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Original Research Paper

Mental Health Nursing

EFFECTIVENESS OF NEUROBIC EXERCISE ON MEMORY ENHANCEMENT AMONG ELDERLY PEOPLE IN SELECTED OLD AGE HOMES: A QUASI-EXPERIMENTAL STUDY

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ABSTRACT

Introduction: Aging is a natural process of our lives. As we age, we experience gradual changes to our brains and bodies. Some of these changes affect our physical and mental abilities, and may increase our risk of disease. So that the neurobic exercise is one of brain exercise is based on our day-to-day activity which helps improving our cognitive functions. **Methodology:** the study evaluated the effectiveness of neurobic exercise on memory enhancement among elderly people in selected old age homes using a quasi-experimental pre test post test design. Conducted at a nursing institute with 60 elderly people, the study employed a quantitative approach. Participants included elderly people in old age home, selected via non probability convenient sampling technique. Data collection involved a semi-structured questionnaire for demographics, a standardized mini-mental status examination scale. Reliability of the tools was (0.084). **Result:** The study assess the impact of neurobic exercise on memory enhancement among elderly people by comparing pre-test and post-test scores. The study reveals mean pretest level of memory score was 18.70 (SD= 3.62) and mean posttest level of memory score was 23.16 (SD= 3.04) the calculated t- value is 16.51 are much higher than table value 2.00 at 0.05 level of significance. Hence it is statistically interpreted that neurobic exercise on memory enhancement among elderly people from selected old age home was effective. Thus, H1 is accepted and H0 is rejected. The analysis also reveals that there is association posttest memory score with educational status and number of children while none of other demographic variable were associated with level of memory score. **Conclusion:** The intervention significantly improved memory score in elderly people in selected old age home. Statistical analysis confirmed the effectiveness of the neurobic exercise.

KEYWORDS :

INTRODUCTION

Aging is a natural process of our lives. As we age, we experience gradual changes to our brains and bodies. Some of these changes affect our physical and mental abilities, and may increase our risk of disease. Each one of us experiences aging differently. The extent of how we experience changes due to aging, and the point in our lives when they start becoming more noticeable, varies from person to person. According to the World Health Organization (WHO), each person should have the ability to live a long and healthy life. This is considered healthy aging.1 In humans, old age, also known as senescence, is the ultimate phase of the average lifespan. From the perspectives of biology, demography (conditions of mortality and morbidity), employment and retirement, and sociology, definitions of old age are different. However, old age is commonly seen as being 60 or 65 years of age or older for statistical and public administration purposes.2 In general, ageing can be divided into three separates but frequently connected categories: biological aging, psychological aging, and social ageing.3

The two types of treatments—pharmacologic and non-pharmacologic that can slow the progression in memory impairment are listed below. The non-pharmacologic techniques include reality orientation, cognitive training, and reminiscence. Memory, language, and problem-solving skills can all be improved in dementia patients with cognitive training. Additionally, by bringing meaningful people, music, and images from the elders' prior experiences into their present-day thinking, reminiscence improved cognitive abilities. In addition, it was discovered in the study of the memory training programme that it helped older people's memory. A novel programme for exercising the brain called "neurobic exercise" is based on the most recent results in science.6 Neurobics (neuron + aerobics) are stretching exercises to increase oxygen and give our brain's neurons more life by experiencing or participating in some new activity, situation, or event. When we stretch our mind, it never returns to its previous shape. A combination of bodily senses, such as vision, hearing, taste, smell, touch, and an emotional sense are presented in the brain exercise program, and the daily routine is regularly changed.

