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RESEARCH ARTICLE

Effectiveness of relaxation therapy on psychological variables among the elderly in old-age homes - A pilot study

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ABSTRACT

Background: Aging is an inevitable developmental phenomenon even with best nutrition and health care. Consequently, changes occur in the physical, psychological, hormonal, and social realms besides others. The mental disorders frequently encountered in the Indian elderly include dementia, mood disorders, and more frequently depression in its varying forms. Mental health problems are underidentified by health-care professionals and older people themselves. Increasing burden of the Geriatric Mental Health is engulfing India as a Silent Epidemic. Psychological well-being has been examined as an indicator of successful adaptation during old age. **Objective:** The objective of this study is to assess the effectiveness of relaxation therapy on psychological variables among the elderly in old-age homes. **Materials and Methods:** This study embarks on the effect of relaxation therapy on the psychological problems of the elderly in old-age homes. Twenty elderly in the age group of 60–80 of both genders were included in the study after voluntary informed consent. Relaxation therapy (Jacobson's progressive muscle relaxation with music, physical exercise, and laughter therapy) was given for an hour each in the morning and evening for 4 months successively. **Results:** Psychological problem assessment questionnaire scores were significant in post-test I and post-test II ($P < 0.004$ and $P < 0.001$). DASS21 scores were statistically significant ($P < 0.001$) indicating that depression anxiety and stress were reduced both in males and females as well. **Conclusion:** From the findings of the study, it is evident that alternative therapies are greatly useful in geriatric care and it could be recommended for the psychological health and well-being of the elderly.

KEY WORDS: Relaxation Therapy; Elderly; Old-Age Homes; Psychological Variables

INTRODUCTION

Globally, population is aging rapidly. Between 2015 and 2050, the proportion of the world's older adults is estimated to be almost double from about 12% to 22%. In absolute terms, this is an expected increase from 900 million to 2 billion people over the age of 60. Older people face special physical and mental health challenges which need to be recognized.[1]

In India, 43 of 100 elderly people are victims of psychological problems due to loneliness and other relationship issues. Based on the feedback from 50,000 older persons across the country during June–July 2017, the study by age well foundation revealed that almost half of the elderly population was not taken care of by their families. Issues concerning older people have become a major challenge for all of us. The modern value system is replacing our centuries-old

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traditions. In modern fast-paced lifestyle, they are finding it tough to adjust themselves to emerging trends.[2]

The rate of increase in the aged population in Kerala is higher than that of the other states. There has been a 69% increase in the number of residents of old-age homes in the state over the past 4 years. Moreover, a recent study by HelpAge India concluded that Kerala, among all the states, has the maximum number of old-age homes.[3]

About 20% of the adults aged 55 or older have experienced some type of mental health concern, but nearly one in three of those seniors do not receive treatment (Centers for Disease Control [CDC]; National Institute of Mental Health). The statistics on mental illness in seniors are soaring, but with knowledge and vigilance, caregivers can stay aware of the mental and emotional health of their older loved ones and make sure that they get properly treated if they are experiencing a problem. Depression and mood disorders are also fairly widespread among older adults, and disturbingly, they often go undiagnosed and untreated. In a 2006 survey, 5% of seniors, 65 and older reported having current depression, and about 10.5% reported a diagnosis of depression at some point in their lives (CDC). About 7.6% of those over 65 have been diagnosed with an anxiety disorder at some point in their lives, reporting the CDC. With the combined efforts of families, caregivers, and mental health professionals, we can help ward off mental illness in our older loved ones and make sure that they are on the right track to healthy aging.[4]

The body's natural relaxation response is a powerful antidote to stress. Relaxation techniques such as deep breathing, visualization, progressive muscle relaxation, meditation, and yoga can help to activate this relaxation response. When practiced regularly, these activities lead to a reduction in everyday stress levels and boost feelings of joy and serenity.[1]

Jacobson's Progressive Muscle Relaxation (JPMR) technique appears to reduce depressive symptoms and improve the quality of life enjoyment and satisfaction in older adults. Although the cause of the anxiety will not disappear, the person will probably feel more ability to deal with it once he has released the tension from the body and cleared his thoughts. JPMR technique involves contracting and relaxing the muscles which make the person feel calmer.[5]

Liza (2011) reported that progressive muscular relaxation reduces stress response. Muscle relaxation technique can be practised for reducing depressive symptoms and improving the quality of life, enjoyment, and satisfaction in older adults. When progressive muscle relaxation is practised and incorporated to the individual's lifestyle, it can help to neutralize some of the effects of stress reaction.[6]

MATERIALS AND METHODS

Objective

The objective of this study is to assess the effectiveness of relaxation therapy on psychological variables among the elderly in old-age homes.

Research Approach and Research Design

This was a quantitative experimental with pre-test and post-test control group design.

Participants

The elderly residing in old-age homes between the age group of 60 and 80 years of both the sexes were selected. A total of 20 elderly, 10 each for the experimental and control groups, were selected using stratified random sampling technique from two old-age homes in Ernakulam district, Kerala.

