

# Comparing Nature and its Dimensions in Depressed Patients with and without History of Suicide Attempt

Fatemeh Zeynalpour Ghatar\*, Abbas Abolghasemi

Department of Clinical Psychology, Ardabil Branch, Islamic Azad University, Ardabil, Iran  
Department of Clinical Psychology, Mohaghegh Ardabili University, Ardabil, Iran

\*Corresponding Author Email: [F.zeynalpour@chmail.com](mailto:F.zeynalpour@chmail.com)

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**ABSTRACT:** The research aimed to compare the nature and its dimensions in depressed patients with and without history of suicide attempt. The research statistical population included all depressed patients referring to clinical centers of Urmia in 2010. Its sample consisted of 90 patients, including 60 depressed patients (30 patients with suicidal attempts and 30 patients without suicide attempts) and 30 normal subjects. They were selected among the depressed patients in clinical centers of Urmia using available sampling. The Temperament and Character Inventory, Beck Depression Inventory and MMPI suicide scales were used to collect information. The research data were analyzed using multivariate analysis of variance and LSD pursuant test. The results showed a significant difference between the nature and temperament (and their dimensions) in the three studied groups. Average scores of nature in the depressed patients without a history of suicide attempt are higher than the depressed patients with a history of suicide attempts and normal subjects.

**Keywords:** Nature, Depression, Suicide.

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## INTRODUCTION

Depression is a very unpleasant state that anyone may be affected to it. Depression is a disorder that includes a large number of people referring to mental health clinics. This disorder is one of the most common mood and emotional disorders and the greatest disease of the present century. According to the fourth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), the most distinctive features of this disorder include: 1) the depressed mood in most of times such as feelings of sadness or emptiness in terms of acknowledging one's own or others' observations; 2) significant decreasing interest or pleasure in all or almost all of activities in a day or nearly every day; 3) significantly reducing body weight without a special diet or avoidance, or significant increasing body weight; 4) insomnia or oversleeping almost every day; 5) mental stimulation or slow-moving almost every day; 6) fatigue or loss of energy nearly every day; 7) feelings of worthlessness or excessive guilt almost every day; 8) reducing ability to concentrate or indecisiveness; 9) recurrent thoughts of death, suicidal thoughts, suicide attempt or specific plan to commit suicide. It is assumed that about 75% of hospital admissions are depressive patients (Hatton & Clarke, 1989). This disorder is seen in one third to one half of clients in psychiatric clinics. On the other hand, this disorder is more common among single people and those who are lower in economics (Bajrut, 1998). Mortality rate in patients with bipolar disorder is two to three times more than

entire population; 10-20% of the patients have history of suicide attempts and three-quarters of them have completed suicide. These patients are at increased risk of suicide in stages of depression, so that likelihood of suicide is high in type 1 bipolar disorder that patients experience the repeated depression events. Depressed patients have the highest suicide rate in the world. The highest suicide rate is related to mood illness and there is a significant depression in all suicide-related studies in the world. The suicide rate in patients with major depression for men and for women is 400 and 180 in one hundred thousand respectively, which it is the highest number of suicides among other diseases. Suicide rates in depressed men are more than depressed women.

The World Health Organization has also noted 15% of the death rate from suicide among depressed patients. Many variables including the nature play role to form and exacerbate symptoms of major depressive disorder. By emphasizing on biological parameters, Cloninger's view created a solid theoretical framework of personality that includes both normal and abnormal characters.

According to this view, character is composed of components of nature and manners. In his neurobiological model, he has put forward that constitutional systems in brain contain the organized function including different and independent systems to activate, continue and inhibit behavior to response certain groups of drivers. Behavioral activation is a response to new stimuli, signs of reward and relief from punishment. Therefore, in such a capability, individual differences are called "novelty seeking". Behavioral inhibition is in response to punitive or non-rewarding stimuli. Individual differences in behavioral interruptions or inhibition are called "harm avoidance". On the other hand, the supported behavior by reward usually lasts for a time after bonus discontinuity. Cloninger used the term of "reward dependence" for individual differences to continue response after reburial. Thus, Cloningers has introduced these three dimensions and persistence aspect in the nature section (Cloninger, 1991). Conrad et al (2008) found that suicide attempters, in comparison with those who do not commit suicide, will get higher scores in dimensions of harmfulness and novelty seeking. Therefore, research aimed to compare the nature and its dimensions in depressed patients with and without history of suicide attempt.

