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EFFECT OF YOGASANA AND SHAKTI VIKASHAKA KRIYA ON KNEE PAIN AMONG MIDDLE AGE WOMEN

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Abstract

Background: *Knee pain, often associated with osteoarthritis (OA), is a prevalent condition that significantly reduces quality of life, especially among middle-aged women. Non-pharmacological interventions, including yoga and therapeutic exercises, have shown promise in alleviating pain and improving joint function. This study evaluates the effects of Yogasana and Shakti-Vikasak Kriya on knee pain among middle-aged women.* ***Method:*** *The study included 50 participants recruited from various societies and hospitals in Ahmedabad. Participants were selected using a convenient sampling method and met the inclusion criteria of experiencing knee pain for at least six months. Baseline pain levels were assessed using the Visual Analogue Scale (VAS). Participants underwent a 1.5-month intervention involving daily practice of Yogasana and Shakti-Vikasak Kriya. Post-intervention VAS scores were collected and analyzed using paired t-tests to evaluate the effect of the intervention.* ***Results:*** *The mean VAS scores for knee pain decreased significantly from 6.36 (SD = 1.44) pre-intervention to 3.50 (SD = 1.22) post-intervention ($t = 24.27$, $p < 0.0001$). These findings demonstrate the effectiveness of Yogasana and Shakti-Vikasak Kriya in reducing knee pain and improving functionality among participants.* ***Conclusions:*** *The study concludes that regular practice of Yogasana and Shakti-Vikasak Kriya significantly reduces knee pain in middle-aged women. These interventions enhance joint flexibility, improve muscle strength, and promote better blood circulation, effectively alleviating pain and stiffness. The findings suggest that these yogic practices are effective, non-invasive alternatives for managing knee pain and improving quality of life.*

Keywords: *Knee pain, Yogasana, Shakti-Vikasak Kriya, middle-aged women*

INTRODUCTION

The Sanskrit term *Yoga* comes from the root *yug*, meaning “to join” or “to yoke,” and signifies the union of body and mind with the self, or the higher transcendental self. Over the centuries, yoga has developed into a discipline that harmonizes physical, mental, and spiritual practices. Originating in an oral tradition, its teachings have been preserved and transmitted from teacher to student through generations.

Yoga has been proposed as a therapeutic approach for various conditions, including osteoarthritis (OA) of the finger joints. Through specific asanas, yoga aims to realign the skeletal structure, alleviate stiffness, and address musculoskeletal imbalances. These benefits may arise from the geometric precision of asanas, which are thought to alleviate abnormal stresses and reestablish proper anatomical alignment (Garfinkel, 1992). Yoga practices—including postures (*asana*), breathing techniques (*pranayama*), cleansing methods (*shatkarma*), and meditation (*dharana* and *dhyana*)—have shown beneficial effects on the musculoskeletal system, immune function, nervous system, and autonomic balance. Studies indicate that yoga enhances flexibility, muscle strength, and balance while alleviating pain (Wang et al., 2018).

Knee pain, a prevalent issue affecting approximately 25% of the adult population, is predominantly caused by osteoarthritis in individuals over 50 years old (March & Bachmeier, 1997). In the United States, the number of total knee replacements rose by 134% between 1999 and 2008, incurring costs exceeding $9 billion (Hill et al., 2011). Over the past decade, numerous evidence-based programs have sought to improve knee pain management (Searle et al., 2012). Comparative studies reveal that yoga therapy, traditional stretching, and strengthening exercises significantly improve functional outcomes and quality of life over six weeks (Bukowski et al., 2006). However, yoga-related injuries, particularly in the lower extremities and knees, account for 41% of injuries, with 43% occurring during yoga practice (Russell et al., 2016).

Degenerative changes in the knee joint, often affecting major weight-bearing joints such as the spine and hips, are common. Conditions like soft tissue contracture, reduced quadriceps strength, and limited sagittal range of motion exacerbate knee dysfunction (Scott et al., 1993; Altman et al., 1986). Studies report that nearly half of patients

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with anterior cruciate ligament (ACL) injuries develop clinical signs of knee osteoarthritis within 10 years, with the condition affecting almost all patients 15–20 years post-injury (Myklebust & Bahr, 2005). The prevalence of knee pain is expected to rise alongside increasing obesity rates, projected to reach 35% in the UK by 2015 (Jenkinson et al., 2009).

