Research Article...

INTERACTION OF LIFE EVENTS, SOCIAL SUPPORT, COPING STRATEGIES AND QUALITY OF LIFE IN ATTEMPTED SUICIDE: A CASE CONTROL STUDY

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ABSTRACT

Background: Deliberate self-harm is a major cause of concern in health care globally. Though it encompasses a wide variety of medical and social disciplines, some of the important psycho-social variables and their mutual interactions such as life events, social support, coping strategies and quality of life are yet to be explored in depth. Aims: To analyze and to explore the interaction of life events, coping strategies, social support and quality of life of suicide attempters compared to matched normal controls and to further identify risk factors leading to suicide. Method: Fifty suicide attempters were compared to an identical number of age, sex and martial status matched healthy controls using the Presumptive Stressful Life Events Scale, Social Support Questionnaire, AECOM Coping Style Scale and WHO QOL - BREF. Results: Untoward life events revealed positive correlation with many unhealthy coping styles and negative correlation with healthy coping styles in suicide attempters. Unexpectedly, many healthy coping styles correlated positively with most of the social support variables and QOL domains in suicide attempters, but only with few of these in normal controls. QOL variable environment disclosed negative correlation with total, personal and undesirable life events in attempters. Among risk factors, desirable life events, good education and good social support were found to be protective against suicide. Conclusions: Paradoxical to normal controls, suicide attempters exhibited positive interaction with several of the protective factors against suicide. Despite this positive interaction, occurrence of suicide attempts indicates that some other unidentifiable factors may be operating in these individuals as a leading factor to attempt suicide. This suggests that it is difficult to pinpoint a single factor or factors responsible for suicidal behaviour. It is the complex interplay of various interrelated factors and the resultant buffering effect, which is protecting the individual against attempting suicide.

Key Words: Attempted suicide, life events, social support, coping, quality of life

INTRODUCTION

Life events lead to suicide attempts only when they occur in individuals vulnerable to suicidal behaviour (Rich et al, 1991). Suicidal individuals experience a greater number of stressful life events in the few months or weeks prior to the attempt (Power et al, 1985). A particular problem in life event and suicide research lies in ascertaining the extent to which life events that precede suicidal behaviour are independent of or caused by antecedent factors, including socio-demographic factors, personality factors, social support, coping styles and psychiatric disorders. Lack of social support may be stressful independently or may indicate a lack of a buffer against psychosocial stress originating from life events (Overholser et al, 1990). Rudd (1990) has noted a significant relationship between social support and both life stress and suicidal ideation. Coping mechanisms serve as an internal source of emotional strength and mediates a personal

reaction to any perceived stress, whether internal or external (Lazarus, 1974). Individuals who attempt suicide have more difficulties in coping with interpersonal problems than non-suicidal population (Lineham et al, 1986). Life events and coping styles can alter the situation and function of the social support system in terms of size, frequency of interaction, and stability and such changes may be associated with suicidal behaviour. QOL is another important component that mediates suicide risk. Many studies in this area have reported a negative association between QOL and suicide (Blow et al, 2004).

The interface between stressful life events, coping strategies, social support and quality of life seems to be complex. However, only limited studies have explored the inter-relationship between these important variables. Moreover, literature about the relationship between these factors from India is conspicuous by its absence. An awareness of the relationship between

these factors will definitely help in the prevention and further management of this health hazard.

OBJECTIVES

- To analyze the type and severity of life events, coping strategies, social support and quality of life of suicide attempters versus normal controls
- O To identify the risk factors leading to suicide

MATERIAL AND METHODS

Study sample

The sample comprised fifty suicide attempters qualifying the criteria for 'suicide attempt' - as defined by WHO (1968) 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 the study purview. Wherever possible, relatives, friends and other possible sources of information such as spouse and colleagues were interviewed for eliciting inputs. There were no other exclusion criteria.

Normal persons of the same age, sex and marital status formed the control group. The age was matched by grouping age at 5 years intervals. These subjects were initially screened by GHQ-12 version (Goldberg & Williams, 1998) to exclude the presence of common mental disorders. Those who scored out of normal (out off score 2/3 mode) were excluded from the control group.

TOOLS

1. Personal Data Sheet

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

2. Presumptive Stressful Life Events Scale (PSLE)

This scale consists of fifty-one life events commonly experienced by normal Indian adult population (Singh et al, 1984). One hundred was the highest stress score and 'zero' indicated '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 PSLE scale (0.8) has been found to good in previous studies (Sharma & Ram, 1988). Life events experienced in the year prior to attempt was colleted for this study.

