

Effect of Yoga and Music Therapy for Stress Management in Menopausal Women: a comparative Study

Dr.Devika Bhave¹, Shraddha Mansawale², Dr. Ujwal Yeole³, Dr.Shweta Kulkarni⁴

1. Assistant professor, Tilak Maharashtra Vidyapeeth, Pune. Email: deubhide12345@gmail.com
2. **Intern**, Tilak Maharashtra Vidyapeeth, Pune. Email: shra.mansawale25@gmail.com
3. Principal, Tilak Maharashtra Vidyapeeth, Pune. Email: drujwalyeole@gmail.com
4. Assistant professor, Tilak Maharashtra Vidyapeeth, Pune. Email: coolkarnishweta89@gmail.com

Abstract:

Background: After menopause the level of estrogen drops and body is unable to regulate cortisol levels as effectively as before, causing stress more readily. Yoga is a form of mind-body fitness that involves a combination of muscular activity and an internally directed mindful focus on awareness of the self, the breath, and energy. Reaches showed mind-body interventions are effective to reduce stress. Music has been shown to beneficially affect stress-related physiological, as well as cognitive, and emotional processes.

Aim: To compare the effect of yoga and musical therapy on the stress in menopausal women.

Objectives: 1.To studies the effect of yoga on stress management.2. To study the effect of music therapy on stress management.3. To compare the effect of yoga and musical therapy on stress management in young individuals.

Methodology: Ethical clearance was taken. 60 menopausal women were evaluated by cohen perceived stress scale and quality of life scale scoring system pre and post. Treatment protocol was of 8 weeks. In a week 3 days each exercise program were given to two groups. Data was collected and analyzed.

Results: There is extremely significant change in the pre and post, yoga and musical therapy session on stress reduction in menopausal women ($p < 0.0001$). The p values of both the therapies were extremely significant but yoga is more effective with the difference of 10 than musical therapy i.e. 5.67.

Conclusion: After comparison it showed that yoga was statistically more effective in reducing stress level than musical therapy.

Keywords: Stress, Yoga, Musical Therapy, Menopausal Women.

Introduction

Stress is defined as “an internal state which can be caused by physical demands on the body (disease condition, exercise, extremes of temperature, & the like) or by environmental & social situation which are evaluated as potentially harmful, uncontrollable, or exceeding our resources for coping.

Little stress is useful in helping as adapt. But, beyond some point, “stress” becomes “distress”.

For some women, going through menopause can feel stressful in itself. The transition can be a life changing experience, and is not all negative, as we are often led to believe. Fluctuating hormone levels during menopause alter the way we physically and emotionally respond to stress, and can bring on feelings

of depression, anxiety, or make us feel overwhelmed and isolated.

Why Does Menopause cause Stress?

Your body produces cortisol to allow you to cope with stress. However, consistently high levels of cortisol can be damaging to your body. This is why prolonged stress is not good for health. The hormone estrogen helps maintain the level of cortisol in the body. As you go through the menopause, the levels of estrogen begin drop. This means you are unable to regulate cortisol levels in your body as effectively as before, causing you to experience stress more readily.

Yoga has been practiced for over 5000 years; the practice originated in India and has been implemented to alleviate both mental and physical ailments including bronchitis, chronic pain, and symptoms of menopause.^{[1] [2]} The word “yoga” comes from a Sanskrit root “yuj” which means union, or yoke, to join, and to direct and concentrated one’s attention.^[3] Yoga is often depicted metaphorically as a tree and comprises eight aspects. Or limbs: yama (universal ethics), niyama (individual ethics), asana (physical postures), pranayama (breath control), pratyahara (control of the senses), dharana (concentration), dyana (meditation), and samadhi (bliss).

Pranayama

Pranayama is the conscious expansion of inhalation and exhalation in a specific manner. It is a scientific process of internal purification, draws the mind inwards and connects to deeper levels of consciousness. Pranayama refreshes and energizes the brain, calms the mind, removes stress, negativity and makes all the systems function well.^[4]

Benefits of Asanas (Yoga Poses)

- Specific yoga poses can induce the relaxation response in the body.
- Calming and restorative poses along with controlled breathing

activate the parasympathetic nervous system, bringing the mind and body to a calm and relaxed state.

