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ORIGINAL ARTICLE

Life events, social support, coping strategies, and quality of life in attempted suicide: A case-control study

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ABSTRACT

Background: Though deliberate self-harm encompasses a wide variety of medical and social disciplines some of the important psychosocial variable such as life events, social support, coping strategies, and quality of life have not yet been explored in depth in India.
Aims: The aim was to analyze and compare the type and severity of life events, coping strategies, social support, and quality of life of suicide attempters versus matched normal controls, and to identify the risk factors leading to suicide.
Materials and Methods: A total of 50 consecutive suicide attempters were compared with same number of age, sex, and martial status matched healthy controls using Presumptive Stressful Life Events Scale, Social Support Questionnaire, AECOM Coping Style Scale, and WHO QOL-Bref.
Results: Attempters experienced significantly more life events especially untoward events whereas the control group experienced more desirable and impersonal life events. Social support, positive coping, and of QOL were significantly lower in attempters. Among all risk factors desirable life events, good education, and good social support were protective against suicide.
Conclusion: Suicide attempters were differentiated from healthy controls based on more stressful life events, lower social support, less healthy coping, and poor QOL. Positive life events, good education, and good social support were protective factors against suicide. However, it is difficult to pinpoint a single factor responsible for suicidal behavior. It is the complex interplay of various interrelated factors and the resultant buffering effect, which is protecting the individual against deliberate self-harm.

Key words: Coping, deliberate self harm, life events, quality of life, social support

INTRODUCTION

The World Health Organization[1] defines suicide act as "the injury with varying degrees of lethal intent and that suicide may be defined as a suicidal act with fatal outcome." Deliberate self-harm is a major issue in the health care all over the world. Many factors including biological, socio-cultural, and personality traits can modify this complex behavior. Suicide is a significant problem in India also with a reported rate of 10.8 per 100,000 population.[2] However it may be considerable under estimate due to underreporting and false reporting of many of the cases of suicides in India.[3] Certain thought provoking studies on suicide have been reported from India.[4] However, some of the important psychosocial variables such as life events or stressors, social support, coping strategies, and quality of life have not yet been assessed in relation to deliberate self-harm in India.

Life change could act as a stressor causing physiological arousal and enhanced susceptibility for illness. Suicide

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victims have experienced more changes in living conditions, work problems, and object losses than normal controls.[5] A review of Indian studies on stressors in suicide shows maladjustment with significant family members and domestic strife as the most important causes, followed by physical factors and mental illness.[6] However, most of the Indian studies have not used a proper scale to assess life events and many of them were descriptive and retrospective studies.

A body of research in recent years has focused on the role of social support in maintaining emotional well-being and moderating the effects of life events. There is evidence that social network among suicide attempters are weaker than in nonsuicidal individuals.[7] Life events can alter the social support system in terms of size, frequency of interaction and stability, and such changes may be associated with suicidal behaviors.

Coping behavior, or the things people do to reduce the stress, has been a variable that has recently become the focus of research.[8] Coping behavior is operationally defined as the responses to external life stress that serve to prevent, avoid, reduce or control stress and emotional distress. Horesh *et al.*[9] reported a negative correlation with minimization, replacement, mapping, and reversal, and a positive correlation with suppression, blame and substitution in suicide victims. Quality of life is another factor to assess with regard to suicide risk and a focus recent research in suicidology.[10]

It has been increasingly recognized in recent years that people who attempt suicide have certain individual predispositions, part of which is given by personality traits, in particular, impulsive, aggressive, and violent proneness.[11] Studies from India and West[12,13] show identifiable personality disorder in suicide attempters.

Considering the paucity of such work from the Indian context the present study was conducted to analyze and compare the type and severity of life events, coping strategies and social support, and quality of life of suicide attempters and matched normal controls and to identify the risk factors leading to suicide attempt.