3. Social Support Questionnaire

This scale was specially developed for the study by pooling items from Social Support Scale of Asha (1996) and the Social Support Scale of Nehra et al (1996) by item analysis. Out of 47 items 22 were positively worded and 25 negatively worded. The positive statements were intermingled with negative statements to reduce the likelihood of response set occurring. The retest reliability obtained for this scale was 0.89.

4. Albert Einstein College of Medicine (AECOM) Coping Style Scale

This is a 95-item scale (Plutchik & Conte, 1989) with a fourpossibility 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 (avoiding the problem or situation) (2) Help seeking (asking others for help) (3) Replacement (ability to overcome stressful events by engaging in alternative behaviours)(4) Blame (blame others for the problems) (5) Substitution (engaging in tension-releasing activities such as alcohol or drug abuse) (6) Mapping (ability to collect information for planning and to seek out alternative solutions to problems) (7) Reversal (acting opposite of the way one feels) and (8) Minimization (ability to de-emphasize the burden of stressful events). The internal validity of the scale was found to have a value of between 0.58 and 0.79 with a mean a value of 0.70. The questionnaire had both predictive validity and discriminative validity.

5. WHO QOL - BREF

WHO QOL – BREF (Saxena et al, 2001) 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 scale has been shown to have good discriminated validity, sound content validity and good test-retest reliability at several international WHOQOL centers.

Statistical analysis

For comparison of quantitative variables paired t test or Wilcoxon Signed Rank test was used depending on whether the data were normally distributed or not. Quantitative variables were compared by McNemar Chi-Square test. Correlations of different variables were calculated by Pearson Correlation Coefficient. Conditional Logistic regression analysis was used to identify the risk factors. SPSS-10.0 (Bryman, 2001) and Epiinfo 3.2 (Alperin & Miner, 2003) were used for statistical analyses.

RESULTS

Table 1: Sample characteristics

	_	
Variable	Attempter N=50	s Controls
Mean age (yrs)	30.82	31.54
SD	13.46	13.12
Mean education (yrs)	9.40	14.6
SD	3.79	3.35
Mean monthly income (Rs.)	- 3317.00	9401.64
SD	2999.55	1129.95
Sex		
Male n (6) 22 (44%)	22 (44%)
Female n (%	28(56%)	28(56%)
Marital status		
Married n (%	6) 30 (60%)	30 (60%)
Religion		
Hindu n (%	39 (78%)	33 (66%)
Muslim n (%	· '	11(22%)
Christian n (%	2 (4%)	6 (12%)
Domicile		
Rural n (%	25 (70%)	25 (50%)
Occupation		
Employed n (%	36 (72%)	28 (56%)
Type of family		, ,
Nuclear n (%	25 (50%)	33 (66%)
Type of marriage		(
Arranged n (%)	23 (46%)	23 (46%)
Psychiatric illness in first degree relatives		(1470)
n (%)		8 (16%)
Past Psychiatric Illnesses n (%)	7 (14%)	0 (0%)
Medical Illnesses n (%)	` '	, ,
Suicide Threats n (%)	24 (48%)	5 (10%)
Number of Past Attempts	47 (40%)	1 (2%)
Mean rank) n (%)	56.76	44.64
		44.24
current Psychiatric Diagnosis n (%)	41(82%)	0 (0%)

The psycho-socio-demographic characteristics of the study sample and control group is shown in table-1. The correlation of different types of life events with social support, coping and QOL variables is shown in table-2. Total life events showed positive correlation with blame and negative correlation with environment in attempters. Undesirable life events showed negative correlation with support from reliable attachment and QOL variable environment in attempters. Desirable life events showed positive correlation with religion in normals.

Table 2: Correlation of different types life events with other variables

		Attempter	s Control
Total life events	AECOM Blame Suppression	0.304** 0.148	0.194 0.340**
	QOL Environment	-0.325**	-0.054
Undesirable life events	AECOM Suppression	-0.189	0.391*
	SOCIAL SUPPORT Reliable attachment	-0.278**	-0.049
	QOL Environment	-0.329**	0.004
Desirable life events	SOCIAL SUPPORT Religion	0.191	0.297**
Personal life events	AECOM Blame Substitution Suppression	0.292** 0.300** 0.206	0.276** 0.170 0.340**
	SOCIAL SUPPORT Teachers/parents figures/elders	-0.049	0.307**
	QOL Environment	-0.304**	0.029

p<0.05; p<0.01; AECOM: Coping Style Questionnaire; QOL: Quality of life

Table-3 shows the correlation of of social support variables with other variables. Total social support showed positive correlation with all the four domains of QOL and coping styles minimisation, help seeking, replacement, mapping and reversal in attempters. Support from reliable attachment showed positive correlation with coping styles minimisation and reversal and all the four domains of QOL and negative correlation with undesirable life events in attempters. Support from friends showed positive correlation with three domains of QOL and coping styles minimisation, replacement, substitution and reversal in attempters. Support from teachers, parental figures and elders showed positive correlation with all the four domains of QOL and coping styles minimisation, help seeking, replacement, mapping and reversal in attempters. Religion showed positive correlation with desirable life events in normals. Support from other sources showed positive correlation all the four domains of QOL and minimisation and reversal in attempters.

