

The Effectiveness of Vestibular Exercises on Stress among Elderly

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Abstract: *Background and objectives:* Stress is a common mental health problem of the elderly population that affects their quality of life. The number of persons above the age of 60 years is rapidly growing, especially in India. Stress is common and remains a significant problem for elderly. Stress was identified by the World Health Organization as the sixth leading cause of disease. The use of Vestibular Exercises also can reduce the psychological disorders and enhance mental health and these exercises are effective in elderly to reduce stress. *Methodology:* The conceptual framework adopted for the study was based on General system theory. The research design selected for the study is pre - experimental one group pre - test post - test design with a quantitative evaluative approach. The tools used in the study consisted of two sections. Section one was demographic variables. The section two was Perceived Stress Scale and Standard Process Stress Scale. The study subjects comprised of 50 elderly who were selected based on inclusion and exclusion criteria through purposive sampling technique. Data was collected from the elderly, and it was analyzed by descriptive and inferential statistics. *Results:* The findings of the study revealed that the Vestibular Exercises were effective in reducing the level of stress by using Perceived Stress Scale among elderly as evident from the pre - test mean value is 21.96 with SD 5.7 and post - test mean value is 10.72 with SD 6.1. The mean difference is 11.24. The calculated t - value 24.60 is greater than the table value (1.67) at 0.0001 level of significance among elderly living in a selected old age home and also by using Standard Process Stress Scale as evident from the pre - test mean value is 53.78 with SD 15.2 and post - test mean value is 29.42 with SD 16.3. The mean difference is 24.36. The calculated t - value 31.62 is greater than the table value (1.67) at 0.0001 level of significance. Hence, research hypothesis H₁ is accepted and inferred that there is a statistically significant difference between the levels of stress among elderly living in a selected old age home before and after the selected Vestibular Exercises as measured by Perceived Stress Scale and Standard Process Stress Scale. The calculated Chi - square value is greater than the table value for age by assessing Perceived Stress Scale. The calculated Chi - square value is greater than the table value for age and previous occupation by assessing Standard Process Stress Scale. Hence, H₂ which states that there is significant association between the pre - test levels of stress with their selected demographic variables is accepted only for age and previous occupation. H₂ was rejected for all other demographic variables. *Conclusion:* Stress is present among elderly living in a selected old age home. Vestibular Exercises are effective in reducing the level of stress.

Keywords: Vestibular Exercises, Effectiveness, Stress, Elderly

1. Introduction

Growing old in a society that has been obsessed with youth may have a critical impact on the mental health of many people. This situation has serious implications for psychiatric nursing.¹

Ageing is an inevitable developmental phenomenon bringing along a number of changes in the physical, psychological, hormonal and social conditions. This phenomenon is more evident in developed countries but recently it seems to be increasing more rapidly in developing countries.²

In India, the proportion of the population aged 60 years and above was 7 percent in 2009 and was projected to increase to 20 percent by the year 2050. In absolute numbers, the elderly population in 2009 was approximately 88 million and is expected to sharply increase to more than 315 million by 2050. The more developed states in the southern region and a few others like Punjab, Himachal Pradesh and Maharashtra have experienced demographic transition ahead of others and therefore are growing older faster than other states. Certain regions, primarily in the central and eastern parts of the country, still have high fertility and mortality levels, and therefore, younger population age structures.³

2. Materials and Methods

2.1 Objectives

- To assess the level of stress among elderly residing in a selected old age home,
- To assess the effectiveness of Vestibular Exercises on reducing stress among elderly living in selected old age home,
- To determine the association between the pretest level of stress with their selected demographic variables of elderly living in a selected old age home

2.2 Operational Definitions

Effectiveness

In this study, it refers to the outcome of Vestibular Exercises on reducing the level of stress among elderly.

Vestibular Exercises

In this study it refers to the resourceful and expressive form of Vestibular Exercises that helps elderly to express their emotion, sadness. Duration of sessions will be for 60 minutes (morning 30 minutes and evening 30 minutes) every day for 2 weeks (14days). These include bending, turning -

side to side, sitting (Shrug shoulders, rotate head, shoulders and trunk, Eye movements) standing and walking exercises.

