



“To Study The Effect Of Music Along With Aerobics And Yoga (Without Music) On Functional Inactivity In Post-Menopausal Women.”

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ABSTRACT

BACKGROUND: According to the World Health Organization, menopause is defined as the permanent cessation of menstruation caused by the loss of the follicular activity of the ovaries. Menopause has three phases: peri-menopause, menopause, and post-menopause. Decreased estrogen level during menopause transition leads to the development of menopausal symptoms. The major symptoms are reported as difficulty in vasomotor (hot pressing, night sweats), psychological (anxiety, depression), urogenital (vaginal dryness, dyspareunia) and sleep. Physical inactivity is estimated to be the main cause of 21-25% of the breast and colon cancer load, 27% of diabetes and 30% of ischemic heart diseases. Estrogen deficiency and physical inactivity increase the risk. In contrast, physiotherapy is a non-hormonal and non-pharmacological intervention that has been suggested to be effective in improving both insomnia and depression in menopausal women.

OBJECTIVES: This study aims to provide an updated comprehensive review of the existing literature

to identify the most recent and effective aerobics along with Music and Yoga without Music for the treatment of physical and mental problems in post-menopausal women.

METHODOLOGY: A comparative study was conducted to find out the effects of Aerobics along with Music and Yoga without Music on functional inactivity in post-menopausal women. This study was carried out at Sannidhi Physiotherapy and Fitness Centre, Palanpur, Banas Kantha district. Data was collected using the MRS scale and the 6-Minute Walk Test.

RESULT: The findings revealed that MRS score decreased after the treatment of both music with aerobics and yoga without music. While the 6MWT score increased after the treatment of both music with aerobics and yoga without music.

CONCLUSION: There is a significant improvement in post-menopausal symptoms and functional activity level, whether it takes the form of yoga or aerobics. Ergonomic education and awareness regarding menopause in the society is required.

KEYWORDS: *Menopause, post-menopausal women, aerobic exercise, yoga, physical activity.*

CHAPTER 1

INTRODUCTION

All of a woman's eggs are present at birth and are kept in her ovaries. The hormones progesterone and estrogen, which regulate ovulation and the menstrual cycle, are likewise produced by their ovaries.

(Image courtesy of Dreamstime/Nerthuz).



FIG. 1 FEMALE REPRODUCTIVE SYSTEM

Menopause, which occurs after age 40, is a normal aspect of aging. But some women might have an early menopause. It could be the outcome of a procedure, similar to when their ovaries are removed in a hysterectomy or harm to their ovaries, maybe brought on by chemotherapy. It is referred to as premature menopause if it occurs prior to turning 40 for whatever reason.¹

As stated by the World Health Organization, the menstrual cycle permanently ends with menopause resulting from the loss of the follicular activity of the ovaries.² The menopause is the time after the final menstrual cycle, which occurs twelve months later. It affects older women, on average 51 years old, from forty to fifty years of age. There are three stages to menopause: peri-menopause, menopause, and post-menopause. The perimenopause phase represents the last few years before menopause when women start to have irregular menstrual cycles and hot flashes. Menopause is about experiencing a whole year without a monthly menstrual cycle. In this phase, many menopausal symptoms start to show up. The post-menopause phase demonstrates the rest of a woman's life after menopause.³

The shift to menopause can be a challenging time for women, as it is associated with a range of physical and psychological symptoms that affect most of menopausal women.³ During this time, ovarian function declines causing a cliff-like reduction in the levels of estrogen and progesterone, The quantity and caliber of oocytes decrease, and the Progesterone and estrogen levels continuously decline.⁴

Decreased estrogen level during menopause transition leads to the development of the signs of menopause. The major symptoms are mentioned as difficulty in vasomotor (hot pressing, night sweats), psychological (anxiety, depression), urogenital (vaginal dryness, dyspareunia) and sleep. These signs could start a few years preceding the final menstrual cycle and might continue for several years and sometimes up to old age. Physical inactivity has a significant health impact worldwide.

The level of physical inactivity is increasing all over the world and therefore has a large impact on the prevalence of non-communicable diseases and the overall health of the worldwide population. The anticipated amount of physical inactivity to be the main cause of 21-25% of the colon and breast cancer load, 27% of people with diabetes and 30% of ischemic heart diseases. Although the risk of cardiovascular disease in women is lower than that of menopause, following the age of 60, the difference between genders is reduced. One way to raise the risk is by being physically inactive and lacking in estrogen.

Osteoporosis, Depression and Insomnia are other common problems in the postmenopausal period. These signs may have a detrimental impact on their health, well-being, and daily activities, leading to a decline in their general caliber of life.

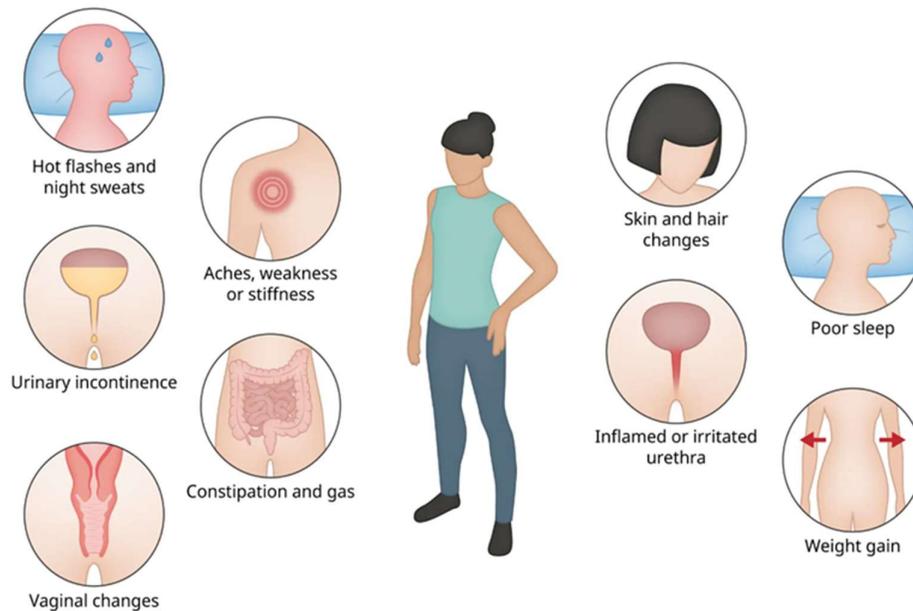


FIG. 2 SIGNS AND SYMPTOMS OF MENOPAUSE

Treatment for menopause symptoms includes Hormonal therapy (HT), non-hormonal medications, or non-pharmacologic therapies. Although HT can be useful in reducing menopausal symptoms, using it carries several hazards, such as a higher chance of blood clots, stroke, and breast cancer. Only women under 60 years old and those without a history of breast cancer or deeply rooted coronary heart disease may safely and effectively use HT.³ For many women, very low-dose estrogen treatment is an effective way to manage hot flashes. Transdermal estradiol (0.025 mg weekly) or low-dose oral esterified and conjugated estrogens (0.3 mg daily) are frequently beneficial, have few adverse effects, and stimulate the endometrium. Progestin therapy must be given concurrently if a woman has not had a hysterectomy, although, with low-dose estrogen therapy, intermittent progestin treatment may be an option.⁵

However, in contrast, it has been proposed that physiotherapy, a non-hormonal and non-pharmacological intervention, can effectively improve menopausal women's depression and sleeplessness. Prior research confirmed that physiotherapy is a useful tool for managing menopausal symptoms without hurting patients' health. It increases hormone levels such as serotonin and the serum concentration of the brain-derived neurotrophic factor without any change in oxidative stress.⁴

Exercise can help older women retain their best quality of life, prevent hormone deficiencies, and enhance their physical function. Thus, one of the best things an aging population can do is start an exercise routine.⁶

Music is a powerful tool. It might improve your mood as well as mend a broken heart. For millennia, music has been a significant factor in our capacity to handle the highs and lows of life. It's only been a little while since studies have suggested music can help combat depression and anxiety, along with a host

of other mental health issues. Music therapy is one technique administered by health care professionals to help support people as they strive to improve and take charge of their emotional well-being, functioning, and well-being.⁷

