Predictors of duration of admission following an act of deliberate self-harm, a cross section study from Oman

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Abstract

Objective: This study aims to determine the predictors of the length of inpatient hospital admission following deliberate self-harm (DSH).

Method: This is a retrospective study; medical notes for all patients admitted from Jan 20012 to Jan 2014 with DSH were reviewed for sociodemographic information, clinical diagnosis and length of hospital admission.

Results: The total number of records reported during the three-year period was 117 patients, 102 (87%) were Omani, and 15 (12.8%) were non-Omani. The mean age was 23.5, and the rate of DSH was the highest in the age group 15-24 (65.8%) and the lowest in the age group <15 (1.7%). The pharmacological method was commonly used (82.9%), and analgesics accounted for 36.1% of this. Of the total sample, 28% had previous self-harm. More than half of the cases were admitted for 1-2 days. There was a significant association between the short hospital stay and pharmacological method. In contrast, psychiatric diagnosis was found to be a predictor for longer stay of more than four days.

Conclusion: The rate of self-harm is increasing in Oman with the analgesic use remaining the commonest method of self-harm. The predictors of longer inpatient stay should be considered in the DSH prevention programs to reduce the avoidable burden.

Key words: self-harm, Mental health, Duration of admission, Oman
Introduction

“Deliberate self-harm is defined as the deliberate, direct, self-inflicted destruction of body tissue without suicidal intent and for purposes not socially sanctioned” (1). People who self-harm often do so by taking medication overdose, ingesting household material or by inflicting direct injury to their bodies. These acts are usually aimed at bringing about change, which the subject desires via the actual or expressed consequences of the DSH escaping an intolerable situation (2).

Many descriptive studies conducted in different parts of the world have shown a substantial increase in the rate of DSH leading to high levels of health care utilization in the form of frequent visits to the emergency departments and admission to inpatients units. A study by Carr et al. from the UK reported annual incidence rates of DSH to be 12.3 and 17.9 per 10,000 male and female patients, respectively. The estimated annual rates of presentation were 18.5 for males and 28.9 for females. Over time, the rates were consistently higher for female patients (3).

There is very limited research on DSH from Islamic countries, and the incidence of DSH is expected to be relatively small because harming oneself is condemned in Islam (4).

However, DSH has become an emerging problem in the Arab-Islamic world. In Jordan, self-poisoning was reported by 8% of the cases attended by the accident and emergency department, and a significant number of these cases were with deliberate self-harm (5).

In 2002 Zaidan, Z.A. et al found an increase in the incidence of DSH in Oman from 1.9 in 1993 per 100,000 to 12.8 in 1998. 78% of the cases were female and 77.2% were of Omani nationality. Conflict with family preceded 31% of the cases. Psychiatric diagnosis was found among 19.3% of the study sample while 12% had previous self-harm history. In spite of such a rise, the figure in Oman was small compared to other countries. The highest rates came from developed countries like France 462/100,000, Finland 314/100,000 and 45/100,000 in Spain.

The risk of suicide among DSH patient is much greater than in the general population and among those who commit suicide, 20-30% have had an episode of DSH within the year before their death (6). Approximately 1% of those who attended hospital after self-harm die within one year and 2-3 % over the next five years (Royal College of Psychiatry, 1994).

Therefore, it is of great significance to analyze the characteristics of the group at risk for DSH and to assess the predictors of duration of hospital stay to develop optimal care and to target this group in suicide strategy prevention.

There is a lack of studies investigating the predictors of hospital length of stay following DSH. In England, Gunnell, D. et al. found that people who self-harm tended to have shorter lengths of hospital stay than those who did not self-harm across all diagnostic groups (7).

Method

This is a retrospective study of patients admitted to Sultan Qaboos University Hospital following an act of deliberate self-harm. All patients admitted to the medical or psychiatry wards from 1st of January 2012 to 30 December 2014 following an overdose, self-poisoning and self-mutilation were included. Patients admitted with an accidental drug overdose, and poisoning were excluded. Patients with recreational drug abuse were also excluded unless the intention of the overdose was to self-harm.

The information about each patient was collected from the electronic medical records. The data collected included patient’s gender, age, marital state, employment, method of self-harm, psychiatric and medical diagnosis, date of admission and discharge, and the precipitating factors. The psychiatric diagnosis was recorded using ICD10, and it covered psychiatric diagnosis before the self-harm and those determined at the time of assessment for the episode of self-harm.

Data was analyzed using SPSS 16. The ethical committee at the college of medicine and health sciences at Sultan Qaboos University approved this study.

Results

A total number of 117 patients met the inclusion criteria; 82% were females, 66 % were single, 29 % married, 5 % divorced. Regarding nationalities, 87% were Omani while 13% were non-Omani. The mean age was 23.5, the median 22 with (SD 6.56). As illustrated in Figure 1 the rate of DSH was the highest in the age group 15-24 (65.8%) and the lowest in the age group <15 (1.7%).

