

Research Article

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Frequency of Pes Anserine Bursitis and Its Impact on Quality of Life Among Sewing Machine Workers

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Abstract

Introduction: Pes Anserine bursitis, occasionally referred to as inter-tendinous bursa, is an inflammatory disorder affecting the bursa of semi-tendinous, gracilis and Sartorius conjoined insertion at proximal, medial tibial aspect, with the prevalence of this condition being 2.5% during 1998 to 2004 at a tertiary orthopedic center in UK. There have been predisposing factors linked to the development of this disorder, inclusive of obesity, diabetes mellitus, trauma, valgus deformity, overuse and osteoarthritis of the knee.

Objective: To determine the frequency of the Pes Anserine Bursitis and its impact on Quality of life among the sewing Machine Workers.

Methodology: The research employed a cross-sectional analytical design. The purpose of this study design was to determine the influential traits of target population at a certain moment in time. It was used to support or refute hypothesis. It did not take a lot of time or money to complete. It had several variables when the data snapshot was taken.

Results: A total of 377 participants (217 males, 160 females; mean age 30.61 ± 17.18 years) were included. The prevalence of PAB was 23.34%, with 88 workers diagnosed. The majority of participants (54.1%) reported working 8-10 hours daily. SF-36 scores indicated significant impairments in general health, physical functioning, emotional health, physical health, social activities, pain, energy level, emotional well-being, and overall quality of life among those with PAB ($p < 0.001$). These findings underscore the detrimental effects of PAB on workers' health and well-being.

Conclusion: The frequency of Pes Anserine Bursitis among Sewing Machine Workers was 23.34%. Pes Anserine Bursitis have significant impact on quality of life among Sewing Machine Workers.

Keywords: pes anserine bursitis; quality of life; sewing machine workers; occupational health; sf 36 questionnaire

Introduction

Sewing machine workers, a significant part of the global workforce, face ergonomic challenges due to repetitive tasks, prolonged sitting, and focused fine movement skills, making them susceptible to musculoskeletal disorders [1]. Pes Anserine bursitis, occasionally referred to as inter-tendinous bursa, is an inflammatory disorder affecting the bursa of semi-tendinous, gracilis and Sartorius conjoined insertion at proximal, medial tibial aspect [1], with the prevalence of this condition is 2.5% during 1998 to 2004 at a tertiary orthopedic center in United Kingdom [2]. There have been predisposing factors linked to the development of this disorder, inclusive of obesity, diabetes mellitus, trauma, valgus deformity, overuse and osteoarthritis of the knee [3]. Clinical presentation of PAB encompasses a range of signs and symptoms, with localized pain being the primary

complaint. The etiology of PATBS is yet unknown and up for debate, but presumed causes include mechanical derangement, overuse of the bursa, repetitive rubbing across it, and direct trauma to it [4]. Workers afflicted by this condition often report tenderness, swelling, and warmth over tibial medial aspect, indicative of the inflammation of bursa. The pain intensifies during activities that involve knee flexion, making routine tasks a source of discomfort for those affected [5].

Patients with this clinical presentation may come with discomfort and edema along the proximal medial tibia, or they may describe vague medial knee pain. Steps up and down the stairs may make the patient's symptoms worse. When there is spontaneous discomfort infero-medial to the knee joint and a history of trauma or diabetes, pes anserine bursitis should be examined [6]. In aspect of Anserine Bursa pain, impairment of quality-of-life manifests through

a spectrum of physical and psychological challenges [3]. The inflammatory nature of the condition, affecting the bursa located at proximal, medial aspect of the tibia, often leads to persistent pain and discomfort, particularly during activities that involve knee flexion [2]. This chronic pain can significantly limit mobility and hold up daily tasks, Spoil the sense of autonomy and physical well-being of the individual. Sleep disturbances may further exacerbate the influence on quality of life, as discomfort associated with Pes Anserine Bursitis may interfere with restful sleep patterns. Additionally, the psychological toll of enduring chronic pain can contribute to heightened stress levels, anxiety, and even depression, thereby diminishing overall mental well-being [7]. The cumulative effect of these physical and psychological factors underscores the complex and multifaceted nature of how quality of life can be affected by Pes Anserine Bursitis, necessitating a comprehensive understanding for effective intervention strategies and holistic patient care.

The research is important because it has ability to bridge existing gaps in our understanding of how Pes Anserine Bursitis has impact on quality of life among sewing machine workers, while general musculoskeletal concerns in this occupational group have been acknowledged, a comprehensive exploration of the specific impact of Pes Anserine Bursitis remains lacking. This study aims to fill this void by providing targeted insights into the relationship between Pes Anserine Bursitis and the quality of life of sewing machine workers. By narrowing our focus to the association between Pes Anserine Bursitis and the quality of life among sewing machine workers, this research aims to fill the existing void in literature. Understanding the nuanced relationship between this specific musculoskeletal issue and the well-being of these workers is crucial for developing targeted interventions and preventive measures. Such insights can inform occupational health practices and contribute to a more holistic approach to the overall health and satisfaction of sewing machine workers.

