Assessment of coping strategies in a sample of risky suicidal Egyptian psychiatric outpatients

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Received 18 October 2011
Accepted 15 July 2012

Egyptian Journal of Psychiatry
2013, 34:177–185

Objective
To assess coping strategies in a sample of risky suicidal Egyptian psychiatric outpatients.
Participants and methods
A total of 150 patients were selected from the psychiatry outpatient clinic; all patients were diagnosed according to the ICD-10 research diagnostic criteria. Patients were subjected to the Tool for the Assessment of Suicide Risk (TASR) and the Coping Inventory.
Results
The mean age of the patients with a high suicide risk was 35.5 ± 12.1; 40% had been diagnosed with an affective disorder, 27.3% with schizophrenia, schizotypal, and delusional disorders, 10.7% with other mental disorders because of brain damage, dysfunction, and physical disease, 8% with mental and behavioral disorders because of psychoactive substance use, 6% with neurotic, stress-related and somatoform disorders, 4.7% with disorders of adult personality and behavior, and 3.3% with other psychiatric disorders including organic mental disorders (dementia) and mild mental retardation. High and moderate risks of suicide were higher in men, 59.6 and 62.7%, respectively. Patients with scholastic education and unemployed patients were found to be significantly higher in both high and moderate suicide risk in comparison to patients with high education and employed patients, respectively. A statistically significant difference was found among single patients than separated, divorced, and widowed groups on moderate TASR. The diagnosis of affective disorders and schizophrenia, schizotypal, and delusional disorders was significantly higher on moderate and low TASR. Patients with a gradual/insidious onset scored significantly higher on all three groups of TASR. The mean duration of psychiatric disorders for a high suicide risk was 8.5 ± 8.16 years. Patients with a positive history of suicidal attempts and those who had made violent suicidal attempts scored significantly higher on both high and moderate suicide risk. Patients who had attempted one suicidal attempt scored significantly higher in high, moderate, and low TASR scores. Patients who used an active cognitive coping method scored significantly higher in high, moderate, and low suicide risk scores compared with the avoidance coping method.
Conclusion
The most frequently used coping method was active cognitive coping; also, patients showed a significantly higher suicide risk compared with the avoidance coping method. A cognitive positive understanding strategy (a subtype of active cognitive coping) scored significantly higher on high, moderate, and low suicide risk in comparison with passive resignation.

Keywords:
coping, psychiatric patients, suicide risk

Egypt J Psychiatr 34:177–185

1110-1105

Introduction

There is an urgent need to study suicide in the Arab world and the Middle East including Egypt. As the official government reports are misleading and do not represent the actual rate, a crude estimate of suicide in Egypt would be about 3.5/100 000, assuming that one in 10 suicide attempts end with actual suicide (Okasha and Lotaif, 1979; Okasha, 2004).

Yet, what are the causes that drive individuals to commit suicide in the Arab World? Is it the low socioeconomic status, reduced self-esteem, and maladaptive coping behavior because of mental illness that drive individuals to commit suicide? Does a good social support system and religious beliefs act as protective factors against suicide? It was found that reduced self-esteem and conflicts also place individuals, particularly young adults and adolescents, at a higher risk of suicide (Gunnell *et al.*, 1995).

 DOI: 10.7123/01.EJP.0000419670.08412.08

Patterns of coping with life events and the burden of psychiatric illness vary considerably among men and women; women are socialized to have more complex and flexible coping skills, to adopt a more helpless-dependent stance in relationships, and to communicate emotionally and seek help, whereas among men, the traditional male role encourages risk-taking behaviors as acceptable male conduct (Nicholas, 2000). They have higher rates of cigarette smoking, alcohol abuse, antisocial behavior, aggression, and violence; each of these is a risk factor for suicide (Maris *et al.*, 2000).

Sharing and exchange of information and research findings among nations regionally could be mutually beneficial, helping the establishment of regional centers for suicide monitoring and surveillance, given the commonalities in culture, social, and economic conditions in different regions (Morad *et al.*, 2005).