Moreover, depression has been recognized as an important factor that can worsen knee pain, even in individuals with mild osteoarthritis (OA). Research has explored the link between depression and pain severity in knee OA patients, with mixed findings. However, recent studies suggest that comorbid depression significantly influences knee symptoms, particularly in cases of mild to moderate radiographic OA (Davis et al., 1992; Kim et al., 2011; Peat & Thomas, 2009; Riddle et al., 2011; Wright et al., 2008).

LITERATURE REVIEW

Osteoarthritis and Knee Pain: Prevalence, Impact, and Interventions

Osteoarthritis (OA) is characterized by joint pain, morning stiffness, limited range of motion, and accompanying muscle weakness. Knee OA, in particular, is associated with poor sleep, depression, increased sedentary lifestyle, reduced physical activity, obesity, and diminished quality of life (Meiring et al., 2016). Additionally, bilateral knee OA compromises balance and heightens the risk of falls, especially among individuals with moderate disease severity (Khalaj et al., 2014).

Non-pharmacological interventions—such as exercise, yoga, the Integrated Approach of Yoga Therapy (IAYT), Tai Chi, physiotherapy, acupressure, naturopathy, and massage therapy—have been shown to enhance quality of life, reduce pain, improve physical function, and promote psychological well-being in individuals with knee OA (Ebnezar et al., 2011; Ferreira et al., 2015; Field, 2016; Glickman & Wallace, 2014; Schilke et al., 1996). However, the benefits of these interventions are often modest to moderate and tend to have limited long-term effectiveness in managing symptoms (Kulesa, 2012). Yoga, in particular, has demonstrated promising results in alleviating pain and morning stiffness, improving flexibility and muscular strength, and enhancing overall quality of life in individuals with knee OA (Savik et al., 2014; Ghasemi et al., 2013; Ebnezar et al., 2012; Nambi & Shah, 2013).

Although both the knee and hip serve as weight-bearing joints, their anatomical structures and biomechanical roles differ. Consequently, comparable radiographic scores may correspond to distinct patterns of symptoms in the knee and hip (Felson, 2009; Felson & Zhang, 1998; Kopec et al., 2007). Regardless of which joint is affected, pain and functional limitations remain central features of OA, frequently resulting in a substantial decline in quality of life (Chan & Wu, 2012).

Radiographic imaging, such as anteroposterior (AP) knee radiographs and lateral images with the knee in 30° flexion, remains a standard diagnostic tool for OA (Buckland, 1995; Dieppe et al., 1995; Chaisson et al., 2000). The prevalence of OA rises with age, being rare among individuals aged 25–35 years but affecting 20–40% of those aged 75 and above. Although commonly linked to aging, knee pain is not confined to older populations; a Finnish study found that 19% of schoolchildren aged 14–15 years reported chronic knee pain (Vahasarja, 1995).

Understanding of risk factors for knee pain—especially in relation to occupational physical strain and exercise—remains limited, largely due to the scarcity of prospective studies. Cross-sectional research, including analyses of NHANES I data on individuals aged 25–74 years, has indicated that the prevalence of knee symptoms (such as pain, swelling, and morning stiffness) rises with age and is slightly higher in women (Hannan, 2000). Other research supports higher knee pain prevalence in women (Andersen et al., 1999). Workload intensity also influences knee pain prevalence; moderate workloads are associated with more frequent knee pain compared to light or heavy workloads (Bergenudd et al., 1989). Similarly, physically demanding occupations—such as carpentry, mining, and construction—are associated with a higher prevalence of knee pain compared to less physically strenuous jobs (O'Reilly et al., 2000).

OBJECTIVE OF THE STUDY

The aim of the study was the effect of yogasana and shakti-vikasak kriya on knee pain among middle-aged women.

RESEARCH METHODOLOGY

Sample

- In present research 50 participants have been taken from Various society & hospitals located in Ahmedabad.
- Present study convenient sampling methods have been used.

Inclusion criteria

- Individuals of any age and gender experiencing knee pain.
- Participants with knee pain persisting from the last six months up to 10 years.

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Exclusion criteria

- Healthy individuals or individuals with other medical conditions have not been considered.
- The patients who have had knee pain for the last 10 years have not been considered.

Variables:

- In present research yogasana and shakti-vikasak kriya has been taken as an independent variable.
- Dependent variables are knee pain.

