

Sensation seeking behavior among schizophrenics

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ABSTRACT

Objective: To compare sensation seeking between schizophrenic patients (and clinical subtypes of schizophrenia) according to criteria of DSM-IV-TR; and a healthy control group. Two hypotheses were assumed: 1. Sensation seeking in the control group is higher than schizophrenic patients. 2. The levels of sensation seeking are different among clinical subtypes of schizophrenia.

Methods: The sample comprised a study group of 69 schizophrenic inpatients at Raazy Psychiatric Center, Tehran, Iran in 2005 (10 males and 10 females for each of paranoid, undifferentiated and residual subtypes, and 9 males from disorganized subtype), and 50 randomly selected healthy people, the control group. To measure sensation seeking, the Zuckermann Sensation Seeking Scale, a 41-item questionnaire form, was used after evaluating its validity and reliability. After obtaining a weak or negative correlation, we omitted 9 questions, so that finally a 32-item questionnaire with highest reliability (Cronbach's alpha = 0.64), remained and was utilized. We used descriptive statistical methods and calculation of statistical indices, and Student t-test for independent groups to evaluate the research hypotheses.

Results: The first hypothesis was confirmed at a 99% significance level. The second hypothesis was rejected at a 95% significance level.

Conclusions: We found a definite correlation between schizophrenia and a low level of sensation seeking. Accordingly, and since sensation seeking (as a part of temperament) has a strong genetic component, a low level of sensation seeking is probably an existing feature of schizophrenia. Assessing sensation seeking in high-risk populations (children or the siblings of schizophrenics) could be a practical attempt at prevention or immediate treatment of schizophrenia.

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In Iran, the average prevalence of schizophrenia reaches a quarter of million people, of which 20% require hospitalization.¹ The high prevalence of substance abuse and higher rate of delinquency in schizophrenic patients,² requires assessment of sensation seeking in these patients, as motive or interest change may cause abnormalities in emotions and behavior.^{3,4} Emotions such as physiological or psychological motives can activate or influence behavior, but meanwhile exhibit as one's goals.⁵ One of the emotional components is "sensation seeking", that is, heterogeneity in feelings and experiences.⁶ Using psychological tests as objective and validated instruments for behavior measurement, we compared existing sensation seeking behavior between schizophrenic patients (and their subtypes) and a sample from the healthy population.

Methods. We conducted a cross-sectional case-control study in which the Zuckermann Sensation Seeking Scale (SSS) was distributed among both study and control groups. Schizophrenic patients hospitalized at the Raazy Psychiatric Center in Tehran, Iran during 2005 comprised the study group. The control group were healthy individuals from the local community. After obtaining local ethics approval, all the research purposes (risk and benefits) were disclosed for the patients or the guardians, and informed consent was received from the members of both study groups.

Research sample. Sixty-nine schizophrenic patients at the center (either from acute, or rehabilitation wards), who were diagnosed as "schizophrenic" by DSM-IV-TR criteria,⁷ and 50 people from the general population, confirmed as healthy by GHQ-28,⁸ were selected for assessment. Inclusion criterion were Iranian cases for both groups, and the exclusion criteria were 1. ruling out of Axis I, II, III co-morbidity diagnoses (organic, psychiatric, substance abuse); and 2. Pregnant and breast-feeding women.

Sampling. The study group was selected by classified randomized sampling (with regards to 4 subtypes, paranoid, undifferentiated, residual and disorganized), 69 schizophrenics were sampled and then all the patients were assessed by Sensation Seeking Test. For the control group, 2 classes of the general population (25 males and

25 females), were selected randomly and then assessed by Sensation Seeking Test. The average age in each subtype, and also in the control group, were selected in a range of 34-40 years, in order to control age variables as far as possible, and to avoid any impact on the study results.

Instruments. To assess the rate of sensation seeking, we used Zuckermann Sensation Seeking Trait Test. The questions in this test reveal a person's intentions in carrying out different activities and includes "risk seeking", "new experience seeking", "disinhibition" and "potentiality for impulsive behavior". This test is known as the Sensation Seeking Scale (SSS),^{9,15-18} and has taken various forms during 1980 to 1989. Zuckermann and colleagues argue that their obtained measures and criteria were based on the qualified studies carried out in various communities and are considered as highly valid and reliable. According to their study, the sensation seeking trait is continuous. They used nominal scales and categorized the individuals in 2 groups with low and high sensation seeking rates.¹⁰ In this study, we ultimately used a 32-item questionnaire instead of 41-item one, as the test after translation-retranslation procedure was made reliable and validated in Iran.¹¹ The inter-item reliability in the 41-item questionnaire using Richardson's formula