Participants and methods

This study included 150 patients recruited from the Psychiatry Outpatient Clinic in Kasr Al Aini Hospital; all patients were diagnosed according to the ICD-10 research diagnostic criteria (World Health Organization, 1992). Patients 20 years of age or older, both sexes, and patients scoring positive on the Tool for the Assessment of Suicide Risk (TASR) were included, whereas patients scoring negative on the TASR and those refusing to participate were excluded. All patients agreed to participate. Written informed consent was obtained from them all the patients. All patients of this study were subjected to the following assessment tools:

(1) Assessment of detailed psychiatric history on the basis of the Kasr Al Aini psychiatric sheet; items were assessed through a semistructured psychiatric interview.
(2) *Psychometric tools*:
    (a) *TASR* (Kutcher and Chehil, 2007): It is used to categorize patients into high, moderate, or low suicide risk; it consists of 26 statements and is divided into three sections, in the TASR. Stars (★) are used to provide the clinician with a section weighing of suicide risk. Section 1 is assigned a weighing of one star; section 2 is assigned a weighing of two stars; and section 3 is assigned a weighing of three stars. The greater the number of stars, the greater the overall weighing of the section and the level of suicide risk. Section 1: individual risk profile, section 2: symptom profile, section 3: interview profile, and section 4: overall rating of risk dealing with Illness.
    (b) *Coping Inventory* (Namir *et al.*, 1987): The Arabic version was translated and validated (Abd-El-Azim *et al.*, 1999). It was used to assess the patient's cognitive and behavioral responses to cope with illness; it was based on a description of three methods of coping: active cognitive coping, active behavioral coping, and avoidance coping (Billings and Moos, 1981). It was further divided into three coping methods conceptually into eight specific coping strategies: active positive involvement, active expressive/information seeking, active reliance on others, cognitive positive understanding/create meaning, cognitive passive/ruminative, distraction, passive resignation, and avoidance solitary/passive behaviors. These eight coping strategies had good internal consistency. It included 48 phrases, each with 5 points ranging from never to always (Namir *et al.*, 1987).

The following statistical procedures were used in this study:

(1) χ^2*-test*: test of statistical significance used for comparison of different groups in which qualitative variables are expressed as percentages.
(2) *Analysis of variance test between groups*: a statistical test for multiple regression analysis used for a comparison of means for more than two groups.
(3) *Spearman's correlation test*: to assess the relationship between two quantitative variables; the r value ($r = 1–0$) can range from 1 (strongest correlation) to 0 (weak correlation). A positive correlation indicates that the change in the two variables is in the same direction, whereas a negative correlation indicates that the change in the two variables is in opposite directions.
(4) *Threshold of significance*: it is fixed at a 5% level (P value); the P value is the probability that an observed difference is because of chance and not an actual difference. A P value of more than 0.05 is nonsignificant. A P value of 0.05 or less is significant.
(5) The results of the study were analyzed using SPSS, version 16 (SPSS Inc., Chicago, Illinois, USA).

Results

The results of the study included sample characteristics and the results of psychometric assessment tools.

Sample characteristics

The mean age of the study sample was 35.8 ± 12.5 years. Fifty-seven percent of the patients were men, whereas 42.7% were women. A total of 32% of the study sample was illiterate, whereas 54.7% of the patients had scholastic education; and 13.3% of the study sample were patients with high education. Fifty percent of the study sample were unemployed, whereas the other 50% were working. Forty-one percent were married, whereas 58.7% of the patients were single, divorced, separated, and widowed.

Table 1 shows that the majority (40%) of the study sample were diagnosed with an affective disorder.

Table 2 shows that 74% of the patients had a gradual onset of their psychiatric illness, compared with only 26% with an acute onset.

Table 1 Psychiatric diagnoses according to the ICD-10 research criteria among the study sample

Psychiatric diagnoses according to ICD-10 among patients	*N* (%)
Affective disorders	60 (40%)
Schizophrenia, schizotypal, and delusional disorders	41 (27.3%)
Disorders of adult personality and behavior	7 (4.7%)
Other mental disorders because of brain damage and dysfunction and physical disease	16 (10.7%)
Mental and behavioral disorders because of psychoactive substance use	12 (8%)
Neurotic, stress-related, and somatoform disorders (including panic disorders, anxiety disorders, adjustment disorder, and obsessive compulsive disorder)	9 (6%)
Others including: organic mental disorders and mild mental retardation	5 (3.3%)
Total	150 (100%)

Table 2 Mode of onset, course, and duration of psychiatric illness

	N (%)
Onset of psychiatric illness	
Acute onset	39 (26%)
Insidious/gradual onset	111 (74%)
Course of psychiatric illness	
Continuous	85 (56.7%)
Episodic	65 (43.3%)
Duration of psychiatric illness in years (mean ± SD)	7.5 ± 7.6

Table 3 shows that almost 24.7% of the patients did not have history of suicidal attempts, whereas 75.3% had attempted suicide.

