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CHARACTERISTICS OF PATIENTS REFERRED FROM EMERGENCY AND GENERAL WARDS TO PSYCHIATRIC SERVICES FOR DELIBERATE SELF-HARM IN BRUNEI DARUSSALAM.

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ABSTRACT

Introduction: Deliberate self-harm (DSH) is a common presentation to hospital emergency departments and general wards in Brunei. Patients who present with DSH are usually referred for a psychiatric assessment. **Methods:** This study describes the demographic, social and clinical characteristics of patients who were referred to psychiatric services after an acute incident of DSH. An evaluation of the DSH methods used and situational factors was conducted. Outcomes included medical or surgical treatment, hospital and psychiatric admissions. **Results:** 99 patients were referred between 1st October 2018 and 1st September 2020. 65 (65.7%) were female. The mean age was 26.6 years. The most common method of DSH was overdose of medication, followed by self-cutting. Females were significantly more likely to overdose than males. The most common situational factors were relationship and financial problems. Previous psychiatric history and chronic medical conditions were equally prevalent in about a quarter of participants. Most participants did not require a psychiatric admission. **Conclusions:** Female gender, young age, unemployment, recent history of DSH, previous psychiatric history, chronic medical conditions, relationship and financial problems, were identified as risk factors for DSH. The majority of people presenting with DSH required medical intervention, however only a small proportion required psychiatric admission. Although the majority of DSH incidents were unplanned, providing interventions for these high-risk groups may be helpful.

Keywords: Brunei, Cross-sectional study, Deliberate self-harm, Demography, Drug overdose, mental health.

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three relevant references should be included. Only images of high quality (at least 300dpi) will be acceptable.

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Introduction: Deliberate self-harm (DSH) is a common presentation to hospital emergency departments and general wards in Brunei. Patients who present with DSH are usually referred for a psychiatric assessment. **Methods:** This study describes the demographic, social and clinical characteristics of patients who were referred to psychiatric services after an acute incident of DSH. An evaluation of the DSH methods used and situational factors was conducted. Outcomes included medical or surgical treatment, hospital and psychiatric admissions. **Results:** 99 patients were referred between 1st October 2018 and 1st September 2020. 65 (65.7%) were female. The mean age was 26.6 years. The most common method of DSH was overdose of medication, followed by self-cutting. Females were significantly more likely to overdose than males. The most common situational factors were relationship and financial problems. Previous psychiatric history and chronic medical conditions were equally prevalent in about a quarter of participants. Most participants did not require a psychiatric admission. **Conclusions:** Female gender, young age, unemployment, recent history of DSH, previous psychiatric history, chronic medical conditions, relationship and financial problems, were identified as risk factors for DSH. The majority of people presenting with DSH required medical intervention, however only a small proportion required psychiatric admission. Although the majority of DSH incidents were unplanned, providing interventions for these high-risk groups may be helpful.

Keywords: Deliberate self-harm, Cross-sectional study, Demography, Drug overdose, mental health, Brunei.

BACKGROUND

Deliberate self-harm (DSH) is the deliberate act of self-injury, with or without the intention of suicide.[1] DSH is associated with a substantially increased risk of suicide.[2,3] There is often an opportunity for healthcare services to intervene before a completed suicide, as 20-25% of people who die by suicide have presented to a general hospital after episodes of DSH in the year before death.[3] The motivation for DSH varies and can be difficult to elicit,[4] however, it may be understood as an expression of personal distress.[5] Factors such as unemployment, living alone, relationship breakdown, other life stressors, and pre-

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existing psychiatric history are associated with a higher risk of DSH.[6] Depressive symptoms are associated with higher risk of DSH.[7] Having a general medical illness has been shown to increase the risk of DSH and suicide attempts compared with the general population.[8] The method of DSH provides useful information regarding future risk. Methods such as the ingestion of toxic poisons and hanging are more fatal than other methods such as overdoses or self-cutting.[9]

Suicide and DSH are taboos in Brunei for cultural and religious reasons. There is some data available on suicides in Brunei which have shown an increasing trend.[10] The most common method of suicide appeared to be by hanging.[11] Unfortunately, there is no systematic data available regarding DSH in Brunei. Understanding of the methods of DSH used would assist in the development of preventive strategies.[12]

Raja Isteri Pengiran Anak Saleha (RIPAS) Hospital is the largest government hospital in Brunei, with the country's largest emergency department. Acute DSH incidents are often presented here and are referred to psychiatric services for psychiatric evaluation. This group of patients are a useful cohort in which to study the characteristics of DSH in Brunei. The primary aim of this study was to describe the demographic, social and clinical characteristics of patients presenting with acute DSH who were referred to psychiatry services from emergency services or RIPAS hospital general wards. The secondary aim was to evaluate the characteristics of the DSH incidents including methods used, whether planned or unplanned, the situational factors and subsequent outcomes including treatment provided and hospital admissions.