1. Child’s pose (Balasana): Gently stretches the hips, thighs and ankles. Calms the brain (nervous system). Lengthens and stretches spine, relieves tension in back, neck and shoulders. Relieves stress and fatigue.

2. Cat pose (Marjaryasana): Stretches spine, tones abdominal muscles, improves circulation and digestion. Help to relieves tension and stress.

3. Down dog (AdhoMukhaSvanasana): Calms nervous system and helps relieve stress. Stretches shoulder, calves, hamstrings and arms. Improve digestion and relieves insomnia, back pain and fatigue.

4. Standing forward Bend or rag doll (uttanasana): Calms the brain and helps relieve stress and mild depression. Stretches hamstring, calves and hips. Helps with digestion and reduces fatigue and anxiety. Relieve headache, insomnia, tension in back and neck.

5. Supine Twist (Supta Matsyendrasana): Stretches the back muscles and spine. Stimulates the kidneys and abdominal organs. Helps with digestion. Relieves stress.

6. Savasana: Calms nervous system, Relieves tension, stress and anxiety. Relaxes the body. Reduces headache, fatigue and insomnia.

Regular practice of yoga promotes strength, endurance, flexibility and facilitates characteristics of friendliness, compassion, and greater self-control, while cultivating a sense of calmness and well-being.^[5] Yoga offers as effective method of managing and reducing stress, anxiety, and depression, and numerous studies demonstrated the efficacy of yoga on mood-related disorders. Yoga, a form of mind-body fitness that involves a combination of muscular activity and an

internally directed mindful focus on awareness of the self, the breath, and energy.^[6] Currently, treatment for anxiety and depression involves mostly psychological and interventions; however, mind-body interventions are becoming an increasingly popular as a mean to reduce stress.

Music has been shown to beneficially affect stress-related physiological, as well as cognitive, and emotional processes. Thus, the use of listening to music as an economic, non-invasive, and highly accepted intervention tool has received special interest in the management of stress and stress-related health issues.

Research on potentially beneficial effects of music listening on HPA axis functioning, i.e. on stress-induced cortisol release. Significant positive changes in cortisol were reported when listening to music before and / or during medical interventions considered stressful (decreases and lower increases in cortisol)^[7] and after such interventions (greater reductions in cortisol). The few laboratory-based studies show inconsistent findings, though: some report that music was effective in suppressing a stress-related increase in cortisol^[8], or in decreasing cortisol levels following a stressor when compared to a non-music control condition. The research on beneficial effects on SNS parameters has a longer tradition: A series of clinical and laboratory-based studies revealed that listening to music can decrease sympathetic activity.^[9] Previous investigations found reductions in perceived levels of psychological stress, increased coping abilities, or altered levels in perceived relaxation after listening to music in the context of a stressful situation.^[10]

Need of Study

- As women go through the menopause, the levels of estrogen

begin drop, causing you to experience stress more readily.

- The results demonstrated that yoga is useful, for the reduction of symptoms of stress.
- The use of listening to music as an economic, non-invasive, highly accepted in stress management and stress-related health issues.

Materials And Methodology

Material:

- TYPE OF STUDY- Comparative study
- SAMPLING SIZE- 60 [Group 1 (n=30) & Group 2 (n=30)]
- PLACE OF STUDY- Hospital setup Cooper hospital, Mumbai
- DURATION OF STUDY- Thrice a week for 2 months.
- STUDY SETTING – OPD Based
- MATERIALS – Pen, Paper, Yoga mat, Sound system.

Inclusion criteria-

- Menopausal women are included
- Having average 13 score of Cohen Perceived Stress Scale

Exclusion criteria-

- Use of hormonal contraceptives
- Excessive consumption of alcohol or tobacco

Outcome Measures:

1. Cohen-Perceived Stress Scale
2. Quality Of Life Scale

Procedure

The study was approved by the Institutional Ethical Committee at Tilak Maharashtra Vidyapeeth, Pune. The 60 menopausal women in hospital were evaluated by cohen perceived stress scale and quality of life scale scoring system. Consent forms were given to the patients and procedure was explained. The assured and responsibility is taking that the identity is preserved. They were randomly

divided into two groups. Group A (n=30) received hatha yoga and group B (n=30) received musical therapy. Treatment protocol was of 8 weeks. In a week 3 days each exercise program were given to two groups for 30 minutes. Yoga session includes pranayama for 10 minutes and asanas for 20 minutes with breathing