Stress

In this study it refers to psychological responses such as hopelessness, helplessness, low self - esteem, feeling of sadness and loss of interest, and physiological response such as body ache, indigestion problems and insomnia due to stressors of old age people. Which stops them from doing their normal activities as measured by Perceived Stress Scale and Standard Process Stress Scale.

Elderly

In this study it refers to the people aged 60 years and above residing in a selected old age home.

2.3 Methodology

Research methodology is a design or a plan or strategy of a research study which includes research approach, research design, variables, setting of the study, population, sample and sampling technique, criteria for sample selection - inclusion and exclusion criteria, development and description of the tool, pilot study, data collection procedure and data analysis. The main aim of the study is to evaluate the effectiveness of Vestibular Exercises on stress among elderly residing in a selected old age home, Bengaluru. Hence the study focuses whether the intervention of Vestibular Exercises is effective among elderly.

A quantitative evaluative research approach was adopted to attain the objectives of the study.

O₁ – Pre - test (Screening) for stress by Perceived Stress Scale and Standard Process Stress Scale.

X – Intervention (Vestibular Exercises).

O₂ – Post - test for stress by Perceived Stress Scale and Standard Process Stress Scale.

This study is carried out to assess effectiveness of Vestibular Exercises on reducing stress among elderly living in a selected old age home, Bengaluru. The research design used for the study is pre - experimental one group pre - test post - test design.

3. Results and Interpretation

3.1 The findings related to their demographic variables

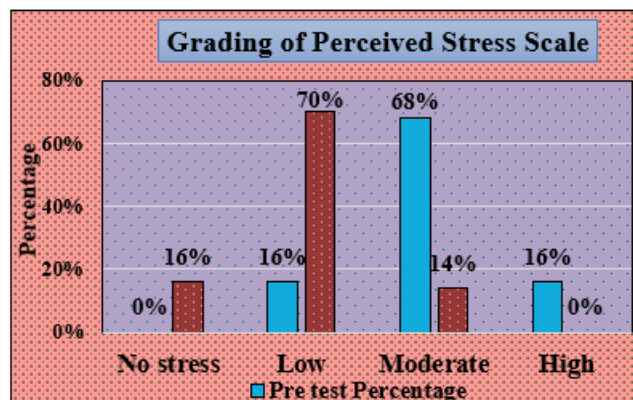
The findings depicts that 24 (48%) of the elderly belongs to 71 to 80 years of the age group followed by 18 (36%) belongs to 60 to 70 years and 8 (16%) belongs to above 80 years, 31 (62%) of elderly were females and 19 (38%) of them were males, 28 (56%) of the elderly had graduate level of education followed by 12 (32%) had secondary education and 6 (12%) had primary education, 24 (48%) of elderly were married followed by 9 (18%) were single, 5 (10%) were divorced and 12 (24%) were widow, 13 (26%) of elderly are having 1 child followed by 21 (42%) of elderly are having 2 children and 16 (32%) are having more than 2 children, 42 (84%) were Christians followed by 8 (16%) were Hindus. Also the findings shows that 43 (86%) were having family support whereas 7 (14%) were not supported by the family, 25 (50%) of the elderly were not working

followed by 18 (36%) of the elderly were into teaching and 7 (14%) of the elderly were into other jobs like daily wages, 25 (50%) of the elderly were staying in the old age home for more than 5 years followed by 18 (36%) for 2 to 5 years and 7 (14%) for 1 to 2 years, 37 (74%) of the elderly were performing daily activities by themselves whereas, 13 (26%) of the elderly's activities were performed by others, 41 (82%) elderly were having visitors whereas, 9 (18%) were not having, 39 (78%) were having co - morbidities like diabetes mellitus and hypertension whereas, 11 (22%) were not having, 36 (72%) of the elderly were on medications and 14 (28%) were not on any medications, 26 (52%) of the elderly had previous ideas about Vestibular Exercises followed by 24 (48%) were not having any idea about Vestibular Exercises.