METHODS

This is a prospective cross-sectional cohort study of all patients who presented with acute DSH to the emergency department or directly admitted to the general wards of RIPAS Hospital and were referred to psychiatric services for psychiatric evaluation.

Sample

Inclusion Criteria

All patients who were referred to psychiatric services between 1st October 2018 to 1st September 2020 from the emergency department or a medical or surgical ward in RIPAS hospital with an acute DSH incident, were prospectively included in this study. A DSH incident is defined as an any act of self-poisoning or physical self-injury, irrespective of the apparent purpose of the act.[5] An acute incident was defined as occurring within one week of presentation to hospital.

Written informed consent was obtained from all participants of the full study. Capacity to consent was assessed by a doctor working in psychiatric services, who also completed the data collection sheet for the patient. Only patients above 12 years of age were included in the study as DSH in under 12-year-olds have been found to have different characteristics to self-harm in older patients.[13] Patient consent was obtained from those aged 18 years and above. Parental consent was obtained from those aged 12 to 17 years, and assent to participate was also obtained from the child. Patients who were unable to consent to participate in the study during their initial presentation for reasons such as having to undergo medical or surgical intervention, were contacted within 30 days to obtain their consent to participate.

Exclusion Criteria

Patients who presented with accidental self-harm and those who had reported thoughts of self-harm without a DSH incident, were excluded from the study.

Data collection

All doctors working in psychiatry were informed of the study prior to the start. A data collection sheet was designed for the purpose of this study. This data sheet includes demographic information, socio-occupational data, information on situational factors associated with the DSH, information on self-harm methods and clinical data. Each participant who consented to the full study was interviewed by a doctor working in psychiatric services, to collect self-reported data directly from the participant.

The demographic information including age, gender and nationality status (Bruneian citizen, permanent resident, or foreign nationals). Socio-occupational data were collected regarding educational attainment, employment status and whether the person lived alone. Participants were asked about situational factors associated with the DSH incident such as workplace or relationship problems, financial problems, problems related to their schooling or further education, and whether they had experienced a close bereavement within the past year. The method of self-harm was recorded, whether ingestion of a potentially toxic substance, overdose of medications or tablets, self-cutting, blunt trauma, burning of their body or a part of their body, or attempted strangulation as part of a hanging attempt. Clinical data included whether each participant had received previous treatment from mental health services including psychiatric or clinical psychology services, any history of recent DSH within the past year, and whether there was a pre-existing physical disability or chronic medical condition requiring treatment at the time of the incident. Finally, participants were asked whether the DSH had been planned or unplanned.

Outcome data were collected from hospital electronic records. This included whether or not medical or surgical interventions were required. Medical interventions included any period of observation in hospital, medical investigations, intravenous fluids, simple suturing in the emergency department, and any administered medication. Surgical intervention included any referral to specialist surgical services. Hospital admissions were recorded including whether for intensive medical care or psychiatric admission. Data on psychiatric follow-up were not collected as psychiatric referrals seen in the emergency department or general wards for DSH are routinely offered an out-patient psychiatry follow-up appointment if they are not admitted into a psychiatric ward. Any participant who presented with a second DSH incident that met the inclusion criteria during the research period was recorded as having a "recurrent DSH' incident.

Patients who met the inclusion criteria but declined to consent or who did not have the capacity to consent to participate in the study, were excluded from the full data collection. However, basic demographic data namely age and gender, and data on the method of DSH were collected for this group and approval from the research ethics committee was obtained for this research protocol. To ensure completeness of the sample, hospital emergency department records were checked, and data sheets were collected and checked by one of the authors (AS). Data sheets were subsequently re-checked and compared to hospital electronic records for accuracy by another author (HH). Data regarding previous psychiatric and medical history were checked for accuracy using hospital electronic records.