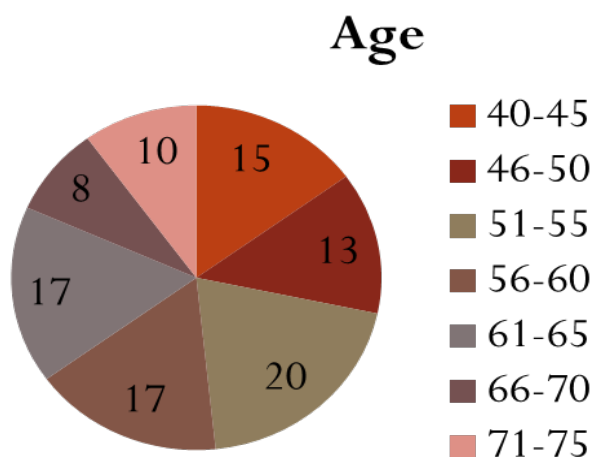
control. Musical therapy session includes alpha wave music, sound of rippling water and rest with acoustic music for 10 mins each. After weeks again the groups were evaluated by perceived stress scale and quality of life scale scoring system. Data was collected and analyzed.

Results:

Table 1. Age

40-45	46-50	51-55	56-60	61-65	66-70	71-75
9	8	12	10	10	5	6

Graph 1.:



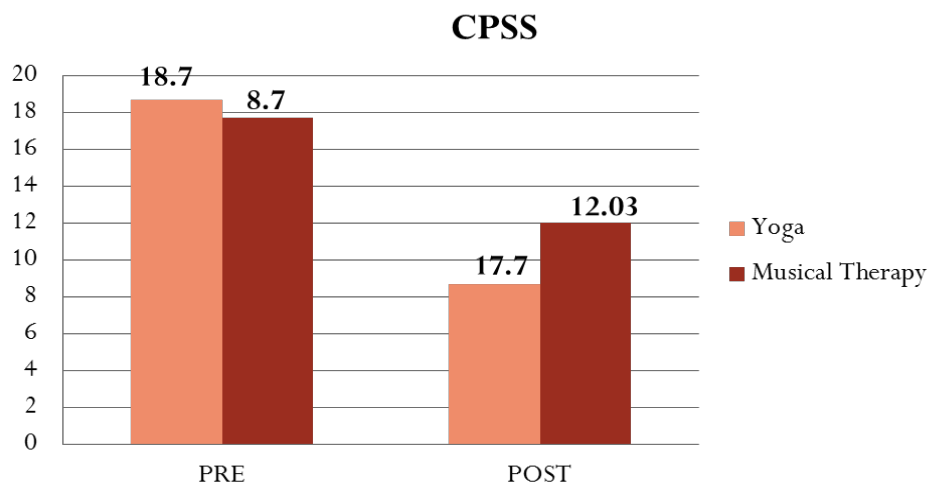
Interpretation :

In table 1, there were about 9 women in 40 to 45 age group, 8 women in 46 to 50 age group, 12 women in 51 to 55 age group, 10 women in 56 to 60 age group, 10 women in 61 to 65 age group, 5 women in 66 to 70 age group and 6 women in 71 to 75 age group. The mean age of subjects in yoga group was 52.3 with SD ±8.960 and in musical therapy group mean age was 60.76 with SD ±7.523

Table 2
Cohen Perceived Stress Scale (YOGA vs MUSICAL THERAPY)

MEAN ± SD	PRE	POST	DIFF
YOGA	18.7	8.7	10
MUSICAL THERAPY	17.7	12.03	5.67

Graph 2.



