

# A study of psychosocial correlates of suicide in a sample of suicide attempters in Kuwait

Farouk Lotaief, Ihab Shafik, Sulaiman Al-Khadhari and Dina Ibrahim

Department of Psychiatry, Psychological Medicine Hospital, Kuwait University, Kuwait

Correspondence to Ihab Shafik, MD, M.Sc., Faculty of Medicine, Ain Shams University, Department of Psychiatry, Psychological Medicine Hospital, P.O. Box 1809, 92400 El-Arydia, Kuwait  
Tel: +009 656 644 3068;  
e-mail: ihab\_shafik@hotmail.com

**Received** 3 January 2012

**Accepted** 22 February 2012

**Middle East Current Psychiatry**

2012, 19:190–195

## Introduction

Suicide attempts constitute one of the most common emergencies in psychiatry. However, its prediction and prevention still represent a very complex and puzzling clinical problem. The complexity of suicidal ideation and behavior across different cultures makes risk factors vary widely from one country to another, depending on psychopathological, social, personal and relational, and cultural factors.

## Aim

The aim of this work was to study different psychological correlates and risk factors for suicide attempters in Kuwait.

## Methods

A case–control cross-sectional study of all psychopathological, social, and familial data in a trial to identify the risk factors for suicide attempts in Kuwait.

## Results

We found that suicide attempts are more common at a young age, among women more than men. Financial problems, unemployment, mental illness comorbidity, and a past history of suicide are all predictive risk factors for suicide.

## Conclusion

Rates of suicide are increasing nowadays; therefore, it is important to study predictive risk factors across different cultures so that mental health services can implement plans and projects to deal with this problem.

## Keywords:

psychological, risk factors, suicide

Middle East Curr Psychiatry 19:190–195

© 2012 Okasha Institute of Psychiatry, Ain Shams University  
2090-5408

## Introduction

Suicide is a complex phenomenon that has attracted the attention of philosophers, physician, sociologists, artists, and psychiatrists over the centuries. Suicide has occurred consistently throughout recorded history; however, many researchers have found that attitudes toward suicide vary widely in different ages, cultures, and societies [1].

Surprisingly, people dying from suicide more than all of the several armed conflicts around the world and, in many places, about the same or slightly more than those dying from traffic accidents. In all countries, suicide is now one of the three leading causes of death among individuals aged 15–34 years; until recently, suicide was predominant among the elderly, but now suicide is prevalent among younger individuals in both absolute and relative terms [2].

The WHO has estimated that by the year 2020, ~1.53 million individuals will die by suicide, according to current trends. Worldwide, suicide attempts will be about 10–20 times more than deaths by suicide. There will be an average of one suicide every 20 s and a suicide attempt every 1–2 s [2].

Several studies have reported that suicide attempts range in intent and medical severity from mild to very severe.

All suicide attempts, irrespective of the extent of injury, are indications of severe emotional distress, unhappiness, and/or mental illness. Goes back to the propositions of the early psychoanalytical psychiatrist who regarded the amount of violence which is implicit in person with a suicidal attempts as a form of failed homicide, the turning of aggression against the self that was formerly directed against another person [3].

Suicide attempts result in major economic losses. Direct costs reflect treatment and hospitalization following suicide attempts and indirect costs represent lost potential lifetime income because of suicide-related disability. Notably, every youth suicide implies a loss of productivity of 50 years or more. The resulting economic burden from suicides and serious attempts was estimated to exceed \$16 billion annually in the USA [4].

The definitions of attempted suicide used by many authors differ from those used by psychiatrists. The most likely explanation is that the individuals who responded to anonymous inquiries were using a broader definition of attempted suicide than that by professionals [5].

Schmidtke *et al.* [6] have provided a definition for suicide attempt as a potentially self-injurious behavior with a nonfatal outcome, for which there is evidence (either

explicit or implicit) that the person intended to kill himself or herself.