Statistical analyses

Data were Statistical Package for Social Sciences (SPSS), version 16. The Chi-Square test was used to analyse categorical data. The Student's t-test was used to compare means between two groups. The ANOVA test

Table I: Comparison of method of DSH between genders.

DSH method	n (%), N = 99	Males n (%), N = 34	Females n (%), N = 65	χ^2(1, N=99), p-value
Overdose of medications / tablets	58 (58.59)	14 (41.18%)	44 (67.69)	*χ^2 = 6.47, p = 0.01**
Self-cutting	31 (31.31)	12 (35.29%)	19 (29.23)	χ^2 = 0.38, p = 0.54
Ingestion of a potentially toxic substance	6 (6.06)	4 (11.76%)	2 (3.08)	χ^2 = 2.196, p = 0.09
Blunt trauma	4 (4.04)	2 (5.88%)	2 (3.08)	χ^2 = 0.45, p = 0.50
Strangulation (as an attempted hanging)	4 (4.04)	3 (8.82%)	1 (1.54)	χ^2 = 3.06, p = 0.08
Burning	1 (1.01)	0	1 (1.54)	χ^2 = 0.53, p = 0.47

*indicates a statistically significant difference between groups (Univariate analysis).
(Some participants used more than one method)

was used to compare means between more than two groups. A p-value of 0.05 or less was considered a statistically significant result.

Ethics Approval

Ethics approval was obtained for this study from the Brunei Ministry of Health Research Ethics Committee.

RESULTS

Socio-demographic Data

A total of 99 patients who were referred to psychiatric services in RIPAS hospital during the study period met the inclusion criteria. Thirty-four (34.34%) were male and 65 (65.66%) were female. The mean age was 26.6 (SD = 9.7) years. Of these 99 patients, only 67 (67.68%) patients consented to participate in the full study. Thirty-two patients did not give consent to participate in the full study. Of the 67 patients who participated, 60 (89.55%) were Bruneian citizens or permanent residents, whilst 7 (10.45%) had foreign nationalities. Twenty-four (35.82%) were male and 43 (64.18%) were female. Their mean age was 27.7 (Range: 12 – 62) years. Six (8.96%) patients were less than 18 years of age. Twenty-five (37.31%) were married. Three (4.48%) lived alone. There was no significant difference in age (t = 1.62, p= 0.11) or gender ($\chi^{2=}$ = 0.20, p = 0.65) between the consenting and non-consenting groups.

Eighteen (26.87%) patients were unemployed, 34 (50.75%) were employed and 15 (22.39%) were students. Twelve (17.91%) had completed tertiary education, 27 (40.30%) had completed secondary school, 26 (38.81%) had completed primary school and 2 (2.99%) had not completed primary education. Of the 6 participants who participated in the full study (Total 67) and who were less than 18 years old, 4 had completed secondary school and 2 had completed primary school.

Method of DSH

Overdose of medication or tablets was the most common method, followed by self-cutting. Females were significantly more likely to use the overdose method than males (Table I). Five participants used more than one method of DSH. Of the six participants who ingested a toxic substance, one ingested insecticide, one ingested bleach, one ingested a liquid detergent, one ingested vaping liquid, one ingested a combination of bleach and insecticide, and one ingested a combination of insecticide and car engine oil.

A one-way ANOVA test was performed to analyse the difference between mean age for the different DSH method groups (Table II). For this analysis, participants who used two methods were categorized as a 'mixed methods' group. No significant difference was found in mean age between DSH method groups. However, only overdose and self-cutting groups had partici-

Table II: DSH method and mean age.

DSH method	n (%), N = 99	Mean age (years)	sd (range)	p-value
Overdose only	54 (54.55)	25.67	9.76 (15 – 62)	0.096
Self-cutting only	28 (26.28)	25.11	8.93 (12 – 45)	
Ingestion of a potentially toxic substance only	6 (6.06)	31.00	8.05 (20 – 39)	
Strangulation only	4 (4.04)	31.00	10.36 (21 – 45)	
Blunt trauma only	1 (1.01)	39.00	-	
Burning only	1 (1.01)	49.00	-	
Mixed methods	5 (5.05)	29.00	8.69 (18 – 38)	

pants who were young adolescents.

