

## Evaluation of Psychiatric Symptoms in Patients with Vertigo

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### Abstract

**Introduction:** The close interaction between vestibular, psychological and neurological disorders causes inefficient treatment of the patients, so it seems necessary for the physicians to consider psychiatric disorders and get to know their different presentations so that they can offer the best treatment.

**Objective:** This study aimed to evaluate the frequency of psychological symptoms in patients with vertigo.

**Materials and Methods:** In this descriptive, cross-sectional study, 104 patients with vertigo referred to neurologic and otolaryngologic clinics of the Poursina and the Amiralmomenin hospitals in Rasht in 2014-2017, were selected by the simple sampling method. After a complete neurologic and otolaryngologic examination, the organic cause of the patient's vertigo (if any) was determined through history taking, clinical examination and necessary paraclinical measures. Then, the patients were asked to complete the SCL-90R questionnaire. Data were analyzed using t test,  $\chi^2$  and logistic regression statistical tests with SPSS 22.0 software.

**Results:** The mean age of participants was 50.4±18.1 years, of the 46 patients (44.2%) were male and 58 (55.8%) were female (P=0.05). Thirty nine patients were with history of dizziness (37.5%). According to the SCL-90R questionnaire, 28 (27.0%) had pathologic psychological symptoms, of which about one fifth was severe. The most common psychiatric symptoms were anxiety, paranoid, interpersonal sensitivity, somatization and obsessive-compulsive disorder. There was a significant association between the mean of the general symptom index and age of participants (correlation coefficient: -0.36, P <0.001). Logistic regression analysis showed that only age and previous history of vertigo could predict significantly psychological symptoms in our patients (P values 0.004 and 0.05, respectively).

**Conclusion:** In patients with vertigo complaints, psychiatric disorders are common. Therefore, it is better to treat multiple aspects of the patients and pay attention to the treatment of psychiatric disorders at the onset of the disease.

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**Key words:** Dizziness\ Mental Disorders\ Vertigo

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## Extended Abstract

**Introduction:** Vertigo is a type of sensory distortion caused by disruption of one or several parts of the balance system. A strong association between vestibular diseases and psychiatric disorders, especially anxiety disorders, has been reported (1). Researchers reported comorbidity of vertigo and psychological disorders in 30-50% of patients (2). The close interaction between vestibular, psychological and neurological disorders causes inefficient treatment of the patients, so it seems necessary for the physicians to consider psychiatric disorder and get to know their different presentations so that they can offer the best treatment.

**Objective:** This study aimed to evaluate the frequency of psychological symptoms in patients with vertigo.

**Materials and Methods:** In this descriptive, cross-sectional study, 104 patients with vertigo referred to neurologic clinic of Poursina Hospital and otolaryngologic clinic of Amiralmomenin Hospital in Rasht in 2014-2017, were selected by the simple sampling method. Inclusion criteria were history of dizziness, lack of serious neurological diseases and mental retardation, lack of recent serious psychiatric disorders, and level of education higher than grade six. After a complete neurologic and otolaryngologic examination, the organic cause of the patient's vertigo (if any) was determined through history taking, clinical examination and necessary paraclinical measures. Then, the patients were asked to complete the SCL-90R questionnaire.

The SCL-90-R is a 90-item self-report system inventory developed by Derogatis (3) and was translated into Persian language. Its validity and reliability were approved in an independent study (4). Internal consistency for all dimensions of the questionnaire was more than 0.70. Each item in SCL-90-R is rated on a five-point scale of distress (0-4) ranging from "not at all" to "extremely". The nine primary symptom dimensions were labeled as: Somatization; obsessive-compulsive; interpersonal sensitivity; depression; anxiety; hostility; phobic anxiety; paranoid ideation; and psychoticism. Respondents rated 90 items using a 5-point scale to measure the extent to which they have experienced the listed symptoms during the last 7 days. The SCL-90-R also has 3 global indices: the global severity index (GSI), measures the extent or depth of the individual's psychiatric disturbances; the Positive Symptom Total (PST) counts the total number of questions rated above 1 point; and the Positive Symptoms Distress Index (PSDI) is calculated by dividing the sum of all items values by the PST. In this study we only reported GSI and PST of SCL-90-R subscales.

Data were analyzed using t test,  $\chi^2$  and logistic regression statistical tests with SPSS 22.0 software.

**Results:** The mean age of participants was  $50.4 \pm 18.1$  years, of the 46 patients (44.2%) were male and 58 (55.8%) were female ( $P = 0.05$ ). Thirty nine patients experienced previous history of dizziness (37.5%). The mean score of GSI of participants was 0.68 and 28 (27.0%) had pathologic psychological symptoms of which about one fifth was severe. The most common psychiatric symptoms were anxiety, paranoid, interpersonal sensitivity, somatization and obsessive-compulsiveness. There was a significant association between the mean of the general symptom index and the age of participants (correlation coefficient: -0.36,  $P < 0.001$ ). We found no significant difference in psychological symptoms or their severity. Multivariate logistic regression analysis showed that only age and history of previous vertigo predicted significantly psychological symptoms in our patients ( $P$  values 0.004 and 0.05, respectively). We found a high odds of psychiatric comorbidity among the participants with previous history of vertigo, compared to those without it (odds ratio 3.04). In most symptom dimensions, except somatization and phobic anxiety, there was a significant association between score of SCL-90-R subscales and age. In other words, 43.1% of participants under 50 years old and 11.3% of those equal or over 50 years had psychiatric comorbidity ( $P = 0.001$ ). Also, history of previous vertigo was a significant predictor of anxiety and paranoid dimensions.

**Conclusion:** In patients with vertigo complaints, psychiatric disorders are common. In the present study, 27% of participants exhibited pathologic psychological symptoms. This finding is in line with previous studies. Lehmann et al (5) found that anxiety/phobia is the most common psychiatric disorder (28%). In contrast with our finding, Monzani et al., showed that sex plays a role in both symptom and its severity. This controversy could be due to methodological heterogeneity of studies. Similar to our finding, Ferrari et al, (7) noticed that somatization was a common symptom. The relationship between vertigo and psychiatric disorders is complex and the neurobiological relationship between balance control and anxiety has been addressed through pathways mediated by autonomic control, vestibulo-autonomic interactions, and anxiety (8). There are mainly two models of the relationship between vertigo and psychiatric symptoms: the somatosocial model and the psychosomatic model. In the former, anxiety is a secondary reaction to organic

pathology, whereas in the latter, stress and anxiety are the primary causes of vertigo attacks (8). Therefore, it is better to treat multiple aspects of the patients and pay

attention to the treatment of psychiatric disorders at the onset of the disease.

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