## MATERIALS AND METHODS

The research method was descriptive, comparative type. Its population consisted of all depressed patients referring to clinical centers of Urmia in 2010. The research sample consisted of 90 patients, including 60 depressed patients (30 patients with suicidal attempts and 30 patients without suicide attempts) and 30 normal subjects. They were selected among the depressed patients in clinical centers of Urmia using available sampling. Initially, they were identified with by permission of faculty to refer clinics to identify those diagnosed with major depression. In the next step, a comprehensive international diagnostic interview for depression disorder was performed to ensure that psychiatrist diagnosis. After diagnosis, the questionnaires were provided to the patients and they were asked to answer the questions carefully. About ethical considerations, after obtaining letter of satisfaction and providing necessary information, they were ensured that the received information will be only used in this research and of will be kept from any misuse. The following questionnaires were used to measure the research variables.

*The Structured Clinical Interview:* It is a flexible interview to diagnose disorders of I axis in DSM-IV that has been prepared by First, Spitzer, Gibbon and Williams (1995; quoted by Segal, 1997). According to Segal (1997), this interview has a good reliability to detect mental disorders. It was translated and published by Sharifi et al (1995) in Iran as a booklet.

*Temperament and Character Inventory:* Cloninger et al (1994) designed Temperament and Character Inventory to measure the biogenetic nature and the acquired attitudes. This questionnaire contains 125 questions and each subject answers the questions as true or false. In this questionnaire, nature includes four dimensions (novelty seeking, harm avoidance, reward dependence and persistence) and character contains three dimensions (self-direction, collaboration, self-transcendence). The nature data were analyzed, according the research objective. In a research, Alonso et al (2008) reported Cronbach's alpha coefficient of the questionnaire higher than 0.68 (quoted by Kaviani & Mohaghghshenas, 2007). Kaviani and Mohaghghshenas (2007) identified 0.61-0.96 as reliability value of the inventory on heptarch scales. There was no significant correlation between quadruplet scales of nature and triple scales of character. This means that measures are independent. The short form correlation coefficient of this questionnaire was obtained with a long form of 0.62.

*Beck Depression Inventory (Second Edition):* Beck Depression Inventory was introduced for the first time in 1961 by Beck, Mendelssohn, Mook and Varbarf. It was revised and published in 1971 and 1987 respectively. In 1996, Beck, Steer and Brown developed the revised Beck Depression Inventory to

measure severity of depression. Thus, this test was more coordinated with diagnostic criteria for DSM-IV depressive disorders. The questionnaire, like the first one, consists of 21 items that subjects select one out of four options that shows severity of their depression. The questionnaire total score is ranged from 0 to 63. In this research, we used the short form of Beck Depression Inventory. Different conducted studies on Beck Depression Inventory (the second edition) have constantly shown high internal consistency coefficients ranged from 0.89 to .94 in different populations. The revised reliability test in one week was 0.93. Results of evaluating content, synchronization, cleanliness and factor analysis validity have generally been desirable. The questionnaire psychometric properties on the sample of 94 people in Iran were as follows: Cronbach's alpha coefficient was 0.91, coefficient of reliability was 0.89, and retest reliability coefficient was 0.94 per week. Correlation questionnaire with Beck Depression Inventory (first edition) was 0.93. The test is correlated with Hamilton Rating Scale for Depression, Beck Hopelessness Scale and Stress-Anxiety-Depression Scale as 0.71, 0.68 and 0.88 respectively (quoted by Kaviani & Mohaghghshenas, 2007).

