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A COMPARISON OF PERSONALITY CHARACTERISTICS AND FAMILY FUNCTIONING OF SUICIDAL INPATIENTS WITH NORMAL PERSONS[#]

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The purpose of this study was to compare the personality and family functioning variables of attempted suicide inpatients and normal controls. Therefore, 100 attempted suicide inpatients and 85 normal controls were randomly selected, and the Farsi versions of the short form of MMPI (Barahani, Shamloo, & Nouparast, 1974) and the Family Assessment Device (FAD; Epstein, Baldwin, & Bishop, 1983) were administered to them. Information about age, education, economic status, and other demographic variables were also gathered. It was hypothesized that there would be significant differences between suicidal and normal controls with regard to all variables. The results of multivariate analysis of variance showed that the two groups were significantly different on the variables like hypochondrias, depression, hysteria, psychopathic, paranoia, psychastany, schizophrenia, mania, family problem solving, communication, family roles, affective involvement, behavior control, general functioning, education, and economic status. There was non significant difference in the mean scores of affective responsiveness subscale. The results of varimax component analysis showed that the two questionnaires were relatively independent but the subscales of each were interrelated. Further discriminant analysis showed that the best predictors of suicide attempt were: Education, psychopathy, economic status, family communication, affective responsiveness in family, and behavior control in family.

Suicide is caused by any or a combination of factors. Of particular importance are the sociological and psychological variables. Based on the theoretical perspectives, numerous studies have been carried out on suicide and the risk factors leading to it.

According to Durkheim (1964), there is a relationship between societal complexity and frequency of suicide. This hypothesis was supported in a cross-cultural study by Kraus (1970) on a sample of 58 societies. Also in other cross-cultural studies, suicide rates have been related to lower level of social integration (Lester, 1991) in 16 Caribbean Islands, lower birth rates in European nations (Lester,

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1993), social breakdown and crime in New Zealand (Newbold, 1993), and high pressure cultures such as Germany, Taiwan, U.S., and Japan as compared to the less achievement oriented cultures (Shiraev & Levy, 2001).

Suicide rates are lower in Catholic and Muslim countries in which religion strongly opposes self-murder as compared to many protestant and western countries (Shiraev & Levy, 2001).

Prediction of risk factors for attempting suicide is an important issue which has not been thoroughly studied from the point of view of personality characteristics and family functioning. According to Brent and Birmaher (2002), as suicide and attempted suicide are important causes of morbidity and mortality among adolescents, it is important to recognize risk factors and to screen all adolescents for suicidal thoughts and feelings.

Martin, Pearce, and Allisone (1995) have shown that family dysfunctions (low family problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, and general functioning in family) influence suicide behaviors indirectly through other variables such as depression, that is, by increasing depression, they increase the likelihood of suicide behaviors. They reported that family dysfunction is associated with thinking and planning suicide, delibrate self-harm, suicide attempts, and severe depression. Evaluating depression, hopelessness, and self-esteem among psychiatric inpatient children, Marciano and Kazdin (1994) have found that Children Depression Inventory was the single best predictor of suicide ideation and attempt in 6-13 years old children. Another study has reported that perceived family dysfunctions and negative expectations for future are significant predictors of stress and depression (Hovey & King, 1996).

Some studies have used discriminant analysis to find the most important risk factors leading to suicide attempt. For example, Wilde, Kienhorst, Diekstra, and Wolters (1993) found that low self-esteem, permissive attitude toward suicide, psychiatric symptoms, high anxiety, lower family cohesion, and higher family conflict discriminated attempters from normals. Grossi and Violato (1992) have reported that lack of emotional significant other best differentiates the attempters from non-attempters, that is, the absence of a father or mother figure that a person can emotionally depend upon or feel attached to is most likely to be the characteristic of attempters rather than non-attempters. Also Madianos, Madianou, and

Costas (1993) through discriminant analysis have shown that social and psychiatric factors predict suicidal behavior.

In this study it was decided to evaluate the degree to which personality, and family functioning variables differentiate suicide attempters from normal (control) persons in a different culture, that is, an Iranian population. The results of such a study would help the clinicians to predict, and prevent suicide attempt on the basis of significant risk factors in Iranian culture. It was hypothesized that there would be significant differences between suicidal and normal control groups with regard to personality, and family functioning variables.

METHOD

Sample

100 attempted suicide in-patients, 64 females and 36 males were randomly selected on three random days of each week. The patients were admitted to the intoxication centers of two clinics in Isfahan, Iran. Their mean age was 22.5 years. Eighty-three participants were also randomly selected from different locations of the same region as the normal (control) persons. Their mean age was 24 years. The mean and standard deviation of age of attempted and control groups are presented in Table 1.

Table 1

Means and Standard Deviations of Age of Attempted Suicide and Control Groups

Groups	*n*	*M*	*SD*	*Minimum*	*Maximum*
Control	83	24.06	6.49	16	48
Suicide	100	22.51	8.37	12	67
Total	183	23.21	7.59	12	67

Preliminary analysis showed that there were non significant difference between the two groups with regard to age, and parent education. Also gender did not have a significant effect on personality and family functioning variables. So these variables were not included in the final analysis.