and correlation coefficient is 1% significant. We carried out the test in all 119 cases (50 healthy controls and 69 patients) with Statistica software and Cronbach's alpha 0.48. However, on analysis of each question correlation coefficient with the total test, some questions showed weak or even negative correlation. Therefore, to increase result reliability, we waived (omitted) 9 questions (questions: 1, 14, 21, 26, 30, 33, 34, 36 and 37), and again continued with 32 items in which the new Cronbach's alpha was 0.64. These 41 items were made culture-sensitive by peer review.¹⁰ Reliability of 32 items was achieved by the split-half method, and was $r=0.73$, while that of the two-halves method was $r=0.58$.

Statistical analysis. We used Student T Test for independent groups, to obtain detailed data on case scores, including significant differences between the mean sensation seeking test scores in the control and study groups (including subtypes).

Results. The study included 50 (42%) controls (25 males and 25 females) and 69 schizophrenic patients (10 males and 10 females for each of paranoid, undifferentiated and residual subtypes, and 9 males from disorganized subtype). As both sample cases were

Table 1 - Comparison of T-test results related to sensation seeking between various groups.

Comparison between various groups (n)		T-test	P-value
Mean SSS ± SD			
Total healthy people (50) 16.72±4.43	Total schizophrenic patients (69) 12.23±3.84	5.90	0*
Healthy males (25) 16.2±3.87	Schizophrenic males (39) 11.97±3.98	4.19	0*
Healthy males (25) 16.2±3.87	Schizophrenic females (30) 12.57±3.68	3.56	0*
Healthy females (25) 17.24±4.96	Schizophrenic females (30) 12.57±3.68	4.01	0*
Healthy females (25) 17.24±4.96	Schizophrenic males (39) 11.97±3.98	4.70	0*
Residual schizophrenic females (10) 12±4.27	Undifferentiated schizophrenic females (10) 11.30±3.98	0.43	0.67
Residual schizophrenic females (10) 12±4.27	Residual schizophrenic males (10) 12.3±4.27	0.16	0.87
Paranoid schizophrenic females (10) 14.4±2.83	Undifferentiated schizophrenic females (10) 11.30±3.98	2.21	0.04*
Paranoid schizophrenic females (10) 14.4±2.83	Paranoid schizophrenic males (10) 10.6±3.41	2.22	0.04*
Disorganized schizophrenic females + males (9) 13.67±4.2	Paranoid schizophrenic females + males (20) 12.50±3.64	0.72	0.48
Undifferentiated schizophrenic females (10) 11.3±3.98	Undifferentiated schizophrenic males (10) 11.5±2.83	0.13	0.9

SSS – sensation seeking score, *significant difference

in a range of 20-59 years, therefore the average age in the study and control groups were selected in a range of 30-40 years. Table 1 summarizes a comparison of t-test results related to sensation seeking between various groups. The study group had lower mean sensation seeking scores than the control group indicating a significant difference in the levels of sensation seeking between healthy people and those suffering from schizophrenia. We also found a significant difference between paranoid schizophrenic females and undifferentiated females, and a significant difference between paranoid schizophrenic females and paranoid schizophrenic males.

Discussion. In this research, a negative and significant correlation between sensation seeking and schizophrenia was revealed by lower levels of sensation seeking in the study group than the control group. The implication of this result is to find latent schizophrenic cases prior to the appearance of criterion A of schizophrenia in the DSM-IV-TR classification. Zuckermann believes that there is no connection between high score in emotion and neurosis.¹² Recently, a psychiatric resident in his specialty dissertation, indicated a correlation between one of the temperamental aspects of personality (sensation seeking) and opioid abuse or dependence.¹³ In schizophrenia, the individual, by “exaggerated isolation” keeps himself/herself away from self-conceived conflicts and dangers, or by “isolation”, decreases his/her anxiety with lack of reaction.¹⁴

In conclusion, perhaps, if we are ever able to diagnose the latent phase of this disorder, prior to the appearance or activation of schizophrenia criterion A, we can make major attempts in prevalence and incidence decrease, and improvement in the patients’, and his/her families quality of life. Since the temperamental traits have usually a strong genetic component, based on having a correlation with a special disorder, it can be used as an indicator of that disorder. Therefore, using the Sensation Seeking Test, may be of help in the diagnosis and even prevention of schizophrenia in high-risk groups. We hope that by assessing sensation seeking levels in other psychiatric disorders, and detecting other temperamental traits of personality in schizophrenia, further steps will be taken in this field.

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