MATERIALS AND METHODS

Study sample

The sample comprised 50 suicide attempters qualifying the criteria for suicide attempt as defined by WHO[1] admitted to different departments of a general hospital. These patients were interviewed within the first week of their admission. Patients below the age of 18 years and those whose physical condition did not allow detailed evaluation were excluded from study. Wherever possible, relatives, friends, and other possible sources of information such as spouse and colleagues were also interviewed for eliciting further information. There were no other exclusion criteria. Age, sex, and marital status-matched healthy controls from the community formed the comparison group. The age was matched by grouping the age at 5 years intervals. These subjects were initially screened by GHQ-12 version[14] to exclude the presence of common mental disorders. Those who scored (cut-off score 2/3 mode) were excluded from the control group.

Tools

Personal data sheet

A specially designed proforma was used for documenting socio-demographic variables, illness variables, and details of the current suicide attempt.

Presumptive stressful life events scale

This scale consists of 51 life events commonly experienced by the normal Indian adult population.[15] One hundred was the highest stress score and zero no perceived stress. Scale items were further classified into (a) desirable, undesirable or ambiguous and (b) personal or impersonal (not dependent on the individual action). Reliability of the PSLE scale was conducted on 15 patients and relatives.[16] Life event data collected from each patient were compared with life event data about the patient given by his relative and was found to be satisfactory (0.8).

Social support questionnaire

This scale was specially developed by poling items from Social Support Scale of Asha[17] and the Social Support Scale of Nehra, Kulhara, and Verma[18] by item analysis. Out of 47 items 22 were positively worded and 25 were negatively worded. The positive statements were intermingled with negative statements to reduce the likelihood of response set occurring. This scale has approximately the same number of items from each area. The retest reliability obtained for this scale was 0.89.

AECOM coping style scale

This is a 95-item scale[19] with a four-possibility spectrum ranging from "never" to "very often." The scale measures eight basic coping styles that may be used for reducing stress and coping with life problems. These coping styles are (1) suppression, (2) help seeking, (3) replacement, (4) blame, (5) substitution, (6) mapping, (7) reversal, and (8) minimization. The internal validity of the scale was found to have an α value of between 0.58 and 0.79 with a mean α value of 0.70. The questionnaire had both predictive validity and discriminative validity.

WHO QOL – bref

WHO QOL-Bref[20] contains 26 items with four domains 1. Physical health and well-being, 2. Psychological health and well-being, 3. Social relations, and 4. Environment. The

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scale has been shown to have good discriminant validity, sound content validity, and good test--retest reliability at several international WHOQOL centers.

Statistical analysis

For comparison of quantitative variables we used a paired *t*-test or Wilcoxon signed rank test applied depending on whether the data were normally distributed or not. Quantitative variables were compared by a Mc-Nemar chi-square test. Conditional logistic regression analysis was used to identify the risk factors. SPSS-10.0[21] and Epiinfo 3.2[22] were used for statistical analyses.

RESULTS

The sample comprised 50 suicide attempters and 50 controls matched on age, sex, and marital status. The mean age of attempters versus control was 30.82±13.56 vs. 31.54±13.1 (*P*=0.787) and the male female ratio was male attempters 22 (44%) vs. male control 22 (44%) and female attempters 28 (56%) vs. female control 28 (56%) (*P*=1.0). In both groups 60% were married [Table 1].

Comparison of mean scores of different types of life events in attempters versus controls showed significantly higher total life events, and undesirable and personal life events in attempters [Table 2].

Comparison of social support variables between attempters and controls showed that the confiding relationship was significantly less (35 (70%) vs. 49 (98%), Pearson Chi-square *P*=0.000) often present and loneliness was significantly more frequent (14 (28%) vs. 3 (6%), Pearson Chi-square *P*=0.003) in attempters. Comparison of various items from the social support scale showed significantly lower scores in attempters, except for religion [Table 3].

Comparison of different types of coping behavior between attempters and controls showed that scores for minimization, replacement, and mapping were significantly higher in controls [Table 4].