Results of psychometric assessment tools

Table 4 shows that patients were almost equally divided into the three groups of TASR; 34.7% had a high suicide risk, 34% had a moderate suicide risk, and 31.3% had a low suicide risk.

Table 5 shows that the most frequently used coping method among the study sample patients was active cognitive coping (60.2 ± 13.2), whereas the most frequently used coping strategy was cognitive positive understanding (a subtype of active cognitive coping) (30.5 ± 7.7).

Table 6 shows that the mean age of the patients with a high suicide risk was 35.5 ± 12.1. Unemployed patients had high statistically significant scores in terms of a high and moderate suicide risk compared with the working group. A statistically significant difference was found among patients who were single, who had significantly higher scores than the separated, divorced, and widowed group on moderate TASR.

Table 7 shows that the group with affective disorders and the group with schizophrenia, schizotypal, and delusional disorders scored significantly higher on moderate and low TASR scores.

Table 8 shows that patients with a gradual/insidious onset scored significantly higher among all three groups of TASR.

Table 3 History of previous suicidal attempts, methods used for suicidal attempts, and the type and frequency of suicidal attempts among patients in the study

	N (%)
History of previous suicidal attempts	
Previous suicidal attempts	113 (75.3%)
No history of previous attempts	37 (24.7%)
Cutting of wrists	29 (19.3%)
Jump from a height	24 (16%)
Hanging	9 (6%)
Burning	8 (5.3%)
Electrocution	7 (4.7%)
Stabbing self	5 (3.3%)
Jumping in front of a moving vehicle	4 (2.7%)
Total of violent methods	86 (57.3%)
Drug overdose	24 (16%)
Poison intake	18 (12%)
Drowning	9 (6%)
Suffocation in a gas-filled room	6 (4%)
Total of nonviolent methods	57 (38%)
Frequency of suicidal attempts	
1 time	70 (62%)
2 times	26 (23%)
3 times	16 (14%)
>3 times	2 (1.7%)

Table 4 Distribution of TASR results among the study sample

TASR	*N* (%)
High risk	52 (34.7%)
Moderate risk	51 (34%)
Low risk	47 (31.3%)
Total	150 (100%)

TASR, Tool for the Assessment of Suicide Risk.

Table 5 Mean scores of dealing with Illness Coping Inventory

Dealing with Illness Coping Inventory	Mean ± SD
3 coping methods	
Active cognitive	60.2 ± 13.2
Active behavioral	52.1 ± 15.1
Avoidance	31.7 ± 7.8
8 coping strategies	
Active positive involvement	20.8 ± 7.2
Active expressive, information seeking	14 ± 3.4
Active reliance on others	16.8 ± 4.9
Cognitive positive understanding	30.5 ± 7.7
Cognitive passive ruminative	13.4 ± 2.7
Distraction	16.5 ± 4.6
Passive resignation	10.8 ± 3.6
Avoidance/solitary behavior	21.1 ± 6.2

Mean score of three coping methods and eight coping strategies used.

Table 9 shows that patients with a positive history of suicidal attempts scored significantly higher on both high and moderate suicide risk.

Thirty-five percent of the patients had a previous history of substance abuse, whereas 64.7% had negative history of substance abuse. A positive history of substance abuse was significantly negatively correlated with moderate and low TASR scores compared with the groups without a history of substance abuse. There was no significant difference in the high TASR group. The use of cannabinoids was significantly high in high and moderate TASR groups compared with the other substances. Patients with polysubstance abuse scored significantly higher on a high suicide risk in comparison with patients with monosubstance abuse.

Table 6 Correlation between age, sex, occupation, education, marital status, and TASR

	TASR			
	High	Moderate	Low	Total
Age				
Mean ± SD	35.3 ± 12.1	35.5 ± 13.3	36.7 ± 12.5	35.8 ± 12.6
P value	0.574			
Female				
N (%)	21 (40.4%)	19 (37.3%)	24 (51.1%)	64 (42.7%)
Male				
N (%)	31 (59.6%)	32 (62.7%)	23 (48.9%)	86 (57.3%)
P value	0.166	0.069	0.884	
Occupation				
Not working	32 (61.5%)	28 (54.9%)	15 (31.9%)	75 (50.0%)
Unskilled worker	14 (26.9%)	16 (31.4%)	20 (42.6%)	50 (33.3%)
Skilled worker	6 (11.5%)	7 (13.7%)	12 (25.5%)	25 (16.7%)
P value	0.001*	0.001*	0.353	
Education				
Illiterate	17 (32.7%)	13 (25.5%)	18 (38.3%)	48 (32.0%)
Scholastic education	32 (61.5%)	30 (58.8%)	20 (42.6%)	82 (54.7%)
High education	3 (5.8%)	8 (15.7%)	9 (19.1%)	20 (13.3%)
P value	0.001*	0.003*	0.112	
Marital status				
Single	22 (42.3%)	26 (51.0%)	18 (38.3%)	66 (44.0%)
Married	20 (38.5%)	19 (37.3%)	23 (48.9%)	62 (41.3%)
Separated, divorced and Widowed	10 (19.2%)	6 (11.8%)	6 (12.8%)	22 (14.7%)
P value	0.092	0.002*	0.008*	

