

Mini Review

Effect of Physiotherapy on Postmenopausal Women: A Review of Literature

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How to cite this article:

Munjal J, Zutshi K, Aman I, Khan MR. Effect of Physiotherapy on Postmenopausal Women: A Review of Literature. *Int J Adv Res Gynaecol Obstet.* 2021;2(1):4-8.

Date of Submission: 2021-01-15

Date of Acceptance: 2021-05-20

A B S T R A C T

We pursue a review of literature on the effect of physiotherapy on postmenopausal women and engender the list of evidence reviewed articles. The articles on postmenopausal women that were finally chosen for review had to include a focus point on the key term, i.e., postmenopausal, urinary incontinence, insomnia, low bone density, pelvic floor muscles, and osteoporosis. After a review of all the literature, it was concluded that regular physical activity appears to be an alternative method to reduce urinary incontinence, insomnia, REM latency, and pain. It also helps in improving BMD, quality of life, dynamic balance, posture, muscle strength, and sleep quality that occur during the postmenopausal period. Physiotherapy has a significant effect on urinary incontinence, insomnia, and osteoporosis in postmenopausal women. However, more randomized clinical trials need to be conducted in this area for more studies.

Keywords: Postmenopausal, Urinary Incontinence, Low Bone Density, Insomnia, Pelvic Floor Muscles, Osteoporosis

Introduction

In the last few decades, women have been experiencing physical, psychological, and social changes which are caused by hypoestrogenism during the postmenopausal period. The hormone level, ethnicity, and lifestyle of the woman and ethnical and emotional and social factors will vary the menopausal symptoms.^{1,3}

Prolonged hypoestrogenism leads to reduced flexibility and muscle strength. It also increases the cartilage density, and there will be an appearance of osteoarticular diseases.²

Urinary Incontinence (UI) has become a common condition among females and approximately 10% of women experience urine leakage at least once a week, which has been putting a significant negative impact on the quality of life (QOL) of women.⁴

Recent guidelines and researches advise conservative

management of UI. These interventions do not involve treatment with drugs or surgery as a first-line therapy.⁵

The menopause transition is marked by an increased prevalence of disturbed sleep and insomnia. Approximately 40% to 60% of women are suffering from postmenopausal insomnia. This causes significant distress and impacts women's daytime functioning, qualifying them for a diagnosis of insomnia disorder.⁶

Osteoporosis is characterized by skeletal fragility and microarchitectural deterioration. The definition of osteoporosis links a higher risk of postmenopausal fractures to low bone mass density (BMD) and qualitative changes in microarchitecture. The prevalence of osteoporosis varies as it depends on whether it is defined by low BMD (a T score of -2.5 or less) or fracture incidence.⁷

Vertebral fracture is the hallmark of postmenopausal

osteoporosis and also the commonest osteoporotic fracture. It is associated with low back pain, functional limitation, disability, and poor quality of life. BMD T-score, recommended by the World Health Organization (WHO), is used for evaluation of bone mass and fracture.⁸

Methods

To initiate the list of articles that formed the basis of the evidence reviewed in this article, we conducted a vast search of the published articles. The databases pre owned in the search included PubMed, EMBASE, PubMed, Cinahl, and Google Scholar. The criterion for articles to be encompassed in the search was the incorporating of following keywords: postmenopausal women, insomnia, osteoporosis, urinary incontinence, effect of physiotherapy. The articles that were eventually selected for review had to bring focus into the terms, i.e. urinary incontinence, low bone density, insomnia, pelvic floor muscles, and osteoporosis. We excluded articles

related to balance, Colles' fracture, and proprioception. We further demarcate the search to include literature published in the span period of 1995 till 2020. At last, only English language articles were included.

Findings

By using the search team postmenopausal women, we bring about more than 500 articles in Google Scholar, PubMed, EMBASE, and Springer, most of which were failed to fit in our inclusion criteria for articles with a focus point on the physiotherapy on urinary incontinence, insomnia, and osteoporosis. Thus, combining all the terms, we generated 12 articles that did meet the criteria. We grouped the published literature into three parts as follows: (a) Physiotherapy has a significant role in managing urinary incontinence, (b) Physiotherapy is simply another exercise program that can be used in the treatment of insomnia, and (c) Physiotherapy is beneficial for osteoporosis.