The mean scores of all the four domains of QOL (physical health and well-being, psychological health and well-being, social relations and environment) were significantly lower in the attempters [Table 5].

All factors which were significant in one to one comparison were entered into a stepwise conditioned regression analysis. The final result showed that the lifetime score of desirable life events, longer education, and good social support were protective factors against suicide [Table 6].

DISCUSSION

The present study attempted to differentiate suicide attempters from healthy controls based on their profile of life events, social support, coping strategies, psychiatric diagnosis, and quality of life. Attempters had accumulation of life events especially unpleasant and personal events, lower social support, poor coping styles, and poor quality of life.

Life events and other psychosocial stressors are commonly associated with suicidal behavior when attempters were

Table 1: Sample characteristics

Variable	N=50 (%)		x^2/t	Significance
	Attempters	Controls		*P*
Mean age (years)	30.82	31.54	1.7	0.09
SD	13.46	13.12		
Sex				
Male	22 (44)	22 (44)	0.04	0.84
Female	28 (56)	28 (56)		
Marital status				
Married	30 (60)	30 (60)	2.18	0.34
Mean education (years)	9.40	14.6	7.56	<0.001
SD	3.79	3.35		
Religion				
Hindu	39 (78)	33 (66)	7.33	0.03
Muslim	9 (18)	11 (22)		
Christian	2 (4)	6 (12)		
Domicile				
Rural	35 (70)	25 (50)	4.17	0.04
Occupation				
Employed	36 (72)	28 (56)	0.16	0.69
Psychiatric illness in first-degree relatives	16 (32)	8 (16)	2.45	0.12
Past psychiatric illnesses	7 (14)	0 (0)	5.14	0.02
Medical illnesses	12 (24)	5 (10)	2.4	0.12
Number of past attempts (Median and IQR)	0 (1)	0 (0)	3.69	<0.001
Current psychiatric diagnosis	41 (82)	0 (0)	0.71	0.40
Adjustment disorder	14 (28)	0 (0)	–	–
Depression	12 (24)	0 (0)	–	–
Alcohol dependence/abuse	7 (14)	0 (0)	–	–
Emotionally unstable personality disorder	5 (10)	0 (0)	–	–
Schizophrenia	3 (6)	0 (0)	–	–
Mania	2 (4)	0 (0)	–	–
Acute psychosis	2 (4)	0 (0)	–	–
Delusional disorder	1 (2)	0 (0)	–	–
Drug abuse	1 (2)	0 (0)	–	–

Table 2: Comparison of different types of life events

Variable	Mean SD		*t*-value
	Attempters	Controls	
Total LE score	201.70	130.54	2.508**
	153.05	125.61	
Desirable LE score	70.26	75.92	0.447
	80.37	65.81	
Undesirable LE score	164.46	88.14	3.219*
	120.32	96.47	
Personal LE score	104.92	55.92	2.982*
	93.33	72.43	
Impersonal LE score	96.78	74.62	1.335
	86.73	71.74	

*P<0.01; **P<0.05

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Table 3: Comparison of variables in social support scale

Social support	Mean SD		*t*-value
	Attempters	Controls	
Total score	110.70	127.20	5.650*
	17.48	12.47	
Reliable attachment	33.38	38.52	4.726*
	6.88	6.28	
Integration from friends	26.32	33.64	4.963*
	8.22	6.05	
Teachers/parental figures/elders	15.62	17.22	2.729*
	3.23	2.73	
Religion	13.82	14.66	1.694
	2.93	2.06	
Other sources	21.56	23.16	2.162**
	4.00	2.98	

