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EFFECTS OF CHAIR SURYANAMASKAR IN COMMUNITY DWELLING ELDERLY PATIENTS WITH KINESIOPHOBIA

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ABSTRACT

Background: *Aging is a natural and irreversible process, associated with physiological and psychological changes that reduces mobility, balance and independence. Kinesiophobia is fear of movement due to painful injury or reinjury. It limits physical activity in the elderly.*
Chair Suryanamaskar, a seated form of yoga, integrates gentle posture and breathing techniques, which enhances body awareness, improves flexibility, strength and psychological confidence.
Methods: *Thirty elderly individuals aged 60–80 years with Tampa Scale of Kinesiophobia (TSK) scores >37 were divided into two groups: Chair Suryanamaskar and Walking. Both interventions were performed three times weekly for four weeks.*
Results: Both Chair Suryanamaskar (44.5±4.93 to 41.8±5.02; p<0.001, d=1.84) and Walking (44.4±3.33 to 41.6±4.21; p<0.001, d=1.48) showed significant reductions in kinesiophobia. No significant difference was found between groups (p=0.83).
Conclusion: *Chair Suryanamaskar and Walking were equally effective in reducing kinesiophobia in elderly individuals. Chair Suryanamaskar provides a safe, accessible, and culturally relevant option for improving physical and mental well-being among seniors.*

KEYWORDS: *Chair Suryanamaskar, Kinesiophobia, Elderly, Tampa Scale, Yoga, Community Rehabilitation.*

INTRODUCTION

The global population is aging rapidly and India is no exception. Aging is a natural and irreversible process that gradually transforms a healthy body into one that is frail and more susceptible to infections, injury and mortality. Indian nationals, aged 60 years and above are considered 'senior citizens' in India. According to India's population distribution, 8.6% of people are 60 years of age or older. According to this demographic, 7.5% of people are older adults in the population. [1] [2]

Kinesiophobia, as defined by Kori et al. (1990), is an excessive, irrational, and incapacitating fear of physical movement and activity due to a sense of vulnerability to painful injury or re-injury [3]. The 17-item Tampa Scale of Kinesiophobia (TSK) is often used to evaluate it. [4]

Different physiotherapy treatment like conventional physiotherapy treatment, i.e., hot pack, extension and flexion exercise with limited stretching, physiotherapy rehabilitation, psycho-motor physiotherapy have been created to treat kinesiophobia and have been found to modify behavioral and cognitive components of pain and movement and thus improve functional outcomes. [5] [6] [7]

Surya namaskar is a traditional yoga practice which includes sets of postures done in a flowing manner, it includes 12 physical postures [8]. But elderly individuals may find it strenuous and challenging to adhere to traditional exercise routine because of physical limitation. However adapted physical activity, like chair-based exercises, present a possible solution, one such adaptation is Chair Suryanamaskar, a modified version of traditional Suryanamaskar, designed to be performed while seated [9].
It consists of 12 physical postures in a continuous flow, which is synchronized with breathing. [10]
It offers a gentle, seated alternative to traditional yoga, improving mobility and balance.
Despite potential benefits, there is scarcity of studies examining the effectiveness of Chair Suryanamaskar on kinesiophobia in elderly patients. Thus, this study seeks to determine the impact of Chair Suryanamaskar on elderly individuals with kinesiophobia.

OBJECTIVES

To study the effect of Chair Suryanamaskar on kinesiophobia in the elderly patient's using the Tampa Scale of Kinesiophobia (TSK).