TASR, Tool for the Assessment of Suicide Risk.
*Statistically significant.

Table 7 Relation of psychiatric diagnosis according to ICD-10 to TASR

	TASR				
Psychiatric diagnosis according to ICD-10	High	Moderate	Low	Total	*P* value
Affective disorders [*N* (%)]	18 (36.7%)	18 (40.0%)	24 (53.3%)	60 (43.2%)	0.549
Schizophrenia, schizotypal, and delusionl disorders [*N* (%)]	19 (38.8%)	12 (28.9%)	10 (22.2%)	41 (27.3%)	0.195
Disorders of adult personality and behavior [*N* (%)]	1 (2.0%)	4 (7.9%)	2 (4.4%)	7 (4.1%)	0.368
Other mental disorders because of brain damage and dysfunction and physical disease [*N* (%)]	6 (11.1%)	7 (13.3%)	3 (6.7%)	16 (10.1%)	0.444
Mental and behavioral disorders because of psychoactive substance use [*N* (%)]	6 (11.1%)	4 (7.9%)	2 (4.4%)	12 (7.4%)	0.368
Neurotic, stress-related, and somatoform disorders [*N* (%)]	1 (2.0%)	3 (6.7%)	5 (9.1%)	9 (4.8%)	0.264
Other diagnoses (e.g. organic mental disorders and mild mental retardation)					
N (%)	1 (2.0%)	3 (6.7%)	1 (2.0%)	5 (3.1%)	0.170
Total	52	51	47	150	
P value	0.296	0.001*	0.003*		

TASR, Tool for the Assessment of Suicide Risk.
*Statistically significant.

Table 8 Effect of mode of onset, course, and duration of the psychiatric disorder on TASR

	High	Moderate	Low	Total
Onset of psychiatric disorder				
Acute onset	12 (23.1%)	13 (25.5%)	14 (29.8%)	39 (26.0%)
Insidious/gradual onset	40 (76.9%)	38 (74.5%)	33 (70.2%)	111 (74.0%)
Course of psychiatric illness				
Continuous	30 (57.7%)	32 (62.7%)	23 (48.9%)	85 (56.7%)
Episodic	22 (42.3%)	19 (37.3%)	24 (51.1%)	65 (43.3%)
Duration of psychiatric disorder in years				
Mean ± SD	8.51 ± 8.16	7.38 ± 7.98	6.79 ± 6.65	
Total	52	51	47	150

TASR, Tool for the Assessment of Suicide Risk.

Patients with monosubstance abuse scored significantly higher on moderate and low suicide risk.

Forty-four percent had a positive family history of psychiatric disorders, whereas 55.3% of the patients had a negative family history; only 14% of the study sample had a positive family history of suicide, whereas the majority (86%) of patients had a negative family history of suicide.

A positive family history of psychiatric disorder was significantly negatively correlated to a moderate suicide

Table 9 Effect of previous suicidal attempts, method used for suicide attempts, and frequency of suicide attempts on TASR

	TASR			
History of previous suicide attempts	High	Moderate	Low	Total
Negative history of suicide attempts [*N* (%)]	2 (3.8%)	15 (29.4%)	20 (42.6%)	37 (24.7%)
Positive history of suicide attempts [*N* (%)]	50 (96.2%)	36 (70.6%)	27 (57.4%)	113 (75.3%)
Total [*N* (%)]	52 (100%)	51 (100.0%)	47 (100.0%)	150 (100.0%)
Method used for suicide attempts				
P value	0.001*	0.003*	0.307	
Violent suicide attempts	46 (90.2%)	30 (58.8%)	10 (19.6%)	
Nonviolent suicide attempts	20 (39.2%)	15 (30.2%)	22 (43.1%)	
P value	0.001*	0.017*	0.007*	
Frequency of suicide attempts				
No attempts [*N* (%)]		2 (3.8%)	15 (29.4%)	20 (42.6%)
1 attempt [*N* (%)]		27 (51.9%)	21 (41.2%)	22 (46.8%)
2 attempts [*N* (%)]		15 (28.8%)	7 (13.7%)	4 (8.5%)
3 attempts [*N* (%)]		6 (11.5%)	8 (15.7%)	1 (2.1%)
More than 3 attempts [*N* (%)]		2 (3.8%)	0 (0.0%)	0 (0.0%)
P value		0.001*	0.018*	0.001*