*P<0.01; **P<0.05

Table 4: Comparison of coping pattern between attempters and controls

Coping strategies	Mean SD		*t*-value
	Attempters	Controls	
Minimization	30.32	34.76	3.491*
	7.08	4.99	
Suppression	32.90	32.52	0.315
	5.57	6.09	
Help seeking	34.36	34.46	0.107
	4.96	4.71	
Replacement	31.90	34.98	2.394**
	7.43	5.27	
Blame	27.54	26.54	1.040
	4.53	4.42	
Substitution	21.88	23.80	1.658
	6.26	5.77	
Mapping	24.52	26.88	2.598**
	4.53	4.01	
Reversal	25.88	27.56	1.442
	5.69	5.12	

*P<0.01; **P<0.05

Table 5: Comparison of QOL between attempters and controls

	Mean SD		*t*-value
	Attempters	Controls	
Physical health and well-being	21.52	25.4	3.967*
	5.50	3.18	
Psychological health and well-being	18.08	21.02	4.108*
	4.43	2.71	
Social relations	9.42	11.66	4.758*
	2.63	2.03	
Environment	25.04	29.72	4.272*
	6.34	4.10	

*P<0.01

Table 6: Stepwise conditional logistic regression analysis of risk factors in suicide attempters

Significant factors	Odds ratio	Z value	*P* value
Desirable LE	0.97	−2.333	0.012
Mean education (years)	0.55	−2.894	0.004
Total social support score	0.89	−2.457	0.014

compared to the general population and nonsuicidal psychiatric patients Osvath *et al.*[23] reported recent life events in 80% of suicides; job problems (28%), family discord (23%), somatic illness (22%), financial problems (18%), unemployment (16%), separation (14%), death (13%), and illness in a family member. In the present study psychosocial stressors like financial loss (34% vs. 14%), family conflict (30% Vs 6%), marital conflict (18% Vs 05), broken engagement, and love failure (12% vs. 2%) and major personal illness (10% Vs 2%) were significantly higher in attempters than controls. Hagnell and Rorsman[5] found more objective losses and humiliating experience in the week before death among suicide victims than people dying from natural causes and more changes in living condition, work problems, and objects losses in the final year. Maladjustment with significant family members and domestic strife has been cited as the most important causes of attempted suicide in many Indian studies[4,24] The present study also figures out interpersonal problems such as the common life events experienced by attempters.

Coping skills are important protective factors against suicide. In the present study healthy coping behaviors such as minimization (ability to de-emphasize the burden of stressful events), replacement (ability to overcome stressful events by engaging in alternative behaviors), and mapping (ability to collect information for planning and to seek out alternative solutions to problems) were higher in controls. Amir *et al.*[25] reported negative correlation of healthy coping mechanisms such as mapping, minimization, and replacement and positive correlation of coping styles of suppression (avoiding the problem or situation) with suicide risk. Some other coping behaviors such as reversal, substitution[9] and help seeking,[25] which have been reported to be excessive in suicide attempters, were not found in this study. Excessive use of substitution in attempters is harmful as it may predispose the individual to suicidal behavior reflecting the destructive nature inherent in excessive dependence on the environment.

Social support is another important protective factor against suicide. Social support is provided by networks comprising family, relatives, friends, neighbors, and coworkers, especially when the interaction is positive. The personal networks may provide social support that helps to maintain emotional well-being and buffer the effect of adverse life events, or it can have a direct, independent effect on mental health irrespective of presence or absence of stressful life events.[26] In the present study, confiding relationship, support from reliable attachment, friends, teachers, parental figures, elders, and other sources were significantly lower and loneliness was higher in attempters. There is evidence from comparative studies that social support systems are undermined among suicide attempters compared with nonsuicidal individuals.[27] Religiosity and social support are very important and counter many

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stressors especially suicidal behavior. Regular church attendance has been reported to be negatively associated with attempted suicide.[28] A psychological autopsy study by Vijayakumar and Rajkumar[29] from India also showed low religiosity in suicide victims.

Social and family factors, negative life events, and medical illness may interact with psychiatric and personality disorders, genetic variables, biological factors, and psychosocial stressors and ultimately act as predisposing and precipitating or contributing factors to suicidal behavior. Morano and Cisler[30] reported an influence of recent loss on serious suicide attempts, especially when paired with a perceived lack of family support and hopelessness, which provides evidence for a "stress vulnerability" model of suicide behavior.