Tools:

Following tools have be used for data collection

- Visual analogue scale (VAS). Used to measure the intensity of knee pain.

Procedure

Prior permission was obtained from various societies and hospitals, and informed consent was secured from all participants. Participation was voluntary and conducted solely for research purposes. Initially, rapport was established with the participants, who were organized into small, manageable groups. Baseline data on knee pain intensity were collected using the Visual Analogue Scale (VAS). These measurements served as the pre-test data. Following the pre-test, participants underwent a 1.5-month intervention program involving Yogasana and Shakti-Vikasak Kriya. The intervention sessions were conducted daily under the supervision of the research team, with structured guidance on the practices. At the end of the 1.5-month intervention, post-test data were gathered using the same VAS questionnaire to assess changes in knee pain intensity. Both pre-test and post-test data were then systematically compiled in an Excel spreadsheet, organized by variables, and prepared for subsequent analysis.

Intervention module

Shakti-Vikasak Kriya	**Duration**
Prayer: 3 Om chanting, ॐ भूर्भुवः स्वः तत्सवितुर्वरेण्यं भर्गो देवस्य धीमहि धियो यो नः प्रचोदयात् ॥	3 mins
Jangha shakti vikasak kriya-1 (legs fast open-close) -5 times	2 mins
Jangha shakti vikasak kriya-2 (chair pose on toes) -5 times	2 mins
Janu shakti vikasak kriya (bend knee) -5 times	2 mins
Pindali shakti vikasak kriya (squat pose) -5 times	2 mins
Paadamoola shakti vikasak kriya (heel up-down) -5 times	2 mins
Gulf paadaprista shakti vikasak kriya (ankle rotate) -5 times	2 mins
Pada angula shakti vikasak kriya (toes flex) -5 times	2 mins
Yoga Asana practice	
Ardha-chandrasana	1 min
Padahastasana	1 min
Ardha-kati chakrasana	1 min
Veer bhadrasana	1 min
Janu-sirsasana	1 min
Paschimottanasana	1 min
Bhujangasana	1 min
Markatasana	1 min

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Savasana	1 min
Deep relaxation techniques (DRT)	8 mins
Ending Prayer: ॐ सर्वे भवन्तु सुखिनः सर्वे सन्तु निरामयाः । सर्वे भद्राणि पश्यन्तु मा कश्चिद्दुःखभाग्भवेत् । ॐ शान्तिः शान्तिः शान्तिः ॥	1 min
Total	35 mins

DATA ANALYSIS & INTERPRETATION

Result

Showing Mean SD and and T of Pre and Post of yogasana and shakti-vikasak kriya on knee pain among middle-aged women.

Table no.1

Data	N	Mean	SD	t	Level of significance
Pre	50	6.36	1.44	24.27	0.0001
Post	50	3.50	1.22		

