Section: Miscellaneous

Original Research Article

ASSESSMENT OF STRESS, ANXIETY AND DEPRESSION AND MOTOR COORDINATION IN VERTIGO PATIENTS: AN OBSERVATIONAL STUDY

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Received *: 13/01/2025*
Received in revised form *: 12/03/2025*
Accepted *: 27/03/2025*

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DOI: 10.70034/ijmedph.2025.1.322

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (1); 1724-1726

ABSTRACT

Background: Vertigo occurs as a secondary symptom to various disorders and occurs in around forty percent of the adult population. Vertigo was reported to affect the overall behaviour of an individual and the quality of life. The studies on vertigo patients and assessment of anxiety and other negative psychological emotions, motor coordination were sparse. **Aims and objectives:** The present study was undertaken to observe stress, anxiety and depression, and motor coordination in vertigo patients.

Materials and Methods: The present study recruited a total of 20 male and female vertigo patients after obtaining written informed consent. Age and gender matched 20 relatively healthy subjects were also recruited after obtaining written informed consent. Vertigo patients within the age group of 18-80 years, willing to participate, were part of the study. Depression, anxiety, and stress were analysed using the DASS 21 scale, which is a standard scale to assess negative psychological parameters. Motor coordination was tested by the 100-pin dexterity test. This test comprises 100 pins and 100 slots to place those pins.

Results: Depression, anxiety, and stress were significantly higher in the vertigo patients when compared with the healthy controls. Poor motor coordination was observed in the patients with vertigo when compared to the healthy controls.

Conclusion: The study results support that there were significantly higher levels of negative psychological emotions and poor motor coordination in the vertigo patients. Further detailed studies are recommended in this area to understand the vertigo in detail and to develop more effective treatment strategies.

Keywords: vertigo, stress, coordination, anxiety, depression.

INTRODUCTION

It was reported that the prevalence of vertigo in the rural areas of India is about 0.71 percent.[1] Vertigo occurs as a secondary symptom to various disorders and occurs in around forty percent of the adult population.[2] Vertigo was reported to affect the overall behaviour of an individual and the quality of life.[3] Unfortunately, the knowledge, attitude, and practice methods among the patients of vertigo in India are not adequate.[3] Excessive stress was reported in the patients with vertigo. Interestingly, stress is reported to trigger vertigo. A study reported higher scores of anxiety in the patients of vertigo.[4] Excess of anxiety, low mood, and personality disorders were commonly observed in vertigo patients.[5] Hence, assessment of the psychiatric parameters is suggested as a part of the management of the vertigo patients.[5] The anxiety observed in these patients is labelled as vertigo-related anxiety.[6] Also it is essential to differentiate the central and peripheral vertigo. Central vertigo

occurs due to the dysfunction of the central vestibular system and its connections. Peripheral vertigo occurs due to dysfunction in the inner ear.[7] The treatment of vertigo must be a multimodal approach that consists of medications, physical therapy to improve the coordination, and in some cases where the severity is high, even surgery may also be needed.[8] The studies on vertigo patients and assessment of anxiety and other negative psychological emotions, motor coordination were sparse. Hence, the present study was undertaken. Understanding vertigo in detail helps to develop more effective management methods.

Aim and objectives: The present study was undertaken to observe stress, anxiety and depression, and motor coordination in vertigo patients.

MATERIALS AND METHODS

The present study recruited a total of 20 male and female vertigo patients after obtaining written informed consent. Age and gender matched 20 relatively healthy subjects were also recruited after obtaining written informed consent. Vertigo patients within the age group of 18-80 years, willing to participate, were part of the study. Those who were already under any kind of treatment or therapy and had any severe complications were excluded from the study. After the recruitment, the participants underwent a general physical examination. Soon after, their data was collected and transferred to the Excel sheet and analyzed. Depression, anxiety, and stress were analysed using the DASS 21 scale, which is a standard scale to assess negative psychological parameters. Motor coordination was tested by the 100-pin dexterity test. This test comprises 100 pins and 100 slots to place those pins. Normally, a healthy person can place the pins faster.

Statistical Analysis: Data was analysed using SPSS 20.0 version. Student t-test was applied to observe the significance of the difference between the groups. A probability value of less than 0.05 was considered significant.

RESULTS

Table 1 presents the demographic data of the participants. Demographic data was not significantly different between the groups. Table 2 presents the comparison of depression, anxiety, stress, and motor coordination among vertigo patients and healthy controls. Significantly higher levels of stress, anxiety, and depression scores are observed in vertigo patients. More time was taken to complete the 100 pin dexterity test by the vertigo patients, which indicates poor coordination when compared with the healthy controls.

Table 1: Demographic data of the participants

Parameter	Vertigo patients (n=20)	Control group (n=20)	P value
Age (years)	46±9.77	50.89±11.06	0.3352
Height (cm)	171.78±7.84	185.43±48.85	0.4189
Weight (kg)	72±9.60	76.38±10.80	0.3903

Data was mentioned as mean and SD.

Table 2: Comparison of depression, anxiety, stress, and motor coordination among vertigo patients and healthy controls

Parameter	Vertigo patients (n=20)	Control group (n=20)	P value
Depression	17.44±2.55	9.10±2.08	0.0001*
Anxiety	16.7±1.49	10.5±2.07	0.0001*
Stress	21.78±2.64	15.22±3.31	0.0003*
100-pin dexterity test (sec)	334.29±39.52	248.57±25.45	0.0004*

Data was mentioned as mean and SD. *P value less than 0.01.

DISCUSSION

The present study was undertaken to observe stress, anxiety and depression, and motor coordination in vertigo patients. The study results support that there were significantly higher levels of negative psychological emotions and poor motor coordination in the vertigo patients. Further detailed studies are recommended in this area to understand the vertigo in detail and to develop more effective treatment strategies. It was reported that, followed by the vestibular dysfunction, the individuals experienced higher levels of stress and anxiety.[9] Another study also testified that vestibular dysfunction leads to excessive stress.[10] Hence, the vestibular relationship with the emotions is very clear.[11] The anxiety experienced by the vestibular dysfunction patients is called vertigo-related anxiety. All types of vertigo patients were reported to experience anxiety from mild to severe forms. The study results support that there were significantly higher levels of negative psychological emotions and poor motor coordination in the vertigo patients. Further detailed studies are recommended in this area to understand the vertigo in detail and to develop more effective treatment strategies. The age group that was most affected by vertigo was between fifty-five to sixty-four years.[13] High levels of stress hormone levels were observed in the patients with vertigo.[14] Poor muscle coordination was reported in the patients of vertigo. The vestibulo-spinal pathway plays a key role in the maintenance of the posture and equilibrium; damage

to the vestibular component might effect the coordination and, hence, prolong time for the 100 pin dexterity test.[14] The present study results are per the earlier studies. However, the sample size used in the study was smaller. Hence, the study recommends further research with a higher sample size.

CONCLUSION

The study results support that there were significantly higher levels of negative psychological emotions and poor motor coordination in the vertigo patients. Further detailed studies are recommended in this area to understand the vertigo in detail and to develop more effective treatment strategies.

Conflicts of interest: None declared
Source of funding: Self-funding.

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