Quality of life is an important variable in assessing the suicide risk. Since this is relatively a new area, only few studies have looked into this aspect in suicide attempters.[31] The score on all the four domains namely physical health and well-being, psychological health and well-being, social relations and environment were significantly lower in attempters in this study. Dissatisfaction with life at baseline is reported as a risk factor for suicide.[32] The association was somewhat stronger in the first decade than in the second decade. Throughout the entire follow-up, life dissatisfaction still predicted suicide after adjusting for other confounding variables. Subjects who reported dissatisfaction at baseline and again 6 years later showed a high risk of suicide compared to those who repeatedly reported dissatisfaction. Suicide was significantly associated with low quality of life in China.[33]

The commonest diagnosis was adjustment disorder with emotional disturbance (28%). Therefore it is beyond dispute that in a significant number of attempted suicides there are only minor psychiatric problems in the background but ratios mentioned in the literature seem to be exaggerated. The relationship between suicidal behavior and psychiatric diagnosis has always been a matter of debate pertaining to the Indian context with low rate of psychiatric morbidity. The psychiatric diagnosis depends on the method of identification and classificatory system adopted. Western literature reports that about 90% of all those who attempt suicide suffer from a psychiatric disorder.[34] In a series of studies from the Indian context, the predominant psychiatric problem was adjustment disorder closely followed by major depression and alcohol abuse/dependence.[29,35] Moreover several of these attempts were of impulsive type and for 10% of the sample the diagnosis was emotionally unstable personality disorder. In a study from India[12] on suicide attempters, 58% subjects had shown clinical features of abnormal personalities. Han *et al.* identified personality disorder in 45.9% of his patients who attempted suicide.[13]

In the present study there were quite a few number of alcoholic/drug abusers who attempted suicide (14%). Similar findings have been noted in earlier studies from India.[29,36] The crucial role alcohol plays in suicide is evident from this study. Suicide is a late phenomenon in the course of alcoholism. The relationship between alcoholism and suicide is complex. It could be because of biochemical factors as well as situational factors. A chronic alcoholic in the course of his illness is more likely to face variety of stressors, interpersonal difficulties of weakening of social support all of which could push the person to suicide.[37] It needs to be mentioned that social drinking is not a way of life in India. Pondichery (which has a high rate of alcohol consumption) also has the highest suicide rate in (58%) in India.[2] Wasserman found that the suicide rate came down by 34% in 1984-1988 following strict restriction in the sale of alcohol in former USSR.[38] Hence there is an urgent need to address this issue at the societal and individual level. Policies and programs should be initiated for reducing the alcohol availability and consumption and at the individual level there should be better availability and follow-up strategies for the treatment of alcoholics and their families.

Stepwise regression analysis shows that desirable life events, good education, and good social support are protective factors against suicide. Desirable life events by virtue of its positive nature may prevent the individual from attempting suicide. Good educational achievement may also help the individual to appraise the situation and to seek alternate solutions. Adequate education is also a prerequisite for problem solving skills and to deal adequately with stressful situations. Though lower education has not been directly cited as a risk factor, lower socio-economic status has been repeatedly shown as risk factor for suicide. Moreover lower education may also invite more adverse life events because of related consequences such as unemployment, poverty, lower social economic status, etc. Lower education and subsequent poor social status can also indirectly reduce the social support vulnerable individuals. Good social support has always been cited as a protective factor against suicide. In an integrative path model analysis of the relationship between several variables and suicidal ideations found a significant relationship between social support and suicidal ideation.[39]

Limitations

The main limitation of this study was the small sample size. Another one is the selection of a biased control group which was purposefully done to match the psycho-socio-demographic characteristics with the study group in order to reduce the confounding variables as much as possible. It seems that the quality of individual life events experienced by attempters and controls is unique. However one to comparison of these events requires higher frequency of events, which can be fulfilled with only larger sample size. Other variables pertaining to suicidal behavior

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such as personality profile, proneness to violent behavior, and impulsivity should also be considered to differentiate suicidal individuals from controls.