Consulting any statistics text with regard to sample size, and statistical power, would reveal that any power value higher than .80 shows the adequacy of sample size. As can be seen from Table 1 the power values for all the tests are well above .90, so it was decided that the sample sizes although were not equal but were adequate.

Instrument

Two questionnaires were administered to all participants: The Farsi versions of MMPI (short form), and McMaster Family Assessment Device (FAD).

Farsi Version of MMPI

The 71 items (response options were "yes" and "no" for example to the item "I have a good appetite") of the MMPI short form was adapted and translated into Farsi by Barahani, Shamloo, and Nouparast (1974) and this scale measures the following variables: Hysteria (Hy), Depression (D), Hypochonderiasis (Hs), Psychopathic deviation (Pd), Psychasthenia (Pt), Schizophrenia (Sc), Paranoia (Pa), and Hypomania (Ma). Molavi and Naderi (1990) found significant differences between clinical and normal samples in Iranian population except for Hs and Sc. The internal consistency of all subscales ranged from .62 to .93.

McMaster Family Assessment Device

It was developed by Epstein, Baldwin, and Bishop (1983). The seven FAD subscales measured the following family functioning variables: Problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, and general functioning. The participants were asked to answer each of the 53 items on a 4-point scale: Strongly agree, agree, disagree, and strongly disagree. Lower scores in the subscales indicated higher competence in family functioning. The reliability coefficients for the FAD subscales are reported to range between .83 to .90 (Najarian, 1995).

The economic status of the participants was obtained by sum of ratings of kind of home, kind of job, and income on a 5-point scale. The information about age and education of the participants were also gathered.

Procedure

Both of the questionnaires were given to the participant. They were assured about the confidentiality of their responses, and information regarding some demographic variables was also collected.

RESULTS

The results of multivariate analysis of variance on the two groups are presented in Table 2.

Table 2

Results of Multivariate Analysis of Variance on the Differences of Attempted Suicide and Normal Control Groups

Variables	Sum of Squares	Mean Square	F	p	Eta Squared	Noncent. Parameter	Observed Power
HS	106.507	106.507	14.734	.000	.075	14.734	.968
D	352.501	352.501	32.674	.000	.153	32.674	1.000
HY	219.375	219.375	17.250	.000	.087	17.250	.985
PD	312.970	312.970	37.508	.000	.172	37.508	1.000
PA	163.545	163.545	29.287	.000	.139	29.287	1.000
PT	343.359	343.359	28.733	.000	.137	28.733	1.000
SC	293.475	293.475	22.855	.000	.112	22.855	.997
MA	51.065	51.065	12.078	.001	.063	12.078	.933
Family problem solving	94.726	94.726	11.160	.001	.058	11.160	.914
Communication	176.170	176.170	21.570	.000	.106	21.570	.996
Competence in family roles	109.034	109.034	15.027	.000	.077	15.027	.971
Affective responsiveness	28.792	28.792	3.266	.072	.018	3.266	.436
Affective participation	181.159	181.159	16.918	.000	.085	16.918	.983
Behavior control	638.504	638.504	32.924	.000	.154	32.924	1.000
General functioning in family	653.227	653.227	32.833	.000	.154	32.833	1.000
Education	76.821	76.821	60.246	.000	.250	60.246	1.000
Birth-order	2.906	2.906	.727	.395	.004	.727	.136
Economic status	168.327	168.327	24.382	.000	.119	24.382	.998

df=1

As can be seen from Table 2, there are significant differences between the attempted suicide and control groups with regard to all variables except affective responsiveness, and birth-order (p<.002). The power column indicates the high probability of finding the same results with replications of the study. It also shows the adequacy of sample sizes since the values are higher than .80. The column headed eta-squared shows the percentage of variance in the scores due to suicidal tendency, or the percentage of variance which is explained by group membership (suicidal or normal). It can be seen that 25% of the variance in education scores and 17% of the variance in psychopathic subscale scores are explained by the differences between the two groups. The percentage of other variables in order of importance are: Depression (15%), affective participation in family (15%), general family functioning (15%), paranoia sub-scale (14%), psychasthenia or inability to resolve conflicts (14%), economic status (12%), schizophrenia (11%), competence of communication in family (11%), hysteria (9%), affective involvement in family (8.5%), competency in family roles (8%), hypochondrias (7.5%), hypomania (6%), and competence in family problem solving (6%), respectively. These results support the hypotheses of this research.

The mean of scores of these variables on the two groups are presented in Table 3.

Table 3

The Mean and Standard Error of Scores of Personality and Family Functioning Subscales of Suicidal and Normal Control Groups

	Normal Persons (N = 83)		Suicidal (N = 100)	
Variables	*M*	*Std. Error*	*M*	*Std. Error*
HS	5.398	.295	6.930	.269
D	8.542	.361	11.330	.328
HY	11.181	.391	13.380	.357
PD	7.783	.317	10.410	.289
PA	5.771	.259	7.670	.236
PT	8.639	.379	11.390	.346
SC	9.566	.393	12.110	.358
MA	6.229	.226	7.290	.206
Family Problem solving	10.205	.320	11.650	.291
Communication	12.289	.314	14.260	.286
Competence in family roles	17.880	.296	19.430	.269
Affective responsiveness	15.313	.326	16.110	.297

Table 3 Continued...