 Table 3: Correlation of different types of social support with other variables

Social suppor variable	t Other variables	Attempte (r)	ers Contro (r)
Total sco	QOL Physical health & well being Psychological health & well being re Social relations Environment	0.510* 0.386* 0.508* 0.496*	0.375 0.511 0.416 0.424
	AECOM Minimization Help seeking Replacement Mapping Reversal	0.519* 0.290** 0.425* 0.305** 0.501*	0.265 0.037 0.481* 0.494* 0.313*
	AECOM Minimization Reversal	0.369* 0.340**	0.265 0.063
Reliable attachmer	PSLE Undesirable life event score QOL	-0.278**	0.195
	Physical health & well being Psychological health & well being Social relations Environment	0.339** 0.365* 0.341** 0.299*	0.208 0.187 0.250 0.241
Friends	AECOM Minimization Replacement Substitution Reversal	0.462* 0.336** 0.333** 0.370*	0.232 0.542* -0.014 0.419*
	Physical health & well being Psychological health & well being Social relations Environment	0.314** 0.091 0.293**	0.310** 0.371* 0.321**
Teachers, parental figures and elders	AECOM Minimization Help seeking Replacement Mapping Reversal PSLE Personal life event score	0.309** 0.410* 0.456* 0.417* 0.370* 0.499*	0.156 0.244 0.308** 0.385* 0.557* 0.359*
[QOL Physical health & well being Psychological health & well being Social relations Environment	0.384* 0.371* 0.463* 0.416*	0.307** 0.244 0.504* 0.394* 0.365*
Religion	PSLE Desirable life event score	0.191	0.297**
Other Sources P	AECOM Minimization Reversal	0.413* 0.370*	-0.039 0.045
	Physical health & well being Psychological health & well being Social relations Environment	0.573* 0.399* 0.471* 0.580*	0.319** 0.454* 0.276 0.576*

