



EFFECT OF PROGRESSIVE MUSCLE RELAXATION ON ANXIETY IN GERIATRIC POPULATION

Physiotherapy

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ABSTRACT

Progressive Muscle Relaxation (PMR) has continued to play an important role in the modern treatment of anxiety disorders. In the light of exposure to various age related problems, it is evident that geriatric people are stressed highly and they need some relaxation techniques to calm their mind. The present study aimed at reducing anxiety among geriatrics by using Jacobson's progressive muscle relaxation technique. The Beck Anxiety Inventory (BAI) was used to assess the anxiety levels in the participants. Exercise protocol consisted of Jacobson's progressive relaxation technique followed by deep breathing exercises. Post training of progressive muscle relaxation technique the anxiety score was significantly lowered. The present study recommends the progressive muscle relaxation technique for reducing anxiety symptoms in geriatrics.

KEYWORDS

Progressive muscle relaxation, geriatrics, anxiety, Beck Anxiety Inventory

INTRODUCTION

Geriatrics is a specialty that focuses on health care of old people. [1] Old age is the ultimate phase in the life span. Like every other period in life span old age is characterized by certain physical and psychological changes. Most anxiety disorders begin in early to middle adulthood, but some appear for the first time after the age of 60.[2] According to United Nations Population Fund (UNFPA), 1 out of every 10 persons is now 60 years or older.[3] Latest census (2011) of India revealed that more than 76 million people aged 60 years and over. This age group currently constitutes 7.4% of the Indian population.[4] Aging of population and increased prevalence of chronic diseases among geriatrics are the major challenges faced by our society and medical community.

Anxiety disorder such as panic disorder, phobia, obsessive and compulsive disorder and somatoform disorders occur more than 4% of the geriatric population. Aging of population and increased prevalence of chronic diseases among geriatrics are the major challenges faced by our society and medical community. Anxiety is stated as a feeling of apprehension or anticipation of unpleasant future events. It involves intense feelings of fear and worry often associated with specific situations, events and objects. Anxiety is a significant cause as well as a consequence of disability. Several biological, psychological, and social risk factors for anxiety disorders have been identified for geriatric population.

Anxiety symptoms are commonly seen with aging due to medical causes like aches, pain, disability, embarrassment about conditions such as incontinence or just a fear of next heart attack and changes such as a deteriorating body, retirement and loss of regular income, dependency on others for basic needs. Researchers stated that it is normal for older adults to worry more about things like deteriorating health and financial concerns as they age. This constant state of worry and anxiousness may seriously affect older people's quality of life by causing them to limit their daily activities and have difficulty in functioning. If untreated, this Generalized Anxiety Disorders (GAD) may also lead to depression.[5]

The geriatric population is increasing due to the advance medical aid and increased interest of people in healthy life which has lead to decline in death rate. [5, 6] Therefore it is very important to evaluate and to treat anxiety symptoms in this population. Adequate evidence is available to justify that both pharmacological and cognitive behavioral therapies are efficacious in reducing anxiety. Progressive Muscle relaxation (PMR) technique has continued to play an important role in the modern treatment of anxiety disorders. The Jacobson's progressive muscle relaxation technique involves contracting and relaxing the muscles to make you feel calmer.[7] Thus, the technique fulfills the function of regulating emotional and physiological reactions to the stressor event and is considered a mediator of the stress-outcome process.

In the light of exposure to various age related problems, it is recognized that especially geriatric people are stressed more and they need some relaxation technique to calm their mind. Hence, the present study aimed at to study the effectiveness of Jacobson's progressive muscle relaxation technique as an intervention on anxiety symptoms among geriatric population.

Objectives

1. To assess the level of anxiety among geriatric population
2. To study the effectiveness of Jacobson progressive muscle relaxation technique on anxiety amongst them.

METHODS

Participants: Individuals of either sex above the age group of 60 years were screened for anxiety symptoms and included for study. Subjects taking anti-anxiety drugs, psychotherapy initiated within the past year, and subjects participating in regular aerobic exercise were excluded.

