

Original Research Article

To Study the Effect of Pranayama on Depression in Geriatric Population

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Received: 12/06/2016

Revised: 15/07/2016

Accepted: 19/07/2016

ABSTRACT

Geriatric population faces so many health related problems like arthritis, obesity, depression, etc. Pranayama reduce stress and induces relaxation.

Need of the study: To reduce the ill effects of stress in Indian geriatric population.

Aims: To measure the effect of Pranayama on depression.

Methodology: Ethical clearance done. Consent were taken from the subjects. 60 geriatric subjects (55-75 years) were included in the study from in and around Pune city after inclusion, exclusion criteria. It was quasi experimental study. Subjects were divided into two groups: group A (experimental) and group B (control). Group A were given Pranayama like anulomaviloma, brahmari and group B were given conventional breathing exercises for 12 weeks.

Results: Data were analysed by unpaired t- test. Depression score (group A – p value 0.04, group B - p value 0.06) which shows that Pranayama is more effective than breathing exercise in reducing depression.

Conclusion: Pranayama is more effective than breathing exercise.

Keywords: Pranayama, anuloma viloma, brahmari.

INTRODUCTION

Geriatric age group grading: Grade 1: 55-65 year, Grade 2: 65-75 year, Grade 3: above 75 year. With ageing developmental process starts to conception. Environmental factors can accelerate ageing. Diseases become more common while ageing.

Exercise has been associated with improvements in cognitive function and may also provide benefits like reducing stress and anxiety, which improves their mental health and social engagements. It improves the elasticity of the lungs and reduces the accumulation of secretion in the lungs, reduce work of breathing, and improve ventilation. ^[1]

Pranayama is a technique of controlling and modulating breath and meditation, a process through which one attains a state of deep rest yet active state of mind. ^[2] It also improves the circulation of

blood and the lymphatic system, helping to eliminate toxins and strengthen the immune system.

Pranayama offers many anti-aging benefits, beyond just the physical. It also provides emotional, spiritual and social advantages. It also reduces the stress and depression as the additional advantage of accessibility it can be practiced any time, any place, without special equipment or clothing. ^[3]

Quality of life also improves by doing Pranayama. ^[4]

Anuloma Viloma is the alternate nostril breathing is to balance the physical energy and mental energy. Benefits are proper supply of oxygen is ensured and CO₂ is effectively removed. Blood is purified of toxins. It helps in reducing the stress, anxiety, depression, and other illnesses. It removes the blockages in the

panic energy channels. Bhramari Pranayama helps to release the mind of agitation, frustration or anxiety and get rid of anger. It Improves concentration, memory and helps in reducing blood pressure. Give relief from slight headache. Yoga practice improved different aspects of sleep in a geriatric population. [5]

Regular practice of yoga postures can also reduce age related changes in range of motion of hip, knee joints and improve gait function in geriatric age group. [6]

Thus the need of the study is to reduce the ill effects of ageing in Indian geriatric population. To see the effects of Pranayama and breathing exercises on depression scale in Indian geriatric population.

Aim: To compare and measure the effect of Pranayama and breathing exercises on depression in geriatric population.

MATERIALS AND METHODS

Study size: 60

Study setting: Subjects in and around Pune city.

Study method: Simple random sampling

Study design: Quasi experimental study

Materials:

- Geriatric depression scale
- Peak flow meter
- Pen
- Paper

Inclusion criteria

- Age between 55-75 years
- Physically healthy geriatric age group.
- Both male and female are included.
- Moderate and severe depressive population was included in the study.

Exclusion criteria:

1. Geriatric people having any neurological (spinal cord injury etc) or psychological disorder (OCD, mentally retarded etc).
2. Geriatric people having musculoskeletal conditions like back pain, OA etc.

Outcome measures

Geriatric depression scale [7] :- (gds-30) Inter rated Reliability-0.94. Cronbach's

alpha - 0.80. Sensitivity - 0.97. Specificity-0.95. It consist of 30 questions and GDS-30 was a reliable.

Procedure

Subjects were divided into two groups by simple random sampling method. Group A (n=30) and Group B (n=30). Ethical clearance was taken from the institution. Consent was taken from the subjects. Subjects were selected as per the inclusion and exclusion criteria. Each subject has filled the Geriatric depression scale (GDS). Subjects in the age group of 55-75 years were included in the study. The mean age in group A was 69.9, and the mean age in group B was 70. Therefore there was no significant difference in the age groups included in the study as the p value was > 0.15 which is considered to be significant. Subjects of Group A were given Pranayama like Anuloma Viloma and brahmari Pranayama with frequency of 10-15 minute, thrice a day for 12 weeks. Subjects of GROUP B were control group and conventional breathing exercises were taught to them like, deep breathing exercises, pursed lip breathing, frequency of 10-15 minutes, and thrice day duration for 12 weeks.

On day 1- All parameters were checked and technique was explained. Revaluations were done at the end of 1st week, 6th and 12th week and recording taken. Each subject has filled the Geriatric depression scale (GDS) before and after 12th weeks. Statistical analyses were drawn by using paired t- test. Result and conclusion were drawn on the basis of data analysis.