Music therapy is a clinical and research-based practice in which music is used to enhance a person's overall mood and well-being. A creative and all-encompassing method of healing is called music therapy, as well as the development of constructive and positive coping strategies. It has proven to play a big role in helping patients recover from negative events and experiences as well as those suffering from post-traumatic stress syndrome (PTSD).⁷

The use of complementary therapies including reflexology, acupuncture, and yoga has grown in popularity recently as a means of treating menopausal symptoms. Music intervention is among the useful, easy-to-use, and accessible alternative methods. Listening to music can enhance the quality of your sleep by affecting the limbic system of the brain. While endorphin, serotonin, dopamine, and oxytocin hormones increase with the effect of music, the levels of stress hormones such as cortisol decrease, and under the influence of hormones, breathing slows down; blood pressure drops; blood vessels expand; and muscle relaxation accelerates. Thus, music has a calming impact that lowers tension and anxiety while improving the quality of sleep. Numerous research found that listening to music helped individuals feel less depressed and sleep better.⁸

Aerobics is a new athletic discipline that blends dance, gymnastics, and music. Its foundation is aerobic exercise, and its attributes include strength, beauty, and health. Based on current studies, women who participate in mass aerobics may be able to prevent sadness and anxiety in addition to maintaining and improving their mood. Lovely and upbeat music beats and lively and pleasant physical movements can maximize people's enthusiasm and vitality in order for the worn-out intellect can be effectively relaxed and both the physique and the intellect to be totally controllable.⁴

For almost five millennia, people have been doing yoga. The practice started in India and has been employed in the treatment of several medical and psychological issues, such as menopausal symptoms, chronic pain, and bronchitis. The Sanskrit root "yuj," which meaning unification or yoke, unite, as well as to focus and direct attention, is where the term "yoga" originates. Yoga has eight elements and is sometimes figuratively shown as a tree. Or limbs: yama (universal ethics), niyama (individual ethics), asana (physical postures), pranayama (breath control), pratyahara (regulation of the senses), dharana (concentration), dhyana (meditation), and samadhi (bliss). Pranayama is the conscious expansion of inhalation and exhalation in a specific manner. It is an internal cleansing method based on science that engages the mind inward and opens doors to higher states of awareness. Pranayama calms the mind and revitalizes the brain, removes stress, negativity and makes all the systems function well.¹⁰

CHAPTER 2

REVIEW OF LITERATURE

2.1 POST-MENOPAUSAL SYMPTOMS' PREVALENCE

Menopause is a silent, unnoticed fact of life whose source is yet entirely unknown to mankind. One such middle-age period that, depending on one's circumstances, may either make a woman happy or very difficult to get through is menopause. Many myths and taboos surround this stage of life. Early symptom detection can assist in lowering women's anxiety and pain. The WHO, or World Health Organization, defines post-menopausal women as those who, due to the result of medicinal or surgical intervention (hysterectomy/oophorectomy), or both, stopped having periods or stopped menstruating a year ago.

As life expectancy rises, women now live for one-third of their lives. in this phase. There will likely be 130 million old women in India by the end of 2015, which will require a significant quantity of care.¹¹ The global count of women who have gone through menopause is rising. ladies fifty years of age and older made up two-thirds of all women and girls worldwide in 2021. Ten years ago, this was risen from 22 percent. We are also seeing longer lives for women. Around the world, a 60-year-old lady in 2019 might anticipate living an additional 21 years on average.¹⁴ Menopause might be a valuable chance to reevaluate one's objectives, lifestyle, and general well-being.

Even said, not every woman reporting menopausal symptoms finds them bothersome,⁵ Numerous extensive investigations have shown a connection between menopausal symptoms and a worse standard of living. Increased overall rating on the checklist of menopausal symptoms (which accounts for the combined burden of symptoms that are psychological, vaso-somatic, and general) ⁷, greater frequency of vasomotor symptoms as reported by the self,¹² as well as more menopausal symptoms⁷ have all been discovered to be strongly connected to reduced standard of living. About 3,000 women's quality of life in relation to their health was assessed as part of the Study of Women's Health Across the Nation (SWAN), which discovered that several menopause-related problems (For example, vaginal dryness, night sweats, hot flashes, and urine leakage) were also linked to reduced standard of living.¹²

2.2 FACTORS RESPONSIBLE FOR MENOPAUSAL SYMPTOMS

Menopause refers to the change in a woman's reproductive status from fertile to infertile. It is a biopsychosocial process. The menopause is an actuality that is concealed by the patriarchal cultural backdrop, encouraging women to prioritize the demands of their kin over their own, including their health, consequently making the menopausal transition invisible. Women have a passive method of treating symptoms throughout the menopausal transition because of their deeply ingrained traditional and cultural beliefs, Even though menopause can cause incredibly uncomfortable physical symptoms

including vaginal mucosa shrinkage that results in genitourinary atrophy resulting in urethritis, dysuria, urine incontinence, and frequency; recurrent urinary tract infections; vaginitis, pruritus, dyspareunia, and stenosis; and vasomotor symptoms as hot flashes and night sweats. In addition to issues connected to gynecological health brought on by lower estrogen levels, menopausal women often experience weariness, increase of weight and mental shifts such as melancholy, worry, fear of getting sick, impatience, and hypersensitivity. Menopausal symptoms can be managed by women by "natural" means, mostly non-pharmacological techniques including diet, exercise, and herbal remedies for hot flashes.¹³ However, It's been difficult to distinguish between symptoms that result due to ovarian function loss and those from the aging process or from the socio-environmental stresses of midlife years.⁵ Menopause-related hormonal changes can have an impact on one's mental, social, emotional, and physical health. Individual differences in the symptoms during and after the menopausal transition are significant. Some have very little or no symptoms. Some people could have severe symptoms that affect their quality of life and day-to-day activities. Some people may not get symptoms for a number of years.¹⁴ Vasomotor symptoms are experienced by most women for 1-2 years following menopause, although may continue for up to 10 years or longer in others.⁵; Different phases of menopause have different rates of menopausal symptoms. For instance, increased sexual symptoms (vulvovaginal atrophy, lack of desire for sex, etc.) and vasomotor symptoms (e.g., hot flushes) have been greater in postmenopausal women compared to premenopausal and perimenopausal women.¹⁶

2.3 TREATMENT RELATING TO MENOPAUSAL SYMPTOMS

The broad range of climacteric symptoms may be divided into three categories: organic (skin, urogenital, and weight changes), somatic (vegetative) (psychological, vasomotor), and metabolic (lipid spectrum changes, atherosclerosis, and osteoporosis).

Hormonal and nonhormonal pharmacotherapy can be distinguished from one another. In circumstances when there are low levels of estrogen, a series of preparations containing sex hormones are delivered as menopause hormone treatment (MHT), also known as hormone replacement therapy (HRT). Estrogen replacement treatment (ET, ERT) is the term used to describe estrogen-only therapy. When progestogens and estrogens are combined, the phrase is estrogen-progestogen therapy (EPT). It is best to differentiate between them due to notable variations in their benefit-risk ratio.¹⁷

Over the past few decades, menopausal hormone therapy (HT) prescribing practices have changed in response to a growing body of knowledge regarding the advantages and hazards of the treatment. Many women stopped using HT, and many doctors stopped prescribing it, because of the WHI's surprising findings, which highlighted concerns about breast cancer and CVD risk in women on oral conjugated equine estrogens (CEE) and medroxyprogesterone acetate (MPA).¹⁸ Only women under 60 years old and those without a history of breast cancer or coronary heart disease in the background can safely

and effectively use HT. This indicates that other therapies should be taken into consideration since in certain circumstances, the hazards of HT may outweigh the benefits. However, in contrast, it has been proposed that physiotherapy, a non-hormonal and non-pharmacological intervention, can effectively improve menopausal women's depression and sleeplessness. .³