De Leo *et al.* [7] have stated that endorsement of the evidence-based perspective in public health has led to a shift from an interpretive investigation to an outcome-based practice that has led to a shift in the use of terminology. Consequently, 'fatal suicidal behavior' is proposed for those suicidal acts that result in death, whereas 'nonfatal suicidal behavior' refers to suicidal behavior that does not result in the person's death. The intention to die is not always a necessary criterion, but the attempters should be aware that the action he/she initiates might cause death. Interestingly, this new approach seems to be closer to the old definition of Durkheim: 'all those death cases directly or indirectly resulting from a positive or negative act of the victim, who is aware of the consequences of its behavior' [8].

More recently and precisely, the WHO defined a suicide attempt as a self-damaging act carried out with some intent to die and distinguished from other self-destructive types of behavior, such as self-mutilation, noncompliance with medical treatment in severely ill individuals, and the use of substances such as alcohol and tobacco [2].

An essential preliminary step in the clinical management of persons who attempt suicide is to consider relevant risk or causal factors. Many researches and investigations are still being carried out worldwide in an attempt to understand and evaluate the risk factors for suicide and attempted suicide, as it will help to predict the protective factors against this phenomenon.

Many risk factors are correlated to suicide attempters ranging from cultural and sociodemographic factors, family factors, cognitive style and personality factors, psychiatric disorders, and situational risk factors. Low socioeconomic status, poor education, and unemployment in the family are also risk factors [9].

Individual growth is inter-related to collective culture tradition. Those who lack culture roots have marked identity problems and lack a model for conflict resolution. In some stressful situations, they may resort to self-destructive behavior such as a suicide attempt or suicide [9].

In Arab countries, there are little available data on suicide. In Egypt, Okasha *et al.* [10] have reported that the crude rate of suicide attempts in Cairo is 38.5/100 000 per annum. Also, they concluded that individuals who attempted suicide often face interpersonal problems, and that their acts may be interpreted more as an attempt to remedy an intolerable situation than a desire to die.

However, in Kuwait, only a few papers have focused on this problem; two of these have examined the psychosocial profile of deliberate self-harm by Al-Sahlawi *et al.* [11]. They have reported that women attempt deliberate self-harm more than men and the most common method is through an overdose of paracetamol. Common risk factors found were exposure to stressors and also depression. However, these studies were retro-

spective and were only carried out in one general hospital in Kuwait (Mobarak Hospital) [11].

Hence, this study was carried out to determine different risk factors and psychosocial correlates for suicide attempts in Kuwait.

Suicide attempters with cluster B personality disorders who have a history of self-mutilation tend to be more depressed, anxious, and impulsive, and they also tend to underestimate the lethality of their suicide attempts. Therefore, clinicians may be unintentionally misled in assessing the suicide risk of self-mutilators as less serious than it is [12].

---

## Materials and methods

With the aim of studying different psychological correlates and risk factors for suicide attempters in Kuwait, we carried out a qualitative cross-sectional, comparative case-control study in a psychological medicine hospital in Kuwait.

The study included two main groups. The case group included at least 50 Kuwaiti and other Arab patients who spoke and wrote Arabic well and the control group included 50 participants cross matched with the cases in terms of sociodemographic data recruited from among the employees and workers in the hospital and who did not have any history of suicide attempts. The case group included patients who presented to the psychiatry department at Kuwait Psychological Medicine Hospital because of a suicide attempt, with age not younger than 18 years, and mini mental state examination value equal to or above 25. An informed consent was obtained from the participating individuals.

Patients were interviewed using a semi-structured form designed by the researchers for demographic data, along with psychiatric and social assessments to identify the predisposing and the precipitating risk factors that contributed to the suicide attempt, as well as the seriousness of the suicide attempt (intent and lethality), stressors, thoughts of and plans of death, method of suicide attempt, and family history of suicide; there was also a section for assessment of the familial and personal relationships of the patient.

Collateral data were collected from available informants. In addition, the ICD-10 check list was used to establish any psychiatric diagnosis.

The Beck depression inventory [13] was used to determine the severity of depression.

## Statistical analysis

All data were recorded and entered in a statistical package on a compatible computer and varied. Analysis was performed using a statistical package for the social science (SPSS, version 15, 2007; SPSS Inc., Chicago, USA).