Planning of the DSH Incident

Of the 67 participants in the full study, 16 (23.88%: male=2; Female=14) reported that they had planned their DSH incident. Females were significantly more likely to have planned their DSH than men ($\chi^2 = 4.97$**,** $p = 0.03$).

Situational Factors

Relationship problems were the most common situational factor associated with DSH incidents, reported by 51 (76.1%) participants, followed by financial problems which were reported by 21 (31.34%) participants. Sixteen (23.88%) participants reported problems experienced in the place of study, 9 (13.43%) reported workplace problems and experiencing a close bereavement in the past year. Only 3 (4.48 %) participants self-harmed as a direct response to psychotic symptoms.

Psychiatric and Medical History

Twenty-two (32.84%) participants reported a history of previous DSH in the past year. Nineteen (28.46%) had a history of receiving psychiatric or clinical psychology out-patient care in the past. Six (8.96%) had previously been admitted into a psychiatric ward for treatment. Depression was the most common previous psychiatric diagnosis, followed by borderline personality disorder (see Table III.) Eighteen (26.87 %) had a history of a physical disability or treatment for a chronic medical condition (see Table III).

Outcomes

Twenty-five (37.31%) were discharged after assessment without treatment in the emergency department. Forty-two (62.69%) required medical intervention, 4 (5.97%) required surgical intervention. Thirty-four (50.75%) were admitted into hospital, of which 9 (13.43%) were voluntary psychiatric admissions and 5 (7.46%) were involuntary psychiatric admissions. Three (4.48%) required treatment in intensive care. Four

Table III: Previous psychiatric diagnoses and chronic medical conditions.

Previous Psychiatric Diagnosis	n (%), N = 67
Depression	10 (14.93)
Borderline Personality Disorder	7 (10.45)
Anxiety Disorder	5 (7.46)
Schizophrenia	2 (2.99)
Bipolar Disorder	1 (1.49%)
Adjustment Disorder	1 (1.49%)
Unspecified Non-organic Psychosis	1 (1.49%)
Chronic Medical Condition	
Asthma	7 (10.45)
Hypertension	6 (8.96)
Non-insulin dependent diabetes	4 (5.97)
Anaemia	3 (4.48)
Hyperlipidaemia	3 (4.48)
Cancer	2 (2.99)
Menorrhagia	2 (2.99)
Gout	2 (2.99)
Insulin dependent diabetes	1 (1.49)
Permanent blindness	1 (1.49)

Note: (Some patients had more than one psychiatric diagnosis or medical condition)**.**

(5.97%) had a recurrent DSH presentation during the study period. None of the DSH incidents resulted in fatality as a direct consequence of the incident.

DISCUSSION

This prospective cohort study provides valuable data regarding the demographics, social and clinical characteristics as well as methods of DSH used by individuals who present with DSH to emergency department and general wards in a large tertiary hospital in Brunei Darussalam.

DSH presentations in this study were predominantly among Bruneian citizens or permanent residents and young females who had planned their DSH in advance of the incident. Studies elsewhere have also found a higher incidence of DSH amongst females compared to males.[4,14,15] Women have previously also been found to prefer the overdose method, whilst men were more likely to ingest poisons.[16] However, the results of this study contrast with the data available regarding completed suicides in Brunei, which suggests that those who complete suicide are predominantly older males of foreign nationalities.[11]

The most common method of DSH in this study was overdose of medications or tablets, followed by self-cutting, which appeared to be similar to those found in studies conducted in Europe and developed countries.[4,14] Both methods occurred in young adolescents. In contrast, the ingestion of poisons appears to be more dominant in other developing countries in Asia.[9,15] Data regarding the type or source of medication taken during overdoses was not collected in this study. In Brunei, prescribed medications from government health facilities are provided free of charge to citizens and permanent residents, and long-term repeat prescriptions for chronic conditions are commonly provided. Unlike in countries such as the United Kingdom where the sale of paracetamol is limited for each purchase, it is easily bought in Brunei without limits. These factors may contribute to the predominance of overdose as a DSH method, however further research is necessary to evaluate this in order to devise effective strategies for prevention.