2.4 ROLE OF PHYSIOTHERAPY IN MENOPAUSE

The term "physical activity" (PA) refers to any behavior involving movement that has physiological effects such as elevated energy expenditure and enhanced physical fitness.¹⁷ The World Health Organization's (WHO) Guidelines stipulate that people should partake in

a minimum of 150 minutes of moderate effort (activity types ranging from 3 to 6 metabolic equivalent of task METs, which is the amount of oxygen utilized during rest and comparable to 3.5 (ml) of oxygen per kilogram of body mass times minute) either 75 minutes or more of vigorous-intensity exercise (6 METs) each week, or an equal mix of moderate-to-intense PA. Furthermore, on two or more days of the week, all adults should engage in moderate- to high-intensity muscle-strengthening exercises, engage every major muscle group.^{16,19,20} Frequent exercise, which includes resistance training, aerobic training, stretching, and relaxation techniques, improves overall health, lowers the risk of chronic illnesses, keeps bones and cartilage stronger to prevent osteoporosis, helps maintain a healthy weight, and stops weight gain that occurs gradually.¹⁹

Exercise has been acknowledged as a low-cost, non-invasive, non-pharmacological treatment with little adverse effects when used as a component of a psychotherapy strategy. In the US, a poll of 1,750 psychologists found that 80% of them thought exercise was an effective way to cure depression and that 60% thought it was a good idea to utilize exercise as a way to alleviate anxiety. Exercise training relieves sleep problems and enhances mood and quality of life.³

2.4.1 MUSIC WITH AEROBICS

Recent studies on the benefits of music during high-intensity interval training (HIIT) have demonstrated how music may both attenuate the usual drop in pleasure observed during this protocol and appear to improve satisfaction after exercise. Studies have produced contradicting results about the impacts of listening to music on muscle-strengthening exercises (*i.e.*, resistance exercises). The majority of research papers have been centered on how music affects muscle-strengthening physical performance, psychological (*e.g.*, mood, feeling status, enjoyment), psychophysical (*e.g.*, RPE), and physiological (*e.g.*, HR) responses in recreationally active participants .²⁰

Karageorghis and colleagues have established the first conceptual framework to anticipate the impacts of music in sport and exercise, characteristics of the music itself (*i.e.*, rhythm, musicality) and external

factors (*i.e.*, association and cultural influence) affect The attributes that inspire the music, which should act as ergogenic aid able to enhance the physiological and psychological status of participants during sport-related activities and physical exercise (PE) .²¹

2.4.2 YOGA (WITHOUT MUSIC)

Yoga is a unique and age-old comprehensive way of life that touches on the mental, spiritual, ethical, and physical domains. The goal of the yogic way of life is to improve the body, mind, soul and day-to-day life of individuals. *Yoga* practices may provide a source of distraction from daily life and enhancement of self-esteem, helping women to focus on the simplicity of movement and forget about work responsibilities and demands, and thus reduce anxiety, depression and thus reduce anxiety as well as depression.²²Pranayama is the conscious expansion of inhalation and exhalation in a specific manner It's a methodical approach to internal cleansing that focuses inward and establishes a connection to higher states of awareness. Pranayama refreshes and energizes the brain, calms the mind, removes stress, negativity and makes all the systems function well.¹⁰

2.5 RELIABILITY OF OUTCOME MEASURE AND ITS TOOLS

2.5.1 6-MINUTE WALK TEST

The six-minute walk test (6MWT) is a quick test that assesses a patient's functional ability in an objective manner. Many clinical trials conducted during the last ten years have evaluated the reliability, responsiveness and predictive worth of the 6MWT. One submaximal exercise test for determining physical functional capacity is the six-minute walk test (6MWT).²³ This study set out to evaluate the validity and reliability of 6-minute walk tests as a means of gauging older individuals' physical endurance. Maintaining adequate physical endurance in later years is important to prevent frailty and loss of independence.²⁴ Sometimes referred to as the "fifth vital sign," pulse oximetry is a rapid, non-invasive monitoring method that uses light at particular wavelengths to shine through tissue, most frequently the nail bed, to assess the oxygen saturation in the blood. The wavelengths at which deoxygenated and oxygenated hemoglobin absorb light are 660 nm and 940 nm, respectively. The pulse oximeter uses a unique algorithm to interpret the absorbed light and display a saturation value.²⁷ Medical pulse-oximeter, showed acceptable accuracy for both SpO₂ and HR, independently of gender, age, skin color and BMI.²⁸ Smartphone applications offer the benefit of being simple to use and reasonably priced for all practitioners when compared to traditional laboratory equipment, which makes them increasingly viable for sports researchers and fitness coaches.²⁹ More advantages to bones are provided by strength training than by aerobic weight-bearing activity.²⁰

2.5.2 MRS QUESTIONARRIES

Women are predicted to spend a large percentage of their lives in this reproductive cycle stage due to global life expectancy increases. The menopause's age in Western countries is 50.8 years and in India is 47.5 years. Menopause rating scale (MRS): a standardized instrument for evaluating menopausal symptoms. It has been extensively utilized to evaluate menopausal symptoms and its severity in populations worldwide (25). The measurement was defined as a menopause-specific, health-related quality of life scale (HRQoL), as the HRQoL of women in this age range is significantly influenced by the profile of complaints on this scale. Additionally, a decent correlation between the results obtained utilizing the basic QoL scale and the MRS scale was observed. The scale used by MRS gained widespread acceptance on a global basis and is currently used in many nations.²⁶

CHAPTER 3

NEED OF STUDY

Menopause is among the primary reasons for impairment or decrease in functional mobility. There aren't many studies that demonstrate how music might enhance the functional mobility of subjects with menopause. Aerobics is regarded as a successful exercise modality to prevent the loss of functional fitness. Yoga has been beneficial for improving functional ability and well-being in normal healthy subjects. In India, there is a lack of studies to improve functional mobility in women with menopause by using Music so the need objective of this research is to ascertain the impact of music along with Aerobics and Yoga without Music on functional inactivity in post-menopausal women.

CHAPTER 4**AIMS AND OBJECTIVES**

- This study aims to provide an updated comprehensive review of the existing literature to identify the most recent and effective aerobics along with Music and Yoga without Music for the therapy of both mental and physical issues after menopause in women.
- We aim to fill any holes within the body of literature and highlight areas for future research. The findings of this study will be useful for clinicians and researchers in developing effective physiotherapy interventions and providing evidence-based recommendations for women experiencing physical and mental problems during the menopausal transition.
- The study's goal is to investigate the effects of Aerobics along with Music and Yoga without Music on functional inactivity in post-menopausal women.

CHAPTER 5**HYPOTHESIS****NULL HYPOTHESIS**

There may not be significant effects of Aerobics along with Music and Yoga without Music on functional inactivity in post-menopausal women.

ALTERNATIVE HYPOTHESIS

There may be significant effects of Aerobics along with Music and Yoga without Music on functional inactivity in post-menopausal women.

MATERIALS AND METHODS**6.1 Source of collection of data:**

This research was conducted at Sannidhi Physiotherapy and Fitness Centre, Palanpur.

6.2 Method of collection of data:

Study design : A comparative analysis was conducted to find out the effects of Aerobics along with Music and Yoga without Music on functional inactivity in post-menopausal women.

Sample size :30

Sampling method: Convenient sampling method

Sampling : Females were chosen in accordance to the inclusion and exclusion Criteria.