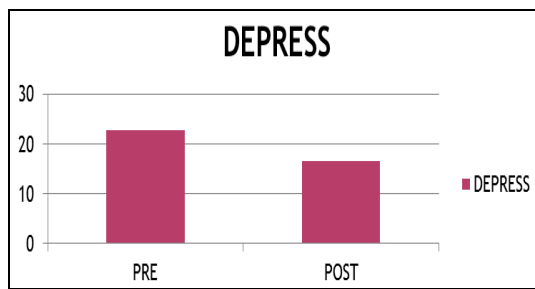
Data analysis and results

Data were analysed by paired t-test and comparison was done by unpaired t- test with the help of in stat 3 software.

RESULTS

Table 1: Comparison between the pre and post depression scores reading in group A. Pre treatment mean was 22.86, post treatment the mean was 17.63 and p value is 0.04 considered to be significant.

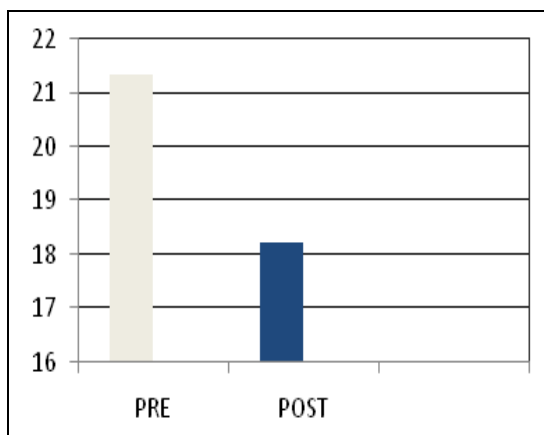
	pre	post	P value
depression	22.86	17.63	0.04



Graph 1: Depression score in yoga group

Table 2: Comparison between the pre and post depression score reading in group B. Pre treatment mean was 21.33, post treatment the mean was 18.23 and p value is 0.06 considered to be non significant.

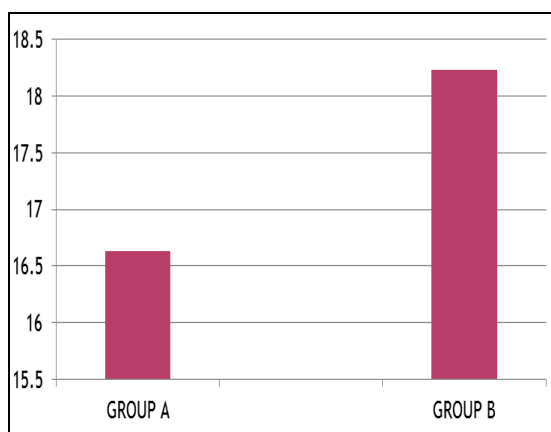
	Pre	post	P value
Depression	21.33	18.23	0.06



Graph 2: Depression score in exercise group

Table 3: Comparison between group A and group B depression scores reading which shows that p value is 0.65 considered to be insignificant which shows both group are effective.

	Group A	Group B	P Value
depression	16.63	18.23	0.65



Graph 3: Comparison of group A and group B on depression

GROUP A: depression score p value is 0.04 which shows Pranayama is effective in reducing depression.

GROUP B: depression scores p value is 0.06 which shows that breathing exercises is

ineffective in reducing depression. By comparing GROUP A AND GROUP B depression scores value shows Pranayama is more effective than breathing exercise.

DISCUSSION

Expiratory capacity of geriatric population between age group of 55-75 years old both male and female age group of 60 samples was analyzed, which are divided into two groups A and B. Group A consist of 30 samples, 15 males and 15 females which are in experimental group and Pranayama were taught to them. Group B consist of 30 samples, 15 males and 15 females which are in control group breathing exercises were taught to them.

In present study, 12 weeks protocol of regular exercises and Pranayama was done. Depression scores got reduced after post intervention treatment indicating Pranayama reduces depression. Usually breathing is not a conscious event and is regulated automatically by the nervous system through the respiratory centers located in the medulla oblongata and pons. These are the dorsal and ventral group of neurons located in medulla, the pneumotaxic center and the apneustic center located in the pons. [8] Regular practice of slow and deep breathing exercises improves muscle strength and flexibility due to work hypertrophy. Pranayama cleanses the airways secretion, acts as a major physiological stimulus for the release of lung surfactant and prostaglandins into alveolar spaces which increases lung compliance. [9] Pranayama practises for short term increases maximum expiratory pressure and flow rate. It decreases reaction time indicating improvement of neuromuscular system.

Deep and controlled breathing desensitizes the sensory nerve ending and reduces the allergic conditions of the environment. Pranayama delays the onset of fatigue. [10]

CONCLUSION

Pranayama reduces depression and stress in geriatric population better than breathing exercise. Regular practice of it helps in relaxation of the mind.

Limitation: Sample size was less. Other parameters should be considered. For more significant result long duration studies can be conducted.

Future scope: Further studies with larger sample size can be conducted. Outcome of the intervention can be compared in patients with asymptomatic and symptomatic respiratory conditions. Further studies can be conducted with other lung parameters like inspiratory capacity, expiratory capacity, total lung capacity, residual volume etc.

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How to cite this article: Deshbhratar P. To study the effect of pranayama on depression in geriatric population. *Int J Health Sci Res.* 2016; 6(8):180-183.
