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The Impact of Hatha Yoga on Musculoskeletal Complaints in Housewives

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Abstract. *Musculoskeletal disorders (MSDs) arise from prolonged minor and major repetitive impacts, causing pain in muscles, bones, and joints. Hatha yoga, as a complementary therapy, has the potential to alleviate joint pain. This study aimed to evaluate the effects of hatha yoga on musculoskeletal complaints among housewives in Sindon Village, Ngemplak, Boyolali. Using a pre-experimental design with a one-group pre-test and post-test method, the study involved 30 purposively selected participants. Data were collected using the Nordic Body Map (NBM) questionnaire. Participants underwent 12 hatha yoga sessions over four weeks. The findings indicated a significant reduction in musculoskeletal complaints after the intervention.*

Keywords: *Musculoskeletal, Hatha, Yoga, Complaints*

1. INTRODUCTION

Musculoskeletal disorders (MSDs) encompass a range of complaints that arise from both minor and significant repetitive impacts that cumulatively occur over an extended duration, ultimately resulting in discomfort and pain within the musculature, skeletal structure, and articulations (Turcu et al., 2022). Complaints associated with the musculoskeletal system, including but not limited to discomfort and pain, alongside complications affecting the vascular system, tendons, joints, bones, nerves, and muscles, are frequently attributable to occupational activities. Among the most prevalent musculoskeletal complaints are discomfort in the lumbar region and waist, tension in the cervical area, as well as pain in the wrists, arms, legs, and ocular fatigue, along with a variety of other symptoms (Tarwaka, 2014).

The onset of these conditions is frequently precipitated by factors such as inadequate posture, repetitive motions, and an ergonomically unfavorable work environment. Such conditions have the potential to impede individual productivity and diminish overall quality of life; therefore, it is imperative to adopt sound occupational practices while incorporating regular stretching and rest periods. Musculoskeletal complaints may manifest in individuals engaged in tasks characterized by monotonous and repetitive hand movements during work, including housewives. Housewives typically undertake their responsibilities continuously from dawn until nightfall. Numerous tasks are performed by housewives, including laundering garments, food preparation, household cleaning, among others. All of these activities necessitate prolonged engagement in either squatting or standing positions. When domestic tasks are performed routinely over an extended duration, they may culminate in

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complaints manifesting as pain in specific body regions, commonly recognized as musculoskeletal complaints (Hastuti, 2016).

The prevalence of musculoskeletal disorders, as determined by healthcare professionals in Indonesia, is recorded at 11.9%, whereas the prevalence based on reported symptoms or diagnoses stands at 24.7%. Specifically within Central Java, the incidence of musculoskeletal disorders reaches 18.9%, while in Boyolali, it is noted at 6.20% (Riskesdas, 2018).

Musculoskeletal complaints can be mitigated through both pharmacological and non-pharmacological therapeutic approaches (El-Tallawy et al., 2021). One manifestation of non-pharmacological therapy for these musculoskeletal complaints is gymnastics. Gymnastics not only alleviates pain but also enhances health, reduces cholesterol levels, and improves joint flexibility, thereby contributing positively to the musculoskeletal system (Setiawan, 2014). One form of physical exercise that has been recognized as beneficial for individuals experiencing musculoskeletal complaints is hatha yoga gymnastics (Marmolejo et al., 2018).

Hatha yoga gymnastics is acknowledged for its efficacy in enhancing flexibility and muscular strength, while also assisting in the reduction of stress that may exacerbate musculoskeletal conditions. Furthermore, the practice of hatha yoga is conducive to improving body awareness and respiratory function, thereby fostering overall relaxation and recuperation for individuals suffering from musculoskeletal complaints (Costa et al., 2020). Hatha yoga has the potential to diminish joint pain provided that the movements are executed correctly and with precision; gentle movement activities can postpone or alleviate pain issues stemming from diseases, trauma, and diminished joint mobility, particularly when paired with a healthy lifestyle, thereby enhancing quality of life (Lebang, 2013).

In light of this contextual framework, the researchers are motivated to investigate the impact of hatha yoga on musculoskeletal complaints among housewives residing in Sindon village, Ngemplak, Boyolali. This research endeavors to yield a comprehensive understanding of the effectiveness of hatha yoga gymnastics as a non-pharmacological intervention for addressing musculoskeletal complaints, while also providing recommendations for public health practices and the prevention of similar issues among housewives.