^{*-}p<0.05; **-p<0.01

Table 4: Correlation of different coping patterns with other variables

Total score	variables		
Minimization Social Support Total score 0.519* 0.265 Reliable attachment 0.369* 0.265 Triends 0.462* 0.232 Teachers, parental figures and elders 0.410* 0.244 Other sources 0.413* -0.039 PSLE Desirable life events 0.294** -0.021 QOL Physical health & well being 0.548* 0.366* 0.309** Social relations 0.366* 0.309** 0.204 Suppression PSLE Undesirable life events 0.189 0.391* Total life events 0.148 0.340** 0.204 Suppression PSLE Undesirable life events 0.148 0.340** 0.293** Total life events 0.148 0.340** 0.293** Total life events 0.148 0.340** 0.293** Total score 0.290** 0.037 Teachers, parental figures and elders 0.456* 0.308** 0.00L Physical health & well being 0.371* 0.125 0.304** 0.135 0.344** 0.171 Total score 0.425* 0.481* 0.142 0.340** 0.142 0.00L Physical health & well being 0.371* 0.125 0.306** 0.542* 0.201 Social support Total score 0.425* 0.481* 0.542* 0.233 Environment 0.357** 0.466* 0.051 Social relations 0.462* 0.233 0.244* 0.233 Environment 0.357** 0.044 Slame PSLE Social life events 0.304** 0.194 0.292** 0.276 Support 0.292** 0.276			
Total score 0.519* 0.265		400	<u> </u>
Reliable attachment			
Friends		0.519*	0.265
Teachers, parental figures and elders Other sources Other sources Other sources PSLE Desirable life events QOL Physical health & well being Psychological health & well being Social relations PSLE Undesirable life events QOL Physical health & well being PSLE Undesirable life events Other sources	Reliable attachment	0.369*	0.265
Teachers, parental figures and elders	Friends	0.462*	0.232
PSLE Desirable life events QOL Physical health & well being Psychological health & well being Social relations Environment QOL Physical health & well being Social relations Environment QOL Physical health & well being Social Support Total Score QOL Physical health & well being QOL QOL Physical health & well being QOL QOL Physical health & well being QOL QOL QOL QOL QOL QOL Physical health & well being QOL	Teachers, parental figures and elders	0.410*	
Desirable life events	Other sources	0.413*	-0.039
QOL Physical health & well being 0.548* 0.086 Psychological health & well being 0.341** 0.225 Social relations 0.366* 0.309** Environment 0.303** 0.204 Suppression 0.189 0.391* Total life events 0.148 0.340** QOL 0.148 0.340** Physical health & well being 0.040 -0.276** Environment -0.038 -0.293** Help seeking 0.040 -0.276** Social Support 0.290** 0.037 Teachers, parental figures and elders 0.456* 0.308*** QOL 0.456* 0.308*** Psychological health & well being 0.371* -0.125 Social relations 0.344** -0.171 Replacement 0.336** 0.542* QOL 0.425* 0.481* Physical health & well being 0.554* 0.118 Psychological health & well being 0.466* 0.051 Social relations <t< td=""><td>[설명하다] 그 아이는 전환 하고 있는 것이다. 그 그 얼마나 없다.</td><td></td><td></td></t<>	[설명하다] 그 아이는 전환 하고 있는 것이다. 그 그 얼마나 없다.		
Physical health & well being		0.294**	-0.021
Psychological health & well being	[1877] 하고 있는 사람들이 하고 되고 그 그 그 이 사용했다.		
Social relations		0.548*	0.086
Environment 0.303** 0.204 Suppression PSLE Undesirable life events 0.189 0.391* Total life events 0.148 0.340** QOL Physical health & well being 0.040 -0.276** Help seeking Social Support Total score 0.290** 0.308** QOL Physical health & well being 0.381* -0.135 QOL Physical health & well being 0.371* -0.125 Social relations 0.344** -0.171 Social Support Total score 0.425* 0.481* Friends 0.336** 0.542* QOL Physical health & well being 0.355* 0.118 Psychological health & well being 0.554* 0.118 Psychological health & well being 0.466* 0.051 Social relations 0.462* 0.233 Environment 0.357** 0.044 Blame PSLE Total life events 0.304** 0.194 Personal life events 0.303** -0.014 Parsonal life events 0.333** -0.014		0.341**	0.225
Suppression PSLE		0.366*	0.309**
PSLE Undesirable life events Total life events QOL Physical health & well being Environment Help seeking Social Support Total score Teachers, parental figures and elders QOL Physical health & well being Psychological health & well being Social relations Replacement Social Support Total score Total score Total score Teachers, parental figures and elders QOL Physical health & well being Psychological health & well being Social relations O.344** O.171 Replacement Social Support Total score Friends QOL Physical health & well being O.354* O.468* O.542* QOL Physical health & well being Psychological health & well being O.466* O.554* O.118 Psychological health & well being O.466* O.554* O.118 Blame PSLE Total life events O.304** O.233 Environment D.357** O.044 Blame PSLE Total life events O.304** O.292** O.276 Substitution Social Support Friends O.333** -0.014		0.303**	0.204
Undesirable life events Total life events QOL Physical health & well being Environment Help seeking Social Support Total score Teachers, parental figures and elders QOL Physical health & well being Psychological health & well being Social relations Replacement Social Support Total score 10.290** 0.037 0.308** 0.456* 0.308** 0.456* 0.308** 0.456* 0.308** 0.471* 0.125 0.344** 0.371* 0.125 0.344** 0.344** 0.344** 0.542* 0.481* Friends 0.336** 0.542* QOL Physical health & well being Psychological health & well being 0.357** 0.466* 0.051 Social relations 0.462* 0.233 Environment Blame PSLE Total life events 0.304** 0.276 Social Support Triends 0.333** 0.492** 0.276 Social Support Total sife events 0.304** 0.333** 0.494 0.276 Social Support Triends 0.333** 0.333** 0.333** 0.304** 0.194 0.276 Displacement Displaceme			
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Physical health & well being		0.148	0.340**
Environment		0.040	
Help seeking Social Support			
Social Support Total score 0.290** 0.037 Teachers, parental figures and elders 0.456* 0.308** QOL		-0.038	-0.293**
Total score 0.290** 0.037 Teachers, parental figures and elders 0.456* 0.308** QOL 0.381* -0.135 Physical health & well being 0.371* -0.125 Social relations 0.344** -0.171 Replacement 0.425* 0.481* Social Support 0.336** 0.542* QOL 0.554* 0.118 Psychological health & well being 0.466* 0.051 Social relations 0.462* 0.233 Environment 0.357** 0.044 Blame PSLE Total life events 0.304** 0.194 Personal life events 0.292** 0.276 Substitution 0.333** -0.014			
Teachers, parental figures and elders QOL Physical health & well being		U 50U**	0.007
QOL Physical health & well being 0.381* -0.135 Psychological health & well being 0.371* -0.125 Social relations 0.344** -0.171 Replacement Social Support 0.425* 0.481* Total score 0.336** 0.542* QOL 0.554* 0.118 Psychological health & well being 0.466* 0.051 Social relations 0.462* 0.233 Environment 0.357** 0.044 Blame 0.304** 0.194 Personal life events 0.292** 0.276 Substitution 0.333** -0.014 PSLE 0.276 0.014	Teachers, parental floures and elders		
Psychological health & well being 0.371* -0.125		0.430	0.308***
Psychological health & well being 0.371* -0.125	Physical health & well being	0.381*	0.125
Social relations 0.344** -0.171			
Replacement 0.425* 0.481* Social Support 0.336** 0.542* Priends 0.336** 0.542* QOL 0.554* 0.118 Psychological health & well being 0.466* 0.051 Social relations 0.462* 0.233 Environment 0.357** 0.044 Blame 0.304** 0.194 Personal life events 0.292** 0.276 Substitution 0.333** -0.014 Personal life events 0.333** -0.014			
Total score 0.425* 0.481* Friends 0.336** 0.542* QOL 0.554* 0.118 Physical health & well being 0.466* 0.051 Social relations 0.462* 0.233 Environment 0.357** 0.044 Blame PSLE Total life events 0.304** 0.194 Personal life events 0.292** 0.276 Substitution 0.333** -0.014 PSLE 0.333** -0.014		0.544	-0.171
Total score 0.425* 0.481* Friends 0.336** 0.542* QOL 0.554* 0.118 Physical health & well being 0.466* 0.051 Social relations 0.462* 0.233 Environment 0.357** 0.044 Blame PSLE Total life events 0.304** 0.194 Personal life events 0.292** 0.276 Substitution 0.333** -0.014 PSLE 0.333** -0.014	Social Support		
Friends 0.336** 0.542* QOL Physical health & well being 0.554* 0.118 Psychological health & well being 0.466* 0.051 Social relations 0.462* 0.233 Environment 0.357** 0.044 Blame PSLE Total life events 0.304** 0.194 Personal life events 0.292** 0.276 Substitution 0.333** -0.014 PSLE 0.333** -0.014		0.425*	0.404+
QOL 0.554* 0.118 Physical health & well being 0.466* 0.051 Social relations 0.462* 0.233 Environment 0.357** 0.044 Blame 0.304** 0.194 Personal life events 0.292** 0.276 Substitution 0.333** -0.014 Personal life events 0.333** -0.014	Friends		
Psychological health & well being	QOL	0.550	0.542"
Psychological health & well being	Physical health & well being	0.554*	0 110
Social relations			
Environment 0.357** 0.044 Blame PSLE Total life events 0.304** 0.194 Personal life events 0.292** 0.276 Substitution Social Support Friends 0.333** -0.014 Personal life events			
## Blame PSLE Total life events Personal life events Substitution Social Support Friends Personal life events 0.304** 0.194 0.276 0.276 0.333** -0.014			
Total life events		0.001	0.044
Personal life events 0.292** 0.276 Substitution Social Support Friends 0.333** -0.014 Personal life events	PSLE		
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Social Support Friends 0.333** -0.014 Personal life events		U.Z9Z""	u.276
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PSLE Personal life events	名 4 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	0 333**	0.044
Personal life events 0.470		0.000	-0.014
	Personal life events	0.300**	0.170