---

## Results

### Sociodemographic characteristics

Among the sample of the study, the women slightly outnumbered the men, with  $n = 41$  (82%) women

compared with  $n = 9$  (18%) men. In terms of age, the sample was divided into four age groups; 22 (44%) were between 18 and 20 years of age, 20 (40%) were between 20 and 30 years of age, five (10%) were between 30 and 40 years of age, and three (6%) were older than 40 years of age.

In terms of the marital status of the case group, 33 (66%) were single, three cases were only engaged (6%), five (10%) were married, and nine (18%) were divorced (Table 1).

The vast majority of the sample were unemployed, housewives, or retired 27 (54%); there were 11 (22%) students, and 12 (24%) were employed. A total of 27 (54%) of the sample had a low educational level, 20 (40%) had an intermediate level of education, and only three (6%) had higher education.

**Suicide attempt methods**

As shown in Table 2, more usage of more than one drug was the most common method for attempts (34%), then usage of paracetamol about (24%), rather than other medications such as antipsychotics, antidepressants and anxiolytics (20%), whereas toxins administration account for only (12%). On the other hand deep wounds used only by (10%).

**Psychiatric morbidity among suicide attempters (Tables 3 and 4)**

Depression was diagnosed in 54% of cases and ranged in severity from mild in 6% and moderate in 28% to severe in 20%. Personality disorder, especially border line, was present in 14% and histrionic personality in 10% of suicide attempters, whereas dissocial personality was only present in only 4% in men. Schizophrenia, paranoid type, was found in only 4% of cases, whereas other neurotic illness including anxiety, panic disorder, and somatoform disorder were found in 16% of all cases.

However, only 30% of controls showed psychiatric morbidity and this was significantly different in comparison with the cases.

**Family and past history factors (Table 5)**

A previous history of childhood sexual abuse was reported more by 14 (28%) cases and only two (4%) of patients in the control group as shown in table. At the same time, a significant history of child abuse was found in the case group in comparison with the controls.

A total of 64% of cases reported previous attempts of suicide.

In terms of the family history of the cases, we found that about half, 23 (46%), of the cases had a family history of suicide attempts and this was very highly significant. Also, a family history of psychiatric illness was found in 19 cases (38%) compared with only 4% in the control group. Especially, depressive disorders (34%), a family history of alcohol abuse (30%), and addiction (16%) were also reported.

**Table 1 Sociodemographic data of the study sample**

	n (%)	
	Cases (N=50)	Control (N=50)
Age		
18–20	22 (44%)	22 (44%)
20–30	20 (40%)	18 (36%)
30–40	5 (10%)	5 (10%)
> 40–50	3 (6%)	5 (10%)
Total	50 (100%)	50 (100%)
Education		
Low education	27 (54%)	23 (46%)
Moderate education	20 (40%)	25 (50%)
High education	3 (6%)	2 (4%)
Total	50 (100%)	50 (100%)
Occupation		
Semi skilled	2 (4%)	2 (4%)
Administrative	5 (10%)	5 (10%)
Moderate skilled	5 (10%)	5 (10%)
Students	11 (22%)	11 (22%)
Housewife	12 (24%)	12 (24%)
Unemployed	8 (16%)	8 (16%)
Retired	7 (14%)	7 (14%)
Total	50 (100%)	50 (100%)
Economic state		
Very low	9 (18%)	9 (18%)
Low	6 (12%)	5 (10%)
Below average	4 (8%)	4 (8%)
Average	21 (42%)	21 (42%)
Above average	8 (16%)	8 (16%)
High	2 (4%)	2 (4%)
Total	50 (100%)	50 (100%)
Social state		
Never married	33 (66%)	35 (70%)
Engaged	3 (6%)	0 (0%)
Married	5 (10%)	6 (12%)
Divorced	9 (18%)	9 (18%)
Total	50 (100%)	50 (100%)

**Table 2 Methods of suicide attempts**

	Cases
Method of suicidal attempt	
Paracetamol	
Count	12
% within group	24.0
Antipsychotics	
Count	1
% within group	2.0
Antidepressants	
Count	5
% within group	10.0
Anxiolytics	
Count	4
% within group	8.0
More than one	
Count	17
% within group	34.0
Unknown tablets, toxins	
Count	6
% within group	12.0
Deep wounds	
Count	5
% within group	10.0
Total	
Count	50
% within group	100.0

**Precipitating factors**

Other stressors found to be correlated to suicide attempts have been assessed and are presented in Table 6. Highly significant familial and other relationships problems were detected in half of the cases before the suicide attempt.