TASR, Tool for the Assessment of Suicide Risk.
*Statistically significant.

risk, whereas there was no difference in the other two groups of TASR.

A positive family history of suicide was significantly negatively correlated to high, moderate, and low TASR.

Patients who used an active cognitive coping method had significantly higher high, moderate, and low suicide risk scores compared with those used an avoidance coping method. A cognitive positive understanding strategy (a subtype of active cognitive coping) scored significantly higher on high, moderate, and low suicide risk in comparison with passive resignation.

Discussion

The sociodemographic data of the studied group showed that there was no statistically significant relation between age and the risk of suicide according to the suicide risk tool; the mean age of the patients in the study was 35.8 ± 12.5 years, which is close to that in a study in which the mean age was 36.3 years (Guwaili, 1999). Yet, it is much higher than the mean age of suicide in another Egyptian study (24.5 years); this difference might be because of the inclusion of younger age groups in their study (<20 years), whereas here, patients were 20 years of age or older.

Sixty-six percent of the patients were 20–39 years of age, with a decreasing frequency with increasing age, with patients older than 40 years of age representing 32% of the sample, which is in agreement with studies reporting suicide to be more among young individuals than the elderly (Nock *et al.*, 2008). The age range for suicides is 35–44 years for both men and women (Bertoltte and Fleischmann, 2002).

There was a high percentage of suicide in the age group 15–44 years in a study carried out in Egypt (Okasha and Lotaif, 1979; Okasha, 2004; Karam *et al.*, 2008). Among Arabs, suicide was more in the age group 20–40 years (Karam *et al.*, 2008).

There was no statistically significant difference between sex and the risk of suicide in the study. The male-to-female ratio was1.3 : 1, which is close to the results of a study that showed no major difference between sexes (Okasha and Lotaif, 1979; Okasha, 2004; Karam *et al.*, 2008); also, the male–female ratio was 1 : 1.1 (Kar, 2010).

However, a higher predominance of suicide rates in males over suicide rates in females found to be: 3.2 : 1 in 1950, 3.6 : 1 in 1995, and expected to become 3.9 : 1 in 2020 (Bertoltte and Fleischmann, 2002).

The differences in male-to-female ratios can often be attributed to the use of more lethal suicide attempt methods, greater aggressiveness, and higher intent to die among men (Nock and Kessler, 2006). In contrast, women outnumbered men in terms of suicide attempts at a ratio of 2.2 : 1 (Okasha *et al.*, 1986; Guwaili, 1999; Law and Liu, 2008).

The group of patients with scholastic education was found to have significantly higher scores for both high and moderate suicide risk, and the high education group had the lowest suicide risk. A similar figure was found in Al Ansari and Ali (2009) where the primary education group constituted 51.7% of their suicide cases. Students showed the highest suicide risk (40%) (Okasha and Lotaif, 1979; Guwaili, 1999; Bertoltte and Fleischmann, 2002). Suicide mortality was also found to be more in the lower education group (Karam *et al.*, 2008). A higher suicide risk was found among those with primary to secondary level education and among students (Lee *et al.*, 2009).

The influence of the level of education on suicide risk may be attributed to three different pathways. First, because those with a low education level cannot seek better jobs and accumulate material wealth, they may have a greater risk of suicide mortality because of lower job security and poor monetary conditions (Stack, 2000). Second, education might have an independent effect on suicide, irrespective of occupation and income (Khang and Kim, 2005). Third, selection and recruitment into education might have an impact. Those with mental

disorders and chronic severe illness as a proximal cause of suicide at younger ages might have left school without any qualification and might be less likely to have the opportunity for further education (Lee *et al*., 2009).

Among the study sample, 50% were unemployed, whereas the other 50% were working; 16.7% were skilled workers, whereas the rest 33.3% were unskilled workers. The rate of unemployment among suicide victims was 37.9%; in other studies it was found that unemployed suicide victims represented 53% of the study sample (Wong *et al*., 2008; Al Ansari and Ali, 2009).