	Attempters	Controls
	(r)	Controls (r)
QOL		V
Physical health & well being	0.322**	-0.032
Psychological health & well being	0.309**	-0.034
Mapping		44.5
Social Support		
Total score	0.305**	0.494*
Teachers, parental figures and elders	0.370*	0.557*
PSLE		
Undesirable life events	-0.028	0.306**
QOL		
Physical health & well being	0.369*	-0.014
Psychological health & well being	0.415*	0.366*
Social relations	0.323**	0.332**
Reversal	1000	
Social Support		
Total score	0.501*	0.313**
Reliable attachment	0.340**	0.063
Teachers, parental figures and elders	0.499*	0.359*
Other sources	0.370*	0.045
QOL		
Physical health & well being	0.384*	0.163
Psychological health & well being	0.415*	0.366*
Social relations	0.481*	0.180
Environment	0.277	0.026

^{*-}p<0.05; **-p<0.01

Table-4 shows the correlation of different coping pattern with other variables. In attempters, minimisation showed positive correlation with all social support variables except religion, all the four domains of QOL and desirable life events in PSLE. In controls suppression showed positive correlation with total life events and undesirable life events and negative correlation with physical health and well being and environment in the QOL. In attempters help seeking showed positive correlation with all the four domains of QOL except religion, total social support score and support from teachers, parental figures and elders. In attempters, replacement showed positive correlation with all the four domains of QOL, total social support score and support from friends. In attempters, blame showed positive correlation with total life events and personal life events. In attempters, replacement showed positive correlation with all the four domains of QOL, total social support score and support from friends. In attempters, substitution showed positive correlation with total life events, support from friends, physical health and psychological health and well being. In attempters,

replacement showed positive correlation with all the four domains of QOL, total social support score and support from friends. In attempters, mapping showed positive correlation with all the four domains of QOL except religion, total social support score and support from teachers, parental figures and elders. In attempters, reversal showed positive correlation with all the social support variables except friends and four domains of QOL except environment.