6.3 Data collection tools:

1. Inform consent form
2. Assessment form
3. Data collection sheet
4. Pen, Paper
5. Weighing scale
6. Yoga mat
7. Smart TV
8. Field marking cones
9. Weights (dumbbells)
10. Stopwatch
11. Pulse oximeter

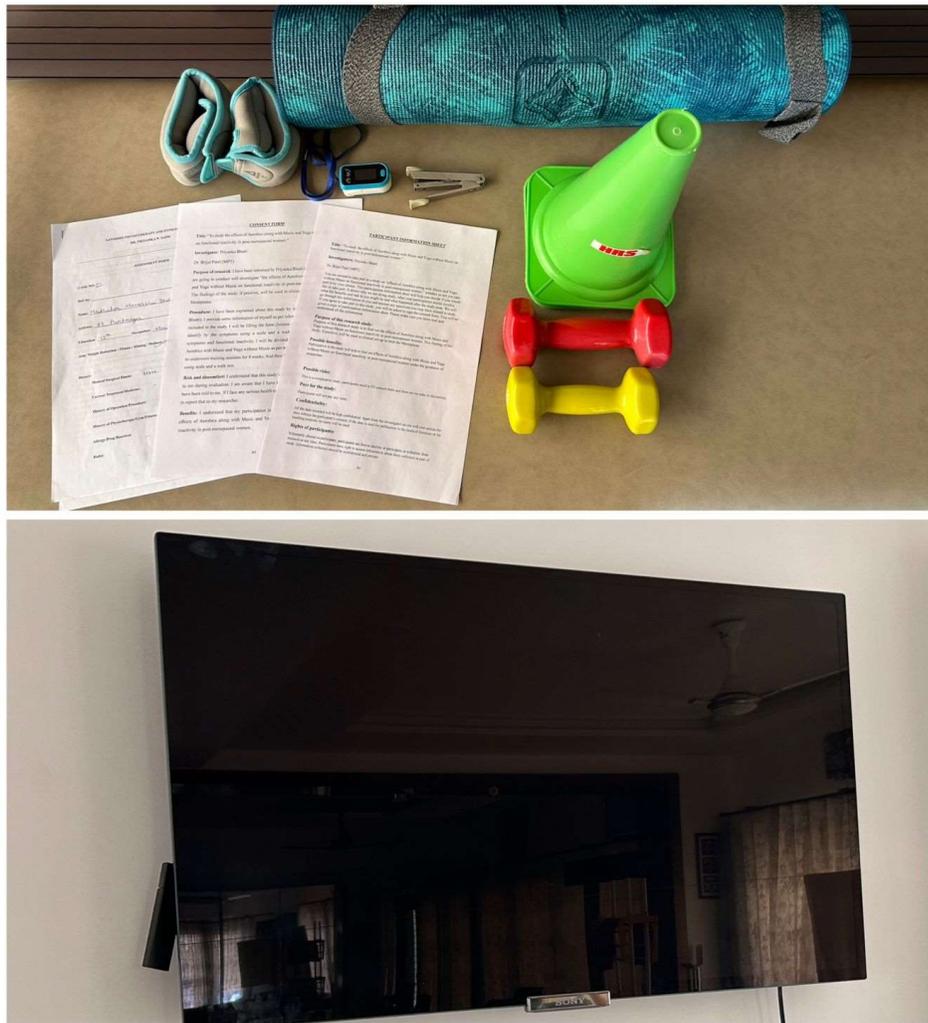


FIG.3 DATA COLLECTION TOOLS

6.4 Sampling Criteria:

Inclusion criteria:

- Only females of age group 45-60 years.
- Willingness to participate.
- Women who were post-menopausal during the study's duration they participated.
- Having physical inactivity.

Exclusion criteria:

- Women with induced menopause (because of surgical removal of ovaries, etc.).
- Menopausal women who use contraceptives or under Hormonal Replacement Therapy (HTR).
- Menopausal women suffering from additional pathogenic circumstances like cancer, cardiac diseases, or thyroid gland disorders.

- Women with primarily depression and insomnia that are not because of menopause.

6.5 Operational Definitions:

- **Menopause:** Menopause is the term used to describe the irreversible end of menstruation brought on by the ovaries' decreased follicular activity.²
- **Aerobics:** Aerobics is a form of physical exercise that combines rhythmic aerobic workouts combined with regimens for strengthening and stretching to improve every component of fitness (cardiovascular fitness, muscular strength, and flexibility).
- **Yoga:** Yoga is primarily a kind of spiritual discipline that aims to achieve harmony between the mind and body through a very delicate science. It is an art and science of healthy living. Yoga comes from the Sanskrit root "Yuj," which means "to join," "to yoke," or "to unite."¹⁰

6.6 Outcome Measures:

- 6-minute walk Test
- MRS Questionaries

6- MINUTE WALK TEST:

The 6-Minute Walk Test is a sub-maximal exercise test used to evaluate endurance and aerobic ability. The distance covered over a time of 6 minutes is used as the outcome by which to compare changes in performance capacity.

The 6MWT is appropriate for preschoolers (2–5 years old), kids (6–12 years old), adults (18–64 years old) and senior citizens (65+) featuring an extensive array of diagnoses including. The test was initially designed to help in the evaluation of individuals with cardiopulmonary issues. Gradually, it was introduced in numerous other conditions. It assesses a person's functional ability and offers insightful data on every system involved in physical exercise, including pulmonary and cardiovascular systems, blood circulation, neuromuscular units, body metabolism, and peripheral circulation.

Preparation

Based on comments made by the American Thoracic Society and the European Respiratory Society, the following guidelines pertain to exam preparation:

Wearing cozy attire is advised, especially if walking shoes are involved.

Patients should walk with any existing mobility aids, such as walkers or canes.

Patients ought to keep taking their prescriptions as normal.

Before the test, patients should have at least two hours of rest.

To ensure uniformity, administer consecutive tests at the same time of day.

Warm-ups are prohibited.

Technique or Treatment:

The technician or other personnel conducting the test should generally adhere to the following procedures:

Before beginning the exam, the patient should take around ten minutes to relax.

Take a baseline oxygen saturation and heart rate measurement. In order to find the lowest oxygen saturation, which might happen before the test is over, these should be continually observed.

Set the timer and lap counter.

Give the patient thorough instructions on how to proceed during the examination.

After that, the patient is placed at the beginning line and given the all-clear to walk once the test starts.

Only during the test should the technician speak with the patient. The patient should be urged to finish the test by being informed of the remaining time as each minute goes by.

An increase in walking distance suggests that one's fundamental mobility has improved. Resnik et al.²⁰¹¹ suggested in Amputee rehabilitation, Post training a difference of at least 45m should be observed for the 6-minute walk test to be sure that a “real” change in the patient’s condition.



FIG.6 6-MINUTE WALK TEST

MRS QUESTIONNAIRES:

The absence of standardized measures to assess the severity of aging symptoms and their effect on the HRQoL led to the development of the Menopause Rating Scale (MRS), a health-related quality of life (HRQoL) evaluation throughout the early nineties. Actually, the treating physician was supposed to complete the initial version of the MRS, but methodological objections led to the creation of a new scale that is simple enough for women to complete, not by their physician. The MRS validation started a few years ago with the goal of creating a simple-to-use tool for measuring HRQoL. MRS was designed to do three things: (1) allow comparisons of aging symptoms amongst groups of women under various situations; (2) examine changes in symptom severity with time; and (3) quantify changes both prior to and following therapy. The MRS was first reported in and formally standardized in accordance with psychometric guidelines in German. The urogenital, psychological, and somato-vegetative sub-scales were shown to be the three independent characteristics that, according to factor analysis, explained 59% of the variation overall throughout the instrument's standardization process. Eleven items make up the MRS list (symptoms or complaints). Depending on how seriously the women filling out the scale assess the intensity of their complaints, every single one of the eleven symptoms can receive 0 (no complaints) or up to 4 score points (severe symptoms) (The relevant box needs to be checked).

The scoring system is straightforward: for each of the 11 categories, the score increases point by point according to how severe the symptoms are judged to be subjectively (from 0 points for no complaints to 4 points for really severe symptoms). The respondent indicates her personal assessment of each issue by selecting one of the five "severity" boxes. The questionnaires in the extra files attached to this book demonstrate this. The composite scores for each dimension are derived from the total of the scores for each item in each sub-scale. The sum of the dimension scores is the total score, often known as the composite score. The three dimensions are fully summarized in the attached file, which is linked to this publication, together with the accompanying questions. The MRS total score ranges from 0 (asymptomatic) to 44 (the greatest level of complaints). Based on evaluations of the literature, total scores ≤ 11 , 12-35 and ≥ 36 are considered asymptomatic, mild to moderate and severe to very severe, respectively.