Patients who were unemployed scored significantly higher on high and moderate suicide risk. Manual workers and unemployed individuals are at the highest risk of suicide (Karam *et al*., 2008). Being unemployed was associated with a two-fold to three-fold increased relative risk of death by suicide compared with being employed (Blakely *et al*., 2003).

In the study sample, only 41.3% were married, whereas 58.7% of the patients were either single (44%), divorced, separated, or widowed (14.7%). This was not very different from a study in Bahrain, in which 58.6% of the patients were single and divorced (Al Ansari and Ali, 2009).

Patients who were single had significantly higher scores on moderate suicide risk than those who were separated, divorced, and widowed. As in Wong *et al*., (2008), study where patients showed a higher tendency to be single (43%). Also, married patients scored significantly higher on a low suicide risk in comparison with separated, divorced, and widowed patients, a result similar to another study that found that suicide ideation and attempts in most patients were associated with being divorced and separated as compared with married (Weissman *et al*., 1999).

Forty percent of this study sample were diagnosed with an affective disorder, whereas mood disorders came second in frequency, 17% (Al Ansari *et al*., 1997; Guwaili 1999); in the Al Ansari and Ali's (2009) study, 14% of the sample had depression.

In this study, 27.3% were diagnosed with schizophrenia, schizotypal, and delusional disorders, a close result that found a predominance of schizophrenia (24.1%) (Al Ansari and Ali, 2009), whereas schizophrenia had been diagnosed in 4% of the patients in (Al Ansari *et al*., 1997; Guwaili, 1999). 11% had been diagnosed with other mental disorders because of brain damage and dysfunction and because of physical disease. While in Guwaili (1999), six percent of the patients had been diagnosed with mental disorders because of brain damage and dysfunction (epilepsy).

Eight percent of patients had been diagnosed with mental and behavioral disorders because of psychoactive substance use and 10.3% with substance abuse disorders (Al Ansari and Ali, 2009); another study found that 6% of the sample had substance abuse disorders. This low incidence might be attributed to religious and cultural factors as well as legislation. Six percent of the patients had been diagnosed with neurotic, stress-related, and somatoform disorders; also, 53% of the patients had adjustment disorders (Guwaili, 1999). Another study found that 7% of the sample had anxiety disorders, whereas 6% had adjustment disorders (Amin *et al*., 1992); another study found that 47% of the sample had adjustment disorders (Sakinofsky *et al*., 1990), and others found that 15% of their study sample had adjustment disorders Manoranjitham *et al*., 2010). The marked discrepancies between the studies regarding the diagnosis of adjustment disorder are most probably because of the misdiagnosis of adjustment disorder with either major depression or with no psychiatric disorders in the researches.

In this study, it was found that almost 5% of the patients had been diagnosed with disorders of adult personality and behavior (including emotionally unstable personality disorder, dissocial personality disorder, and histrionic personality disorder), a result close to the that for personality disorders (Guwaili, 1999). Three percent of the patients had been diagnosed with other psychiatric disorders including organic mental disorders and mild mental retardation, whereas Guwaili (1999) found that 0.5% of their sample had mental retardation.

In this study, patients with affective disorders and those with schizophrenia, schizotypal, and delusional disorders scored significantly higher on moderate and low suicide risk compared with those with neurotic, stress-related, and somatoform disorders, which is in agreement with the existing literature that mood disorders and anxiety are associated with a higher risk of suicidality. There is an association between mental illness and suicide that has been reported in studies in developing countries(Vijayakumar and Rajkumar, 1999; Law and Liu, 2008). The problem in developing countries lies in the poor availability of mental health services and registration and hence underdiagnosis of mental health problems (Al Ansari and Ali, 2009).

The mean duration of psychiatric disorders for a high suicide risk was 8.5 ± 8.16 years; having a psychiatric illness for more than 5 years increased the risk of suicidality (Al Ansari and Ali, 2009). A total of 0.39% of patients in another study had a history of psychiatric illness before a suicide attempt (Guwaili, 1999). Among patients with major depressive disorder, the incidence of suicide attempts varies markedly depending on the level of depression, and the period of time spent depressed is likely the major factor determining the overall long-term risk (Holma *et al*., 2010).