Material: The Institutional Research Review Committee had approved the study prior commencement. An informed consent was obtained from all the participants. The participants were provided with Beck Anxiety Inventory (BAI) to assess their anxiety levels.[8] The scale was filled on the interview basis. The BAI consists of 21-item multiple-choice self report inventory. The items in the BAI describe the emotional, physiological and cognitive symptoms of anxiety. Each symptom item has four possible answer choices: Not at all=0; Mildly=1; Moderately=2 and Severely=3. The values for each item are summed and total score for all 21 symptoms can range between 0 and 63 points. A total score of 0-7 is interpreted as a "No to Minimal" level of anxiety; 8-15 as "Mild"; 16-25 as "Moderate" and 26-63 as "Severe". 30 participants with Beck Anxiety score more than 7 were included in the study.

Procedure: Progressive Muscle Relaxation (Jacobson's Technique) (Figure 1)

Participants were made to lie in supine position and were told to listen to the therapist carefully and follow the instructions throughout the session. The physical component of this technique involved the tensing and relaxing of muscle groups over the face, shoulders, arms, chest, abdomen, buttocks and legs in a sequential pattern. With eyes closed, the individual placed a tension in a given muscle group purposefully for approximately 10 seconds and then released it for 20 seconds before continuing with the next muscle group. The mental component required that the individual focuses on the distinction between the feelings of the tension and relaxation. After the PMR, deep breathing exercises were performed. The participants were given a comfortable position in a calm and quite atmosphere. By placing the hands on abdomen they were told to breathe in slowly and deeply through nose. They were instructed to keep their shoulders relaxed and upper chest quite while breathing allowing the abdomen to rise

slightly. Then the participants were told to relax and exhale slowly through mouth allowing the abdomen to fall back. Rest was given after 4 to 5 breaths to avoid hyperventilation. Any accessory muscle usage was corrected by verbal cues.

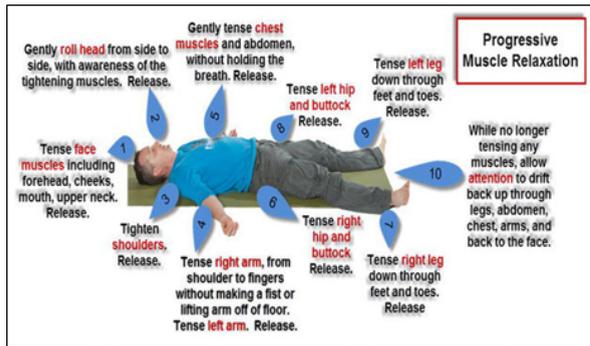


Figure 1: Jacobson's Progressive Muscle Relaxation Technique

This training program consisted of 20 minutes session, 3 sessions per week for a duration of 3 weeks. At the end of 3 weeks of training subjects were again provided with the BAI and the post training score was calculated.

The statistical analysis was done by using SPSS software V.16.

RESULTS

The mean age of participants was 64 years. In total 30 participants, 20 were males and 10 were females. (Figure 2)

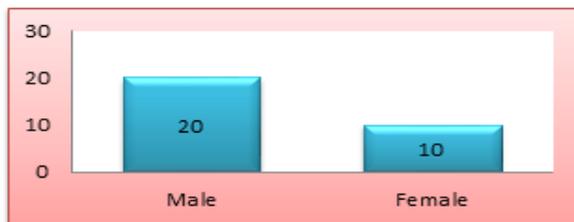


Figure 2: Gender distribution

In age distribution, (Figure 3) maximum participants (50%, 15/30) were in the age group of 60 to 65 years.