*Czech List of Suicide Signs:* the used questionnaire in the present research is a questionnaire about suicidal thoughts with 22 questions that have been selected from scales of MMPI-II questionnaire. The research data were analyzed using multivariate analysis of variance and LSD pursuant test.

## RESULTS

Table 1 presents descriptive statistics of the research variables. As seen mean (and standard deviation) of nature in the depressed patients without a history of suicide attempts, the depressed patients with a history of suicide attempts and normal subjects are 40.13 (5.92), 31.20 (2.10) and 23.60 (3.58) respectively.

**Table 1.** Mean and standard deviation of nature and its dimensions in the studied three groups.

Nature's dimensions	Depressed patients without history of suicide attempt		Depressed patients with history of suicide attempt		Normal	
	Average	SD	Average	SD	Average	SD
Novelty seeking	8229	1.20	10.66	1.64	6.83	2.79
Harm avoidance	21.76	5.76	13.83	2.36	5.93	0.94
Reward dependence	8.13	1.13	5.16	3.71	8.13	2.19
Persistence	1.96	1.27	1.53	1.63	2.70	1.29
Total	4013	5.92	31.20	2.10	23.60	3.58

Levin's test results were not significant. According the results, homogeneity of variances in the above variables was confirmed in three groups. This test was not significant for any variable; as a result, using parametric tests is possible. Co-box test was used to examine assumption of homogeneity of covariance and results showed that box value was not significant (Box = 23.72; F =1.42; P =0.29); thus there is established default of difference between covariance.

As seen in Table 2, the significance levels of all tests allow using multivariate analysis of variance. The results show that there is a significant difference among the depressed patients without history of suicide attempts, the depressed patients with a history of suicide attempts and normal individuals, at least one of dependent variables. ETA square (which is actually the squared coefficient of correlation between dependent variables and group membership) shows a significant difference between the three groups according dependent variables and the difference is 79%, i.e. 79% of variance of difference between the three groups is interaction of dependent variables.

**Table 2.** Results of significant test of multivariate analysis of variance for scores of nature and its dimensions in the three studied groups.

	Test name	Value	F	df hypothesis	df error	P	Eta square
Model	Piley effect	0.985	137.8	4	84	0.000	0.985
	Lambda Wilkes	0.015	137.8	4	84	0.000	0.985
	Hittling effect	65.603	137.8	4	84	0.000	0.985
	The biggest root of error	65.603	137.8	4	84	0.000	0.985
	Piley effect	1.201	31.96	8	170	0.000	0.785
Group	Lambda Wilkes	0.125	38.29	8	168	0.000	0.785
	Hittling effect	0.368	45.31	8	166	0.000	0.785
	The biggest root of error	3.655	77.66	4	85	0.000	0.785

As seen in Table 3, there is a significant difference between mean of nature scores in the three groups (F =117.63). There was obtained a significant difference between scores of novelty seeking (F= 28.24), harm avoidance (F= 142.06), reward dependence (F =13.26) and persistence (F= 5.25) among the three groups, namely the depressed patients without a history of attempted suicide, the depressed patients with a history of attempted suicide and normal people (p< 0.01).

**Table 3.** Results of multivariate variance analysis (MANOVA) on scores of the nature and dimensions in the three studied groups.

	Dependent variable	SS	df	MS	F	P
Model	Novelty seeking	6639.21	1	21.6639	166.6	0.000
	Harm avoidance	17250.178	1	17250.178	130.3	0.000
	Dependency reward	4593.87	1	4593.87	692.54	0.000
	Persistence	384.4	1	384.4	193.60	0.000
	Total	90123.378	1	90123.378	516	0.000
Group	Novelty seeking	2250.8	2	112.54	28.24	0.000
	Harm avoidance	3760.24	2	1880.211	142.06	0.000
	Dependency reward	176.02	2	88.01	13.26	0.000
	Persistence	20.867	2	10.43	5.25	0.000
	Total	4109.156	2	2054.57	117.63	0.000
Error	Novelty seeking	346.70	87	3.98		
	Harm avoidance	1151.40	87	13.23		
	Dependency reward	577.10	87	6.63		
	Persistence	172.73	87	1.98		
	Total	1519.46	87	17.46		