Tool for Data Collection

Section A: Screening tool - mini-mental status examination (MMSE) and physician fitness checkup.
Section B: Demographic data sheet.
Section C: Psychological problem assessment questionnaire (PPAQ).
Section D: DASS21.

Procedure for Data Collection

Phase 1: Pre-test data collection after MMSE and the physician fitness checkup, based on inclusion criteria, equal number of both the genders and equal number in the age group of 61–70 and 71–80 were taken for the study. On the 1st day of data collection, pre-test was performed using PPAQ and DASS21, after collecting the demographic data.

Phase II: Administration of relaxation therapy from 2nd day to 29th day. The experimental group was given relaxation therapy (JPMR with background music, followed by physical exercise and laughter therapy, 1 h each in the morning and afternoon) and was continued for 28 days consecutively.

Phase III: Post-test I, on the 30th day post-test II, was done using the same pre-test assessment scales.

Phase IV: Post-test II, after the completion of the therapy for 4 months post-test II, was done using the same scales.

Data Analysis

As the data were discrete variables, both parametric and non-parametric tests were carried out. In parametric tests, paired and unpaired tests were used for the comparison of means

within the experimental group and between control and experimental groups, respectively. For non-parametric tests, Fisher's exact was used. Frequency and percentage finding was performed to describe the demographic characteristics, Chi-square and Fisher's exact were done to find the association between demographic variables, and the study variables as the sample size was smaller. $P < 0.05$ was considered to be statistically significant for interpretation of the results. The analysis was carried out using SPSS 20.0 Version.

Ethical Consideration

This study was approved by the Institutional Human Ethics Committee of Saveetha University Chennai dated 29th March 2016. No; 017/03/2016/IEC/SU

RESULTS

DASS21 score of control and experimental groups is presented in Figure 1. There was an equal number of participants among males and females and in the age group between 60–70 and 70–80 years in the control and experimental groups. Homogeneity was found between these groups in religion, educational, employment and marital status, history of psychiatric illness, and length of stay in the old-age home. In experimental group, 90%, and in control group, 60% had medical problems. In experimental group, 40% were on medications for 5–10 years, whereas in the control group, 40% were taking medicines for 2–5 years. In experimental group, 90%, and in control group, 80% did not have practice of any relaxation techniques before.

Comparison of pre-test and post-test Scores of psychological problems of Control and Experimental Group

The mean score of the PPAQ in the control group was 65.40, 66.50, and 65.40 in the pre-test, post-test I, and post-test II, respectively, and the difference in the mean scores was not statistically significant. The corresponding figures for the experimental group were 68.00, 46.10, and 42.10, respectively. The difference was statistically significant (paired $t = 3.807$, $P < 0.004$, post-test I), (paired $t = 4.465$; $P < 0.002$, post-test II) and (unpaired $t = 4.5$, $P = <0.001$ post-test I), (unpaired $t = 5.7$, $P = <0.001$ post-test II).

In DASS21, the mean pre-test depression in control group was 23.30, and in post-test I and post-test II, it was 23.20 and 23.30, respectively, which were not statistically significant. The corresponding figures for the experimental group were 22.60, 13.50, and 12.10, respectively. The difference was statistically significant (paired $t = 13.18$ $P < 0.0001$, post-test I), (paired $t = 14.303$, $P < 0.0001$ post-test II) and (unpaired $t = 11.87$, $P = <0.0001$ post-test I), (unpaired $t = 14.32$, $P = <0.001$, post- test II).

The mean pre-test and post-test anxiety in control group was the same (21.60). The parallel figures for the experimental group were 20.00 and post-test I and post-test II were 12.20 and 10.90, respectively. The difference was statistically significant (paired $t = 8.294$; $P < 0.0001$, post-test I), (paired $t = 10.400$; $P < 0.0001$, post-test II) and (unpaired $t = 8.9$, $P = <0.0001$ post-test I), (unpaired $t = 10.62$, $P = <0.0001$ post-test II.)