Yet, other problems did not show a significant difference between the groups.

## Discussion

Suicide attempters are a heterogeneous group with respect to evidence of planning, extent of medical injuries, and choice of methods and intent, which can range from a cry for help, revenge, relief of anxiety, and even to a clear intent to die [5].

Differences in the definition of a suicide attempt and the lack of compulsory registration of deliberate self-inflicted

injuries and poisonings in most countries make international comparison of clinical and epidemiological studies difficult [6]. Scandinavian countries have registers with national coverage on information of hospital admission after a suicide attempt. These data only include around 60% of all individuals attempting suicide, indicating that the actual scale of the problem is much larger [14].

When interpreting the data on hospital admissions, one must keep in mind that these data are influenced by changes in accessibility and routines in healthcare services, as well as changes in the lethality of the methods used [15].

In this study, background factors, ranging from information on demographic, socioeconomic, and psychosocial determinants to a detailed description of the methods of suicide attempts and psychopathological factors, were assessed. There are few studies worldwide that assess different risk groups for suicide attempts and both predisposing and precipitating factors.

In Kuwait, the male-to-female ratio of suicide attempters was found to be 1:4, and this finding is consistent with all studies worldwide; however, in most countries, men commit more suicide and women make more suicide attempts: this is called the sex paradox [16]. Yet, there are some exceptions, such as in China, where women commit more suicide than men, and a few places such as India, Singapore, Hong Kong, and Japan, where the suicidal behavior has almost the same figures between both sexes [17].

At the same time, we found that suicide attempts are prominent in the young age group. It is markedly the highest below the age of 20 years and also below the age of 30 years, and decreases with age. These findings were similar to those of studies and reports on the age range of suicide attempters in Asia and Africa [18], as well as worldwide WHO reports, as they reported that the highest risk groups were adolescents, followed by young adults whose age ranges between 20 and 35 years in developing countries. They also reported another peak in the developed countries in the age group older than 65 years of age [18].

The reasons for this recent increase in suicide attempt rates, particularly among the young, are multifaceted, but may include an increase in mental disorders and substance abuse, changes in traditional family structures,

**Table 3 Psychiatric morbidity among suicide attempters**

	Cases	Controls	P value
Psychiatric morbidity			
Schizophrenia paranoid type			
Count	2	0	
% within group	4.0		
Emotionally unstable personality			
Count	7	1	
% within group	14.0	2	
Histrionic personality			
Count	5	5	
% within group	10.0	10	0.007
Dissocial personality			
Count	2	0	
% within group	4.0		
Anxiety, panic disorder, and phobias			
Count	8	2	
% within group	16.0	4	
Depression			
Count	27	7	
% within group	54.0	14	
Substance abuse (alcohol abuse)	12 (24%)		
Total			
Count	50		
% within group	100.0		

**Table 4 Major depressive disorder and its severity among the sample**

	Group		P value
	Cases	Control	
Depression			
No depression	23	43	
Mild depression	3	7	
Moderate depression	14	0	0.000
Severe depression	10	0	
Total	50	50	

**Table 5 Family and previous history of suicide attempters**

	n (%)		P value
	Cases (N=50)	Control (N=50)	
Family history of depression	17 (34.0%)	5 (10.0%)	0.004
Family history of alcoholic	15 (30.0%)	7 (14.0%)	0.053
Family history of any psychiatric illness	19 (38.0%)	2 (4.0%)	<0.000*
Family history of suicide attempts	23 (46.0%)	0 (0%)	<0.001*
Family history of addiction	8 (16.0%)	5 (10.0%)	0.372
Childhood negligence	21 (42.0%)	5 (10.0%)	<0.001*
Childhood physical abuse	23 (32.0%)	14 (0%)	0.062
Previous history of suicide attempts (repeaters)	32 (64.0%)	0 (0%)	<0.000*

\*Highly significant.