METHODOLOGY

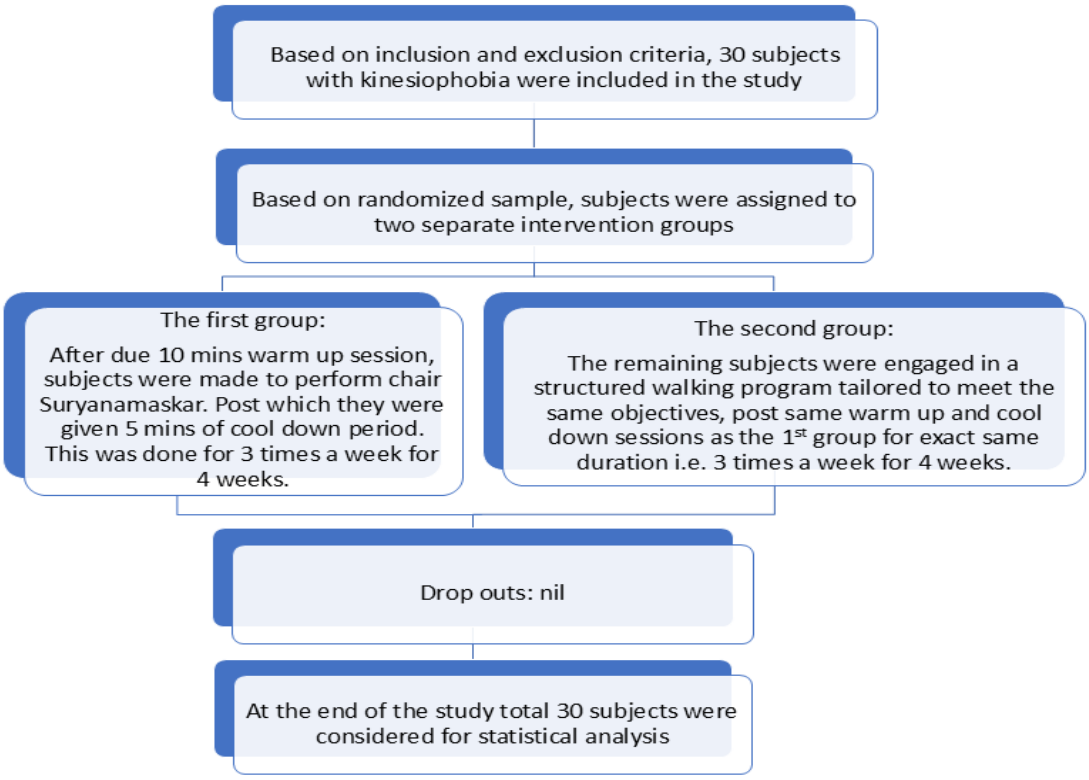
This study was an experimental study with a randomized controlled trial study design. The total number of samples was 30 who were community dwelling elders visiting Physiotherapy OPDs. Their inclusion criteria were Tampa scale score more than 37, people between 60-80 years of age, cooperative patients, and patients who had proficiency in either English or marathi language. And the exclusion criteria were patients with cardiovascular or respiratory diseases, musculoskeletal

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disorders, and/or deformities, Patients who had undergone any surgery within past 6 months. The outcome measure used for understanding the pre and post effect of the interventions on kinesiophobia was the Tampa scale of kinesiophobia (TSK). After ethical approval and consent, participants were divided into two groups. Group A performed Chair Suryanamaskar [9] [11], and Group B participated in a structured walking program. Each session included warm-up (10–15 min), main exercise (10–20 min), and cool-down (5 min). The TSK was recorded before and after the four-week intervention.

SAMPLING DESIGN

Community dwelling elderly people between the age of 60 years to 80 years who lived in residential societies in and around Pune and TMV physiotherapy OPD were included in the study using non-probability purposive sampling.



TREATMENT: Chair Suryanamaskar Steps: [9] [11]



➤1.Pranamasana (Exhale: Sit tall, feet grounded, palms at heart, shoulders relaxed)
➤ 2. Hasta Uttanasana (Inhale: Sweep arms overhead, ribs in, gaze forward/up)
➤ 3. Hasta Padasana (Exhale: Fold from hips over thighs, hands to floor/shins, spine long)
➤ 4. Anjaneyasana (R) (Inhale: Hug right knee to chest, chest open, gentle backbend)
➤ 5. Ek Padhastasana (R) (Exhale: Fold forehead gently toward right knee)
➤ 6. Dandasana (Inhale: Sit tall at chair edge, extend both legs forward, spine long)
➤ 7. Hasta Uttanasana (Inhale: Lift arms overhead, engage core)
➤ 8. Hasta Padasana (Exhale: Fold forward again from hips, neck relaxed)
➤ 9. Anjaneyasana (L) (Inhale: Hug left knee to chest, chest open, gentle backbend)
➤ 10. Ek Padhastasana (L) (Exhale: Fold forehead gently toward left knee)
➤ 11. Hasta Uttanasana (Inhale: Arms overhead, lengthen spine)
➤ 12. Pranamasana (Exhale: Palms at heart, shoulders soft, return to center)

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STATISTICAL DESIGN

SPSS IBM version 26 was used to analyze the data, and Microsoft Excel was used to create the tables and graphs. The study included a total sample size of 30 people with ages ranging from a minimum of 60 years to a maximum of 80 years. The overall mean age is of 71.5 ± 6.38. The Shapiro-Wilk test was used to determine normality. TSK scores before and after the intervention were compared using paired t-tests. Chair Suryanamaskar group (n=15) (Table 1, Graph 1) had a pre score of 44.5 ± 4.93 which was reduced to 41.8 ± 5.02 with mean score of 2.67 ± 1.45 (Table 2). Statistical significance of $p<0.001$ was found with large effect size of 1.84 in this group. Walking group (n=15) (Table 1, Graph 1) had a pre score of 44.4 ± 3.33 which was reduced to 41.6 ± 4.21 with mean score of 2.80 ± 1.90 (Table 2). Statistical significance of $p<0.001$ was found with large effect size of 1.48 in this group. There was no discernible difference between the groups with a mean difference of 0.13 ± 0.26 which was statistically nonsignificant ($p = 0.63$), a negligible effect size of 0.08. (Table 2, Graph 1)