The highest rate of DSH was among the unemployed (44%), followed by students (28%). Those who were employed were 27% of the total sample.

As depicted in Figure 2, (page 6) 83% of the study sample used the pharmacological method to self-harm while 17% used non-pharmacological methods such as injections of chemical detergents reported by 10% of the sample while 7% used self-mutilation.

Four patients self-harm by cutting their wrists. One patient tried jumping from a multi-storey building while four patients were admitted for DSH with misused substances and these involved 3 cases of ethanol and one of heroin.
Results

Figure 1: Percentage of patients by age group
As seen in Figure 3, 36.3% overdosed with analgesics such as paracetamol and non-steroidal anti-inflammatory drugs (NSAIDs), 31% used Paracetamol while 33% used mixed methods such as antihistamine and antibiotics, oral hypoglycemic agents.

Psychotropic and other single drugs were used by 16% and 15% of the patients respectively.

With regards to co-morbidities, 78% had no comorbid medical illness, while 41% had a psychiatric diagnosis of whom 50% had Depression. The remaining percentage was distributed equally between personality disorder, substance misuse and hypomania.

Of the total sample, 32% had previous deliberate self-harm while 68% presented for the first time. Data was missing for 13 patients. 61.0% of the DSH incidents were preceded by conflicts with family members. 27% had Social stressor, 11% due to work related problems while 4.5% occurred after bereavement; 9% were due to poor school achievement.

With regards to progress after admission, six patients (5%) were admitted to the intensive care unit while 33 patients (27%) left the hospital against medical advice.

Figure 4 (page 8) reveals that 53% had a very short inpatient stay (1-2 days) and 26% had a short stay (3-4 days). Long stay (>=5) was found in 20.5% of patients. The mean is 3.75, and the median is 2. The longest admission followed overdoses with Amitriptyline (10 days in ICU followed by 23 days in the medical ward).

Table 1 demonstrates the duration of admission among the different age groups. The shortest period of admission occurred in the age group 15-25 (66.7%) and the longest period in age group <15 (30.8%). There is no significant association (p-value = 0.347).

The short admission occurred in 79% of the females and 75% of males whereas long admission was 25% in males and 19.6% in females. The association was not statistically significant (p value = .479).

Similar results were obtained from analyzing the association between a longer hospital stay and the following characteristics: marital state (Table 2), employment, type of medication used, medical illness, precipitating factors and previous DSH.
Figure 3: Percentage of patients by pharmacological agents involved

Table 1: Admission duration of groups * Age group

<table>
<thead>
<tr>
<th>Duration of Admission</th>
<th>Age group</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;15</td>
<td>43.6%</td>
<td>53.8%</td>
</tr>
<tr>
<td>1-2 days</td>
<td>15-25</td>
<td>66.7%</td>
<td>55.6%</td>
</tr>
<tr>
<td></td>
<td>26-30</td>
<td>55.6%</td>
<td>47.6%</td>
</tr>
<tr>
<td></td>
<td>&gt;30</td>
<td>47.6%</td>
<td>53.8%</td>
</tr>
<tr>
<td>3-4 days</td>
<td>15-25</td>
<td>23.1%</td>
<td>28.6%</td>
</tr>
<tr>
<td></td>
<td>26-30</td>
<td>27.8%</td>
<td>23.8%</td>
</tr>
<tr>
<td></td>
<td>&gt;30</td>
<td>28.6%</td>
<td>20.5%</td>
</tr>
<tr>
<td>&gt;=5 days</td>
<td>15-25</td>
<td>10.3%</td>
<td>16.7%</td>
</tr>
<tr>
<td></td>
<td>26-30</td>
<td>16.7%</td>
<td>23.8%</td>
</tr>
<tr>
<td></td>
<td>&gt;30</td>
<td>23.8%</td>
<td>20.5%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 2: Admission duration groups marital state

<table>
<thead>
<tr>
<th>Admission duration group</th>
<th>Married</th>
<th>Single</th>
<th>Divorced</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 days</td>
<td>63.6%</td>
<td>53.3%</td>
<td>20.0%</td>
<td>54.9%</td>
</tr>
<tr>
<td>3-4 days</td>
<td>25.6%</td>
<td>23.1%</td>
<td>27.8%</td>
<td>25.6%</td>
</tr>
<tr>
<td>&gt;=5 days</td>
<td>25.3%</td>
<td>40.0%</td>
<td>25.7%</td>
<td>20.5%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Figure 4: Distribution of patients by length of hospital stay

![Graph showing distribution of patients by length of hospital stay.]