**Table 6 Precipitating factors**

	Cases (N=50)	Control (N=50)	P value
Family problems	31 (62.0%)	7 (14.0%)	<0.000*
Economic problems	31 (62.0%)	19 (38.0%)	0.016
Occupational problems	20 (42.0%)	11 (20.0%)	0.052
Legal problems	16 (32.0%)	5 (10.0%)	0.007
Marital problems	14 (28.0%)	14 (28.0%)	1.000
Relationship problems	27 (54.0%)	10 (20.0%)	<0.001*
Educational problems	22 (44.0%)	14 (28.0%)	0.096
Recent physical problem	20 (40.0%)	9 (18.0%)	0.015

\*Highly significant.

increases in unemployment, and social isolation, among others [19].

Hence, this study was carried out to assess these risk factors in Kuwait.

The sociological approach explain our results, already postulated by Durkheim. Factors such as low socio-economic status, low educational level, long-term unemployment, and social welfare increase the risk of suicide attempts [9,20].

In our study, the rate of suicide attempts was higher in lower income individuals and this finding is similar to all studies carried out worldwide [18], especially in developing nations, and can be attributed to the fact that there is limited or nonexistent welfare and social security for individuals to fall back on. Families committing suicide *en masse* because of financial difficulties is not an unusual occurrence, especially in India [21].

Furthermore, the proportion of unemployed and economically inactive individuals among the suicide attempters reached up to a fifth and a third, respectively, in our study.

Hence, low socioeconomic status, unemployment, and poverty seem to increase the risk of suicide attempts, independent of mental disorder, and alcohol and drug abuse; these risk factors have also been reported in many other studies [9,18,21,22].

According to data from the WHO/EURO multicenter study, more than half of all suicide attempters have a low level of education [20] and this is correlated and similar to the finding in our study.

Single, widowed, and divorced individuals are typically over-represented among suicide attempters, and this is consistent with other studies [23], in which all researchers worldwide have found that marriage is protective against suicide [16,18]. Yet, this finding was reversed in India [18].

The choice of methods for suicide attempts reflects the accessibility of means, the individual preference, cultural acceptability, and the intent behind the behavior. Nonviolent methods (primarily self-poisoning) are most frequently found among suicide attempters, whereas violent or more lethal methods (hanging, shooting, jumping, drowning, and cutting) are often chosen for completion of suicides. Men are more inclined to use

more drastic violent methods than women, whereas women are over-represented among suicide attempters using poisoning. This sex difference in the chosen method is considered as one of the reasons behind the sex paradox of suicidal behavior [5,18]. Violent suicide attempts can be considered as having a stronger association with completed suicide, possibly reflecting a progress in the suicidal process often starting with nonviolent suicidal behavior (self-poisoning) [5,24].

Psychopathology clearly represents the strongest risk factor for suicide attempts. Up to 98% of suicide attempters fulfill the criteria for any psychiatric disorder, according to various European studies [25].

Previous hospital admission because of any mental disorder is common in both young (26%) and old (41%) suicide attempters, and increases the risk by 30–33 times [26]. Our study is in agreement with all these studies.

The mental disorders that suicide attempters predominantly have include substance abuse, and affective and personality disorders [19,25].

Suicide attempts seem to be strongly associated with mental illness in up to 80% comorbidity, especially depressive and affective disorders in women, and substance abuse and personality disorders in men [25,27,28].

Up to 30% of suicide attempters abuse alcohol, according to a study carried out in Oxford [29]. However, in our study, 24% were alcohol abusers, although alcohol is prohibited in Kuwait.

At the same time, personality differences were found in our study, especially borderline personality disorder (14%) and depression in about (54%).

Similar to our study, in a study carried out in Kuwait, it was found that suicide attempters were of younger age, diagnosed with negative emotions, pessimism, and depression [30].

Also, suicide attempts were reported more among individuals with impulsive and emotionally unstable personalities [18].

