A Case Control Study on Personality Traits and Disorders in Deliberate Self-harm in a Malaysian Hospital

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ABSTRACT

Objective: This study was conducted to compare personality traits in deliberate self-harm (DSH) patients with a control group matched for age, sex and race. **Methods**: A case-control study design was used in this study. A total of 50 consecutive admissions to Kuala Lumpur Hospital following episodes of deliberate self-harm were compared with equal number of controls from the admission for minor medical illness during the same period. They were assessed on socio-demographic profile, Axis I psychiatric diagnosis and personality traits. **Results:** The mean age for the cases and controls was 26 years. Seventy-eight percent of them were females, mostly unmarried and majority had completed their secondary education. The respondents were Indians (52%), Malays (40%) and Chinese (8%). A high prevalence of major depression (22%) was found among the cases compared to none among the controls. Personality disorders were present in 68% of cases as compared to 38% among the controls, while sensitivity ($p<0.0005$), impulsivity ($p<0.0005$), and worthlessness ($p<0.0005$) were the commonly reported personality traits. Paranoid personality disorder ($p<0.05$) and borderline personality disorder ($p<0.05$) were significantly present in deliberate self-harm subjects compared to the control group. **Conclusion**: Personality traits of sensitivity, impulsivity and worthlessness, and personality disorders of paranoid and borderline were common in DSH patients.

Key words: Personality traits, personality disorders, deliberate self-harm, Malaysian Hospital

INTRODUCTION

WHO/Euro Multi-Centre Study on Parasuicide[1] define deliberate self-harm (DSH) as "an act with non-fatal outcome in which an individual deliberately initiates a non-habitual behaviour, that without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognised dosage, and which is aimed at realising changes that the person desires via the actual or expected physical consequences." Considerable research has documented the problem of deliberate self-harm.[2-5] Deliberate self-harm (DSH) is becoming more common and is associated with a significant risk of suicide.[4]

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Research, looking at the suicide rates of those who harm themselves, found that 1% of those who harm themselves commit suicide in the following year and up to 10% commit suicide eventually.[6] Camilla et al[7] found comorbidity of two or more psychiatric disorders present in 46.7% of patients who present with deliberate self-harm. In a survey carried out by Suominen et al, a high proportion of DSH were found to suffer from comorbid mental disorders including personality disorders. This comorbidity appears to play an important role in DSH, similar to the cases of completed suicide.[8] Therefore, patients with personality disorders have a considerably increased risk of suicide in both the short and long-terms.[9]

Previously, only a few studies have investigated the role and correlates of DSH and personality disorders and suicide attempts, because of prior unreliable information in this group of patients.[10] In the sample of DSH patients presenting to a general hospital in the UK, it was found that a high prevalence of both psychiatric (92%) and personality (45.9%) disorders were present.[7]

Among various personality disorder studies, the rates of suicide among patients with borderline personality disorder ranges from 3 to 9%.[11] Brodsky et al.[12] suggest that impulsivity trait is associated with suicidal behaviour in borderline personality disorder and the same diagnosis is a distinct risk factor for suicidal behaviour.[13] A study by Mann et al.[14] found that impulsivity as a personality trait was a predictor for suicidal behaviour across a range of psychiatric disorders. Other personality disorders which have also been shown to be independent risk factors for suicide, were antisocial, avoidant and dependent types.[15] In this article, results of evaluating personality traits of DSH patients who were admitted to Hospital Kuala Lumpur compared to a group of controls will be presented.

METHODS

A case-controlled study was conducted in the Hospital Kuala Lumpur in Malaysia, from August to December 2004. All consecutive series of 50 individuals aged 15 to 65 years old who were admitted to Kuala Lumpur Hospital following an episode of DSH and subsequently referred to the psychiatry clinic of the same hospital were identified by daily telephone calls to the Emergency Department and the relevant admitting wards. In addition, the referral book of the psychiatric clinic, which registered all cases referred for psychiatric evaluation, was checked for the presence of any cases referred for DSH. The controls in this study were male and female patients between 15 to 65 years of age admitted to Kuala Lumpur Hospital following viral (dengue) fever during the study period. They were matched for age (± 5 years), sex and race.