Affective involvement	15.361	.359	17.360	.327
Behavior control	18.988	.483	22.740	.440
General functioning in family	27.735	.490	31.530	.446
Education	5.361	.124	4.060	.113
Birth-order	3.230	.219	2.977	.200
Economic status	9.495	.288	7.568	.263

As can be seen from Table 3, the means of scores of the personality and family functioning subscales of attempted suicide group are higher than those of normal (control) persons.

The results of component analysis with varimax rotation of the MMPI and FAD subscale scores showed that scores of MMPI subscales loaded on one factor, and those of FAD subscales loaded on another factor. Therefore, it was concluded that these two questionnaires are relatively, but not quite independent, and the subscales in each questionnaire are interrelated. These results are presented in Table 4.

Table 4

Factor Loadings of Component Analysis of MMPI and FAD Subscales of Rotated Component Matrix

	Components		
Variables	I	II	III
Behavior control	.785		
General functioning	.772		
Affective participation	.760		
Affective response	.734		.332
Problem solving	.732		
Communication	.709		
Roles	.537		
HY		.848	-.344
D		.832	
HS		.826	
PT		.674	.521
SC	.331	.616	.613
PD	.487	.582	
PA		.578	.556
K			-.725
MA		.409	.600
F		.537	.583
L			-.453

The results of stepwise discriminant analysis (a special kind of regression analysis for predicting group membership) showed that from among the MMPI subscales, psychopathy, depression, and paranoia are the better predictors of suicide attempt with 69% certainity. Among the FAD subscales, the better predictors were: Behavioral control, general functioning, affective responsiveness, and communication (with 77% certainty). When all these variables together with education, and economic status were put into another analysis the following variables emerged that predicted suicide attempt with 82% certainty: Education, psychopathy, economic status, family communication, affective responsiveness, and behavioral control in family. The cannonical correlation between these variables and group membership was .666 (p<.000), which if squared, then it means that 44% of variance of these variables are explained by group membership. The results are presented in Table 5.

Table 5

Significant Criterion Variables in Predicting Attempted Suicide Variables in the Analysis

Variables	Tolerance	Sig. of F to Remove	Wilks' Lambda
Education	.957	.000	.703
Psychopathy	.721	.002	.588
Economic status	.929	.014	.576
Communication	.729	.025	.572
Affective response	.572	.001	.595
Behavior control	.617	.008	.579

The coefficients of prediction equation are presented in Table 6.

Table 6

Coefficients of the Equation for Predicting Attempted Suicide

Canonical Discriminant Function Coefficients
Psychopathy -.143
Communication -.103
Affective response .171
Behavior control -.086
Economic status .109
Education .621
(Constant) -1.995

Unstandardized coefficients

If the scores of any individual on these six variables are put into the equation, and the result was positive, the individual is predicted to belong to the normal group and if the result became negative it is predicted that the individual belongs to the suicide group, that is, he has a higher probability of attempting suicide. The SPSS software computes these probabilities for any given individual with 82% precision.

DISCUSSION

As in the present study, the predictive value of psychiatric factors in suicidal behavior was also shown in studies by Wilde, et al., (1993), and Madianos, et al., (1993). Depression, the second most important variable in predicting suicide attempt in this study was found to be effective in other studies (see, for example, Marciano & Kazdin, 1994; Martin, et al., 1995).

From among family functioning variables, the better predictors were behavioral control, general family functioning, and affective responsiveness. These variables were found to be the indirect cause of thinking and planning of suicide through depression (Martin, et al., 1995) and the direct cause of suicide in the studies by Grossi and Violato (1992) and Wilde, et al., (1993). So these variables constitute the risk factors for attempting suicide.

The final analysis of this study indicated that the following variables could predict suicide attempt with 82% certainity: Education, psychopathy, economic status, family communication, affective responsiveness, and behavioral control.

The relative independence of the two questionnaires may be an artifact of questionnaire formats since the examination of the variables in Tables 5 and 6 reveals that only the psychopathy subscale of MMPI has remained in the regression equation whereas from among subscales of FAD 5 out of 6 subscales has remained. This shows that the FAD subscales generally predict attempted suicide better than MMPI subscales, but does not mean that MMPI subscales do not have any significant prediction power.

The results of Table 2 shows that all the variables significantly discriminate between the two groups but some more strongly and some less. The eta-squared values shows the stronger discrimination power of some variables. When all these variables were put into one discriminant function it became clear that these same stronger

variables could predict attempted suicide better as can be seen from Tables 5 and 6.

Further studies are needed to identify the more general social and cultural risk factors for suicide attempt in Iran and similar cultures. Support is provided for the relationship between sociocultural factors and suicide in various societies (Kraus, 1970; Lester, 1991, 1993; Newbold, 1993; Shiaev & Levy, 2001). It is important to compare suicide rates and risk factors in Iran and other Muslim countries with western cultures.

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