6.7 Operational procedure:

Every patient was brought in from different hospitals. Every patient's evaluation was obtained concurrently with MRS questionnaires and a 6-minute walk Test had to be done before the treatment. We have taken 30 patients. There were two equal groups of patients. Group A has to be exercised with music along with stretching and strengthening aerobic exercises have to be done by patients under the physiotherapist's guidance. Group B has to be yoga without music under the physiotherapist's guidance. After pre-testing, all participants selected a schedule to allow them to participate in the exercise program

twice a week over eight weeks at a Sannidhi Physiotherapy and Fitness Centre. Each appointment lasted approximately 45 minutes with the inclusion of a warm-up, exercise, and cool-down.

After the warm-up, in Group A participants were guided through a course requiring them to do aerobics with music in addition to physical challenges involving the use of the resistance as per the patient's capacity.



FIG. 4 GROUP A (AEROBICS WITH MUSIC)

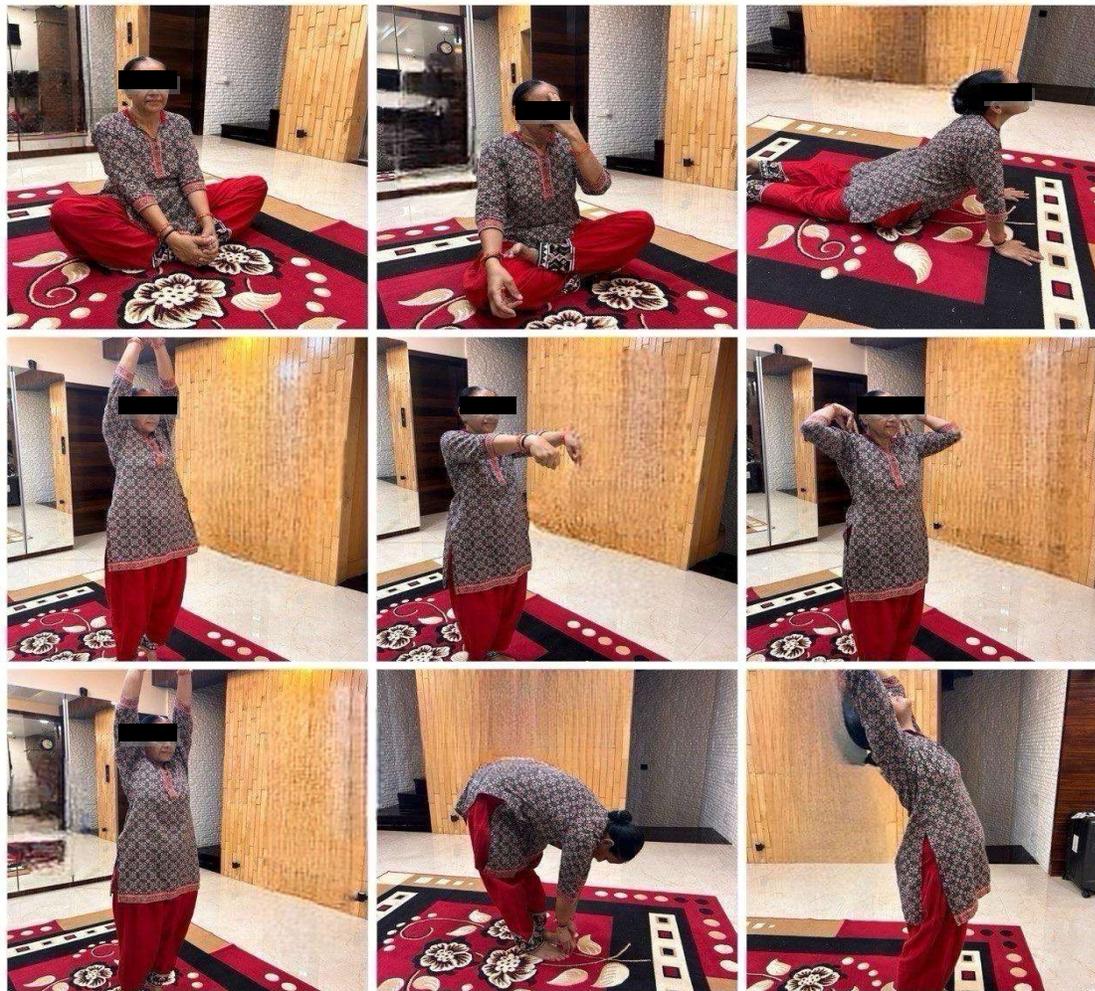


FIG. 5 GROUP B (YOGA WITHOUT MUSIC)

In Group B, they were presented with the challenges of yoga and pranayama consisting of upper-body, lower-body, and core exercises. The workout was approximately 35 minutes for each session. After each workout, the cool-down was completed. The potential dose of the intervention was 720 minutes over 16 sessions (16 sessions X 45 minutes).

Warm up

- Wrist rotation clockwise and anti-clockwise 10 times each
- Wrist flexion & extension hold 30-sec gentle pressure with the other hand
- Shoulder rotation clockwise and anti-clockwise 5 rep on each side
- Elbow flexion combined with shoulder rotation clockwise and anti-clockwise 5-10 reps on each side
- Shoulder rotation with straight hand clockwise and anti-clockwise
- Sideward bending
- Elbow bend chest opener
- Straight arm chest opener

- Swinging arm raise
- Hip rotation
- Torso bend
- Torso swings
- Neck flexion-extension-rotation
- Neck lateral flexion with stretch
- Lunge stretch
- Ankle rotation-flexion-extension
- Front & back jump
- Heel to hip jump
- Knee tuck jump
- Clap jump

Group A Aerobics with music

- Chest fly
- Rotator cuff chest fly
- Pullover
- Jumping jacks (for those who can do)
- Butt kicks
- Jump rope
- Squat and feet together 4 counts on each side
- Squat & knee to chest 4 counts on each side
- Squat and balance 4 counts on each side
- Jump squat (for those who can do)
- Plyo push up for 30 sec
- Mountain climber for 30 sec
- Forward lunge to rotate 3 sets
- Lunge walk 3 sets
- Superman pose 10-15 counts
- March for 60 sec in between every 3 exercises

Group B Yoga

- Marjariasana 3 rounds
- Purna Titli Asana 30-50 counts
- Bhujangasana 2 rounds
- Shalabhasana 2 rounds
- BaddhaKonasana 2 rounds
- Setubandhasana 2 rounds
- Ustrasana hold for 10 sec
- Balasana hold 30 sec
- Deep breathing 60 sec
- Nadi Shodhana Pranayam 5 counts
- Shavasana 60 sec
- “OM” Chanting

6.8 Data Analysis:

Using descriptive analysis, it was done using univariate statistics to report means and standard deviations (SDs) for continuous variables. The data was normally distributed so the student t-test was employed to contrast mean values of variables. The P value recorded less than 0.05 was taken into account significant.

CHAPTER 7**RESULTS**

In the course of the current study, thirty women in menopause were selected to understand the effect of music with aerobics and yoga without music on the MRS score and 6MWT score. Out of 30, 15 females were selected to check the effect of music with aerobics on the MRS score and 6MWT score. Similarly, 15 females were selected to check the effect of yoga without music on the MRS score and 6MWT score. An average MRS score was found as 23.66 ± 4.28 and 9 ± 1.64 before and after the treatment of music with aerobics, respectively (**Table 1, Graphs 1**). Moreover, an average MRS score varied significantly between before and after the treatment of music with aerobics ($p < 0.001$). An average MRS score was found as 22 ± 8.08 and 8.6 ± 3.77 before and after the treatment of yoga without music, respectively (**Table 1, Graphs 2**). Moreover, an average MRS score varied significantly between before and after the treatment of yoga without music ($p < 0.001$). The findings revealed that the MRS score decreased after the treatment of both music with aerobics and yoga without music (**Table 1, Graphs 1 and 2**). In the case of 6MWT score, an average 6MWT score was found as 334 ± 75.34 and 404 ± 76.33 before and after the treatment of music with aerobics, respectively (**Table 1, Graphs 3**). Moreover, an average

