

THE EFFECTS OF MINDFULNESS BASED INTERVENTION AND PROPRIOCEPTIVE EXERCISE PROGRAMME TO PREVENT FALLS AND REDUCE STRESS IN POSTMENOPAUSAL WOMEN - AN EXPERIMENTAL STUDY

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Abstract: Background Of the Study: Menopause is an inevitable developmental event that women encounter at an age of 45 – 55 years the drop of oestrogen levels that accompanies cessation of menstruation is associated with multiple vasomotor, physical, neuropsychological and sexual symptoms which may hamper quality of life.

Objective of The Study: To find out the effect of mindfulness based intervention on reducing stress in postmenopausal women. To find out effect of proprioceptive exercise programme to prevent falls in postmenopausal women.

Methodology: An experimental study consists of 30 Postmenopausal women (45-55 years) were selected based on FES and PSS scale. They were randomly allocated into two groups; GROUP 1 were given with mindfulness based intervention, balance exercise, strengthening exercise and GROUP 2 were given for mindfulness based intervention for weekly 3 sessions. And both groups were measured before and after the treatment, using FES and PSS scale.

Results: The subjects who were supervised to attend all sessions were shown a difference in their FES of average of 3.466 and PSS of average of 3.733. From this study it was concluded that mindfulness based intervention, balance exercise and muscle strengthening exercise are effective in preventing the risk of fall and reduce stress in PMW.

Keywords: Postmenopausal women, Falls prevention, Mindfulness, Stress reduction.

1. INTRODUCTION

Menopause is the permanent end of menstruation and fertility. It depends on the loss of follicular activity in the ovaries during the period of aging women who has not menstruated for at least 12 months retrospectively is deemed to have entered the phase of menopause and the postmenopausal period starts from this moment.⁽¹⁾

PREVALENCE:

Menopause characterized by a gradual decline in ovarian hormones takes toll on the women both physically and mentally.

⁽²⁾ It is a universal physiological condition that annually affects more than 500 million women aged 42 to 55 years with an average age of onset of 51 years.⁽³⁾ A survey conducted among 6500 women across 21 countries showed that 87% of Indian

women claim feeling stressed most of the time with an additional 82% asserting they had insufficient time to relax. Although events occurring in daily life are known to be a major cause of such stress.⁽²⁾

ICF OVERVIEW ON POSTMENOPAUSE:

Body functional changes-bone health (reduced bone density)

Muscle strength (loss of muscle mass and decreased physical activity)

Balance (declined vestibular and proprioceptive functions)

Activity limitation-Daily activities, walking, stair climbing.

Participation Restriction- avoidance of social or leisure activities

Strained family interactions.

Personal factors - stress, fear of falling, inadequate nutrition.

STRUCTURAL AND FUNCTIONAL CHANGES:

Menopause is primarily driven by a decline in the production of the hormones estrogen and progesterone by the ovaries. While the most noticeable effects of menopause are related to reproductive function, the scope of its impact extends far beyond, particularly affecting central nervous system (CNS). The CNS changes can have significant implications for brain health, cognitive function, and overall quality of life⁽⁶⁾. Endocrine changes which start around menopause and sudden loss of the release of hormone have an impact on numerous bodily systems.⁽⁷⁾

IMPACT OF BALANCE IN POSTMENOPAUSE:

Postural stability and balance decreases with age. Loss of balance and increased body sway are important risk factors for falls in postmenopausal women. The muscular and skeletal system are structurally interdependent in women with low BMD, muscle condition changes the altering posture and the COG dislocates and hinders balance which could lead to increased risk of falls. Falls resulting in fractures in postmenopausal women may seriously hinder the QOL and lead to high morbidity and mortality as well as increase in direct cost for health services. In early post menopause rapid bone mass loss occurs in response to hypoestrogenism.⁽¹⁰⁾

Women may not be able to deal with their psychological and social status because of these physiological changes. Women experience psychological distress through menopause that the reason for depression, anxiety and psychological instability cannot be attributed to menopause status alone.⁽²⁾

MINDFULNESS BASED INTERVENTION (ACSM) IN POSTMENOPAUSAL WOMEN:

Mindfulness-Based Stress Reduction (MBSR) is a clinical program originally developed to facilitate adaptation to medical illness that provides systematic training in mindfulness meditation as a self-regulation approach to stress reduction and emotional management.⁽¹²⁾ Moreover, it can lead to better recognition of and differentiation between components of experience (thoughts, feelings, physical sensation).⁽¹¹⁾

BALANCE EXERCISE BASED ON ACSM PRESCRIPTION:

Balance is the ability to maintain the gravitational line that supports body weight. Various factors may affect balance, such as age, gender, cognitive functions, musculoskeletal disorders, sensory disorders, and muscle tone. The decrease in balance ability limits the area of daily activity patients can do and increases the risk of falls. In postmenopausal women, the problem of balance is manifested by walking disorders, instability and falls.⁽¹³⁾

MUSCLE STRENGTHENING EXERCISE BASED ON ACSM PRESCRIPTION:

Muscle strengthening exercise improves other capacities such as isometric and isotonic strength of large neuromuscular complexes of both the lower and upper limbs that seem to be key in the primary for prevention of falls.⁽¹⁴⁾

2. MATERIALS AND METHODOLOGY

A experimental study which consists of 30 female participants with postmenopause age between 45-55 years, were taken on selection criteria. Females aged between 45-55 years, postmenopausal women, able to walk with or without technical aids. Female with neurological conditions, abdominal surgeries, musculoskeletal condition were excluded. The study done

at department of obstetrics and gynecology, adhiparasakthi hospitals & Research Institute, Melmaruvathur. Then participants were randomly divided into two groups: group 1 and group 2. The group 1(15) received mindfulness based intervention, balance exercise and strengthening exercise and group 2 received mindfulness based intervention.the participants received intervention for the duration of 6 weeks. Initially informed consent form were given to all subjects. Further demographic details & the condition related details were received from the participant. complete baseline assessment including pretest and posttest were collected using the falls efficacy scale and perceived stress scale

TREATMENT PROCEDURE:

Phases of exercise: warm up exercise (5 to 10 minutes), exercise intervention (30 to 60 minutes) each exercise was given 10 to 20 repetitions and finally cool down exercise (5 to 10 minutes)

BALANCE EXERCISE: Side walking, tandem walking, backward walking, crossover walking, backleg raise, side leg raise, single leg raise.

MINDFULNESS TECHNIQUE: Mindfulness meditation, body scanning, yoga (downward facing dog, cobra pose, child pose, savasana (corpse pose), tree pose (vrikshasana).

STRENGTHENING EXERCISE:

Biceps curls, squats, cat and camel exercise, bridging, superman exercise.

3. RESULTS

Changes in FES of the participants:

The mean ± standard deviation of group 1 (mindfulness based intervention, balance exercise, strengthening exercise) in pre-test is 45.133 ± 5.86596, in post-test is 41.6667 ± 5.92412.The mean ± standard deviation of group 2 (mindfulness based intervention) in pre-test is 45.000 ± 6.14120, in post-test is 43.1333 ± 5.98649.

Changes in PSS of the participants:

The mean ± standard deviation of group 1 (mindfulness based intervention, balance exercise, strengthening exercise) in pre-test is 23.8000 ± 3.16679, in post-test is 20.0667 ± 3.32666.The mean ± standard deviation of group 2 (mindfulness based intervention) in pre-test is 24.2000 ± 2.54109, in post-test is 22.4000 ± 2.50143.

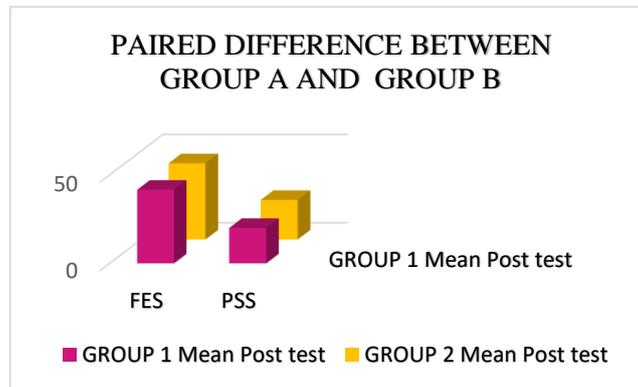


Fig 1

4. DISCUSSION

In this present study, 30 Postmenopausal women samples were included. The purpose of the study is to analyze the effects of mindfulness based intervention and proprioceptive exercise program to prevent falls and reduce stress in postmenopausal women. This study have done the exercise program for 6 weeks. 30 samples were divided into 2 groups of 15 participants. In group 1, the mean and standard deviation of age in group 1 is 51.667 ± 2.160 and group 2 is 51.933± 2.685.

This study had no restriction to the diet and medications of the subjects. This study proven only the effects of physical activity. The independent variables in the study are mindfulness based intervention and proprioceptive exercise programme. The dependent variables in this study are falls efficacy scale and perceived stress scale.

Falls efficacy scale (FES) and perceived stress scale (PSS) is widely used outcome measure to assess the balance and stress in postmenopausal women. When comparing group 1 and group 2 of (mindfulness based intervention and proprioceptive exercise programme).

This study shows that there was significant difference in both the groups on improve balance and reduce stress in postmenopausal women. Group 1 which is combination of proprioceptive exercise programme, mindfulness based intervention and muscle strengthening exercise creates a holistic approach to improve physical and mental well-being.

5. CONCLUSION

From this study it was concluded that mindfulness based intervention, balance exercise and muscle strengthening exercise is effective in preventing the risk of fall and reducing the stress among postmenopausal women.

LIMITATIONS AND RECOMMENDATIONS:

- Long term effects of treatment were not assessed due to short duration and small sample size so we recommend exploring the long term effects on similar population in further research
- The absence of control group could be considered as limitations in this study. So, further Randomized control study could be implicated.

CLINICAL IMPLICATION;

From the quantitative data of the study both the Mindfulness and Balance exercise were benefitted for Postmenopausal women. So we encourage the application of these form of exercise to be inculcated in the regular routine protocol for the same population.

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