Although hanging has been reported to be the most common method of completed suicide recorded during the same time period,[10] the numbers presenting with attempted strangulation as part of a hanging attempt were small. This may indicate the lethality of hanging as a method of DSH. The majority of DSH incidents were unplanned and a third of participants had deliberately self-harmed within the previous year. These findings have also been demonstrated elsewhere.[4]

The results of this study suggest socio-occupational disadvantage in those who presented with DSH. Over a quarter of the participants were unemployed. This is a much higher rate compared to the unemployment rate of 7.4 which was reported in 2020 in the Brunei population. However, this could be influenced in part by the young age of the sample, as unemployment rates have been reported to be much higher in the 15 to 24 years age group compared to older age groups.[17] Although schooling up to secondary level is provided free of charge to all citizens and permanent residents, nearly half the sample had not completed secondary schooling. The most common self-reported situational factor associated with DSH was relationship problems. This finding of higher rates of DSH in young, females of low socioeconomic status and minimal education, and in those with interpersonal problems, has also been reported in the neighbouring country of Malaysia which has a similar socio-cultural environment.[15] Only a very small number lived alone, however this is likely to reflect the cultural norms in Brunei where multi-

generational households are common.

The proportions of participants who had received psychiatric treatment in the past, and those who had a physical disability or received treatment for a chronic medical condition, were similar. This suggests that having a medical condition and previous psychiatric history, were similarly important factors associated with DSH. DSH as a direct response to psychotic symptoms were rare. Half of those who presented with DSH were admitted into hospital, and about a fifth were admitted into a psychiatric ward. Only a small proportion of these required involuntary psychiatric treatment. The hospital admission rate was comparable to a study of DSH presentations in in England.[14] However, there were twice as many psychiatric admissions in this study. This may reflect a more cautious approach towards acute DSH in Brunei as community psychiatry services here are limited and intensive home treatment is unavailable.

There has been increasing public concern regarding deliberate self-harm and suicides in Brunei. In 2019, a national mental health crisis telephone helpline was introduced to provide urgent support for the public, working closely with mental health services. A national mental health action plan is currently being discussed across government agencies and community groups. The results of this study may help future efforts to provide targeted support and services for those at risk of DSH. It would be helpful to address the particular stressors affecting higher-risk groups especially young women. Upstream policy measures such as tackling unemployment and social disadvantage may be of benefit. Further research into the types and sources of medications used for overdose is required to inform strategies to restrict access to this DSH method.

Strengths and Limitations

The study did not include DSH presentations to other services such as primary health care or out-patient clinics. This may have limited the data collected as some methods of DSH such as self-cutting may have been less likely to present to emergency or hospital services. The data regarding situational factors was self-reported. This may have limited the accuracy of the data as participants may have been reluctant to discuss adverse experiences such as abuse or trauma. Nevertheless, this study provides data on a complete cohort of patients presenting with DSH to the largest hospital in Brunei. The findings provide useful information on the patterns and characteristics of DSH presentations here. This can help improve the assessment and management of DSH in the country. Finally, it is necessary to mention that attempted suicide is still considered a criminal offence in Brunei under Section 309 of the Penal Code Act.[18] The legal outcomes of this sample were beyond the scope of this paper although in general, the legal prosecution of attempted suicide is rare. Nevertheless, this may discourage many people from seeking treatment and DSH may be under-reported in this population.

CONCLUSIONS

The main demographic risk factors for DSH in this sample were female gender, young age and unemployment. Clinical risk factors included recent history of DSH, previous psychiatric history and having a chronic medical condition. The main method of DSH used was overdose and the most common situational factor was relationship problems followed by financial problems. The majority of people presenting with DSH required medical intervention, however only a small proportion required psychiatric admission. Although most DSH incidents were unplanned, providing specific interventions for these high-risk groups may be helpful. These interventions should include multi-agency strategies such as providing mental and physical health as-

sessments and treatment where indicated, limiting access to medications for overdose, providing psycho-social support and addressing upstream issues such as unemployment and financial problems.

DATA STATEMENT

All data belongs to the Ministry of Health Brunei. The raw data are not publicly available due to their containing information that could compromise the privacy of research participants.

DECLARATIONS

No funding was required for this study. The opinions expressed in this paper are the authors' own and do not necessarily reflect those of the Ministry of Health.

CONFLICTS OF INTEREST

The authors have no conflict of interest to declare.

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