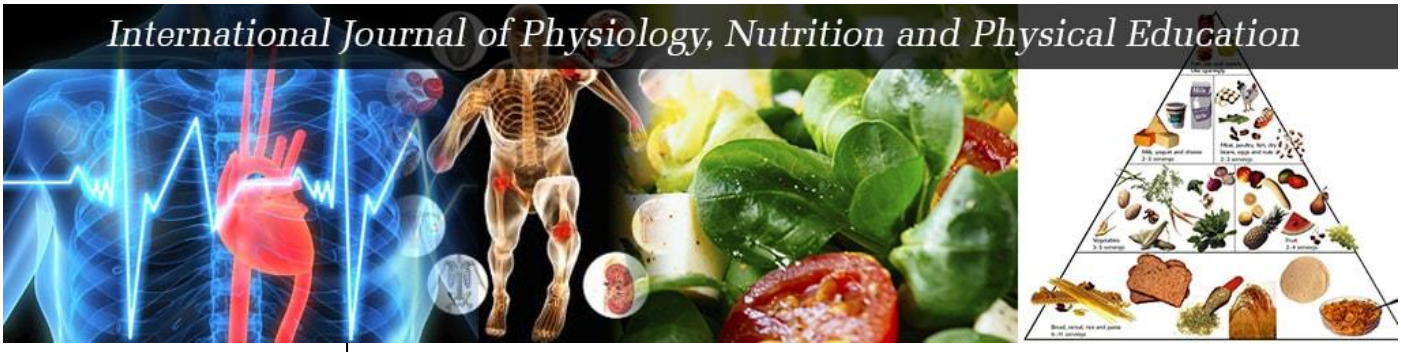

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Efficacy of six months supervised physical exercise program on management of geriatric depression in male population residing in old age homes

Pramod Kumar Yadav and CD Agashe

Abstract
The aim of the study was to assess the effectiveness of supervised physical exercise program on geriatric depression in male population. To conduct the study 50 elderly males (Average age 66.34 years) were selected as sample. Only those subjects with scores greater than 10 on geriatric depression scale were selected as sample. The selected subjects were resident of old age home operational in Durg district of Chhattisgarh. To gather data on depression, geriatric depression scale constructed and standardized by Ganguly *et al*. (1999) were used. A systematic physical exercise program of six months was prepared for this study. The data on depression was collected before the start of six months physical exercise program, after 02 months from commencement of study period, after 04 months from commencement of study period and at the end of the study period. Analysis of data with the help of Repeated Measure ANOVA reveals significant effect of physical exercise program of six months in reducing the level of depression in elderly male subjects. It was concluded that physical exercise program is useful in decreasing the depressive symptoms in elderly male subjects.

Keywords: supervised, geriatric depression

Introduction
Population statistics and trends predict that elderly population in India will rise by 10.7% in 2021 and even further to 12.40% in the year 2026. This statistics is significant because in a study conducted by Barua *et al*. (2011) [1] the prevalence of geriatric depression in India is 21%. Jariwala *et al*. (2010) [4], Sharma and Sharma (2012) in their studies also reported high prevalence of geriatric depression in elderly population of India. This is very significant because depression is considered to be major public health problem. Geriatric depression is a mental and emotional disorder which brings feeling of sadness and uneven mood status. But depression can not be considered as normal process of ageing. Infact several factors such as socio economic status, mental tension due to health problems, lack of sleep, nutrition, educational status and physical activity status etc. are responsible for geriatric depression Sati *et al*. (2013) [8], Minghelli *et al*. (2013) [6], Deshpande *et al*. (2014) [2].
In a developing country like India depression is often neglected because of lack of medical infrastructure and financial constraint of elderly people to avail medical facilities. In this relation an alternative intervention technique may be needed to address the issue of geriatric depression in India. This is important because of financial and social factors involved with geriatric depression. One such intervention therapy was though of is physical exercise. It has been widely opined that physical exercise is physically and psychologically beneficial even for age group above 60 years of age. The results regarding the efficacy of physical exercise program as preventive measure of geriatric depression are contradictory. Researchers such as Nieman *et al*. (1993) [7], Singh *et al*. (1997) [9] found no significant impact of physical exercise on geriatric depression but on the other hand researchers like Minghelli *et al*. (2013) [6], Trajkov *et al*. (2018) [10] have documented the positive role of physical exercise program in decreasing depression in elderly people. Similarly limited literature is available in this regard on elderly people in old age home who are socially cut-off. Hence the researcher decided to find out the effect of six months physical exercise program on geriatric depression in elderly males.