There was used LSD test to compare mean scores of the nature and its dimensions (novelty seeking, harm avoidance, reward dependence and persistence) (Table 4). The results also show that mean score of nature in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts, normal people and normal people respectively (P< 0.001). The results also show that mean score of novelty seeking in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts, normal people and normal people respectively (P< 0.001). The results also show that mean score of harm avoidance in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts, normal people and normal people respectively (P< 0.001). The results also show that mean score of dependence reward in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed

patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts, normal people and normal people respectively ( $P < 0.001$ ). The results also show that mean score of persistence in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts, normal people and normal people respectively.

**Table 4.** Comparing mean scores of the nature and its dimensions among the depressed patients without a history of attempted suicide, the depressed patients with a history of suicide attempts and normal people using LSD test.

Dimensions of nature		Group	1	2	3
Novelty seeking	The depressed patients without a history of attempted suicide		-	-0.40 (0.000)	1.43 (0.000)
	The depressed patients with a history of suicide attempts		2.40 (0.000)	-	3.83 (0.000)
	Normal people		-1.43 (0.000)	-3.83 (0.000)	-
Harm avoidance	The depressed patients without a history of attempted suicide		-	7.93 (0.000)	15.83 (0.000)
	The depressed patients with a history of suicide attempts		-7.93 (0.000)	-	7.90 (0.000)
	Normal people		-15.83 (0.000)	-7.90 (0.000)	-
Dependency reward	The depressed patients without a history of attempted suicide		-	3.96 (0.000)	(0.000) (0.000)
	The depressed patients with a history of suicide attempts		-2.96 (0.000)	-	-2.96 (0.000)
	Normal people		(0.000) (0.000)	2.96 (0.000)	-
Persistence	The depressed patients without a history of attempted suicide		-	0.43 (0.000)	-0.73 (0.000)
	The depressed patients with a history of suicide attempts		-0.43 (0.000)	-	-1.16 (0.000)
	Normal people		0.73 (0.000)	1.16 (0.000)	-
Total	The depressed patients without a history of attempted suicide		-	8.93 (0.000)	16.53 (0.000)
	The depressed patients with a history of suicide attempts		-8.93 (0.000)	-	7.60 (0.000)
	Normal people		-16.53 (0.000)	-7.60 (0.000)	-

## CONCLUSION AND DISCUSSION

The research aimed to compare the nature and its dimensions in depressed patients with and without history of suicide attempt. Results showed a significant difference in dimensions of temperament in the three studied groups. The results also show a significant difference in mean scores of nature in groups of the depressed patients without history of suicide attempts, the depressed patients with history and normal individuals. The results also show that mean score of nature in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts, normal people and normal people respectively ( $P < 0.001$ ).

The results also show that mean score of novelty seeking in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts,

normal people and normal people respectively ( $P < 0.001$ ). The results also show that mean score of harm avoidance in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts, normal people and normal people respectively ( $P < 0.001$ ). The results also show that mean score of dependence reward in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts, normal people and normal people respectively ( $P < 0.001$ ).

The results also show that mean score of persistence in the depressed patients with history of suicide attempts, in depressed patients without suicide attempts and the depressed patients without suicidal attempts is significantly higher than the depressed patients without history of suicide attempts, normal people and normal people respectively. High scores in dimension of harm avoidance are consistent with the obtained findings by Van Heeringen et al (2003), Brass et al (2005), Calati et al (2007) and Conrad et al (2008). It can be said that harm avoidance includes inheritance interest to control behavior in response to punitive messages and lack of disappointing rewards. This feature is as the same as fear of uncertainty, shyness, social inhibition, inactive avoidance of problems and risks and pessimistic concern in situations we are facing. It can have a positive correlation with depression symptoms because increasing this dimension can lead to increase symptoms such as social isolation and negative thoughts in the depressed persons.

#### **Conflict of Interest**

The authors declare no conflict of interest.

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