Informed consent was obtained from both cases and controls. Inclusion criteria were as follows: patients who were admitted for DSH (cases) and dengue fever (controls) to Kuala Lumpur Hospital during the study period, aged 15-65 years, consented to participate in this study and medically fit to be interviewed, good comprehension of English or Bahasa Malaysia and absence of severe learning disability, dementia, psychotic disorders, mood disorder due to general medical condition, or current manic episode.

Data collection

The author himself conducted the interview of the respondents and informants. Respondents were interviewed in a separate room within the ward to ensure confidentiality. After the respondents were interviewed, appropriate help and assistance were offered.

Demographic Data

Respondents were asked the following questions: age, sex, marital status, race, religion, level of education and occupational status. In addition to the above questions, cases were asked on methods of DSH, number of previous attempts of DSH and whether they were receiving psychiatric treatment at the time of DSH.

Psychiatric Diagnosis

The International Neuropsychiatric Interview (MINI)[16] was used to diagnose any psychiatric diagnosis on the respondents as well as to exclude respondents who have psychotic symptoms from the study. It was designed as a brief structured interview for the major Axis I psychiatric disorders in DSM-IV[17] and ICD-10.[18] The rating was done at the right of each question by circling either Yes or No. The interviewer was trained and approved in the used of MINI by a senior psychiatrist who has had experience in the use of this instrument.

Personality Traits

We used Personality Assessment Schedule 5th Revision (PAS).[19] This is a semi-structured interview schedule to assess respondents' premorbid personality by interviewing the respondents and their informants. The PAS assess 24 traits (e.g. conscientiousness, aggression, and impulsiveness) that are grouped by cluster analysis into five personality styles: normal, passive-dependent, sociopathic, anankastic (compulsive), and schizoid. Several studies have found that PAS has good interrater reliability; including cross-nationality[20] and reported validity data comparable to that found with more widely used instruments.[19-23] In this study the respondent was asked to provide information related to 24 personality characteristics, and where the answer was positive, the respondent was asked to provide examples of relevant behaviours.

Ratings for each trait were made on a nine-point scale from 0-8: the ratings of 0-3 were normal variation in the absence of impairment of social functioning or distress to the subject or those around him or her; 4-6 were trait accentuations and 7-8 were personality disorders. The scores are combined by using formulae to derive 13 personality disorder categories (ICD-10)[18], 11 personality categories (DSMIV)[17] or four summary categories.[19] The PAS is a rater-administered questionnaire which takes about 45 minutes to be completed. The interviewer was trained in the use of PAS by a senior psychiatrist who has had experience in the use of this instrument.

After each admission the respondents were identified and the progression of health status of respondents were followed up throughout the admission. The interview would be done as soon as respondents were medically fit and willing to be interviewed, usually a day or two before they were discharged from the hospital. In this study all respondents were assured of the confidentiality of the data collected and informed consent was taken prior to each interview.

This study was carried out with the permission of the Ethical and Research Committee of the Medical Faculty of Universiti Kebangsaan Malaysia, the Director of Hospital Kuala Lumpur and the Head of the Psychiatry Department, Hospital Kuala Lumpur.

ANALYSIS

The study data was analysed using the Statistical Package for Social Science, Version 11.0 (SPSS) computer program. The relationship between the study parameters was analysed using Chi-square test and an independent *t*-test. The *p*-value for statistical analysis was set at 0.05.

RESULTS

Altogether 68 patients were referred to the Psychiatric Department of Hospital Kuala Lumpur for deliberate self-harm during the study period. Of this, after exclusion, 50 cases and 50 controls participated in this study. In the cases group, three cases were excluded because they refused to participate in the study. Four cases were excluded due to the presence of psychotic disorder; three of them were diagnosed schizophrenia and one was diagnosed with bipolar mood disorder. Four cases absconded from the medical ward before they could be interviewed. Another seven cases were excluded because there were unable to understand the questionnaires.

All respondents from the control group were cooperative and participated in the study after they were given an explanation on the objectives of the study and assurance of confidentiality. The overall mean age of the respondents was 27 years old and 78% of them were female. The majority of respondents were Indians (52%) followed by Malays (40%) and Chinese (8%). The religious beliefs of the study sample were Hindusim (44%), Islam (42%), Buddhism (8%) and Christianity (6%). About half of the cases and majority (62%) of control were employed. Among the cases, 66% completed their secondary level of education as compared to only 31% in the control group. There was significant difference ($p<0.05$) in marital status of respondents; 70% of the cases were single as compared to 46% in the control group.