In the study sample, almost 24.7% of the patients did not have a history of previous suicidal attempts, whereas 75.3% had attempted suicide; 50% of suicide attempters were repeaters (Chastang *et al*., 1998). Thirty-one percent of the study sample had made previous attempts (Okasha *et al*., 1986). Yet, a history of a previous suicide attempt was found in 10.3% of cases (Al Ansari and Ali, 2009). These discrepancies are most probably because we

selected this patient group on the basis of the presence of suicidal ideation and a previous suicidal attempt.

Comparison of the frequencies of suicidal attempts between patients showed that 62% of patients tried to commit suicide once, whereas 23% committed suicide twice, and 13% tried to commit suicide three times, and finally 2% of the study sample had tried to commit suicide more than three times.

This study showed that patients with a positive history of suicidal attempts scored significantly higher on both high and moderate suicide risk, whereas no difference was found in a low suicide risk. Patients who had made one suicide attempt scored significantly higher on high, moderate, and low suicide risk compared with those who had made more than one attempt. These results are similar to the findings of other studies indicating that previous suicide attempts had a higher risk of suicidality (Vijayakumar *et al.*, 2005). A suicide attempt is a risk factor for completed suicide; the risk in individuals followed up for 5–37 years was 7–13% (Suominen *et al.*, 2004), roughly corresponding to a 30–40 times increased risk of death from suicide in those who had attempted suicide compared with the general population (Tidemalm *et al.*, 2008).

In this study, it was found that violent suicidal methods constituted 60% of the suicidal methods used; cutting of wrists was the most commonly used violent method, used by almost 20% of the patients, a number similar to another study that found that 25% of the patients had attempted to cut their wrists (Guwaili, 1999). Also, cutting of wrists was found to be the most common violent method (Okasha *et al.*, 1986; Alyahfoufi, 1998), followed by jumping from a height (16%). In other studies, 20% attempted jumping from a height to attempt suicide (Guwaili, 1999). Hanging represented 6% of this sample attempters while in Guwaili (1999) it was only 3%. Only 5.3% of suicide attempts were made by burning, whereas another study in Egypt found that among violent methods 36% of patients attempted suicide by burning (Guwaili, 1999). A total of 4.7% of patients attempted suicide by electrocution, followed by 12% by drowning (Guwaili, 1999), and 4% by suffocation in a gas-filled room.

Drug overdose was the most commonly used nonviolent method (16%), followed by poison intake (12%); self-poisoning by a drug overdose or poison ingestion represented 80% of the nonviolent suicide methods (Guwaili, 1999). Overdose by tablet ingestion was the most commonly used method in nonviolent suicide attempts (80%) (Okasha and Lotaif, 1979; Okasha *et al.*, 1986). A study in Lebanon found that about 95% of individuals who attempted suicide used self-poisoning (Alyahfoufi, 1998). Most individuals (77% men, 90% women) used self-poisoning in their suicide attempts (Runeson *et al.*, 2010). This can be attributed to easy accessibility and availability of poisons and over-the-counter drugs in Egypt.

In this study, it was found that patients who attempted violent suicides had significantly higher scores on high and moderate suicide risks compared with the patients who attempted suicide by nonviolent methods.

This study found that 35% of patients had a previous history of substance abuse, whereas 64.7% had a negative history of substance abuse. This result is similar to a study that found that almost 31% of their sample reported having used drugs and alcohol (Al Ansari and Ali, 2009). In other studies, 13% of patients had a history of substance abuse (Abd-El-Latif *et al.*, 1996; Guwaili, 1999). Also, there was an association between drug use and suicide, ranging from 37 to 66% (Runeson *et al.*, 2010).

A positive history of substance abuse was significantly negatively correlated with moderate and low suicide risk scores compared with patients with a negative history of substance abuse. This study is not in agreement with a study that concluded that substance use disorders were regarded as major risk factors for suicidal behavior in both clinical and community populations (Abd-El-Latif *et al.*, 1996). Also, both drug abuse and suicide ideation might be components of a larger cluster of risk-taking behaviors (Barrios *et al.*, 2000).

Patients with a history of polysubstance abuse scored significantly higher on high suicide risk compared with those with a history of monosubstance abuse. Patients with a history of monosubstance abuse scored significantly higher on moderate and low suicide risk. This is in agreement with a study that showed that suicide attempts were significantly more frequent among those with a history of polysubstance abuse (Landheim *et al.*, 2006).

Cannabinoids use scored significantly higher on high and moderate suicide risk groups compared with the other substances. This is in agreement with other researches in which cannabis use was more associated with deliberate self-harm, suicidal ideation, and suicidal attempts (De Pourtalès *et al.*, 2010).