INTERPRETATION

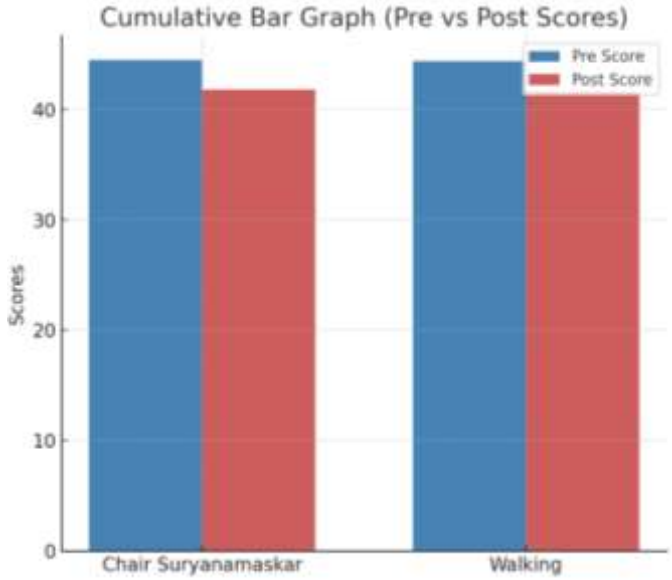
Table 1. Within-group changes in Tampa Scale of Kinesiophobia (TSK) scores

Group	Pre Mean ± SD	Post Mean ± SD	Mean Change ± SD	% Change	p-value	95% CI	Cohen's d
Chair Suryanamaskar	44.5 ± 4.93	41.8 ± 5.02	2.67 ± 1.45	6.00%	<0.001	1.87 – 3.47	1.84
Walking	44.4 ± 3.33	41.6 ± 4.21	2.80 ± 1.90	6.30%	<0.001	1.75 – 3.85	1.48

Table 2. Between-group comparison of post changes in Chair Suryanamaskar and Walking group

Comparison	Mean Change (Chair)	Mean Change (Walking)	Mean Difference	% Difference	p-value	95% CI	Cohen's d
Chair vs Walking	2.67 ± 1.45	2.80 ± 1.90	0.13	4.70%	0.83	−1.13 – 1.40	0.08

Cumulative Comparison of pre- and post-intervention Tampa Scale of Kinesiophobia (TSK) in Both Groups



Graph 1

GEOGRAPHICAL AREA

The study was conducted in Pune, Maharashtra, among elderly individuals residential societies in and around Pune attending the physiotherapy OPD of TMV's Indutai Tilak College of Physiotherapy. The participants were community-dwelling elders residing in nearby urban areas.

RESULTS

The comparison of pre- and post-intervention scores of the Tampa Scale of Kinesiophobia (TSK) showed statistically significant results in both groups i.e. Walking group and Chair Suryanamaskar group ($p < 0.001$). The comparison of mean changes between the two groups showed no statistically significant difference (mean difference = 0.13, $p = 0.83$, Cohen's $d = 0.08$). This indicates that both interventions were equally effective in reducing kinesiophobia.

DISCUSSION

The purpose of the current study was to determine the effect of Chair Suryanamaskar in elderly patients with kinesiophobia. After four weeks intervention, kinesiophobia significantly reduced in both the Chair Suryanamaskar and Walking groups.

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There was no significant difference between the two interventions (p=0.83), suggesting that they were equally effective.

Regular physical activity helps overcome fear-avoidance behavior by exposing people to movement gradually and safely, thus reduction in Tampa scale of kinesiophobia was seen. The regularity and consistency of both programs likely boosted participants' self-esteem and reduced their fear of movement. [3] [4] [5] [6]

Chair Suryanamaskar promoted self-efficacy, awareness of the body, and relaxation through blending conscious movement with synchronized respiration. Its large impact on reducing fear-based avoidance and increasing psychological well-being is evidenced by the large effect size (1.84). [7]

The Walking group also demonstrated a significant improvement which may have been brought on by social interaction, endorphin release, and reassurance during supervised sessions, all of which helped to lessen distress and encourage movement confidence. [5]
Standardized warm-up and cool-down exercises were incorporated into both interventions to reduce stiffness, encourage relaxation, and guarantee a thorough, secure workout. [12]

Overall, kinesiophobia was successfully decreased by the combined psychological and physical benefits of walking and Chair Suryanamaskar. The findings validates earlier research highlighting the value of supervised exercise in disrupting the fear-avoidance cycle. [3] [4] [12]

Therefore, a structured walking program is just as practical and effective for managing kinesiophobia in the elderly as Chair Suryanamaskar, which provides a mindful, culturally appropriate approach. [6]

CONCLUSION

The present study finds that both Chair Suryanamaskar and Walking, done three times a week for four weeks, effectively reduced kinesiophobia among elderly individuals living in the community.

FUTURE SCOPE: Long-term follow-up is necessary to assess the lasting effects of Chair Suryanamaskar and Walking on kinesiophobia. Future research could include additional outcome measures such as balance, functional independence, and quality of life.

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