Scope for further research

In the context of the present study, the following few suggestions seem to be relevant in planning for future research. Probably studies with long-term follow up would throw more light on suicidal tendency in individuals with lower social support, poor coping skills, poor QOL, and excessive life stressors. An interventional study design may provide more information on the role of enhancing social support, improving coping styles and QOL, and exposure to better life experiences in reducing the suicidal tendency. Moreover, only qualitative individual case studies can provide in-depth exploration of multitude of factors operating in this complex behavioral problem.

CONCLUSIONS

This study concludes that suicide attempters experienced significantly more life events especially untoward events whereas the control group experienced more desirable and impersonal life events. Social support, positive coping behaviors, and QOL were significantly lower in attempters. Among all risk factors desirable life events, good education, and good social support were found to be protective against suicide.

However, it is difficult to pinpoint a single factor responsible for suicidal behavior. It is the complex interplay of various interrelated factors and the resultant buffering effect, which is protecting the individual against suicide. The present finding suggests that enhancing the social support, training individuals to adapt good coping skills, exposing the individuals to positive life experiences, promotion of good physical and psychological health and healthy environment are the most effective preventive strategies against individuals attempting suicide.

REFERENCES

1. W.H.O. Prevention of suicide. Public Health Paper: No. 35. Geneva: World Health Organization; 1968.
2. National Crime Record Bureau. Accidental deaths and suicides in India. New Delhi, Ministry of Home Affairs: Govt. of India 2009.
3. Gajalakshmi V, Peto R. Suicide rates in rural Tamil Nadu, South India: Verbal autopsy of 39000 deaths in 1997-98. Int J Epidemiol 2007;36:203-7.
4. Kumar PN. Analysis of suicide attempters versus completers-study from Kerala. Indian J Psychiatry 2004;46:144-9.
5. Hagnell O, Rorsman B. Suicide in the Lundby study: A controlled prospective investigation of stressful life events. Neuropsychobiology 1980;6:319-32.
6. Ponnudurai R. Suicide in India. Indian J Psychol Med 1996;19:19-25.
7. Hart EE, Williams CL, Davidson JA. Social behaviour, social networks and psychiatric diagnosis. Soc Psychiatr Psychiatr Epidemiol 1988;23:222-8.
8. Lazarus RS. The Psychology of coping: Issues of research and assessment. In: Coehlo GV, Humburg DA, Adams JE, editors. Coping and adaptation. New York: Basic Books; 1974.
9. Horesh N, Rolnick T, Dannon P, Lepkifker E, Apter A, Kotler M. Coping styles and suicide risk. Acta Psychiatr Scand 1996;93:489-93.
10. Ponizovsky AM, Grinshpoon A, Levav I, Ritsner MS. Life satisfaction and suicide attempts among persons with schizophrenia. Comp Psychiatry 2003;44:442-7.
11. McGirr A, Turecki G. The relationship of impulsive aggressiveness to suicidality and other depression-linked behaviors. Curr Psychiatry Rep 2007;9:460-6.
12. Gupta CS, Sings H. Psychiatric illness and suicide attempters. Indian J Psychiatry 1981;23:69-74.
13. Han C, Hawton K, Houston K, Townsend E. Psychiatric and personality disorders in patients with deliberate self harm. Br J Psychiatry 1997;178:48-53.
14. Goldberg D, Williams P. A user's guide to General Health Questionnaire, NFER – Nelson: Windsor 1998.