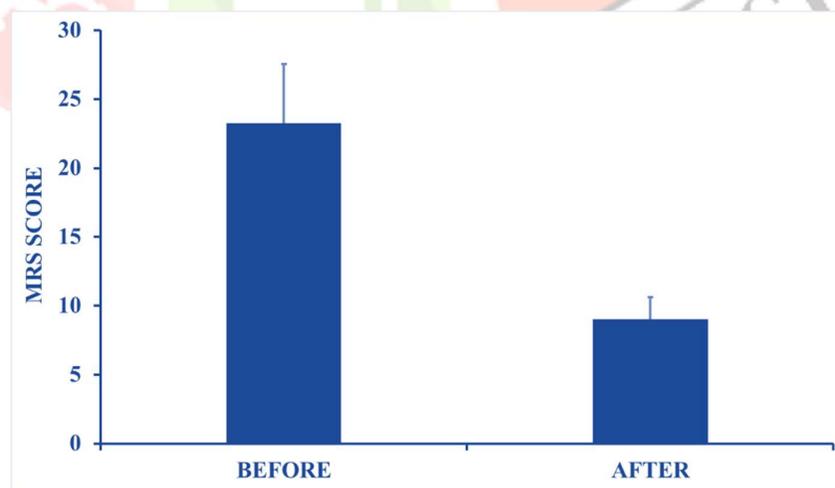
6MWT score varied significantly between before and after the treatment of music with aerobics ($p < 0.01$). An average 6MWT score was found as 341 ± 63.28 and 388 ± 74.78 before and after the treatment of yoga without music, respectively (**Table 1, Graphs 4**). Moreover, an average 6MWT score did not substantially change between before and after the treatment of music with aerobics ($p = 0.07$). The findings revealed that the 6MWT score increased after the treatment of both music with aerobics and yoga without music (**Table 1, Graphs 3 and 4**).

Table 1: Results of MRS before and after the treatment of music with aerobics and yoga without music in menopause females.

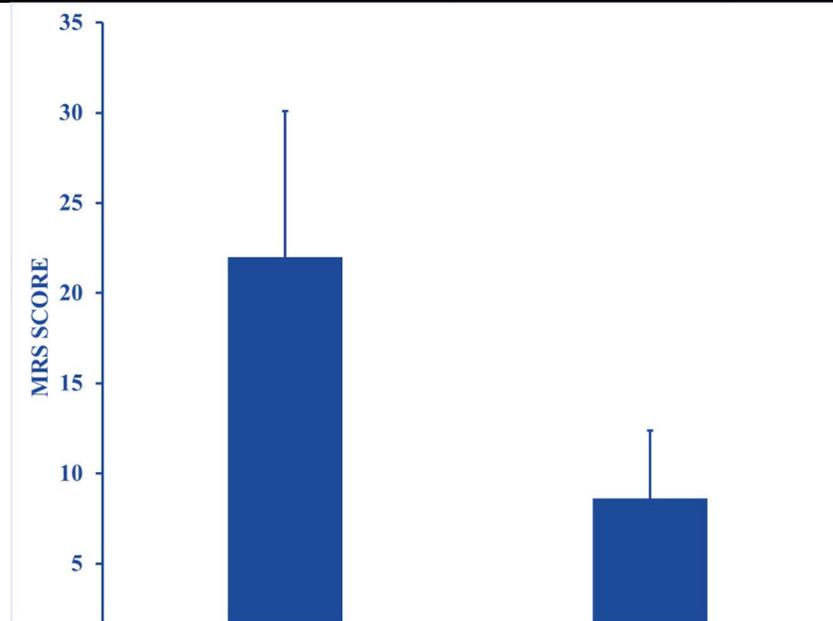
| Treatment | N | MRS SCORE (Mean \pm SD) | | T test ($p < 0.05$) |
|---------------------|----|---------------------------|----------------|-----------------------|
| | | BEFORE | AFTER | |
| Music with aerobics | 15 | 23.66 ± 4.28 | 9 ± 1.64 | 0.0001 |
| Yoga without music | 15 | 22 ± 8.08 | 8.6 ± 3.77 | 0.0001 |

Table 2: Results of 6MWT before and after the treatment of music with aerobics and yoga without music in menopause females

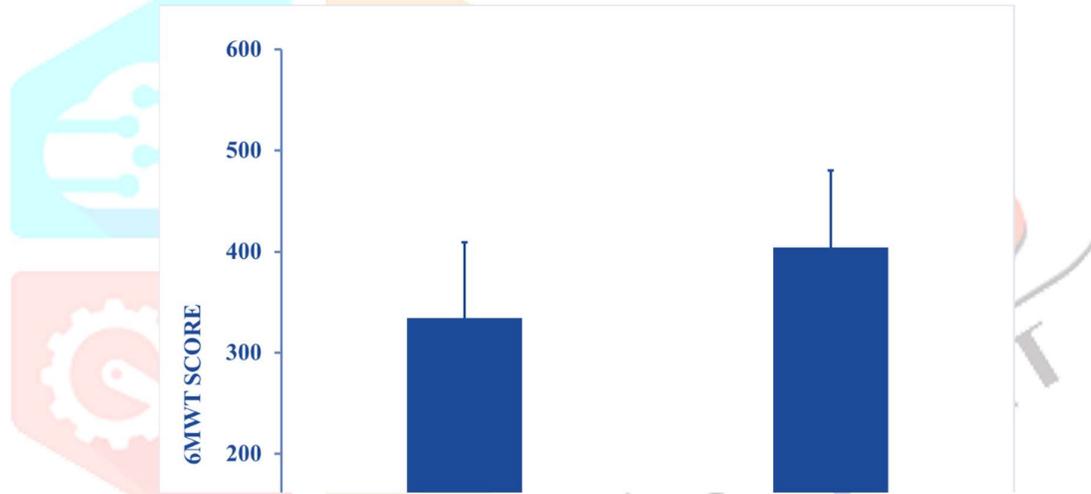
| Treatment | N | 6MWT SCORE (Mean \pm SD) | | T test ($p < 0.05$) |
|---------------------|----|----------------------------|-----------------|-----------------------|
| | | BEFORE | AFTER | |
| Music with aerobics | 15 | 334 ± 75.34 | 404 ± 76.33 | 0.01 |
| Yoga without music | 15 | 341 ± 63.28 | 388 ± 74.78 | 0.07 |



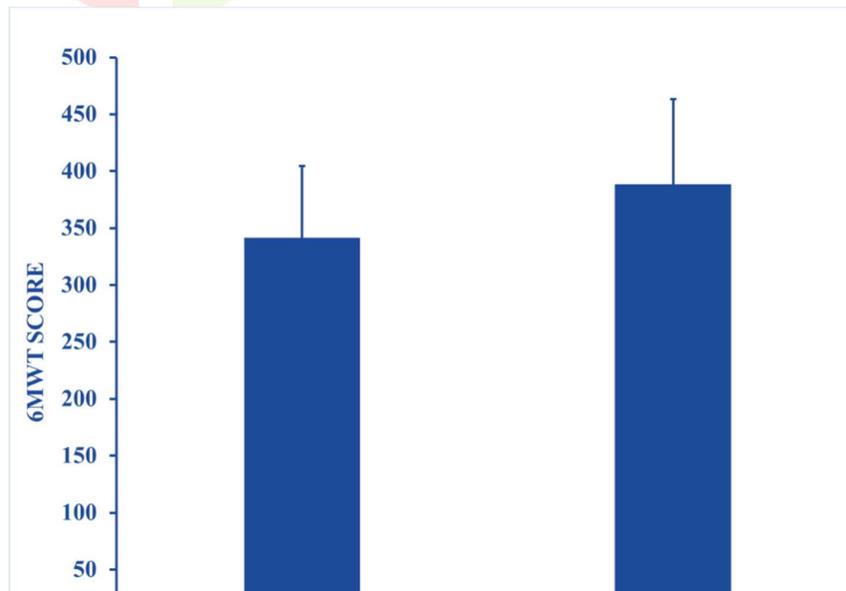
Graph 1: An average of MRS score before and after the treatment of music with aerobics.



Graph 2: An average of MRS score before and after the treatment of yoga without music.

