

East African Medical Journal Vol. 79 No. 5 May 2002

PREVALENCE OF MAJOR DEPRESSION IN DELIBERATE SELF-HARM INDIVIDUALS IN HARARE, ZIMBABWE

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ABSTRACT

Objective: To investigate the prevalence of major depression in deliberate self-harm individuals.

Design. A cross sectional descriptive study.

Setting. Three tertiary health care centres in Harare, Zimbabwe.

Subjects: Three hundred and eighty seven deliberate self-harm consecutive subjects were recruited from July 1, 1997 to December 31, 1997 for this study. Diagnostic procedures included complete medical history, physical and neurological examinations. The DSM-IV criterion for major depression was used for the diagnostic purpose.

Main outcome measures: The prevalence of major depression, number of attempts and recent life events, methods used, feeling in deliberate self-harm individuals.

Results: The prevalence of major depression was 20.7% (n=80, 95% CI= 16.7-24.2) according to the DSM-IV criterion. Sixty-two percent (95% CI= 57.2-66.8) of the subjects with DSH were aged ≤ 30 years. Significant differences ($P < 0.05$) were found between DSH subjects with and without major depression related to age, education, life events and number of previous attempts.

Conclusion: The most predictive factors associated with DSH risks are age, depression, recent loss, divorced, loss of job and history of previous attempts. Further studies are needed to address some causes of DSH.

INTRODUCTION

Parasuicide(1) is defined as "a non-fatal act in which an individual deliberately causes self-injury or ingests a substance in excess of any prescribed or generally recognised therapeutic dosage." The term "parasuicide" and "deliberate self-harm(DSH) have over the past twenty years been used synonymously(2). The most common finding about persons who deliberately self-harm is that about 50% of the attempters are less than 30 years of age(3). The female to male ratio of DSH used to be 1:1.4(4), but currently the ratio is equal 1:1(4). Hodes(5) postulates that deliberate self-harm was a form of communication by individuals who were in a powerless position. DSH tends to occur at highest rates among the least powerful in society: the young, women, the unemployed and those in lower socioeconomic groups(6-8). It is so often that the individual whose coping mechanisms have been exhausted who resorts to DSH and the actual behaviour has been viewed by many as a cry for help(2).

In the U.K. paracetamol overdose is the frequently used method in female attempters, while tranquilizers and sedatives are found in male attempters(9). In Malaysia, Maniam(10) found the ingestion of agricultural poisons to be the most frequently used form of deliberate

self-harm and suicide. In Nigeria, Odejide *et al*(4) found the use of insecticides and other chemicals to be a frequent method for the attempters. The ingestion of drugs and chemical substances by DSH individuals has also been shown in Zimbabwe(11), although the author did not state the nature of the chemicals taken. Goldney(12) looked at attempted suicide in women and found that medical lethality correlated with depression. Ennis *et al*(13) found the prevalence rate of major depression to be 31% while Odejide *et al*(4) found a prevalence of depression in DSH to be 25.6%. Furthermore, co-morbidity that includes depressive illness increases the risk of DSH(14,15). The most common difficulties preceding DSH are problems with parents, boy or girlfriends, and at school or work, including unemployment(9,16). Limited research has been done locally in Zimbabwe, therefore there is a need to re-examine the size and impact of DSH on individuals. Assuming from empirical observations carried out in cosmopolitan centers(3,4,9), the burden imposed on health delivery systems by DSH is quite significant. Thus, this paper reports on the prevalence of major depression in DSH subjects and risk factors associated with it, such as, number of previous attempts, methods used, recent life events, feelings and socio-demographic characteristics of individuals.

MATERIALS AND METHODS

The study population: The study was conducted in Harare, Zimbabwe from July 1, 1997 to December 31, 1997. A total of 387 subjects were recruited from three medical facilities in Harare. These are Parirenyatwa Groups of Hospital (n= 73.4%) which is a public hospital and two private hospitals, Baines Emergency Rooms (n=15.2%), and Trauma Center (n=11.4%). The sample size of 387 was derived using the statistical formula: $N = (Z_{\alpha/2}/CI) 2 + 3$ where $(Z_{\alpha/2}) = 1.96$ for a 95% confidence interval (CI). Some researchers recommend at least 300 subjects to achieve the above confidence interval. Therefore, we estimated that the sample size to be 387 subjects. We enrolled subjects aged sixteen years or more, including both sexes. Patients admitted to the Intensive Care Unit (ICU) were not included in the study. This is because they were usually serious cases and could not give consent.