3.2 Findings related to pre - test and post - test levels of stress

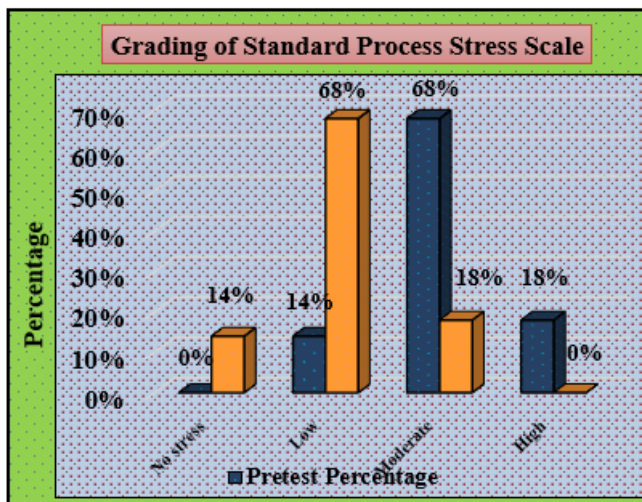
Findings related to comparison of pre - test and post - test scores of Stress (Perceived Stress Scale)

The findings shows that the mean pre - test score was 21.96 with SD 5.7 whereas the mean post - test was 10.72 with SD 6.1, the computed paired t test value is 24.60 at $p < 0.05$ was found to be significant among elderly living in a selected old age home.



Bar chart showing frequency distribution according to their pretest and post - test level of stress among elderly Findings related to comparison of pre - test and post - test scores of Stress (Standard Process Stress Scale)

The findings shows that the mean pre - test score was 53.78 with SD 15.2 whereas the mean post - test was 29.42 with SD 16.3, the computed paired t test value is 31.62 at $p < 0.05$ was found to be significant among elderly living in a selected old age home.



Bar chart showing frequency distribution according to their pretest and post - test level of stress among elderly

3.3 Findings related to association between the pre - test level of stress among elderly with their demographic variables based on Perceived Stress Scale

The findings illustrate that an association between the pre - test level of stress among elderly living in a selected old age home with their demographic variables. The calculated Chi - square value is greater than the table value for age.

Hence, H2 which states that there is significant association between the pre - test levels of stress with their selected demographic variables is accepted only for age. H2 was rejected for all other demographic variables.

Findings related to association between the pre - test level of stress among elderly with their demographic variables based on Standard Process Stress Scale

The findings illustrate that an association between the pre - test level of stress among elderly living in a selected old age home with their demographic variables. The calculated Chi - square value is greater than the table value for age and previous occupation.

Hence, H2 which states that there is significant association between the pre - test levels of stress with their selected demographic variables is accepted only for age and previous occupation. H2 was rejected for all other demographic variables.

4. Discussion

A descriptive study was conducted to assess the level of stress among elderly at Lucknow district of Uttar Pradesh. The data was collected from the elderly living with families and the elderly living in old age homes. The sample for this study comprised of 120 elderly individuals. The results showed that there was no significant difference between gender and stress. The study concluded that no significant of elderly domicile was found on their stress. Majority of the respondent depicted high level of stress among old age home.4

A descriptive cross - sectional study conducted among elderly to assess the perceived stress among inmates of an old age home in Kanchipuram District, Tamil Nadu.100 inmates of an old age using a semi - structured questionnaire. The study concluded that perceived stress was high among inmates of old age homes. There is a need for organized family and social support to improve the physical and psychological health of elderly.5

An experimental study was conducted to assess the effect of vestibular exercises on depression, anxiety and stress in elderly women with type 2 diabetes.40 elderly women with type - 2 diabetes were recruited for the study after written informed consent by convenient sampling. The results showed that Depression, anxiety and stress levels were significantly decreased followed by the vestibular exercises. The study concluded that there was a significant decrease in the depression, anxiety and stress followed by the exercises. Further studies are recommended in this area to recommend vestibular exercises for the benefit of elderly in general.6

The experimental study was conducted to observe the effectiveness of vestibular stimulation by rocking and vestibular exercises on postural stability, depression, anxiety and stress in elderly by using probability sampling technique. A total of 150 elderly male and females were part of the study after obtaining the written informed consent. The results showed that the effects of vestibular exercises and rocking on reaction time and quality of life in elderly. The study concluded that vestibular exercises and rocking were effective in improving sleep quality and quality of life among elderly.7

A descriptive research approach was used to assess the level of stress among elderly at selected geriatric homes Bangalore. The finding showed that 75% of elderly had moderate level of stress followed by 16.7% had low level of stress and 8.3% had high level of stress. The study concluded that elderly people had a moderate level of stress.8

5. Nursing Implications

Nursing implications

The study was conducted to assess the effectiveness of selected Vestibular Exercises on reducing stress among elderly living in a selected old age home. The study findings have several implications for nursing education, nursing practice, nursing administration, nursing research and community health nursing.