Table 5: Correlation of different domains of QOL with other variables

All the second of the second	Attempters (r)	Controls (r)
Physical health & well-being		
AECOM		
Minimization	0.548*	0.086
Help seeking	0.381*	-0.135
Replacement	0.554*	0.118
Substitution	0.322**	-0.032
Mapping	0.369*	-0.014
Suppression	0.040	-0.276
Social Support		
Total score	0.510*	0.375*
Reliable attachment	0.339**	0.208
Friends	0.314**	0.310**
Teachers, parental figures and elders	0.384*	0.244
Other sources	0.573*	0.319**
Psychological health & well-being		
AECOM		
Minimization	0.341**	0.225
Help seeking	0.371*	-0.128
Replacement	0.466*	0.051
Mapping	0.415*	0.366*
Reversal	0.348*	0.366*
Substitution	0.309**	-0.034
Social support		
Total score	0.386*	0.375*
Reliable attachment	0.365*	0.208
Friends	0.914	0.371*
Teachers, parental figures and elders	. 0.371*	0.504*
Other sources	0.399*	0.454*
Social relations	page 1	
AECOM		
Minimization	0.366*	0.309**
Help seeking	0.344**	-0.171
Replacement	0.462*	0.233
Mapping	0.323**	0.332**
Reversal	0.481*	0.180

	Attempters	Controls
	(r)	(1)
Social Support		
Total score	0.508*	0.416*
Reliable attachment	0.341**	0.250
Friends	0.293*	0.321**
Teachers, parental figures and elders	0.463*	0.394*
Other sources	0.471*	0.276**
Environment		
AECOM		
Minimization	0.303**	0.204
Replacement	0.357**	0.044
Suppression	-0.038	-0.293**
Social Support		
Total score	0.496*	0.424*
Reliable attachment	0.299**	0.241
Friends	0.309**	0.156
Teachers, parental figures and elders	0.416*	0.365*
Other sources	0.580*	0.576*
PSLE		
Personal life events	-0.304**	0.029
Undesirable life events	-0.329**	-0.085
Total life events	-0.325**	-0.054

*-p<0.05; **-p<0.01

Table-5 shows the correlation of different domains of QOL with other variables. In attempters, physical health and well being showed positive correlation with minimization, help-seeking, replacement, substitution, mapping and suppression and all the social support variables except religion. In attempters, psychological health and well being showed positive correlation with minimization, help seeking, replacement, substitution, mapping and reversal and all the social support variables except friends. In attempters, social relations showed positive correlation with minimization, help-seeking, replacement, mapping and reversal and all the social support variables except religion. In attempters, environment showed positive correlation with minimization, replacement, mapping and suppression and all the social support variables except religion. Environment showed negative correlation with total life events, personal life events and undesirable life events in attempters.

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

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 (yrs.)	0.55	-2.894	0.004
Total Social Support Score	0.89	-2.457	0.014

DISCUSSION

Suicidal behaviour can be modified by the quality of life events experienced, social support system, coping patterns and the quality of life. In the present study, total life events and personal life events showed positive association with unhealthy coping strategies such as blame and substitution in attempters. Except for minimization, they failed to adopt healthy coping styles under stressful situations. On the contrary many of the unhealthy coping behaviours such as blame, substitution and suppression had positive correlation in the normal controls. Despite this positive association normals have not attempted suicide under stress.

In studies on suicide risk and coping styles (Kotler et al, 1993; Botsis et al, 1994; Josepho & Plutchik, 1994; Horesh et al, 1996; Amir et al, 1999) suicide risk was correlated negatively with coping styles such as mapping, minimization, reversal and replacement and positively with coping styles such as suppression, blame, substitution and help-seeking. In the present study most of the healthy coping styles such as minimization, help seeking, replacement, mapping and reversal tend to occur more frequently in attempters despite having good social support. Even with such a positive relationship, occurrence of attempt is unexplainable. One reason could probably be that some other unidentified factors may have a role in an individuals' suicidal behaviour.