Almost 45% of the patients had a positive family history of psychiatric disorders including affective disorders (15.3%), psychotic disorders (10%), substance abuse, (6.7%), and other psychiatric disorders (12%), whereas 55% of the patients had a negative family history. In another study, almost 30% of the sample had a family history of psychiatric disorders (Guwaili, 1999). There were significantly higher number of attempters who had a family history of psychiatric illness (Kar, 2010).

Yet, unpredictably, in this study, a positive family history of psychiatric disorders was significantly negatively correlated with a moderate suicide risk, whereas there was no difference in the other two groups in the risk of suicide. A family history of psychiatric illness significantly increases the risk of suicide only in individuals without a history of psychiatric illness, in agreement with the results of this study (Qin *et al.*, 2002).

Unexpectedly, the results of this study showed that a positive family history of suicide was significantly negatively correlated to high, moderate, and low suicide risk. Nakagawa *et al.* (2009) concluded that, in the literature, the rate of suicide motive connected with family relations and the rate of the deliberate self-harm was significantly higher among patients with a family history of suicide attempts.

The most frequently used coping method among the study sample as a whole was active cognitive coping (60.2 ± 13.2), whereas the most frequently used coping strategy was cognitive positive understanding, which is a modality of active cognitive coping (30.5 ± 7.7).

Among active behavioral coping methods, active positive involvement was the most commonly used strategy and among active cognitive coping methods, cognitive positive understanding was the most frequently used strategy (Nakagawa *et al.*, 2009). Among avoidance coping methods, the avoidance solitary passive behavior strategy was the most commonly used strategy. Patients who used the active cognitive coping method had significantly higher scores in high, moderate, and low suicide risk compared with those who used the avoidance coping method.

Cognitive positive understanding and create meaning strategy (a kind of an active cognitive coping method) scored significantly higher on high, moderate, and low suicide risk in comparison with passive resignation (a kind of an avoidance coping method).

However, in a study carried out to identify youths' attitudes about coping and help-seeking strategies for suicidal ideation and behavior, it was found that they used maladaptive coping strategies in response to depression and suicidal thoughts and behaviors such as avoidance and approach coping responses, respectively (Gould *et al.*, 2004; Dinya *et al.*, 2009).

The avoidance coping method was reported to be a less effective strategy, primarily because this approach does not involve the direct management of the problem at hand. This exacerbates the stressful experience, and can in turn lead to suicidal behaviors as a means of escape (Edwards and Holden, 2001).

A study examined the relationship between interpersonal problems, coping styles, and suicide risk. Seventy-one adult psychiatric inpatients completed a suicide risk scale, a measure of interpersonal problems, and a coping scale designed to measure eight coping styles; it was found that the coping style of 'suppression' (tendency to avoid threatening or uncomfortable situations) was found to be significantly and positively related to suicide risk. Several other coping styles were found to be significantly related to suicide risk. These findings are in agreement with a 'two-stage model of countervailing forces' and have both research and clinical implications (Josepho and Plutchik, 1994).

Suicide experts are beginning to identify common emotional threads that may underlie some suicides. Prominent among these are a perceived sense of isolation, a lack of personal attachments, and a dearth of coping skills. Healthy coping, according to the crisis theory, involves four dimensions: involvement in daily activities, a supportive community, physical well-being, and good quality of life; suicide attempts, in contrast, can be viewed as a maladaptive effort to cope (DeAngelis, 2001).

Elevated emotional coping and thought suppression were associated with increased suicide risk (Cukrowicz *et al.*, 2008). Religious coping decreased the risk of suicidal ideation among African Americans, White college students, and Latin American immigrants (Walker and Bishop, 2005). Some psychologists have categorized prayer and religious commitment as defensive coping strategies, arguing that they are less effective in helping individuals cope than life-skill, problem-solving strategies (Paloutzian and Santrock, 2002).

However, some styles of religious coping are associated with high levels of personal initiative and competence, and even when defensive religious strategies are initially adopted, they sometimes set the stage for the later appearance of more-active religious coping (Pargament and Park, 1995). Also, the stigma of mental illness and suicide discourages individuals from seeking and accepting help (Dinos *et al.*, 2004; Mann and Himelein 2004).

Our recommendation is that the stigma of mental illness that hinders help-seeking behavior among the mentally ill should be eliminated, and patients should be helped to cope better with their illness by educating and providing them with diverse coping skills.

Acknowledgements

Conflicts of interest

There are no conflicts of interest.

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