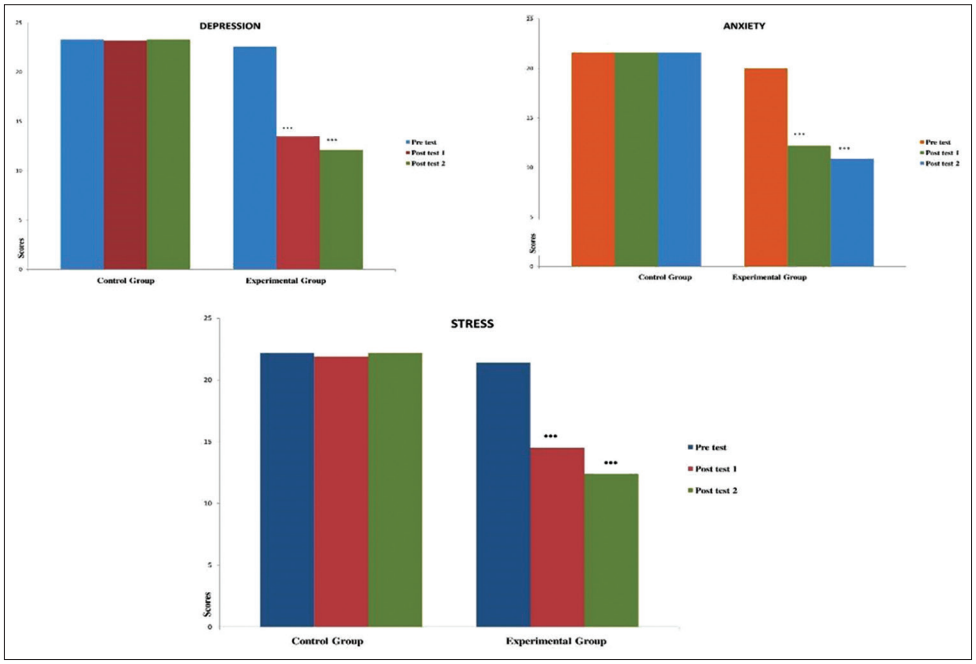

Figure 1: Depression, anxiety stress levels in control and experimental groups. (*$P < 0.05$ is statistically significant, **$P < 0.01$ is statistically significant, ***$P < 0.001$ is statistically significant)

The mean pre-test and post-test stress scores in control group were 22.20, 21.9, and 22.2 in post-test I and post-test II which were not statistically significant. The corresponding figures for the experimental group were 21.40 and post-test I and post-test II were 14.50 and 12.40, respectively. The difference was statistically significant (paired t = 11.080, $P < 0.0001$, post-test I), paired t = 10.510, $P < 0.0001$, post-test II) and (unpaired t =5.8, P = <0.0001 post-test I), (unpaired t = 8.15, P = <0.001 post -test II).

DISCUSSION

The participants for the study were selected based on the screening done using a MMSE to assess the mental cognitive and sensory impairment. Only those who were normal and with mild and moderate impairments were taken for the study and those with substantial impairment of activities were not included. The physician fitness certification was obtained and those with neurological problems were not included in the study.

Ninety percent of the participants in the experimental group had medical problems, and in the control group, 60% presented with medical problems. This finding is similar to the findings of a study to screen the emotional problems of the elderly, whereas 80% of them presented with physical problems. Another study done to assess the nature of stressors experienced by the age group between 60 and 80 years found that medical stressors were the most common cause of stressors. A survey done to assess the stress and coping strategies and quality of life between the institutionalized and non-institutionalized elderly involving 150 participants reported that there is more stress and less quality of life among the institutionalized compared to the non-institutionalized.[7]

It was found that the relaxation therapy for the elderly is effective in reducing the physiological and psychological problems of the elderly. There was a significant difference in mean pre- and post-test scores of psychological problems of the experimental and control group after the relaxation therapy.

The following studies support the findings of the present study indicating that various complementary and alternative therapies have a constructive effect on the well-being of the elderly.

An experimental study conducted on 30 subjects living in old-age home in the age group 60–85 years demonstrated statistically significant difference between pre- and post-geriatric depression scale scores (P = 0.005, t = 2.9709, df = 29) which indicates that there is a reduction of depressive symptoms in older adults. There is a statistically significant difference in pre- and post-quality of life enjoyment and satisfaction questionnaire scores (P = 0.01, t = 2.5292, df = 29) which indicates that there is improvement in the quality of life enjoyment and satisfaction in older adult.[5]

A study for stress management and lifestyle change intervention for women 60 years and older using training in progressive muscle relaxation and guided imagery, abdominal breathing training using biofeedback, physical activity, and nutrition counseling, and cognitive restructuring training revealed that the intervention group experienced significantly greater reduction in perceived stress ($P < 0.001$, $r = 0.8$) and physical and psychological stress symptoms ($P < 0.001$, $r = 0.7$) compared to the control group. The intervention also significantly reduced depressive symptoms and improved quality of life ($P < 0.001$, $r = 0.7$ for both variables).[8]

Another study to explore the effectiveness of lifestyle interventions consisting of exercises, diet schedule, physical activities such as vestibular stimulation, and meditation to enhance psychological well-being of institutionalized and non-institutionalized 240 senior citizens selected randomly showed significant improvements in psychological well-being scale, leisure time activity scale, lifestyle scale, and depression scale.[9,10]

The effect of progressive muscle relaxation therapy on elderly patients with heart failure documented a medium effect on psychological distress. Progressive and imaginal relaxation training for elderly persons with subjective anxiety recorded improvement on measures of personal functioning. The elders who imagined muscle tension release profited as much as those engaged in actual muscle tension release activities.[11]

Activity schedule for elderly living in old-age homes with depression revealed highly effective in reducing the depressive feelings ($P < 0.05$).[12]

Animal-assisted activities for the elderly residing in old-age homes with depression found very effective in reducing depression ($P < 0.05$).[13]

CONCLUSION

Exploring innovative options of caring for the elderly is crucial considering the rapid pace at which the population is aging globally. They need to be assisted in being better productive and secure because of the changing familial and social structures. The investigator concludes that JPMR therapy and physical exercise are a safe, non-pharmacological, non-invasive, painless, cost-effective method to relieve psychological problems of the elderly. This is an independent intervention and easy to practice and could be integrated into the curriculum of geriatric and mental health nursing.

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