A questionnaire designed by the Department of Psychiatry, University of Zimbabwe, was used to collect information for the study. The questionnaire covered socio-demographic data, reasons for deliberate self-harm, the method used, history of physical or mental illness, history of deliberate self-harm, life events preceding the incident, feelings about the act and treatment outcome. The DSM-IV criterion (17) for major depression was used for the diagnosis of subjects. The DSM-IV criterion included: (a) a five (or more) of the following symptoms that have been present during the same two week period and represent a change from previous functioning; (b) at least one symptom is either depressed mood or loss of interest or pleasure; and (c) significant weight loss when not dieting or weight gain, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, excessive or inappropriate guilt, diminished ability to think or concentrate and recurrent thoughts of death. The reliability of the DSM-IV (17) as a measuring instrument depends on the clinicians' ability to elicit the symptoms that make up a given disorder. They have validated the DSM IV (17) internationally in different cultural settings and association of the actual affective contents with depression is universal.

Procedure: All patients with DSH attending the outpatients/inpatients of these medical facilities were recruited after informed consent was obtained. Casualty officers, nurses or specialists attending to all DSH subjects were required to call the interviewer either via Parirenyatwa Groups of Hospital's switchboard or by phoning him on a cellphone during the six months of the study.

The interview procedure consisted of two parts. The first part was carried out immediately after the casualty officer, physician or surgeon had assessed the subjects, depending on the nature of the DSH. The second part was, when subjects were admitted for instance to the Burns unit, and then seen after 24 hours. Subjects were interviewed in the side room of the casualty's department. For those who were admitted and able to give informed consent, the interviews were carried out in the respective wards. After administering the General Information Questionnaire, subjects were interviewed using the diagnostic interview schedule for a diagnosis of major depression according to the DSM-IV criterion. On an average, most cases were seen two to three hours after the DSH. Those who were not seen within this period were due to either being admitted to the wards or in extreme distress. All the patients were seen after they had stabilised them. Thirty-four subjects refused to participate in the

study and were excluded from the study. The Chi-Square and Fisher's exact (two-tailed) test were used for comparisons of proportions between the groups (depressed and non-depressed subjects), where data were normally distributed. Frequencies were calculated and a p-value of <0.05 was considered statistically significant.

RESULTS

Overall characteristics of the sample: Three hundred and eighty-seven subjects with DSH took part in the study. They had a mean age of twenty-two years. Most of them were aged 30 years (62%) and mostly females (81.4%). The sample consisted mainly of African racial group (52.5%), the rest were mulattos (22.7%), whites (21.4%) and Asian race (4.4%). Most of the data on DSH were obtained at Parirenyatwa Hospital (73.4%) which is a public institution. However, most in the white race were seen at private institutions, i.e., the Trauma ER and Baines ER. Married people accounted for 45.5%, single 24.5% and others, 30.0% (divorced, separated and widowed). The largest proportion (60.2%) of the subjects were unemployed, but 19.4% were informally employed and 20.4% were formally employed. With reference to their education status, 0.8% did not have any formal education, 15% had primary education, 69.2% had secondary education and 15% had tertiary education.

Most frequently reported precipitating or triggering factors in DSH were a dispute with spouses (55.6%), other causes were dispute with parent(s) 7.2%, with siblings, 6.7% and with friends 3.4%. The methods used for the DSH were mainly drugs overdosing: Chloroquine ingestion (35.5%) while "other drugs" included antibiotics, antacids (cimetidine, magnesium mixtures etc.), antihypertensives, psychotropic drugs and many more, accounted for 37% of the cases. Physical methods totalling 25, included four paraffin burns, five wrist slashings, three hangings, three jumping in front of on coming traffic, one lying across a railway line, two lying in the middle of the road, two jumping from a moving vehicle, one sticking head in pot full of boiling water, three ingestion of crushed glass and one use of exhaust fumes.

Sociodemographic data: The mean age for the depressed subjects was 31 years. Significant differences were found between DSH subjects with depression and without depression. Those aged 30 years or less were 0.24 times most likely to be non-depressed subjects (n= 69.1%) than those with depression (OR= 0.24; 95% CI= 0.14-0.42; P <0.0001), mostly they had primary education (n= 65.8%; $\chi^2 = 40.95$, df= 3, P<0.0001) and were single (n=48.5%; $\chi^2 = 8.4$, df=2; P=0.015) [Figures 1 and Table 1]. No significant differences were found between DSH subjects with and without depression about gender, race, occupation, methods used for DSH or risk/precipitating factors.