According to world health organization (2019) Currently more than 55 million people have dementia worldwide, over 60% of whom live in low-and middle-income countries. Every year, there are nearly 10 million new cases.9

Need Of The Study

By 2050, 153 million people are expected to be living with dementia worldwide, up from 57 million in 2019, largely due to population growth and population ageing.10

According to national health statistics, In India, the prevalence of cognitive impairment varies from 3.5% to 11.5% from north to southern parts of India in people aged >65 years. The prevalence of CI is high in rural areas of India compared to urban areas, whereas the studies in rural areas are very few compared to urban population.11

Maharashtra has been identified as one of 11 states where prevalence is higher than the national average. It is 7.61% in the state, with researchers projecting that individuals living with the condition in the state will rise from nearly a million to 1.8 million by 2036. Notably, the study, led by researchers from the University of Southern California, and AIIMS, in collaboration with 18 other institutes, including Mumbai's JJ Hospital, found wide variations in the presence of dementia among different states

Mumbai: A pan-India study has revealed that dementia, a debilitating disorder that affects memory and cognitive function, is prevalent among an estimated 7.4% of seniors, or 8.8 million individuals, in the country. This figure is notably

higher than previous estimates, which had put the prevalence at 3.7 million in 2010 and predicted it would double by 2030. The new findings suggest that the number has doubled a decade earlier, underscoring the pressing need for better care and support.12

Problem Statement

Effectiveness of neurobic exercise on memory enhancement among elderly people in selected old age homes: A quasi-experimental study.

Aim Of The Study

To evaluate the effectivenss of neurobic exercise on memory enhancement among elderly people in selected old age home.

Objective Of Study:

Primary Objectives

- To assess the effectiveness of neurobic exercise on memory enhancement among elderly people residing in selected old age homes.

Secondary Objectives

- To assess the pre-test level of memory among elderly people residing in selected old age homes.
- To assess the post-test level of memory among elderly people residing in selected old age homes.
- To evaluate the effectiveness of neurobic exercise on memory enhancement among elderly people residing in selected old age homes.
- To find the association between the post-test level of memory with demographic variables.

Conceptual Framework

The study was based on Roy Adaptation Model

Methodology

the study evaluated the effectiveness of neurobic exercise on memory enhancement among elderly people in selected old age homes using a quasi-experimental pre test post test design. Conducted at a nursing institute with 60 elderly people, the study employed a quantitative approach. Participants included elderly people in old age home, selected via non probability convenient sampling technique.

Tool

1) Semi-structured questionnaire for demographics
2) Standardized mini-mental status examination scale. Reliability of the tools was (0.084).

RESULT AND DISCUSSION

Table No. 1 : Table Showing Assessment With The Level Of Pre-test Memory Score N= 60

Level of Memory	Score Range	Level of Pretest Memory Score (SMMSE)	
		Frequency (f)	Percentage (%)
Severe	0-9	4	6.67
Moderate	10-19	37	61.67
Mild	20-25	15	25
Could be normal	26-30	4	6.97
Minimum score		9	
Maximum score		27	
Mean memory score		18.70 ± 3.62	
Mean % memory Score		62.33 ± 12.07	

Table No. 2 : Table Showing Assessment With The Level Of Post-test Memory Score N= 60

Level of Memory	Score Range	Level of Posttest Memory Score (SMMSE)	
		Frequency (f)	Percentage (%)
Severe	0-9	0	0
Moderate	10-19	9	15
Mild	20-25	37	61.67
Could be normal	26-30	14	23.33
Minimum score		14	
Maximum score		27	
Mean memory score		23.16 ± 3.04	
Mean % memory Score		77.22 ± 10.14	

Table No. 3 Table Showing The Significance Difference Between Memory Score In Pre And Post Test Of Elderly People N=60

Test	Mean	SD	Mean Difference	Calculated t-value	df	Table value	p-value	Significance
Pre-Test	18.70	3.62	4.46±2.09	16.51	59	2.00	0.0001	S
Post Test	23.16	3.04						

Level of significance p<0.005

Table No.4 Table Showing The Association Of Post- Test Level Of Memory With Selected Demographic Variables. N = 60