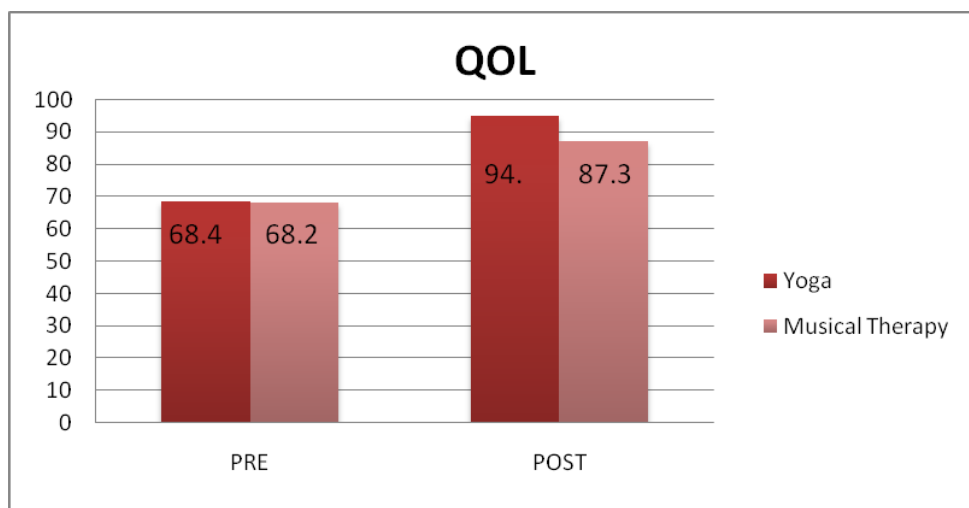
Interpretation:

In table 6, there was reduction in stress level in menopausal women after the treatment but more improvement was observed among subjects in Yoga group with mean difference of 10 so Yoga is more effective as compared to Musical Therapy The p value for difference within scores in group was <0.0001 considered as extremely significant.

Table 3
Quality of Life Scale (YOGA vs MUSICAL THERAPY)

MEAN ± SD	PRE	POST	DIFF
YOGA	68.46	94.9	26.42
MUSICAL THERAPY	68.2	87.3	19.1

Graph 3



Interpretation:

In table 7, there was improvement in quality of life in menopausal women after the treatment but more improvement was observed among subjects in Yoga group with mean difference of 26.42 so Yoga is more effective to improve quality of life as compared to Musical Therapy with p value of 0.0329 of difference in groups which is considered as significant.

DISCUSSION

This study was aimed to compare the effects of yoga and musical therapy for stress management in menopausal women and objectives to find out the effect of yoga and musical therapy for stress management in menopausal women. Initially synopsis was approved by the ethical committee and permission for data collection was received from the Hospital in Mumbai. In the study 60 menopausal women were selected according to the inclusion and exclusion criteria and then they were randomly divided into two groups. All the two groups included 30 subjects each. Group A received Yoga and Group B received Musical Therapy.

Subjects included in the study had mean age of 56.53 with SD \pm 9.24. Subjects in Yoga (Group A) had mean age of 52.3 with SD \pm 8.96 and in Musical Therapy (Group B) had mean age of 60.76 with SD \pm 7.52. Outcome measures used in this study were Cohen Perceived Stress Scale to assess severity of stress and Quality of Life Scale to assess the individuals physical activity. Pre and post of all outcome measures was done.

Treatment was given for 30 sessions for duration of 8 weeks. In a week 3 days each exercise program were given to two groups for 30 minutes. Yoga session includes pranayama for 10 minutes and asanas for 20 minutes with breathing control. Musical therapy session includes alpha wave music, sound of rippling water and rest with acoustic music for 10 mins each.

Pre intervention readings of Cohen Perceived Stress Scale were evaluated

where we found the mean of Yoga 18.7 with \pm 2.62 and the mean of Musical Therapy 17.7 with SD \pm 2.08. Other outcome measure we used Quality of Life Scale where we found the mean of Yoga 68.46 with SD \pm 6.69 and the mean of Musical Therapy 68.2 with SD \pm 5.86. After the pre data collection we found that most of the menopausal women are suffering from stress, because of stress their day to day quality of life and physical activity is hampered. Post evaluation of the subject was done after the treatment. After evaluation we found that there was significant reduction in stress level in both the groups. They also experienced improvement in the quality of life and also were able to do various physical activities as described in Quality of life scale. Statistical analysis was done under 95% confidence interval.