The higher occurrence of substitution in the presence of good support from friends in attempters raises serious concerns that this maladaptive coping pattern by engaging in tension-reducing activities such as alcohol or drug use occurs more frequently especially in the company of friends. This means that it is not only the availability but also the quality of friends which is important in adopting good coping strategies. Horesh et al (1996) has reported that excessive use of substitution is harmful and it may pre-dispose the individual to suicidal behaviour.

In the attempters undesirable life events were found to occur more frequently when there was no support from reliable attachments such as spouse or family members. This finding indirectly suggests that lack of reliable attachments may be a risk factor for attempting suicide when the person is exposed to adverse life events. Moreover in this study, support from religion was found to produce more desirable life events in normals. Probably religious faith may promote more positive life events thereby protecting individuals from contemplating suicide. Study by Vijayakumar & Rajkumar (1999) supports this finding with low religious beliefs in suicide attempters.

Contrary to the expectation, most of the social support variables had positive correlation with all the four domains of QOL in attempters compared to normals. Availability of good social support and good quality of life may act as a shock absorber, and may help the individual to adopt healthy coping strategies in response to stressful situations. However, despite this positive association the occurrence of suicide attempt indicates that only these factors are not enough in preventing the individual from attempting suicide. This further reiterates complex interaction of other unidentified psychosocial factors in this complex behavioural paradigm.

Earlier studies (Josepho & Plutchik, 1994) have demonstrated positively correlation of interpersonal problems and suppression with suicide risk. In this study unlike attempters, normal group had adopted a negative coping mechanism suppression in the presence of adverse life experiences and poor quality of life. Even then normals have not adopted suicide as a way to solve crisis. As described earlier, this finding also suggests that normals may have other protective mechanism against suicide even if they are exposed to untoward events and poor quality of life.

In this study, more attempters were found to adopt help seeking (asking others for help), a negative coping style even if they had good social support and good QOL which reflects undue dependence of the individual on others at the time of crisis. Amir et al (1999) reported a positive association of help seeking with suicide, reflecting the destructive nature inherent in excessive dependence on the environment.

Blaming others or the 'system' for one's own problems being a maladaptive coping style the occurrence may be increased in the presence adverse life stressors (Kotler et al, 1993; Horesh et al, 1996). As expected blaming was high in attempters when they had experienced cumulative life events and personal stressors.

Suicidal patients are unable to de-emphasize the importance of a perceived problem or source of stress. They also lack the ability to obtain new information required to resolve stressful life events (Horesh et al, 1996). Mapping a positive coping style showed positive correlation with most of the social support variables and QOL domains in both attempters and normals. This suggests that this coping technique may be increasingly used if there is availability of good social support and good quality of life. However, despite the availability of this buffering system occurrence of suicide attempt necessitates mobilization of other unidentifiable factors to counter the impact of stress.

Most importantly all the four QOL domains such as physical health and well-being, psychological health and well-being, social relations and environment had positive correlation with most of the positive coping styles and social support variables in attempters. However, this relationship was not much stronger in normals. As described above, despite this significant positive mutual interaction occurrence of suicide attempt again indicates under play of some other factors as a leading factor to attempt suicide.

Environment was the only QOL domain which showed negative correlation with total, personal and undesirable life events in attempters. This means that suicidal individuals were feeling unsafe, unsecure with poor financial resources and inadequate relaxation and leisure when had experienced adverse life events in the year of attempting suicide. This finding supports the hypothesis that in these individuals there is an inter-relationship between life events and social support.

Coming to the identification of risk factors, stepwise regression analysis showed desirable life events, good education and strong social support as protective factors against suicide. Desirable life events by virtue of its positive nature may prevent the individual from attempting suicide. Educational achievement may also help the individual to appraise the situation (e.g. mapping) and 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 probably a forerunner has been repeatedly shown as risk factor for suicide. Moreover lower educational achievement may also invite more adverse life events because of related consequences such as poor

planning, unemployment, poverty, lower social economic status, drug abuse etc. Lower education and subsequent poor social status can also indirectly reduce the social support of vulnerable individuals. Since time immemorial, good social support has been cited as protective factor against suicide. In an integrative path model analysis of the relationship between several variables and suicidal ideations, (Rudd, 1990) found a significant relationship between social support and suicidal ideation.

LIMITATIONS

Main limitation of this study was the small sample size and the selection of a biased control group. However selection of such a control group was purposeful to match the psycho-sociodemographic 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 and impact of such events may be unique in attempters and controls. However, one to one comparison of these events requires higher frequency of events, which can be fulfilled with only with larger sample size. Other variables pertaining to suicidal behaviour such as personality profile, proneness to violent behaviour and impulsivity should also be considered to differentiate suicidal individuals from controls.