Table I. Physiotherapy and Urinary Incontinence

Study	Participants	Exercise Intervention	Result
Mane PR et al. ⁹	58 patients, Group A (n = 29) and Group B (n = 29)	Bladder training program and IFT was used as a baseline treatment. Group A received structured exercises whereas Group B received conventional exercises. Treatment was given for 6 weeks with 3 sessions per week	Improvement in pelvic floor strength Improvement in pad test. Effective in lowering dribbling of urine. Enhanced in QOL.
Toos SN et al. ¹⁰	45 women of age 40-50 years with BMI < 30 kg/m ² . Group A/ controlled group (n = 15), Group B (n = 15), Group C (n = 15). Group B & C (Experimental group) Treatment was for 12 weeks with 2 sessions per week	Participants received pelvic floor exercises for 20 minutes. 3 sessions per week were given for 12 weeks along with home program.	Decrease in Revised Urinary Intensive Scale. Improvement in Vaginal Squeeze pressure. Pelvic floor muscle exercises performed in different positions are effectual in treating stress urinary incontinence.
Wang W et al. ¹¹	349 postmenopausal women (mean age 58.8 years) having stress urinary incontinence. EA Group (n = 169), SA Group (n = 180) 18 treatment sessions of electroacupuncture or sham electroacupuncture over 6 weeks with 24_ weeks of follow up assessment	Participants underwent 30-min EA or SA treatment sessions three times per week for a total of 18 sessions over 6 consecutive weeks	Reduction in mean 72-h incontinence episode frequency. Improvement in QOL.

Davila GW et al. ¹²	104 patients with urinary incontinence, Group A (n = 38), Group B (n = 68). Weekly treatment sessions for 4 weeks and then monthly for 2 months	Participants received physiotherapy session for 45-60 minutes which included a bladder diary for 10 minutes, pressure biofeedback pelvic floor exercises for 10 minutes, sub maximal electrical stimulation for 15 minutes and patient education or counseling for 10-20 minutes.	Reduction in recorded incontinence episodes
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Table 2. Physiotherapy and Insomnia

Study	Participants	Exercise Intervention	Result
Karandikar-Agashe G et al. ¹³	60 patients with menopause and insomnia. Controlled Group (n = 30), Experimental Group (n = 30)	Group A underwent general strengthening exercises. Frequency was three times for first two weeks session last for 20 min, 30 min for 3rd and 4th week. Group B received aerobic exercises for 20 min in 1 st and 2 nd week, and 30 min in 3rd and 4 th week	Reduction in insomnia in postmenopausal women
Llanas AC et al. ¹⁴	2 patients aged 56 and 62 years (case study)	One and a half hours physiotherapy session twice a week for six months Treatment includes active and passive stretching and active strengthening of a major group of muscles.	Reduction in REM latency Improvement in sleep efficiency
Oliveira DS et al. ¹⁵	44 participants were divided into 3 groups, TM (n = 15), CTL (n = 15), PM (n = 14)	The duration of treatment was 4 months PM and TM group participants were seen twice a week in 1-h sessions, i.e. the 16th session of massage and passive movement	Improvement in ISI Decrease in the BDI Decrease in insomnia symptoms
Emara HM et al. ¹⁶	20 postmenopausal women with BMI less than 30 kg/m ²	The duration of treatment lasted for 40 minutes. Each treatment sessions were 3 times/week for 2 months.	Improvement in sleep quality

Table 3. Physiotherapy and Insomnia

Study	Participants	Exercise Intervention	Result
Schröder G et al. ¹⁷	50 participants were enrolled into two groups (controlled and experimental). Control group (n=25) Experimental group (n=25)	30-minute intensive exercise, twice weekly for 3 months	Decrease in pain Improvement in quality of life
Bergstrom I et al. ¹⁸	36 postmenopausal women with kyphosis attending the osteoporosis split into two groups. Control group (n=16) Experiment group (n=20)	60-min group training program twice a week for 4 months	Increased thoracic extension Increased back extensor strength Improvement in physical mobility

Angin E et al. ¹⁹	16 osteoporotic and 17 osteopenic postmenopausal women were enrolled into the study.	Participants received exercise session for 1 hour for 3 weeks for 21 weeks.	Decrease in pain Increase in BMD Improvement in quality of life
Angin E. ²⁰	Forty-one women were divided into 2 groups, Pilates group (n = 22) Control group (n = 19)	One hour session, three times a week for 24 weeks	Increase in pain Increase in BMD Improvement in quality of life
Aveiro MC et al. ²¹	36 postmenopausal women with osteoporosis were divided into two groups (n = 18 each):) : land based or water-based.	Each session was for 45 minutes. 2 sessions/week for 12 weeks.	Improvement in postural control Improvement in dynamic balance

Conclusion

In conclusion, regular physical activity appears to be an alternative method to reduce urinary incontinence, insomnia, REM latency, and pain. It also helps in improving BMD, quality of life, dynamic balance, posture, muscle strength, and sleep quality that occur during postmenopausal period.

Physiotherapy has a significant effect on urinary incontinence, insomnia, and osteoporosis in postmenopausal women. These benefits have a clinically relevant impact on postmenopausal women. However, more randomisation is required in these areas for more studies.

Conflicts of Interest: None

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