Twenty-two percent of cases were known to have carried out one or more previous episode of deliberate self-harm as compared to none in the control group. The most commonly reported method of self-harm was self-poisoning (96%), that is, an overdose of medication or ingestion of toxic substances such as insecticide, herbicide, rat poisoning, bleach or detergent. Other methods included self-injury (4%); they cut their own wrist. Only 6% of cases reported that they were receiving psychiatric treatment at the time of attempted DSH while the rest of the cases (94%) had never received any psychiatric treatment.

Table 1. Description of Axis I psychiatric diagnosis between cases and control

Psychiatric Diagnosis (DSM-IV)	Cases (n=50)		Controls (n=50)	
	n	(%)	n	(%)
Major depressive disorder only	11	(22)	0	0
Dysthymia	1	(2)	0	0
Panic disorder	0	0	1	(2)
Alcohol dependence	0	0	2	(4)
Alcohol abuse	2	(4)	0	0
Generalised anxiety disorder	1	(2)	0	0
Co-morbidity	5	(10)	0	0
No diagnosis	30	(60)	47	(94)

1. Comorbidity of Major Depression and PTSD and Dysthymia present in one case
2. Comorbidity of Major Depression and Generalised Anxiety Disorder present in one case
3. Comorbidity of Major Depression and Dysthymia present in one case
4. Comorbidity of Major Depression, Obsessive-compulsive Disorder and Alcohol abuse present in one case
5. Comorbidity of Major Depression and Obsessive-compulsive Disorder present in one case

Table 1 shows the description of Axis I psychiatric diagnosis between cases and control. Among the cases, 22% had major depression without comorbidity, 2% had diagnosis of dysthymia, 10% presented with comorbidity and 6% had other psychiatric diagnoses (generalised anxiety disorder (2%) and alcohol abuse (4%). In the control group, 6% reported having other psychiatric diagnoses (alcohol dependence (4%) and panic disorder (2%)). Sixty percent of cases and 84% of controls had no psychiatric diagnosis.

Table 2 shows the comparison of behaviour subscale scores of Personality Assessment Schedule (PAS) between cases and controls. Behaviour subscale of pessimism (14%), worthlessness (11%), anxiousness (20%), introspection (16%), aloofness (14%), sensitivity (42%), vulnerability (44%), impulsiveness (88%) and resourcefulness (18%) were present among the cases compared to pessimism (0%), worthlessness (0%), anxiousness (4%), introspection (0%), aloofness (0%), sensitivity (6%), vulnerability (24%), impulsiveness (6%) and resourcefulness (4%) among the control group.

There were significant differences between cases and controls on behaviour subscale of pessimism ($p<0.05$), worthlessness ($p<0.0005$), anxiousness ($p<0.05$), introspection ($p<0.05$), aloofness ($p<0.005$), sensitivity ($p<0.0005$), vulnerability ($p<0.05$), impulsiveness ($p<0.0005$) and resourcefulness ($p<0.05$). Therefore behaviour subscale of pessimism, worthlessness, anxiousness, introspection, aloofness, sensitivity, vulnerability, impulsiveness and resourcefulness are associated with deliberate self-harm. Among those nine behaviour subscales, three are highly associated with deliberate self-harm, namely worthlessness ($p<0.0005$), sensitivity ($p<0.0005$) and impulsiveness ($p<0.0005$).

Table 3 shows the comparison of personality disorders between cases and controls. Among the cases, 56% were diagnosed with paranoid personality disorder and 14% with borderline personality disorder while in the control group, only 24% were diagnosed with

