/widowed	05(5.0)	06 (06)
<b>Choice Involved</b>		
Parents/relatives	26(25.7)	32 (32)
Own choice	15(14.9)	05 (05)
Both	06(5.9)	22 (22)
N/A	54(53.5)	41 (41)
<b>Do you have children?</b>		
Yes	30(69.8)	35 (35)
No	13(30.2)	15 (15)
<b>Employment</b>		
Yes	29(28.7)	22 (22)
No	40(39.6)	30 (30)
Students	06(5.9)	17 (17)
House wife	26(25.7)	31 (31)
<b>Having Problem at work</b>		
Yes	24(33.3)	11 (11)
No	48(66.7)	78 (78)

**Table 2.** Mode of attempt according to public versus private hospitals

	Public	Private
<b>Alcohol</b>	01 (1.0)	00 (1.0)
<b>Analgesic</b>	00 (0.0)	09 (09)
<b>Antiepileptic, Cannabinoids</b>	00 (0.0)	04 (04)
<b>Benzodiazepine</b>	03 (3.0)	32 (32)
<b>Cannabis</b>	01 (1.0)	00 (00)
<b>Heroin, Opium, Methodone, Codeine</b>	00 (0.0)	03 (03)
<b>Jumping from a height</b>	00 (0.0)	01 (01)
<b>Lysergic acid diethylamide</b>	00 (0.0)	02 (02)
<b>Organo-phosphorous</b>	91 (90)	40 (40)
<b>Petrol</b>	03 (3.0)	00 (00)
<b>Sharp weapon</b>	02 (2.0)	09 (09)

noted previously in a retrospective study from the same center.<sup>8</sup> However, there has been marked increase in DSH patients with organophosphorus poisoning in private hospitals (especially AKUH) with in last 6 years or so. A previous study from the same center has shown that there were more cases with benzodiazepine overdose than other form of poisoning. In the present study, we noted that organophosphorus compounds were more a common mode of DSH compared to tranquilizers in the patients presenting to the public sector hospitals. Similar results were observed from previous work.<sup>9</sup> More affluent (and educated) people presented to the private sector hospital ED settings, however there is a high cost of the management of DSH in private hospital,<sup>10</sup> which paradoxically was one of the significant reasons for Leaving Against Medical Advice (LAMA) from the ED as cost of care become exorbitantly high.<sup>5</sup> These patients in the private care settings had diagnosed mental disorders as reported at the point of inquiry compared to public sector hospitals. This can be either an artifact of reporting or a result of more comprehensive care available at these centers.

The study has several limitations which should be kept in mind while reviewing the results. We enrolled a small sample which might not be representative of all patients presenting at these centers. Additionally there are many private health care facilities in the city, of which only a fraction of patients present to a tertiary care facility. This fact is corroborated by the evidence that only 100 such patients presented to AKUH ED in one year's time.

The estimated number of DSH cases in Karachi is around 3000-6000 per year and out of these approximately 350 cases are admitted in the National Poisons Control Center, JPMC.<sup>11</sup> One of the strengths of our study is that we took equal number of cases from JPMC and CHK for the sake of comparison with the private health care facility. The study cannot be generalized to the ED patients in other parts of Pakistan since each hospital has its unique catchment area. More research is needed in this important, yet neglected area of public health concern. Particular attention should be paid to know the correct management of organophosphorus poisoning in the ED settings. Strategies must be developed by the government to limit the illegal sale of these compounds. Media should educate masses, especially the parents supervising the children, to keep these products out of the reach. Mass campaigns like "Lock up your pesticides" as was used in Sri Lanka,<sup>12</sup> with some good effect may be beneficial. Pakistan should follow suit with such campaigns, as well as further research to help reduce the burden of this problem.

## CONCLUSION

DSH is a common presentation in the EDs settings of both public and private sector hospitals. The demographic background as well as education, and the associated cause of DSH differs between the private and public sector hospitals. More research is needed in this important, yet neglected area.

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