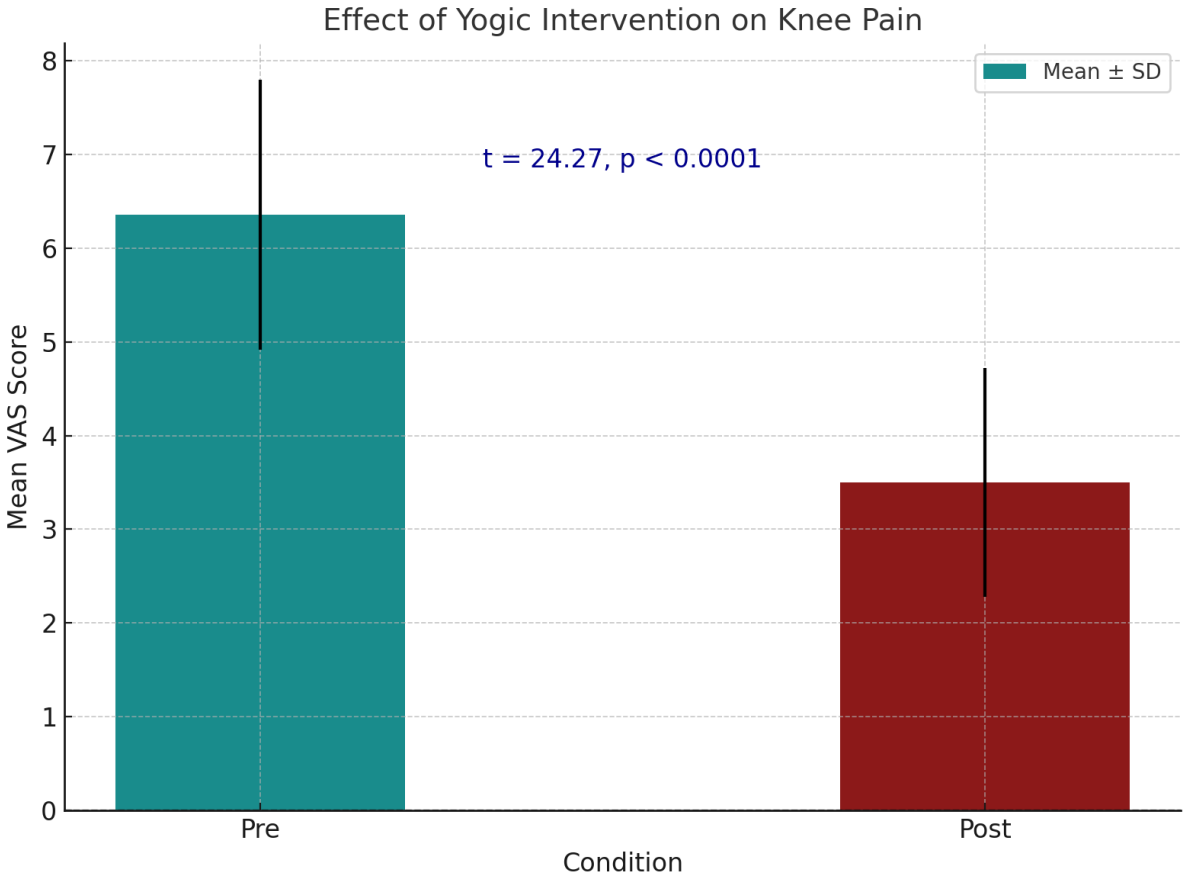

Table 1 presents the *t*-value (24.27) for pre- and post-yogic intervention on knee pain among middle-aged women, which is significant at the 0.0001 level. Therefore, the null hypothesis—that yogic intervention through *yogasana* and *shakti-vikasak kriya* has no significant effect on knee pain in middle-aged women—is rejected. The results indicate a significant positive effect of yogic intervention on reducing knee pain in this population. Mean scores of pre & post intervention on knee pain among middle-aged women were 6.36 and 3.50 respectively with SD 1.44

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& 1.22. It indicates that yogic intervention could significantly help in reducing knee pain among middle-aged women.

DISCUSSION

This study underscores the significant positive impact of Yogasana and Shakti-Vikasak Kriya on alleviating knee pain among middle-aged women. The regular practice of these yogic techniques was found to enhance joint flexibility, strengthen surrounding muscles, and improve circulation, thereby reducing inflammation and discomfort in the knees. The integration of mindful breathing and gentle stretches, particularly in Shakti-Vikasak Kriya, complements the physical benefits of Yogasana, promoting overall joint health and functionality. The findings suggest that Yogasana and Shakti-Vikasak Kriya provide an effective, non-invasive, and holistic approach to managing knee pain. These practices not only alleviate symptoms but also foster improved mobility and an enhanced quality of life for individuals with knee pain. Future research should aim to investigate the long-term effectiveness of these practices and include comparative studies with conventional therapeutic approaches. Such studies would provide a deeper understanding of their efficacy and potential for broader application in clinical and non-clinical settings.

CONCLUSION

The study concludes that the regular practice of Yogasana and Shakti-Vikasak Kriya significantly reduces knee pain in middle-aged women. These practices enhance joint flexibility, strengthen supporting muscles, and improve blood circulation around the knee joint, effectively alleviating pain and stiffness. Participants also reported improved physical functionality and a reduced reliance on pain relief medications. Additionally, the holistic integration of asanas with kriyas contributed to mental relaxation, further augmenting pain management. These findings suggest that Yogasana and Shakti-Vikasak Kriya are effective, non-invasive interventions for managing knee pain, offering both physical and psychological benefits for middle-aged women.

CONFLICT OF INTEREST

This study was carried out independently, without any external funding, sponsorship, or influence on its design, implementation, analysis, or reporting. Its sole objective was to assess the effects of *Yogasana* and *Shakti-Vikasak Kriya* on knee pain among middle-aged women. All ethical guidelines were strictly adhered to, ensuring transparency and unbiased results.

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