Table 3: Admission duration groups and Method of self-harm

<table>
<thead>
<tr>
<th>Admission duration group</th>
<th>Method</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pharmacological</td>
<td>Household Material</td>
<td>Others</td>
<td></td>
</tr>
<tr>
<td>1-2 days</td>
<td>57.3%</td>
<td>25.0%</td>
<td>62.5%</td>
<td>54.3%</td>
</tr>
<tr>
<td>3-4 days</td>
<td>25.0%</td>
<td>41.7%</td>
<td>.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>&gt;=5 days</td>
<td>25.3%</td>
<td>40.0%</td>
<td>25.7%</td>
<td>20.5%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
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Table 3. The pharmacological method was significantly associated with shorter length of hospital stay (82.3%) while 57.3% had a very short stay. Other methods of self-harm were associated with longer stay (37.5%) compared to other groups (p-value 0.043) although the majority of patients in this group had a very short stay (62.5%).

The longer stay was reported to be higher in those with a psychiatric diagnosis (31%). The association was significant with a p-value of 0.032.
Discussion

This study aimed to examine factors related to the length of hospital admission following DSH. The numbers of females presenting with self-harm was over-representative which is consistent with studies worldwide. This might be because females are more emotional and at higher risk of self-harm when experiencing the higher level of stress.

The mean age for DSH in this study was 23.5 which is almost the same finding in the previous study carried in Oman by Zaidan et al(8). It is more in those aged 15-24 years. Youth problems including difficulties with school or college and choice of the spouse are common during this age. After the age of 24, there are more stable social relationships and work. This is similar to the finding in a study by Wilkinson et al. which reported the highest rate among those aged 16-24 years (9).

In the current study, more than half of the patients who presented with DSH were single, and this was expected since marriage provides more stability in life. Employment is a protective factor for DSH as 44% of the patients were unemployed. Being unemployed is stressful and has a detrimental effect on the person and the community as this might put the person at pressure from his family to get work and as a result may increase family conflicts.

Self-poisoning was reported in 93% of the cases, and this figure was similar to that in England in 1995-2000 (10) (94.9% in 1995/1996, 93.8% in 1999/2000). The pharmacological methods were used by 83% of the sample which is higher than the previous report in Oman, 50% in 200 (11) and 74% in 2002(8). Overdosing with analgesics is the commonly used method, and paracetamol was predominating. This can be due to availability of paracetamol as over the counter medication.

Psychotropic use in this study was 16.3% which is lower than that in other studies conducted in Oman. This might be because there is more awareness about the lethal effect of these drugs. Therefore, people are keeping them away from everyone’s reach. In comparison, an Iranian study found that psychoactive agents, mainly benzodiazepine were common 72%, compared to analgesics 18% (11) .

Despite the widespread use of serotonin reuptake inhibitor prescription (SSRIs), tricyclic antidepressants are still widely prescribed to patients in Oman. This could be explained by the lack of SSRI in some local health centers. Four patients were admitted for DSH with comorbid substance misuse (3 Alcohol & 1 Heroin use). The use of these methods is expected to increase due to the growth in the number of addicted adolescents and the availability of these substances.

In this study, the number of patients with depression doubled those with a personality disorder. This can be because people with adjustment disorder are diagnosed to have depression because of difficulties in distinguishing adjustment disorder from mild or subclinical depression(12).

Further support for this view is that 25% of adolescents with a diagnosis of adjustment disorder engage in this behavior, and this rises to 60% among adults(12). Another possibility is that patients with personality disorder are often under-diagnosed due to cultural variation in the presentation of these patient groups. Moreover, those diagnosed with personality disorder need more evaluation unless the diagnosis was made in previous visits.

The short hospital stay occurred among 79% of the patients, possibly because the attempts were not lethal and most of the medical overdoses were with analgesics (36%). Our analysis was negative for any significant association between age group, gender, marital state, employment, particular psychiatric diagnosis, medical illness, precipitating factors and previous self-harm. The pharmacological method was significantly associated with shorter length of hospital stay (82.3%); 57.3% had a very short stay. Another method of harm was associated with longer stay (37.5%) compared to other groups (p-value 0.043 although the majority of patients in this group had a very short stay (62.5%).

The longer period of stay was found among those who used other methods followed by patients who used household products with a small difference between the two. This is because non-pharmacological methods are more lethal and have an important effect on the body systems. The longer stay was reported in patients with psychiatry diagnosis (31.2%). In fact, this group of patients need more observation and management. Therefore, further assessment and management are usually required in the psychiatry ward.

These groups of patients should be the target for programs of deliberate self-harm and suicide prevention as this will reduce the hospital burden especially the ones related to bed occupancy and care provided by staff. It also reduces the family sufferings which resulted from a longer stay in the hospital.

Limitations

This study has a few limitations. First, the sample was collected from one tertiary care center. The findings might be different if the study included the peripheral hospitals.

Secondly, surgical ward admissions were not included as most of them are serious since they necessitate admission and therefore are transferred to a psychiatry ward after stability.

Conclusion

Deliberate self harm is a preventable health problem which has a burden on the health care system. Identifying the groups who are at risk of self-harm can reduce the load in the health care system. Further multicenter studies are needed to explore predictors of length of hospital admission.
References