Figure 1

Age distribution

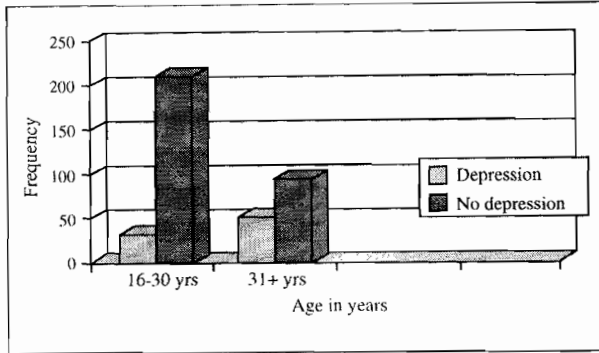


Table 1

Comparison of depressed and non-depressed subjects

Variable	Depression N=80 (%)	Normals N=307 (%)	χ^2	Df	P-value
<i>Marital status</i>					
Single	27 (33.8)	149 (48.5)	8.35	2	0.015*
Married	19 (23.7)	76 (24.8)			
Others	34 (42.5)	82 (26.7)			
<i>Education</i>					
Nil	2 (2.5)	19 (6.2)	40.9	3	<0.0001#
Primary	25 (31.3)	202 (65.8)			
Secondary	42 (52.5)	64 (20.8)			
College/University	11 (13.7)	22 (7.2)			
<i>Occupation</i>					
Unemployed	47 (58.8)	186 (60.6)	3.94	2	0.139
Informal employed	21 (26.2)	54 (17.6)			
Formal employed	12 (15.0)	67 (21.8)			
<i>Race</i>					
Blacks	42 (52.5)	157 (51.1)	5.64	2	0.131
Whites	21 (26.2)	62 (20.2)			
Coloured	17 (21.3)	71 (23.2)			
Asian	0	17 (5.5)			
<i>Methods used</i>					
Paracetamol tablets	13 (16.3)	32 (10.4)	6.81	4	0.146
Chloroquine tablets	24 (30.0)	102 (33.3)			
Physical	8 (10.0)	17 (5.5)			
Pesticides	14 (17.5)	42 (13.7)			
Other methods	21 (26.2)	114 (37.1)			

Significance, *P=0.015; #P<0.0001

Figure 2

Gender distribution (P> 0.05)

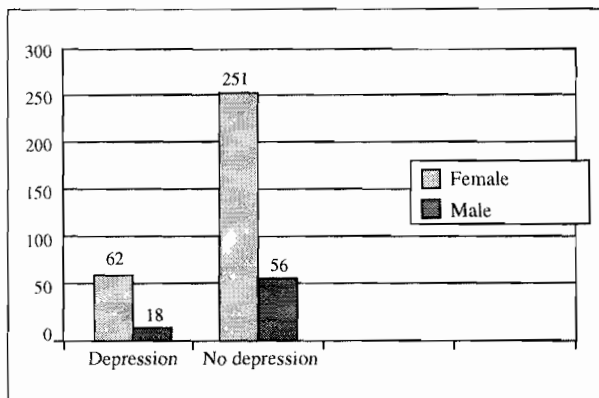


Table 2

Risk/precipitating factors distribution in DSH subjects

Variable	Depression N=80 (%)	Normal N=307 (%)	χ^2	Df	P-value
<i>Feelings</i>					
Regret	8 (10.0)	97 (31.6)	99.9	3	<0.0001*
Anger	12 (15.0)	103 (33.6)			
Others	14 (17.5)	80 (26.1)			
No feelings	46 (57.5)	27 (8.7)			
<i>Number of attempts</i>					
First attempt	38 (47.5)	201 (65.5)	12.4	3	0.006**
Two attempts	23 (28.8)	67 (21.8)			
Three attempts	12 (15.0)	17 (5.5)			
Four attempts	7 (8.7)	22 (7.2)			
<i>Precipitating factors</i>					
Dispute with friends	3 (3.8)	10 (3.3)	4.6	4	0.320
Dispute with parents	10 (12.5)	18 (5.8)			
Dispute with siblings	4 (5.0)	22 (7.2)			
Dispute with spouse	41 (51.2)	174 (56.7)			
Other causes	22 (27.5)	83 (27.0)			
<i>Recent life events</i>					
None	11 (13.8)	144 (46.9)	35.4	5	<0.0001#
Death	9 (11.2)	27 (8.7)			
Marital separation	21 (26.3)	37 (46.2)			
Job loss	8 (10.0)	35 (11.4)			
Divorce	8 (10.0)	35 (11.4)			
Others	23 (28.7)	43 (14.0)			