#### **Repetition of attempted suicide**

Recurrent suicidal behavior places a huge burden on the patients, on their relationships, and on the healthcare and welfare system. The risk of repetition of attempts was estimated to be 14%, in a multicenter study, during a 12-month follow-up period [31]. The tendency for repetitive self-destructive behavior seems to increase with decreasing age as the 12-month repetition risk reached 24% in adolescents [32]. As many as 42 and 45% of male and female suicide attempters included in the WHO/EURO multicenter study reported previous attempts, respectively [20]. Similar to our study, 64% of our sample reported a previous history of suicide attempts and this is considered a serious predictor for future suicide attempts and would increase the chance of completion of suicide even without a real intention to commit suicide [18].

In agreement with all suicide reports worldwide, we found a major association between a family history of suicide or suicide attempts in 46% of our patients and this indicates the role of the biological and genetic basis of suicidality.

Childhood adversities including physical, emotional, and sexual abuse lead to substantially higher risks for suicide. Domestic abuse is one of the most significant precipitants of suicides among women [18]. We found a history of child abuse in about one-third of our patients.

Several conditions increase the risk of repeating a suicide attempt, including the choice of violent method in earlier attempts, availability of psychiatric treatment, alcohol misuse, divorce, and unemployment. Thus, there is a need to develop suicide-prevention strategies on the basis of data derived from local research studies, such as epidemiological information on those psychiatric disorders mostly associated with suicidal behavior; early detection and appropriate treatment of psychiatric disorders and psychosocial conditions, which are significantly associated with suicide; suicide-prevention training of healthcare professionals; availability of medication for both mood and schizophrenic disorders; restriction of access to means of suicides such as medications and pesticides, appropriate treatment after a suicide attempt; and the reduction in stigma toward the mentally ill and those who attempt suicide.

## Acknowledgements

### Conflicts of interest

There are no conflicts of interest.