Demographic Variables	Calculated Value			df	Table Value	Level Of Significance P< 0.05	Significance
	t – value	F – value	p-value				
Age	-	2.76	0.39	3,56	1.01	>0.05	NS
Gender	2.00		0.97	58	0.02	>0.05	NS
Marital status	2.53		0.28	4,55	1.27	>0.05	NS
Elderly beneficiaries	2.00		0.20	58	1.29	<0.05	NS
Type of financial support		3.15	0.43	2,57	0.83	>0.05	NS
Education		2.53	0.009	4,55	3.73	<0.05	S
Number of children		2.53	0.049	4,55	2.55	<0.05	S
Duration of stay in old age home		0.79	0.45	2,57	0.79	>0.05	NS
Mode of entry at old age home		3.15	0.26	2,57	1.34	>0.05	NS

Majority of (40%) were the age group 71-75 yrs, were of (63.30%) elderly people females, (63.30%) are females ,(53%) were widow/widower, were (51.70%) had non pensioners, (70%) had self-support, (33.30%) elderly people were educated upto graduate, (46.70%) had no children, (46.70%) elderly people had duration of 1-5 years, were (66.70%) had entry in old age home by themselves.

Table no. 1 This table shows that 61.67% of elderly people had moderate level of memory score, 25% of them had mild level of memory score, 6.67% of elderly people had severe memory impairment, 6.97% of them had normal level of memory score.

- Minimum memory score in pretest was 9 and maximum memory score was 27.
- Mean memory score was 18.70 ±3.62 and percentage of memory score was 62.33 ± 12.07.

Table no.2 The above table no. – III shows that 61.67% of elderly people had mild level of memory score and 23.33% of them had normal level of memory score, 15% of them had moderate level of memory score.

- Minimum memory score in post-test was 14 and maximum memory score was 27.
- Mean memory score was 23.16 ± 3.04 and percentage of memory score was 77.22 ± 10.

Table no. 3 This table shows the comparison of pretest and post-test memory enhancement score among elderly people from selected old age homes. Mean, standard deviation and mean difference values are compared and student's paired 't' test is applied at 5% level of significance. The tabulated value

for n=60-1 i.e. 59 degrees of freedom was 2.00. The calculated 't' value i.e. 16.51 are much higher than the tabulated value at 5% level of significance for overall memory enhancement score of elderly people which is statistically acceptable level of significance. Hence it is statistically interpreted that the Neurobic Exercise on memory enhancement among people residing in selected old age homes was effective. Thus, the H1 is accepted.

Table no. 4 displays that there is an association of memory score with education, and number of children and there is no association of memory score with any other demographic variable of elderly people.

CONCLUSION

In the present study, the memory enhancement was assessed by taking pre- test among elderly people followed by standardized mini- mental status examination scale, then post-test was taken with same scale. The analysis reveals that overall mean memory score of pretest and post-test which reveals that post-test mean memory score was higher 23.16 with SD of 3.04 when compare with the pretest mean memory score which was 18.70 with SD of 3.62. The calculated 't' value 16.51 is greater than table value 2.00 at 0.05 level of significance.

Hence it is statistically interpreted that neurobic exercise on memory enhancement among elderly people from selected old age home was effective. Thus, H1 is accepted and H0 is rejected. The analysis also reveals that there is association post-test memory score with educational status and number of children while none of other demographic variable were associated with level of memory score.

RECOMMENDATIONS

- The study can be done in large sample for a generalization of findings.
- The replication of present study can be conducted with more effective and with constant intervention.
- Comparative study may be conducted in residential home and old age home settings to find out the similarities and difference between knowledge, attitude and practices of neurobic exercise.
- Comparative study may be conducted in urban and rural settings to find out the similarities and difference between knowledge, attitude and practices
- Qualitative study can be conducted to find out the multifactorial causes for cognitive impairment.
- A similar study can be conducted for nursing students as well as nurse educators.

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