CONCLUSIONS

This study concludes that suicide attempters adopt many unhealthy coping styles in response to stressful situations, poor social support and poor quality of life. However, this negative interaction was more significant in normal than controls; but they have not adopted suicide as a way to solve crisis. This could be due to availability of other unidentifiable protective factors operating against suicidal behaviour in normal individuals. Among all risk factors desirable life events, good education and strong social support were found to be protective against suicide. Since suicide results from complex interplay of various interrelated factors and the resultant buffering effect, identification and analysis of these factors may be helpful for planning suitable suicide prevention strategies pertaining to our own culture.

REFERENCES

Alperin, M. & Miner, K. (2003) Using Epi Info 2002, A Step-by-Step Guide. Soquel, CA: ToucanEd Publications.

 $Amir, M., Kaplan, Z., Efroni, R.\,et\,al\,(1999)\,Suicide\,risk\,and\,coping\,styles$

- in posttraumatic stress disorder patients. Psychotherapeutics and Psychosomatics, $68,\,76-81.$
- Asha, C.B. (1996) Social Support Scale (Unpublished). University of Calicut.
- Blow, F.C., Brockamn, L. M., Barry, K.L. (2004) Role of alcohol in late-life suicide. Alcohol Clinical Experience and Reserch, 28, 48S-56S.
- Botsis, A.J., Soldatos, C.R., Liossi, A. et al (1994) Suicide and violence risk 1. Relationship to coping styles. Acta Psychiatrica Scandinavica, 89, 92 96.
- Bryman, A. (2001) Quantitative Data Analysis with SPSS Release 10 for Windows: A Guide for Social Scientists. New York: Routledge Publishers.
- Goldberg, D. & Williams, P. 1998) A user's guide to General Health Questionnaire. NFER Nelson: Windsor.
- Horesh, N., Rolnick, T., Dannon, P. et al (1996) Coping styles and suicide risk. Acta Psychiatrica Scandinavica, 93, 489 493.
- Josepho, S.A. & Płutchik, R. (1994) Stress, coping and suicide risk in psychiatric patients. Suicide and Life Threatening Behaviour, 25, 48 57.
- Kotler, M., Finkelstein, G., Moracho, A. et al (1993) Correlates of suicide and violence risk in an inpatient population: Coping Styles and social support. Psychiatric Research, 47, 281-290.
- Lazarus, R.S. (1974) The Psychology of coping: Issues of research and assessment. In: Coehlo, G.V., Humburg, D.A., Adams, J.E., (Eds.). Coping and adaptation. New York: Bami Books.
- Lineham, M.M., Chiles, J.A., Egan, K.L. (1986) Preventing problems of parasuicide versus suicide ideators and Non-suicidal psychiatric patients. Journal of Consulting and Clinical Psychology, 54, 880 881.
- Nehra, R., Kulhara, P., Verma, S.K. (1996) Development of a scale for assessment of social support: initial try out in Indian settings. Indian Journal of Social Psychiatry, 3, 353-359.
- Overholser, J.C., Normen, W.H., Miller, I.W. (1990) Life stress and social supports in depressed inpatients. Behavioural Medicine, 16, 125 132.
- Plutchik, R. & Conte, H.R. (1989) Measuring emotions and their derivatives: Personality traits, ego defenses, and coping styles. In: Wetzler, S. & Katz, M., (Eds.), Contemporary approaches to psychological assessment. New York: Brunner.
- Power, K.G., Cooke, D.J., Brooks, D.N. (1985) Life stress, medical lethality and suicidal intent. British Journal of Psychiatry, 147, 655-659.

- Rich, C.L., Warsradt, G.M., Nemiroff, R.A. et al (1991) Suicide, stresses and life cycle. American Journal of Psychiatry, 148, 524-527.
- Rudd, M.D. (1990) An integrative model of suicidal ideation. Suicide and Life Threatening Behaviour, 20, 16-30.
- Saxena, S., Carlson, D., Brillington, R. et al (2001) The WHO quality of life assessment instrument (WHOQOL- BREF). The importance of its items for cross-cultural research. Quality of Life Research, 10, 711-721.
- Singh, G., Kaur, D., Kaur, H. (1984) Presumptive stressful life event scale (PSLES) A new stressful life event scale for use in India. Indian Journal of Psychiatry, 26, 107-114.
- Vijayakumar, L. & Rajkumar, S. (1999) Are risk factors for suicide universal? A case control study in India. Acta Psychiatrica Scandinavica, 99, 407 441.

- W.H.O. (1968) Prevention of suicide. Public health paper No.35, Geneva: WHO.
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