2. METHODS

This research employs a quantitative methodology characterized as a pre-experimental design, specifically a study framework that does not meet the criteria for a true experimental design, utilizing the "one group pre-test-post-test design" to evaluate the effects of an intervention on the study sample. The methodological framework adopted entails the administration of a pre-test to a cohort of participants using an assessment instrument, followed by the implementation of an intervention, culminating in a post-test administered with the identical instrument, with subsequent data analysis conducted using the SPSS software. The sampling strategy employed in this investigation was purposive sampling, resulting in a final sample size of 30 individuals.

3. RESULTS AND DISCUSSION

`The study was conducted in Sindon Village, Ngemplak, Boyolali which was conducted in August-November 2023. The characteristics of the respondents are presented in the following table 1.

Table 1. Distribution of Sample Characteristics

Characteristic	Frequency (n)	Percentage (%)
Age		
Late Adolescence (17-25 tahun)	2	6,7
Early Adulthood (26-35 tahun)	7	23,3
Late Adulthood (36-45 tahun)	12	40
Early Elderly (46-55 tahun)	9	30
Total	30	100
BMI (Body Mass Index)		
Underweight (17-18,5)	3	10
Normal (18,5-25,0)	13	43,3
Overweight (25,0-27,0)	6	20
Obese (>27,0)	8	26,7
Total	30	100
Education		
Junior High School	7	23,3
Senior High School/Vocational High School (SMA/SMK)	17	56,7
Diploma/Bachelor's Degree (D2/D3/S1)	6	20
Total	30	100

Table 1 shows that the majority of the sample (40%) were aged 36–45 years, with a normal BMI (18.5–25.0) in 43.3% of the participants. Most participants had completed Senior High School or Vocational School (56.7%).

Table 2. Pre-Test and Post-Test Differences

Variable Min	Mean Max	Mean Difference	Sid. Deviation	Frequency (n)	Min	Max	P-Value
Pre-test	45,17	6,2	8.288	30	36	66	
Post-test	38,97		9.688	30	29	61	0.000

Table 2 indicates that the mean score decreased from 45.17 during the pre-test to 38.97 during the post-test, showing a reduction of 6.2 points.

The dataset analyzed in this study showed a non-normal distribution, prompting a data transformation that still resulted in abnormal characteristics, leading to the use of the Wilcoxon test for hypothesis evaluation. The test revealed a significance value of 0.000 ($p<0.05$), indicating a significant difference in musculoskeletal complaints among housewives in Sindon Village after implementing hatha yoga exercises.

The consistent practice of hatha yoga has been demonstrated to exert a beneficial influence on musculoskeletal complaints (Utari et al., 2018). The findings presented in Table 2 indicate a reduction in musculoskeletal complaints pre- and post-intervention. The efficacy of hatha yoga exercises in alleviating the diverse symptoms associated with musculoskeletal complaints has been substantiated. This aligns with the assertion made by McCaffrey and Park (2012) that the provision of yoga interventions can mitigate musculoskeletal or joint pain during physical activities, accompanied by a significant enhancement in the range of motion for individuals experiencing musculoskeletal complaints.

Hatha yoga serves as a therapeutic approach aimed at elongating soft tissue structures, thereby facilitating the training and prevention of muscle contracture or rigidity, which ultimately enhances muscle functionality, capacity, and alleviates pain (Grabara, 2017). Furthermore, hatha yoga is posited to enhance blood circulation, oxygenation, self-esteem, diminish bodily tension, reduce joint discomfort, promote improved postural alignment, and cultivate flexible and robust musculature (Armini & Larashanti, 2020).

4. CONCLUSION

In this research, the cohort experiencing musculoskeletal issues was predominantly comprised of individuals in late adulthood, specifically within the age range of 35 to 45 years. According to the body mass index, the prevalence of normal weight (18.5-25.0) was found to be 43.3%. An analysis of the Nordic Body Map questionnaire, administered to a sample of 30 individuals, revealed a significant change in the mean score from the pre-test value of 45.17 to the post-test value of 38.97, indicating a reduction of 6.2. The findings from the hypothesis test utilizing the Wilcoxon signed-rank test indicated a significance level of 0.000 ($P<0.05$), there by supporting the acceptance of the alternative hypothesis, as there exists a statistically significant difference in the musculoskeletal complaint scores among households in Sindon Village, Ngempak, Boyolali, before and after the implementation of hatha yoga intervention. Consequently, it can be concluded that hatha yoga exerts a measurable influence on musculoskeletal complaints experienced by housewives in Sindon Village, Ngempak, Boyolali.

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