## References

- 1 Tseng WS. *Clinician's guide to cultural psychiatry*. 1st ed. California, USA: Academic Press; 2003.
- 2 World Health Organization (WHO). *Multisite intervention study on suicidal behaviours – SUPRE-MISS: protocol of SUPRE-MISS*. Geneva: World Health Organization (WHO); 2002.
- 3 Dieserud G, Loeb M, Ekeberg Ø. Suicidal behavior in the municipality of Baerum, Norway: a 12-year prospective study of parasuicide and suicide. *Suicide Life Threat Behav* 2000; 30:61–73.
- 4 Claassen CA, Trivedi MH, Shimizu I, Stewart S, Larkin GL, Litovitz T. Epidemiology of nonfatal deliberate self-harm in the United States as described in three medical databases. *Suicide Life Threat Behav* 2006; 36:192–212.
- 5 Lotaief F. Cultural psychiatry. Saudi-German Hospital Annual Meeting, Geddah, Saudia Arabia, 2009.
- 6 Schmidtke A, Bille Brahe U, De Leo D. *Suicidal behaviour in Europe: results from the WHO/EURO multicentre study on suicidal behaviour*. Bern: Hogrefe & Huber; 2001.
- 7 De Leo D, Burgis S, Bertolote JM, Kerkhof AJFM, Bille Brahe U. Definintiv of suicidal behavior: lessons learned from the WHO/EURO multicentre study. *Crisis* 2006; 27:4–15.
- 8 Durkheim E. *Suicide: a study in sociology*. Rep. No. 1897/2002. London: Routledge; 2002.
- 9 Christoffersen MN, Poulsen HD, Nielsen A. Attempted suicide among young people: risk factors in a prospective register-based study of Danish children born in 1966. *Acta Psychiatr Scand* 2003; 108:350–358.
- 10 Okasha A, Lotaief F, El Mahallawy N. Descriptive study of attempted suicide in Cairo. *Egypt J Psychiatry* 1986; 9:53–90.
- 11 Al Sahlawi KS, Zahid MA, Shahid AA. Deliberate self-harm in Kuwait, demographic and precipitating factors. *Kuwait Med J* 1998; 30:10–14.
- 12 Stanley B, Gameroff MJ, Michalsen V, Mann JJ. Are suicide attempters who self-mutilate a unique population? *Am J Psychiatry* 2001; 158: 427–432.
- 13 Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Arch Gen Psychiatry* 1961; 4:561–571.
- 14 Ramberg IL. *Promoting suicide prevention. An evaluation of a programme for training trainers in psychiatric clinical work*. Stockholm, Sweden: Karolinska Institutet; 2003.
- 15 Wasserman D, Wasserman C. *Oxford textbook of suicidology and suicide prevention*. 1st ed. USA: Oxford University Press; 2009.
- 16 Stefanello S, Cais CFDS, Mauro MLF, De Freitas GVS, Botega NJ. Gender differences in suicide attempts: preliminary results of the multisite intervention study on suicidal behavior (SUPRE-MISS) from Campinas. *Brazil Rev Bras Psiquiatr* 2008; 30:139–143.
- 17 Cheng ATA, Lee CS. Suicide in Asia and the Far East. In: Hawton K, van Heeringen K, editors. *The international handbook of suicide and attempted suicide*. 1st ed. Wiley; 2000. pp. 29–48.
- 18 Vijayakumar L, Nagaraj K, John S. 2004. Suicide and suicide prevention in developing countries. Working paper no. 27. Disease Control Priorities Project.
- 19 Mittendorfer Rutz E. Trends of youth suicide in Europe during the 1980s and 1990s – gender differences and implications for prevention. *J Men's Health Gender* 2006; 3:250–257.
- 20 Schmidtke A, Bille Brahe U, DeLeo D, Kerkhof A, Bjerke T, Crepet P, et al. Attempted suicide in Europe: rates, trends and sociodemographic characteristics of suicide attempters during the period 1989–1992. Results of the WHO/EURO multicentre study on parasuicide. *Acta Psychiatr Scand* 1996; 93:327–338.
- 21 Stone GD. *Biotechnology and suicide in India*. Ver. 1.4. St Louis: Washington University; 2002.
- 22 Jancloes M. The poorest first: WHO's activities to help the people in greatest need. *World Health Forum* 1998; 19:182–187.
- 23 Hawton K, Harriss L, Hall S, Simkin S, Bale E, Bond A. Deliberate self-harm in Oxford, 1990–2000: a time of change in patient characteristics. *Psychol Med* 2003; 33:987–995.
- 24 Mace D, Khalsa V, Crumbley J, Aarons J. *In harm's way: a primer in detention suicide prevention*. Lane County, Oregon, USA: Suicide Prevention Resource Center; 2003.
- 25 McLean J, Maxwell M, Platt S, Harris F, Jepson R. *Risk and protective factors for suicide and suicidal behaviour: a literature review*. Edinburgh: Scottish Government Social Research; 2008.
- 26 Hawton K, Harriss L. Deliberate self-harm in people aged 60 years and over: characteristics and outcome of a 20-year cohort. *Int J Geriatr Psychiatry* 2006; 21:572–581.
- 27 Fekete S, Voros V, Osvath P. Gender differences in suicide attempters in Hungary: retrospective epidemiological study. *Croat Med J* 2005; 46:288–293.
- 28 Haw C, Hawton K, Houston K, Townsend E. Psychiatric and personality disorders in deliberate self-harm patients. *Br J Psychiatry* 2001; 178 (Jan): 48–54.
- 29 Hawton K, Houston K, Haw C, Townsend E, Harriss L. Comorbidity of axis I and axis II disorders in patients who attempted suicide. *Am J Psychiatry* 2003; 160:1494–1500.
- 30 Abdel Khalek A, Lester D. Can personality predict suicidality? A study in two cultures. *Int J Soc Psychiatry* 2002; 48:231–239.
- 31 Kapur N, Cooper J, King Hele S. The repetition of suicidal behaviour: a multicentre cohort study. *J Clin Psychiatry* 2006; 67:1599–1609.
- 32 Hultén A, Jiang GX, Wasserman D, Hawton K, Hjelmeland H, De Leo D, et al. Repetition of attempted suicide among teenagers in Europe: frequency, timing and risk factors. *Eur Child Adolesc Psychiatry* 2001; 10:161–169.