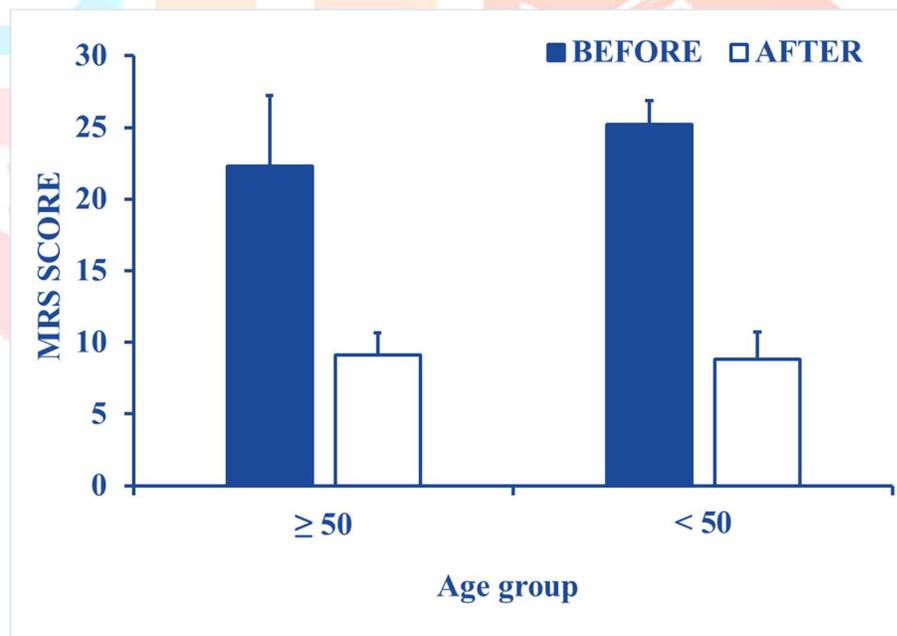


Graph 3: An average of 6MWT score before and after the treatment of music with aerobics.

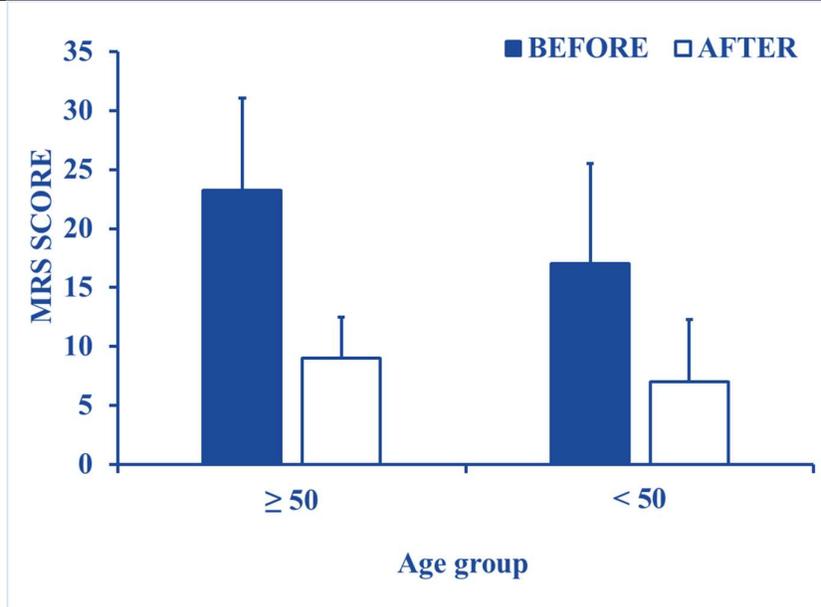


Graph 4: An average of 6MWT score before and after the treatment of yoga without music.

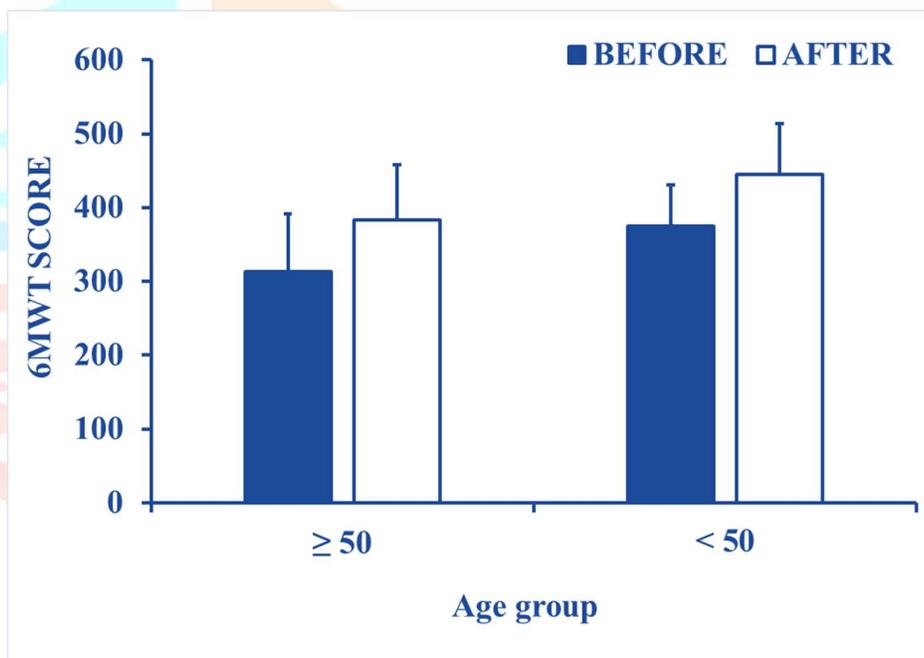
In the case of age-wise investigation of MRS score, an average MRS score was found as 22.03 ± 4.92 and 9.1 ± 1.59 before and after the treatment of music with aerobics in ≥ 50 -year-old females, respectively (**Graphs 5**). An average MRS score was found as 25.02 ± 1.64 and 8.8 ± 1.92 before and after the treatment of music with aerobics in < 50 -year-old females, respectively (**Graphs5**). An average MRS score was found as 23.25 ± 7.8 and 9 ± 3.49 before and after the treatment of yoga without music in ≥ 50 -year-old females, respectively (**Graphs6**). An average MRS score was found as 17 ± 8.54 and 7 ± 5.29 before and after the treatment of yoga without music in < 50 -year-old females, respectively (**Graphs 6**). The findings revealed that MRS score decreased after the treatment of both music with aerobics and yoga without music in ≥ 50 and < 50 -year-old females (**Graphs 5 and 6**). In the case of age-wise investigation of the 6MWT score, an average 6MWT score was found as 313.5 ± 77.67 and 383.5 ± 74 before and after the treatment of music with aerobics in ≥ 50 -year-old females, respectively (**Graphs 7**). An average 6MWT score was found as 375 ± 56.01 and 445 ± 68.92 before and after the treatment of music with aerobics in < 50 -year-old females, respectively (**Graphs7**). An average 6MWT score was found as 345 ± 63.24 and 390.83 ± 69.60 before and after the treatment of yoga without music in ≥ 50 -year-old females, respectively (**Graphs8**). An average 6MWT score was found as 326.66 ± 75 and 378.33 ± 110.94 before and after the treatment of yoga without music in < 50 -year-old females, respectively (**Graphs8**). The findings revealed that the 6MWT score increased after the treatment of both music with aerobics and yoga without music in ≥ 50 and < 50 -year-old females(**Graphs 6 and 7**).