Significance *P<0.0001; **P=0.006; #P<0.0001

Risk/Precipitating factors: The most significant difference encountered with respect to diagnosis of depression was having no feelings about the act (n=57.5%; P<0.0001). Non-depressed subjects, were mostly first attempters (n=65.5%), whereas those who had two or more attempts were mainly depressed subjects (P=0.006). None presence of life events before DSH was significant in non-depressed subjects (n=46.9%; P<0.0001), whereas the most predictive risk factors in depressed subjects were recent loss (death), loss of job, divorce and other risks. We compared the overall depressed and non-depressed subjects about a recent life events in the last three months, before DSH. Those who had a recent life event were 0.18 times most likely to be depressed (n=86.2%; OR=0.18; 95% CI=0.08-0.36; P<0.0001), than those who were not depressed. Likewise, comparison between the DSH subjects with and without depression about number of attempts carried out. Those who were depressed were 0.48 times most likely to have had two or more attempts of DSH than those with first attempts (OR=0.48, 95% CI=0.28-0.81, P=0.005).

DISCUSSION

The results of the current study reflect a prevalence rate of a major depressive episode in DSH subjects of 20.7%. This finding is lower than Ennis's prevalence rate of 31% using the same instrument(13). We may attribute this difference to our small sample size. Besides, in our African settings, especially in Zimbabwe, people may view DSH as a cultural/ spiritual problem i.e., *Ngozi* (*Ngozi* means bad spirit, in Zimbabwe), in which case

appeasing the *Ngozi* deals with the problem within the family. This might have indirectly affected the low prevalence rate of depression in our sample, as well as referrals of subjects to aforesaid health facilities. Birtchnell and Alarcon (18) have stated that higher rates of depression were to be expected in DSH patients who were admitted to hospitals. The most common finding including ours about subjects who deliberately self-harm is that about 50% of the attempters were less than 30 years of age (3). However, increasing age is known to be a risk factor for serious attempts of deliberate self-harm and diagnosis of depression. Furthermore, most studies have shown a female/male sex ratio in favour of females (10,16).

Marital disputes were the most common precipitating factor, (55.6%), in the current study, which is in agreement with the finding by Paykel *et al* (19). Our study seems to suggest that marriage actually appears to be a protective factor against depression in DSH subjects, while being single appears to be a risk factor ($P=0.006$). This may be attributed to a stable environment in terms of shelter, basic needs and sense of security offered by marriage that may provide some form of protection against depression. In the current study, a recent significant life event having occurred within the last three months prior to the DSH was reported in 69 (86.2%) of the depressed cases, in contrast to 163 (53.1%) in the non-depressed subjects. This finding is in agreement with Paykel's finding (19) in which DSH subjects experienced four times as many life events in the six months before the attempt than the general population. This can be explained by the fact that DSH subjects' motives are multiple and may be mutually contradictory. The current study has shown a strong association between frequency of previous attempts and depression. History of DSH is clearly a risk factor for depression (52.5%, $P=0.005$). Pallis *et al.* (20) has reported that the closer an act of DSH resembles a suicide in personal and clinical characteristics as well as in the manner of carrying out his suicidal act, the higher his risk for repeated and fatal suicide attempt. We found a significant difference between depressed and non-depressed subjects with respect to feelings, but depressed subjects experienced no feelings at all (57.5%, $P<0.0001$). This is to be expected, because subjects who are depressed usually express their wish to die and the length of time spent contemplating the act may render them to have no feelings.

The clinical implication of this study is that DSH appears to be a major health problem that needs attention. The high proportion of female attempters in the current study is also cause for concern. We hypothesise that the prevalence rate of depression in DSH in our communities may actually be higher than the 20.7%. There is a need for the development of a policy guideline on the management of DSH subjects. Future research studies into other aspects of DSH, such as other psychiatric conditions are needed. Limitations of this study are many such as exclusion of serious attempters who were nursed in ICU, which makes the generalisability of the study, a bit difficult. Secondly, we did not rule out personality disorders. Since

psychometric studies have shown that as a group, DSH subjects contain a high proportion of personality disorders, and tend to be hostile to others and to themselves, and have high levels of anxiety (21).

ACKNOWLEDGMENTS

We thank Mr. A. Chingono and Mrs. Kordic for their helpful contribution in terms of constructive criticisms and advice during the preparatory stage of the study and data collection.

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