Nursing Education

- A Nurse educator is not primarily to teach, but to promote learning and provide the environment conducive to learning and create the teachable moment rather than first waiting for it to happen.
- Nurse educator can train and encourage the student nurses to learn the vestibular exercises to reduce stress among old age people.
- This study can motivate student nurses to explore new strategies for effective reduction of stress among old age people.

- Student nurses can be trained to assess the level of stress of the patient and their relatives.
- Nurse educators can undergo certified courses in geriatrics to update their knowledge on elderly care.
- Nursing educators can conduct conferences to strengthen the curriculum in such a way, in - service education and work shop to encourage nurses to learn about various alternative therapies to reduce stress among old age people.
- Nurse can educate the village health guides about incorporating Vestibular Exercises to reduce stress among elderly in community.

6. Recommendations for further research

- The study can be replicated on larger samples for generalization of the findings.
- A similar study can be conducted in hospital settings, urban and rural areas.
- A similar study can be conducted using self - instructional module, informational booklet on Vestibular Exercises in reducing stress among elderly.
- A comparative study can be conducted on the effect of Vestibular Exercises between the elderly residing in home and old age homes.
- An experimental study can be conducted on the effect of Vestibular Exercises among the older adults in a hospital setting.
- A similar study can be conducted for a longer duration of time.

Nursing Practice

- Understanding and assisting elderly with stress is an essential part of psychiatric nursing process. The study implied that Vestibular Exercises can be used by the psychiatric nurses to reduce stress among elderly. Psychological dysfunction can be present along with other medical or surgical conditions. Hence the knowledge of Vestibular Exercises can help the nurses in better understanding and managing those psychological disturbances.
- Vestibular Exercises can be made mandatory for all the psychiatric and old age homes to reduce the stress level and maintain the psychological well - being.

Nursing Research

- It is apparent that there are inadequate research studies with regard to Vestibular Exercises in India.
- Nurses can conduct several research studies on efficacy of Vestibular Exercises on stress among elderly.

Nursing Administration

- Nurse administrators have a responsibility to provide staff development opportunities for the nurses regarding the management of stress by using various interventions like Vestibular Exercises. This would enable the nurses to update their knowledge and apply the acquired skills for reducing stress and develop a positive attitude and demonstrate holistic care in management of stress among elderly.
- The nurse administrators can organize health camps and check - ups to detect health issues among elderly.
- Periodic in - service education programs can be conducted for fresher's and staff nurses to update their knowledge on geriatric care.

Community Health Nursing

- The main goal of the community health nurse is primary prevention through health education.
- Community Health Nurses can use modified Perceived Stress Scale and Standard Process Stress Assess Scale to assess the level of stress among elderly during their home visits.
- The community health nurse can educate the public about stress by regular home visits, periodic check - up, regular counselling and guidance service which will help in identifying and imparting knowledge to the public about stress and managing by using exercises.
- Nurses can involve with Government and NGO in creating awareness and early detection and management of stress among elderly in community area by organizing health camps.

7. Limitations

- The findings of the study cannot be generalized as the sample size is 50.
- The study was only limited to elderly in selected old age homes, Bengaluru.
- The compliance of the Vestibular Exercises was not assessed.
- Vestibular Exercises was practiced and assessed only for a period of two weeks.

8. Conclusion

The study was concluded that Vestibular Exercises were effective in reducing the level of stress among elderly living in a selected old age home and there was a statistically significant difference between the level of stress among elderly living in a selected old age home before and after the selected Vestibular Exercises as measured by Perceived Stress Scale and Standard Process Stress Scale with a significant association between the pre - test level of stress and age and previous occupation in the old age home.

Ethical clearance - Taken

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Conflict of Interest - Nil

Source of support - Nil

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