Sewing machine workers form an essential workforce globally, contributing Significantly to textile and garment production. Engaged in tasks that involve prolonged sitting and repetitive knee movements, these workers are susceptible to musculoskeletal issues, with Pes Anserine Bursitis emerging as a potential concern. Understanding the significance relationship between Pes Anserine Bursitis and the

quality of life among sewing machine workers is crucial for several reasons. Firstly, chronic pain and discomfort associated with the condition can significantly limit mobility and interfere with daily activities, impacting the overall well-being of individuals¹. Secondly, the potential for sleep disturbances further compounds the challenges, affecting restful sleep patterns and contributing to the overall burden on the individual's quality of life [7]. This study aims to contribute valuable knowledge that can inform effective interventions, enhance occupational health practices, and ultimately improve the holistic well-being of sewing machine workers. In conclusion, the convergence of occupational demands and musculoskeletal health in sewing machine workers highlights the significance of exploring the impact of Pes Anserine Bursitis on their quality of life. Through an in-depth understanding of the disease's pathophysiology, signs, and symptoms, coupled with an exploration of its far-reaching effects on daily life, this research endeavors to provide a comprehensive perspective that can drive meaningful interventions and enhance the overall occupational health of sewing machine workers.

Methodology

This study employed a cross-sectional analytical design to assess the prevalence of Pes Anserine Bursitis (PAB) and its association with quality of life among sewing machine workers. Data collection was carried out over six months across several key locations in Lahore, including Baghbanpura, Naulakha Bazar, Gunj Bazar, Anarkali Bazar, Attari Saroba, and Purana Kahna-areas selected for their accessibility and concentration of home-based sewing machine workers. A non-probability convenience sampling technique was used to recruit participants, and the sample size of 377 was determined using Rao Software, based on a population estimate of 20,000, with a 95% confidence level and 5% margin of error. Participants were eligible for inclusion if they were between 18 to 45 years of age, worked 6 to 12 hours daily, and sewed on the floor without using chairs. Exclusion criteria included any history of hip extensor muscle spasm, osteoarthritis of the knee, lower limb ischemic disease, recent surgery (within three months), recent physical therapy (within five weeks), or specific conditions such as patellofemoral syndrome, medial meniscus injury, and panniculitis. The independent variable in the study was Pes Anserine Bursitis, while quality of life was the dependent variable. Data was

collected through structured questionnaires capturing demographic details, followed by physical examination to identify PAB through palpation and the valgus stress test. Hamstring tightness was assessed via active knee extension with a 20-degree cut-off value. The RAND SF-36 questionnaire, known for its reliability (Cronbach's $\alpha = 0.791$), was used to assess participants' quality of life across physical, mental, and social dimensions. Standardized protocols were followed by trained data collectors, with a pilot test conducted beforehand to refine the tools and process. All participants provided informed consent, and ethical standards including confidentiality and privacy were strictly maintained. Data was securely stored in soft format and analyzed using SPSS version 29. Descriptive statistics (mean, standard deviation, frequency, percentages) were visualized through histograms, bar charts, and pie charts, while the Chi-square test was applied to explore the association between PAB and quality of life.

Results

Final results of our study manifested that the mean of age of the participants were 30.61 with std. deviation 17.18, and a total number of participants were 377 including males and females. The frequency of male gender was 217 (57.6%) and female was 160 (42.4%). The frequency of underweight Participants was 53 (14.1%), Healthy weight participants were 225 (59.7%), Overweight participants were 86 (22.8%) and Obese participants were 13 (3.4%). The percentage of normal healthy weight participant was more than underweight, Overweight and obese one.

The frequency of 6 to 7 working hours were 48 (12.7%), 8 to 10 working hours were 204 (54.1%) and 10 to 12 working hours were 125 (33.2%). The Percentage of 8 to 10 working hours was more than the 6 to 7 and 10 to 12 working hours. The frequency of the right dominant side 327 (86.7%) and left dominant side was 50 (13.3%). The frequency of the Positive Pes Anserine bursitis in the Sewing Machine Workers was 88 (23.34%) and negative Pes Anserine bursitis was 289 (76.66%). According to the domains of SF 36 each domain gives an idea about the patient's quality of life. The frequency of Poor General health in participants with positive pes anserine bursitis was 65 and 23 was with Good General Health. The p value for general health was < 0.001 . It shows the significant relationship. The frequency of Poor physical functioning in participants with positive pes anserine bursitis was 78 and 10 was with Good Physical functioning. The P value for physical functioning was less than 0.001. It shows the significant relationship. The frequency of poor Emotional health in participants with positive pes anserine bursitis was 68 and 20 was with Good Emotional Health. The P value for Emotional health was < 0.001 . It shows the significant relationship. The frequency of poor physical health in participants with positive pes anserine bursitis was 62 and 26 was with Good Physical Health. The P value for Physical health was < 0.001 . It shows the significant relationship. The frequency of poor Social Activities in participants with positive pes anserine bursitis was 50 and 38 was with Good Social Activities.

Table 1: Descriptive statistics of demographic data.