Table 2. Comparison of behaviour subscale score between cases and control

Behaviour subscale	Normal traits				Personality traits				Statistical value	
	Cases		Control		Cases		Control		χ^2	p
	n	(%)	n	(%)	n	(%)	n	(%)		
Pessimism	43	(86)	50	(100)	7	(14)	0	(0)	5.530	0.019**
Worthlessness	39	(78)	50	(100)	11	(22)	0	(0)	12.360	0.000*
Optimism	50	(100)	50	(100)	0	(0)	0	(0)		
Liability	49	(98)	48	(96)	1	(2)	2	(4)	0.000	1.00**
Anxiousness	41	(82)	48	(96)	9	(18)	2	(4)	6.061	0.014*
Suspiciousness	41	(82)	46	(92)	9	(18)	4	(8)	2.210	0.137*
Introspection	42	(84)	50	(100)	8	(16)	0	(0)	6.658	0.01**
Shyness	41	(82)	46	(92)	9	(18)	4	(8)	2.210	0.137*
Aloofness	43	(86)	50	(100)	7	(14)	0	(0)	5.530	0.019*
Sensitivity	29	(58)	47	(94)	21	(42)	3	(6)	17.763	0.000*
Vulnerability	28	(56)	38	(76)	22	(44)	12	(22)	4.456	0.035*
Irritability	44	(88)	48	(96)	6	(12)	2	(4)	1.223	0.269**
Impulsiveness	6	(12)	47	(94)	44	(88)	3	(6)	67.483	0.000*
Aggression	46	(92)	50	(100)	4	(8)	0	(0)	2.344	0.126**
Callousness	49	(98)	47	(94)	1	(2)	3	(4)	0.000	1.000**
Irresponsibility	47	(94)	49	(98)	3	(6)	1	(2)	0.260	0.61**
Childishness	47	(94)	49	(98)	3	(6)	1	(0)	0.260	0.61**
Resourcefulness	41	(82)	48	(96)	9	(18)	2	(4)	5.005	0.025*
Dependence	48	(96)	50	(100)	2	(4)	0	(0)	0.510	0.475**
Submissiveness	42	(84)	45	(90)	8	(16)	5	(10)	1.329	0.249*
Conscientiousness	45	(90)	49	(98)	5	(10)	1	(2)	2.458	0.117**
Rigidity	44	(88)	49	(98)	6	(12)	1	(2)	2.458	0.117**
Eccentricity	50	(50)	50	(100)	0	(0)	0	(0)		
Hypochondriasis	48	(96)	49	(98)	2	(4)	1	(2)	0.000	1.000**

** χ^2 test with Yates correction

*Pearson χ^2 test

Table 3. Description of personality disorder between cases and control

Personality Disorders	Cases (n=50%)		Control (n=50%)		p value
	n	%	n	%	
Paranoid	28	(56)	12	(24)	0.001*
Schizoid	3	(6)	0	0	0.241**
Schizotypal	5	(10)	0	0	0.066**
Histrionic	2	(4)	0	0	0.475**
Antisocial	6	(12)	1	(2)	0.117**
Borderline	7	(14)	0	0	0.019**
Avoidant	13	(26)	6	(12)	0.074*
Dependent	9	(18)	0	0	0.05**
Obsessive-compulsive	7	(14)	1	(2)	0.65**
Narcissistic	7	(14)	1	(2)	0.65**
Passive-aggressive	7	(14)	1	(2)	0.65**

** χ^2 test with Yates correction
*** Pearson χ^2 test

paranoid personality disorder. There was no diagnosis of borderline personality disorder in the controls group.

There was significant difference between cases and control on two types of personality disorder. Paranoid personality disorder ($p<0.001$) and borderline personality disorder ($p<0.05$) were significantly associated with deliberate self-harm.

DISCUSSION

The goal of this article is to fill a gap in knowledge associated with personality traits among the deliberate self-harm in Malaysia. This study compared personality traits and disorder of DSH patients presenting to Hospital Kuala Lumpur in Malaysia to a control group. We found three personality traits to be significantly present in the DSH subjects as compared to control group: these were sensitivity ($p<0.0005$), impulsivity ($p<0.0005$), and worthlessness ($p<0.0005$).

The traits of impulsivity and worthlessness are the characteristics of borderline personality disorder and a trait of sensitivity is one of the characteristics of paranoid personality disorder. The presence of the trait of impulsivity in our DSH respondents showed that this trait is universally present in DSH patients. In a study of characteristics of borderline personality disorder in DSH by Brodsky *et al.*[12] it was found that "borderline personality disorder traits of impulsivity, rather than global severity borderline personality disorder pathology, were associated with suicidal behaviour."

In a comparative study on characteristics of suicide attempts of patients with major depressive episode and borderline personality disorder, Soloft *et al.* [25] concluded that impulsivity increases the probability of suicidal behaviour in the presence of acute stressors such as episodes of affective illness, interpersonal crises, or substance abuse. Impulsivity

was also associated with the number of suicide attempts independent of comorbid depression or substance use disorder in the patients with borderline personality disorder as reported by Brodsky *et al*.[12]

Another finding from our study indicates that a trait of sensitivity, which is characteristic of paranoid personality disorder, is significantly present in respondents present with DSH as compared to control group. In the study on repetition of parasuicide-personality disorders and adversity, Dirks[24] found that paranoid and anxious (avoidant personality disorder in DSM-IV), followed by impulsive (subtype of unstable personality disorder in ICD-10) were the most common personality disorders among the DSH patients.