Objective of the Study

The objective of the present study is to weigh up the efficacy of six months physical exercise program as therapeutic means for geriatric depression in elderly males.

Hypothesis

It was hypothesized that depression in elderly male subjects will decrease significantly during six months period of physical exercise program.

Methodology

Sample

To conduct the study 50 elderly males (Average age 66.34 years) were selected as sample. Only those subjects with scores greater than 10 on geriatric depression scale were selected as sample. The study area of present study was confined to old age home operational in Durg District of Chhattisgarh. Purposive sampling method was adopted in the present study

Tools

Geriatric depression scale

30 items Geriatric Depression Scale prepared by Ganguly *et al*. (1999) was used to assess depression in elderly male subjects. Hindi version of this inventory is highly reliable and valid.

Physical exercise protocol

A physical exercise protocol of six months was formulated by the researcher. This protocol includes warm up, upper body exercise of neck, elbow, prayer stretch, elbow flexion / extension, shoulder circles and upper back stretch, chest/shoulder/car and cow stretch and side bends. The lower body exercises include side, rotator and hamstring stretch, ankle circles etc. and finally cool-down. The duration of exercise was 90 minutes/day and five days in a week.

Procedure

50 elderly male subjects residing in old age homes were selected as sample with inclusion criteria of scores over 10 on GDS. Ethical consideration was followed in the present study. The entire study period was of six months in which physical exercise program was monitored by the researcher. GDS was again administered after two months, four months and after completion of six months of study period. Repeated measure ANOVA technique was used to analyse the data. The results are presented in table no. 1 and 2 respectively.

Result and Discussion

Table 1: Pre-Post Test Statistics of Scores on Depression Scale Repeated Measures ANOVA – Test of Within Subject Effects

Conditions	N	Depression	
		Mean	S.D.
Pre-test	50	15.86	4.42
After 02 months	50	10.60	4.53
After 04 months	50	5.22	4.67
After 06 months	50	2.44	2.76
F= 262.30, p<.01			

Results obtained through Repeated Measures ANOVA indicate that mean scores on depression scale vary significantly in four study conditions i.e. pre-test (M=15.86), after 02 months from commencement of physical exercise program (M=10.60), after 04 months from commencement of study period (M=5.22) and at the end of the six months physical exercise program (M=2.44). This fact is statistically verified in terms of F=262.30 which is significant at.01 of significance.

To minute examine the changes in mean scores on depression scale during different study conditions, Least Significant Difference Test was used. (Table 2).

Table 2: Least Significant Difference Test with Significance Level.05

Mean (I)	Mean (J)	Mean Difference (I-J)
Pre-test	After 02 months	5.26
	After 04 months	10.64
	After 06 months	13.42
After 2 months	After 04 months	5.38
	After 06 months	8.16
After 04 months	After 06 months	2.78

* Significant at.05 level

Perusal of entries shown in table 2 reveal that mean score on depression significantly reduced after 02 months from start of study period,04 months from start of study period and at the end of 6 months of study period as compared to what they were at the commencement of study period. The mean difference of 5.26, 10.64 and 13.42 also confirms these facts at.01 of statistical significance.

The mean score on depression as shown in table 2 significantly reduced after 4 months from start of study period, and at the end of 6 months of study period as compared to what they were after 02 months from commencement of study period. The mean difference of 5.38 and 8.16 also confirms these facts at.01 of statistical significance.

Similarly mean score on depression as shown in table 2 significantly reduced after 6 months from start of study period as compared to what they were after 4 months from commencement of study period. The mean difference of 2.78 also confirms this at.01 of statistical significance.

Result and Discussion

Results indicate gradual significant decrease in depression among elderly male subjects during the course of six months physical exercise program. It may be due to increase in hormone secreation namely catecholamines, ACTH, vasopressin, β-endorphin, dopamine and serotonin respectively which activate the specific receptors which in turn gives analgesic effect that reduces depressive symptoms. [Kiive *et al*. (2004), Frazer *et al*. (2005)] [5, 3].

Conclusion

On the basis of results it may be concluded that six months of supervised physical exercise steadily reduces depressive symptoms in elderly males.

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