After post evaluation we found that there was significant reduction in stress level among menopausal women who received Yoga as compared to subjects who received Musical Therapy according to Cohen Perceived Stress Scale. According to post assessment the mean of Yoga (Group A) 8.7 with SD \pm 2 and the mean of Musical therapy (Group B) 12.03 with SD \pm 1.90. After post evaluation there was statistically reduction in stress level in menopausal women with significant difference in mean of pre-post in Yoga according to CPSS of 10 as compared to subjects who received Musical Therapy with difference in mean of pre-post according to CPSS of 5.67 with p Value of $<$ 0.0001 using Paired test which is extremely significant when difference in groups was compared.

Similar results were found by Andreas Michalsen et al in their study, there are potential effects of Iyengar Hatha yoga on perceived stress and associated psychological outcomes in mentally distressed women and showed significant improvements in perceived stress and psychological outcomes as compared to waiting-list.^[11] In this study distressed women received Hatha yoga while in our study Group A menopausal women received Hatha yoga. Similarly in our study yoga is more effective as compared to musical therapy to reduce stress in menopausal women and showed significant improvement in Cohen Perceived Stress Scale.

Previous study also states that stretching is the component of Hatha (Iyengar) yoga, which promotes relaxation response. Daily stretching exercise significantly increase heart rate variability and a marked decrease of heart rate was found, and, the increase in flexibility was correlated to improvement of cardiac autonomic function.¹⁸ As Iyengar yoga has an intensive stretching component itself, it might be that the increased flexibility also contributes to stress reduction by means of improved autonomic function. We also found that yogic breathing can be taught to large groups in just a few days and Ujjayi breathing is safe under professional supervision and can be helpful even in psychotic patients. It has been used to relieve stress, anxiety, insomnia, and depression.

Myriam V. Thoma et al stated that listening to music has been beneficial impact on health via stress-reducing effects. The aim of their study to address this gap in knowledge and overcome previous shortcomings by thoroughly examining music effects across endocrine, autonomic, cognitive, and emotional domains of the human stress response. Our study aimed to find out the effect of musical therapy in menopausal women as

compare to yoga to reduce to reduce stress. They conducted a study on sixty healthy female volunteers (mean age = 25) were exposed to a standardized psychosocial stress test after having been randomly assigned to one of three different conditions prior to the stress test: 1) relaxing music ('Miserere', Allegri) (RM), 2) sound of rippling water (SW), and 3) rest without acoustic stimulation (R). In our study we used Cohen Perceived Stress Scale to evaluate the stress level and Quality of Life scale to evaluate the day to day physical activity in menopausal women. Similarly used sound of rippling water, acoustic music and alpha wave music as musical therapy for 10 minutes each, duration is 8 weeks in which 30 sessions are given for 30 minutes. There result showed that, listening to music decreases stress response.^[12] In our study there is also significantly decrease in stress level according to CPSS when data analyzed and improvement in various activities according to QOLS. But is there is more reduction in stress levels in Group A (Yoga) as compare to Group B (Musical Therapy).

We also found that there was improvement in quality of life among menopausal women who received Yoga as compared to subjects who received Musical therapy according to Quality of Life Scale and they were also able to do various physical activities as described in Quality of life scale. Post intervention readings of Quality of Life Scale were evaluated where we found the mean of Yoga 94.9 with SD ± 3.58 and the mean of Musical Therapy 87.3 with SD ± 5.96 . After post evaluation there was statistically improvement in quality of life in menopausal women ability who received Yoga with difference in mean of pre-post QOLS score of 26.42 as compared to Musical Therapy with mean difference in pre-post QOLS score of and Conventional therapy with difference in mean of pre post 19.1. The p value was 0.0329 which is significant

using Paired test when difference in groups was compared.

These results demonstrated that the use of yoga is at least equivalent to, and may be better than, other techniques for the reduction of symptoms of stress. This study shows that, both therapies, Yoga and Musical Therapy were effective in reducing stress level according to CPSS score and improvement in quality of life according to QOLS scoring. After comparison it showed that Yoga was statistically more effective in reducing stress level and improving quality of life than Musical Therapy among menopausal women.

Conclusion

After comparison it showed that Yoga was statistically more effective in reducing stress level according to CPSS and improving quality of life according to QOLS scoring than Musical Therapy among menopausal women.

Limitations and Future Scope of Study

- Limitations:
 1. Less duration of time.
 2. Other outcomes measures can be used along with CPSS and QOLS.
- Future Scope:
 1. Study can be conducted on different subjects.
 2. Study can be compare between different subjects.

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