15. Singh G, Kaur, D, Kaur H. Presumptive stressful life event scale (PSLES) – a new stressful life event scale for use in India. Indian J Psychiatry 1984;26:107-14.
16. Sharma I, Ram D. Life events in anxiety neurosis. Indian J Psychiatry 1988;30:61-7.
17. Asha CB. Social Support Scale, (Unpublished). University of Calicut, 1996.
18. Nehra R, Kulhara P, Verma SK. Development of a scale for assessment of social support: Initial try out in Indian settings. Indian J Soc Psychiatry 1996;3:353-9.
19. Plutchik R, Conte HR. Measuring emotions and their derivatives: personality traits, ego defences, and coping styles. In: Wetzler S, Katz M, editors. Contemporary approaches to psychological assessment. New York: Brunner Mazel; 1989.
20. Saxena S, Carlson D, Brillington R, Orley J. The WHO quality of life assessment instrument (WHOQOL- Bref): The importance of its items for cross-cultural research. Quality of Life Research. Vol. 10. Netherlands: Kluwer Academic Publishers; 2001. p. 711-21.
21. Bryman A. Quantitative Data Analysis with SPSS Release 10 for Windows: A Guide for Social Scientists. New York: Routledge Publishers; 2001.
22. Alperin M, Miner K. Using Epi Info 2002: A Step-by-Step Guide, 2003.
23. Osvath P, Voros V, Fekete S. Life events and psychopathology in a group of suicide attempters. Psychopathology 2004;37:36-40.
24. Latha KS, Bhat SM, D'souza P. Attempted suicide and recent stressful life events: A report from India. Crisis 1994;15:136.
25. Amir M, Kaplan Z, Efroni R, Kotler M. Suicide risk and coping styles in posttraumatic stress disorder patients. Psychother Psychosom 1999;68:76-81.
26. Paykel ES, Emms EM, Fletcher J, Rassaby ES. Life events and social support is puerperal depression. Br J Psychiatry 1980;136:339-46.
27. Soykan A, Araplaslan B, Kumbasar H. Suicidal behaviour, satisfaction with life, and perceived social support in end stage renal disease. Transplantation Proc 2003;35:1290-1.
28. Marion MS, Range LM. African American college women's suicide buffers. Suicide Life Threat Behav 2003;33:33-43.
29. Vijayakumar L, Rajkumar S. Are risk factors for suicide universal? A case-control study in India. Acta Psychiatr Scand 1999;99:407-41.
30. Morano CD, Cisler RA, Lemerond J. Risk factors for adolescent suicidal behavior: Loss, insufficient family support, and hopelessness. Adolescence 1993;28:851-65.
31. Cui S, Yang R, He F, Zheng Y. Case-control analysis and follow up study on risk factors of suicide attempt in a rural population in Shandong Province. Wei Sheng Yan Jiu 2003;32:562-4.
32. Koivumaa-Honkanen H, Honkanen R, Vinamakai K, Kaipro J, Koskenvuo M. Life satisfaction and suicide: a 20-year follow-up study. Am J Psychiatry 2001;158:433-9.
33. Phillips MR, Yang G, Zhang Y, Wang L, Ji H, Zhou M. Risk factors for suicide in China: A national case-control psychological autopsy study. Lancet 2002;360:1728-36.
34. Zonda T. One-hundeed cases of suicide in Budapest- Acase controlled Psychological autopsy studty. Crisis 2006;27:125-9.
35. Kumar PN. An analysis suicide attempters versus completers in Kerala. Ind J Psychiat 2004;46:144-9.
36. Kumar PN. Age and gender related analysis of psychosocial factors in attempted suicide – study from medical intensive care unit. Indian J Psychiatry 1998;40:338-45.
37. Murphy GE, Wetzel RD. The life time risk of suicide in alcoholism. Arch Gen Psychiatry 1990;47:383-92.
38. Wasserman D, Varmik A, Eklund G. Male suicides and alcohol consumption in former USSR. Acta Psychiatr Scand 1994;89:306-13.
39. Rudd MD. An integrative model of suicidal ideation. Suicide Life Threat Behav 1990;20:16-30.

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