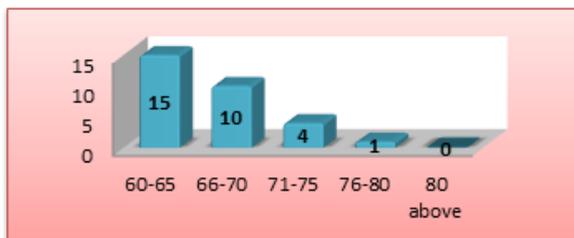


Figure 3: Age distribution

On Beck anxiety score, prior to intervention, 60% (18/30) participants had moderate anxiety level, 27% (8/30) had mild anxiety level and 13% (4/30) had severe anxiety level. (Figure 4)



Figure 4: Anxiety level

The pre and post mean scores of Beck Anxiety Inventory were

compared with students paired't' test. The mean score of BAI of pre training was 25.5 and of post training was 14.2. (Graph 1) The test showed significant difference (p-value < 0.001) (Table 1).

Results indicated that post training of progressive muscle relaxation technique significantly lowered the anxiety symptoms in geriatric population.

Graph 1: Mean difference of Beck Anxiety Inventory

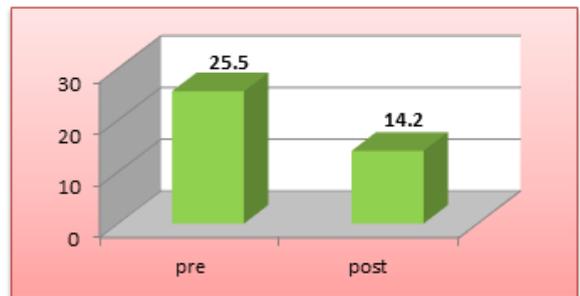


Table 1: Paired Samples t-Test

| Standard deviation | Standard error of mean | Pre BAI Mean | Post BAI Mean | t-value | df | p-value |
|--------------------|------------------------|--------------|---------------|---------|----|---------|
| 0.520 | 0.095 | 25.5 | 14.2 | 3.609 | 29 | 0.000 |

DISCUSSION

This study demonstrated significant effects of progressive muscle relaxation technique on reduction of anxiety scores. It is proposed that muscle tension and anxiety go hand in hand. Emotions can cause certain muscle group to tense and tighten. Hence reduction of muscle tension will eventually cause decrease in anxiety.[9] Jacobson's relaxation technique is effective in reducing pulse rate and muscle tension. It leads to reduction in muscle sympathetic nervous system activity and increase in vagal activity causing decrease in pulse rate which relieves muscle tension resulting in reduction of stress and anxiety.[9-10]

A study by Jorm et al. reviewed that the clinical effectiveness of relaxation therapy for anxiety yields better outcomes.[11] The review included all the relevant randomized controlled trials and had concluded that the relaxation technique was as effective as pharmacologic, cognitive, or exposure-based interventions for generalized anxiety disorders and phobia.

Davison in his study had demonstrated that 7 week of PMR therapy reduced trait anxiety in Caucasian male with borderline hypertension. [12] They suggested that PMR training is a cost-effective intervention which needs minimal training. It could be easily offered to those patients who would like to use it as a part of the specialist care provided to patients with chronic diseases.

People who are anxious tend to take shallow breaths during the anxiety state that causes upset in the carbon dioxide and oxygen levels leading to increase in heart rate and muscle tension. This may lead to stress response and thus lead to further anxiety. So the vicious cycle continues and the anxiety level increases. During shallow breathing as seen in anxiety, person relies substantially on accessory muscles of inspiration that causes increase in the work of breathing along with increase muscle tension.

The Jacobson's progressive muscle relaxation technique along with deep breathing exercises had reduced the stress and anxiety levels in geriatric population of our study and also helped them to calm their state of mind.

Although the results of our study are promising, there are certain limitations. The study had small sample size, short duration of follow up, and absence of a placebo control. Randomized trials are needed to define the role of various relaxation methods, to safely improve psychological outcomes and enhance the quality of life among geriatric population.

CONCLUSION

The progressive muscle relaxation technique is effective in reducing

the anxiety symptoms in geriatric population and can be used as a primary treatment or adjuvant for medical treatment of anxiety disorders.

ACKNOWLEDGMENT

We thank all the participants of our study for their co-operation.

CONFLICT OF INTEREST

Authors report no conflict of interest.

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