Age	
Mean±Std. Deviation	30.61±17.18years
Gender	Frequency and Percentage
Male	217 (57.6%)
Female	160 (42.3%)
Body mass index	Frequency and Percentage
Under weight	53 (14.1%)
Healthy weight	225 (59.7%)
Over weight	86 (22.8%)
Obese	13 (3.4%)

Table 2: Statistical Analysis of frequency of pes anserine bursitis.

Pes Anserine Bursitis	Frequency	Percent
Yes	88	23.34%
No	289	76.66%
Total	377	100.0%

The P value for Social Activities was < 0.001 . It shows the significant relationship. The frequency of Pain increase in participants with positive pes anserine bursitis was 58 and 30 was with decrease in pain. The P value for Pain was < 0.001 . It shows the significant relationship. The frequency of the participants with pes anserine bursitis with poor Energy level was 53 and 35 was with Good Energy Level. The P value for Energy Level was 0.005. It shows the significant relationship. The frequency of participants with pes

anserine bursitis with poor QOL of Emotional wellbeing was 48 and 40 with Good QOL of emotional wellbeing The P value for Emotional wellbeing was < 0.001 . It shows the significant relationship. The frequency of Poor Quality of life in Participants with Pes Anserine Bursitis was 68 and 20 was with good quality of life. The P value for Emotional health was < 0.001 . It shows the significant decrease in quality of life in the Participant with Pes Anserine Bursitis.

Table 3: Statistical analysis of domains of sf 36.

Domain	Poor QOL	Good QOL	P Value
General Health	65	23	< 0.001
Physical Functioning	78	10	< 0.001
Physical Health	62	26	< 0.001
Emotional Health	68	20	< 0.001
Social Activities	50	38	< 0.001
Pain	58	30	< 0.001
Emotional Wellbeing	48	20	< 0.001

Discussion

The findings of this study indicate a significant association between Pes Anserine Bursitis (PAB) and a decline in multiple domains of quality of life among sewing machine workers, as assessed by the SF-36 questionnaire. Participants diagnosed with PAB demonstrated significantly poorer outcomes in general health, physical functioning, emotional wellbeing, pain levels, energy, and social activities. These results are consistent with existing literature that has recognized PAB as a common condition among individuals involved in occupations requiring prolonged sitting or repetitive lower limb activity. A 2023 randomized clinical trial by Saeb et al. found that conservative treatments such as local corticosteroid injections and extracorporeal shockwave therapy improved pain and quality of life in PAB patients, underscoring the burden of untreated cases (Saeb et al., 2023). Similarly, Gouda et al. (2023) reported that PAB frequently co-exists with knee osteoarthritis, further exacerbating physical limitations and pain, which aligns with our findings of poor physical functioning among affected individuals (Gouda et al., 2023). Moreover, our study uniquely contributes to the literature by focusing on an occupational group sewing machine workers-who are often overlooked in musculoskeletal health research. The high frequency of 8-10 working hours per day, combined with static posture and repetitive

movements, likely contributes to the elevated prevalence of PAB (23.34%) in this group.

In addition to physical symptoms, emotional and social aspects of quality of life were also significantly impaired in participants with PAB. This holistic impact mirrors findings from Toktas et al. (2015), who emphasized that chronic musculoskeletal conditions often lead to psychosocial stressors and reduced work productivity. The significant deterioration in physical functioning, emotional wellbeing, and overall quality of life among workers with PAB corroborates findings from other studies. For instance, a randomized clinical trial by Majidi et al. (2023) demonstrated that both local corticosteroid injections and extracorporeal shockwave therapy effectively reduced pain intensity and improved quality of life in PAB patients. Similarly, Gouda et al. (2023) reported that conservative treatments such as local corticosteroid injections and platelet-rich plasma therapy led to significant improvements in pain and function in PAB patients. Furthermore, the association between PAB and increased pain levels observed in our study is consistent with findings from a 2023 study by Saeb et al., which reported significant improvements in pain intensity following treatment. The impact on emotional health and social activities also mirrors results from Toktas et al. (2015), who emphasized that chronic musculoskeletal conditions often lead to psychosocial stressors and reduced work productivity.

In conclusion, our study underscores the detrimental effects of PAB on the health and well-being of sewing machine workers. The high prevalence and significant impairments associated with PAB necessitate targeted interventions, including ergonomic modifications, physical therapy, and appropriate medical treatments, to mitigate the impact on workers' quality of life. Future research should focus on evaluating the long-term effectiveness of these interventions and exploring preventive strategies to reduce the incidence of PAB in occupational settings.

Conclusion

The frequency of Pes Anserine Bursitis among Sewing Machine Workers was 23.34%. Positive Pes Anserine Bursitis have significant impact on quality of life among Sewing Machine Workers.

Limitation and Suggestion

There are few limitations that should be stated as follow in order to helpful for future studies.

- Tailors work environment and tasks can vary significantly affecting the generalizability of findings some tailors may work in factories with different ergonomics compared to those who work in small shops or home.

Few are following suggestions to improve the study:

- Conduct pilot studies to refine research methods, ensure feasibility, and identify potential issues before scaling up to a larger grade before scaling up to a larger study.

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