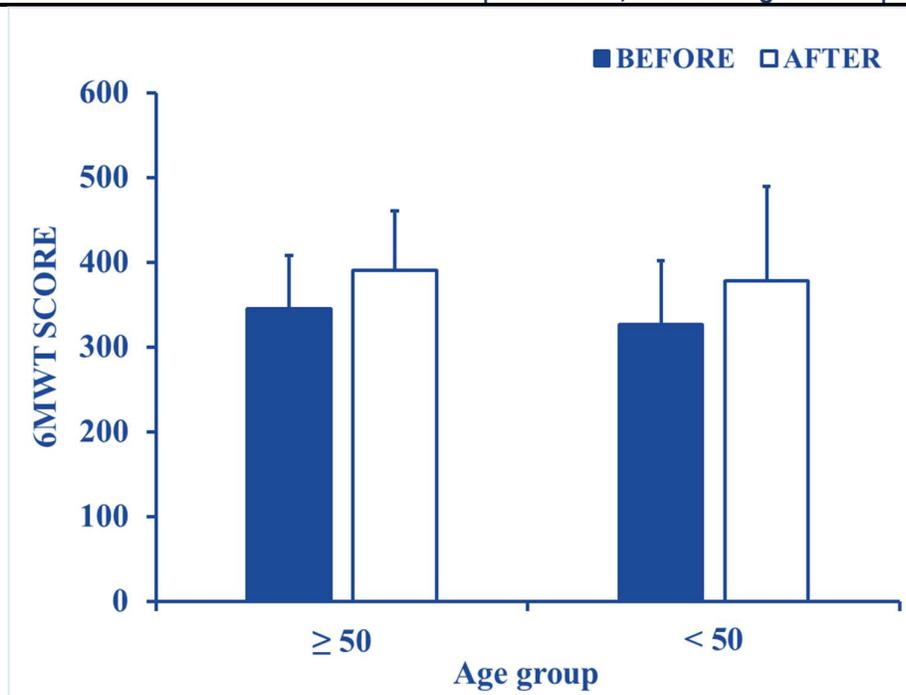
Graph 5: An average of MRS score before and after the treatment of music with aerobics with respect to age groups.



Graph 6: An average of MRS score before and after the treatment of yoga without music in respect to age groups.



Graph 7: An average of 6MWT score before and after the treatment of music with aerobics with respect to age groups.



Graph 8: An average of 6MWT score before and after the treatment of yoga without music with respect to age groups.

CHAPTER 8

DISCUSSION

This study showed that all post-menopausal women who volunteered to take part in the research were able to adhere to 16 aerobics and yoga training sessions over 8 weeks with good compliance, which may be related to the frequent occurrence of symptoms like hot flashes, joint complaints, anxiety, irritability, depression and sleep disorders in the post-menopausal period without good intervention, or to the health care, medical treatment, fitness, bodybuilding, and interest and non-impairment unique to aerobics training.

After the intervention, there will be markable improvement seen in these symptoms. In my study, based on the MRS scale in aerobics with music and yoga without music there will be a 61% improvement seen in both training sessions. Based on 6MWT, 20% and 13% improvements were seen in the distance of aerobics with music and yoga without music in training sessions respectively.

In the case of Age-wise investigations, in ≥ 50 years of women based on the MRS scale aerobics with music and in yoga without music training sessions showed a remarkable 60% improvement while in < 50 years women showed 64.8% and 50% improvement in aerobic with music and in yoga without music training sessions respectively. On the basis of 6MWT in ≥ 50 years of women, 22.3% improvement in distance in aerobics with music and 13.2% in yoga without music training sessions. While in < 50 years of women, 18.6% and 15.8% improvement in distance were seen in aerobics with music and yoga without music training sessions respectively.

As an aerobic workout, aerobics gives individuals a booming, spiritual character, free driving force because of its excitement, rhythm, movement stretch, beauty, and power, so that exercisers and ornaments can feel the beautiful realm of the combination of aerobics and beauty. The motor function of bone, joint, and muscle fibre tissue can all be enhanced by aerobic exercise. Additionally, mass aerobics may be flexibly set up for various objects and exerciser goals (e.g., weight reduction, building a strong waist, physique, etc.). As an illustration, middle-aged and elderly aerobics, adolescent aerobics, young children aerobics, pregnant women aerobics, warm-up aerobics, body aerobics, rhythm aerobics, weight loss aerobics, free-hand aerobics, device aerobics, body parts aerobics and so on. Moreover, mass aerobics adheres according to the physiological rule of sports load, which goes from little to big, simple to complicated, and weak to powerful in terms of movement, gradually increased load and gradually decreased when reaching and maintaining a certain negative. In aerobics with music, Exercises included stretching of the shoulder girdle and upper body; and strengthening exercises for the back, hip and lower extremities.

A growing number of chronic diseases, such as obesity, type 2 diabetes, cancer, and cardiovascular disease, are the result of people making bad lifestyle choices. Yoga's eight limbs (worldwide moral precepts, personal self-control, physical positions, breath work, focusing, relaxing the senses, practicing meditation, and gaining freedom), is believed to bring balance and health to the soul, mind, and body. Numerous chronic health disorders, such as type 2 diabetes, cardiovascular disease, metabolic syndrome, and cancer, have their symptoms lessened by yoga. Yoga is beneficial to immune system function, reduces inflammation, and has a positive impact on mental health by lowering anxiety and sadness. Research indicates that yoga works as a stress-reduction technique by raising vagal activation, inhibiting the hypothalamic-pituitary-adrenal (HPA) axis, and reducing the sympathetic nervous systems' (SNS) reaction. Streeter et al. suggest that yoga reduces allostatic load—the harm caused when the HPA–SNS stress response system becomes overworked and starts to operate improperly—and corrects underactivity of the parasympathetic nervous system (PNS) and gamma amino-butyric acid (GABA) systems. Yoga influences each cell of the body. It achieves better neuron-effector correspondence, enhances the quality of the body, expands the ideal working of all organ frameworks, builds opposition against stress and maladies and brings peacefulness, adjustment, inspirational mentality and composure in the expert which influences him to lead an intentional and more advantageous life.

Numerous research using a comparable design were carried out and their results also show markable improvements like Carolina et al. (2008) divided 44 postmenopausal women into 3 groups. Group 1 included hormone replacement therapy, group 2 physical activity and group 3 as control group. After 24 weeks of treatment, only the physical activity group showed an increase in quality of life.² As stated in his study, the hormone therapy that maintains its frequency of use is ineffective, on the contrary, the risk of developing breast cancer after hormone replacement therapy and the fact that women still accept these treatments unconsciously reveal that the awareness about physical activity in women should be increased.² Additionally, one study found that Therapeutic Touch and music increased sleep quality (subjective sleep quality, sleep latency, and sleep disturbances) and quality of life and

reduced menopausal symptoms.⁹ There was one basic audit that assessed whether yoga can cause wellness in more seasoned grown-ups. Ten examinations with 544 members (mean age 69.9 ± 6.3) were incorporated; Concerning physical wellness and capacity, the investigations revealed direct impact sizes for stride, adjustment, body adaptability, body quality, and weight reduction.¹⁵

CHAPTER 9

LIMITATIONS

Although this research offers insights observations into the results of Aerobics along with Music and Yoga without Music on functional inactivity in post-menopausal women, it's important to acknowledge several limitations that influence the interpretation of the findings:

1. **Sample Size:** The relatively small sample size of 30 participants may limit the generalizability of the results to a broader population with post-menopausal symptoms.
2. **Control Group:** The absence of a control group receiving no intervention makes it challenging.
3. **Follow-Up Period:** A longer follow-up period after the intervention possibly offer further information on the sustainability of the observed improvements over time.

In conclusion, While this research offers insightful information about the impacts of Aerobics along with Music and Yoga without Music on functional inactivity in post-menopausal women, these limitations emphasize the requirement for more studies with larger, more diverse samples, longer follow-up periods, and additional controls to fully understand the broader implications and effectiveness of these interventions.

CHAPTER 10

FUTURE RECOMMENDATION

In this study, have given only two forms of treatment. For future studies, we can be given diet changes, lifestyle modifications, and other forms of therapies like acupuncture, HIIT (high-intensity interval training) etc., Studies can be conducted on different kinds of populations, with a large sample for varied results. We can prepare guidelines on how to improve functional activity and suggest exercises and treatment on the basis of guidelines. This way can reduce the prevalence of post-menopausal symptoms.

CHAPTER 11

CONCLUSION

With this study, we found that physical activity, regardless of music's impact, significantly improves post-menopausal symptoms and functional activity levels, whether it takes the form of yoga or aerobics. However, aerobics shows a significant difference in improvement in comparison to yoga. Physical exercise is a much-needed form of daily routine for every individual, especially post-menopausal women.

CHAPTER 12

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