By using the formulae described by Tyrer *et al*.[19] we were able to derive 11 personality disorders (DSM-IV) from the 24 personality characteristics of DSH subjects. We found personality disorder in 68% of DSH cases as compared to only 38% of the control. This finding is higher than those of Camilla *et al*. (45.9%),[7] Ennis *et al*. (57.7%),[26] Suominen *et al*. (40.4%)[27] and Ferreira de Castro *et al*. (50.6%).[28] Our findings suggest that there were a significantly higher number of paranoid personality disorders ($p<0.05$) and borderline personality disorders ($p<0.05$) in DSH subjects as compared to the controls.

Borderline personality disorder has been reported as the most common personality disorder in several studies of DSH.[26-29]   However, Camilla *et al*.[7] found borderline personality disorder to be less common than the anxious, anankastic (obsessive- compulsive personality disorder in DSM-IV) and paranoid disorders. Another study that screened for full range of personality disorders in DSH conducted by Nordentoft & Rubin reported only on the presence of borderline and antisocial personality disorders.[29] Our findings are similar to the study by Dirks[24] who used a standardised tool for assessment of personality. The author found that paranoid and anxious followed by impulsive were the most common personality disorders encountered .

The presence of Axis II personality disorder has also been positively related to indicators of suicidality as shown by previous research.[31] Apart from personality disorders, suicidal behaviours are often presented with other comorbid psychiatric symptoms. Cavanagh & Masterton[31] studying suicidal behaviour in those with major depression and comorbid personality disorder found that "those with borderline personality disorder symptoms are at risk for serious suicide attempts." Van Gastel *et al*.[32] in a study on relationships between suicidal ideation or suicidal attempts and severity of depression, presence of personality disorders, and socio-demographic factors in a population of depressed inpatients, found that depressed patients with a personality disorder demonstrated significantly more suicidal attempts and showed more suicidal ideation than depressed patients without personality disorder.

Kaplan & Saddock[33] suggest that "a personality disorder may be a determinant of suicidal behaviour in several ways: by predisposing to major mental disorders like depressive disorders or alcohol dependence; by leading to difficulties in relationships and social adjustment; by precipitating undesirable life events; by impairing the ability to cope with mental or physical disorder; and by drawing people into conflicts with those around them."

The high rate of psychiatric comorbidity found in this study suggests that psychiatric comorbidity is common in deliberate self-harm patients. Psychiatric disorder and personality disorder comorbidity increases the risk of suicide over sixfold as compared to those patients

who had Axis I disorder only.[9] Psychiatric disorder and personality disorder comorbidity in suicidal patients often complicate clinical evaluation and management of them. Apart from that, the effective management of these patients demand specific and advanced skills because these patients are different from other patients: they have low frustration tolerance, high level of anger, impulsivity and affective instability.[9] Because of that, the assessment of psychiatric symptoms in patients with DSH should be done carefully and their suicide attempts taken seriously. There is a need for collaboration between inpatient treatment, outpatient care and other agencies in order to give continuity of care. All these have implications on the training of doctors and supporting staff in our hospitals.

We should note several limitations to this study. First, being a case-control study, it is prone to many types of bias and confounding factors as information on the diagnosis and obtaining personality traits retrospectively. In this study, the author therefore relied on subjects' memory. Second, 'matching' for age, sex and race were done to reduce possible confounders. It is, however, very difficult to achieve close matching without seriously limiting the numbers of suitable subjects.

Third, the Personality Assessment Schedule (PAS) which was used to assess personality traits in this study has not been validated in this country even though it was used by Mahmud in the heroin dependence subjects.[34] This could involve problems about validity and reliability. Therefore the diagnoses generated from using it should be treated with caution. Fourth, the PAS was completed during the index admission because from the experience of the author, these patients have poor compliance to the follow-up appointment. The completion of the PAS at the follow-up interview might allow the author to assess personality when psychiatric disorder was likely to be less prominent.[35]

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