FREQUENCY OF PLANTAR FASCIITIS AMONG PHYSIOTHERAPISTS IN LAHORE

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ABSTRACT

Background: Plantar fasciitis is known as burning and aching plantar heel pain. It results from inflammation or irritation of plantar fascia, a thick band of tissue responsible for supporting the foot's arche and absorbing shock during movement. **Objective**: To assess how common plantar fasciitis is among physiotherapists in Lahore. **Methodology**: The total of 64 physiotherapists aged between 25-50 years was included with plantar fasciitis pain. A plantar fasciitis pain scale questionnaire administered among physiotherapists and performed a windlass test. SPSS version 24.0 software was utilized for data analysis. **Results**: The findings revealed that approximately 19% of the physiotherapists of Lahore suffered from plantar fasciitis. Of the population suffering from pain about 11(17.2%) have little pain, 10 (15.6%) have moderate pain and 3(4.7%) have severe pain. In which 33(51.6%) have pain withstanding for a prolonged time. And about 45 (70.3%) have not been suffering because of wearing appropriate shoes and maintaining proper posture. **Conclusion**: Physiotherapists may develop plantar fasciitis throughout their life and the intensity of pain can vary depending upon standing hours, and shoe wear.

INTRODUCTION

Physiotherapists are healthcare professionals and part of a multidisciplinary team. For decades, they are playing an important role in the healthcare system.[1]Musculoskeletal disorders arise due to poor posture, which imposes overpressure on the muscles and soft tissues.[2] Plantar fasciitis, often referred to as plantar heel pain, is a condition that effect approximately 11 to 15% of adult seeking professional care for foot issues.[3]The plantar heel consist of the deep fascia at the base of the foot, which plays a critical role in connecting the calcaneus to the toes. Anatomically, the fascia is divided into 3 elements: medial, lateral, and central. [4]

Plantar fascia occurs due to inflammation and degenerative changes in the plantar fascia, often caused by repetitive injury and stress, especially at its attachment point on the medial calcaneal tuberosity of heel. This leads to pain in the central to medial heel pain. Studies indicate that 11 to 15% of adults with foot pain experience plantar heel pain. While plantar fasciitis is typically a self-limiting condition, the pain can become chronic and disabling, often requiring several months of the rehabilitation.[5]

It plays a crucial role in the foot's normal biomechanics, and even small changes in foot structures or pain can impact balance and gait. This often results in slower walking pace, shorter stride length and unbalanced walking pattern.[6]Plantar fasciitis pain is often described as a burning or aching sensation. Plantar fasciitis more often affects unilateral, although approximately 30% of patients have bilateral symptoms.[7]

A key clinical feature of plantar fasciitis is heel pain, primarily affecting the medial part of the heel and sometimes radiating into the medial arc of the foot. The discomfort is typically most severe in the morning. Pain may also be worse during overuse conditions of the foot such as running.[8] The main cause of plantar fasciitis is repetitive strain injury to the ligament of the sole. Other causes include being overweight, prolonged standing or walking, and heel spurs.[9]

Plantar fasciitis is the leading cause of heel pain, affecting approximately 7% to 10% of the population. Risk factors include a high body mass index or sudden weight gain. Diagnosis is primarily based on symptoms, with ultrasound often used for confirmation. Research indicates that up to 49% of individual with plantar fasciitis continue to experience symptoms 1.5 to 5 years after onset.[10]

Heel pain is commonly observed in older teachers, possibly due to decrease elasticity of the plantar fascia. The prevalence of plantar fasciitis has been studied in the population with varying findings of 2.7-17.55%. A large-scale population in the US reported a prevalence of 0.85% among adults. Additionally, within 12 to 24 months of diagnosis, 60-80% of patients have been reported to experience plantar fasciitis.[11]

Of the working females of Multan, about 72% suffered from plantar fasciitis and were above 50 years. About 54% of the individual with plantar fasciitis report experiencing deep pain, while 46% describe it as superficial pain. Around 34% of those affected suffer from pain throughout the day at regular intervals.[12] The condition has been found to affect about 8.14% of physicians and 13.11% of nurses. Compared to the general population, the risk of developing plantar fasciitis is lower among physician but higher among nurses.[13]

Patient may experience pain along the central band of the plantar fascia, particularly in the area of the foot's medial arch.[14-17]

A cross-sectional online survey was conducted with a total of 695 participants. The prevalence of plantar fasciitis among them was found to be 37%. The study identified that extended period of walking or standing at work, along with inadequate workplace facilities,[17]were linked to a higher risk of developing the condition. Additional contributing factors included middle age, prolonged exercise, and gastrocnemius muscle tightness. The findings highlight the importance of raising public awareness about the risk factor and management strategies for plantar fasciitis through health education initiatives.[16]

Pallavi Yamini did her study in 2020. He took 100 subjects for the trial. A total of 100 female students from Galgotias University participated in the study, divided equally into 2 groups: one group of 50 individual with flat feet and the other 50 who wear high heels. The finding revealed 20% of subjects experienced the plantar fascia stretch, and 7% tested positive in the windlass test. Additionally, 27% of the total population were found to be risk of developing plantar fasciitis, with 19% of them being regular high heel users. Notably, all participants who tested positive in the windlass test were among those who wore heels.[17]

In a 2021 study conducted by Bhoir and GD, 100 healthy nurses from the Pravara institute were examined, including 30 male and 70 female nurses, all aged between 20-50 years. Among participants, 21% tested positive for sign of plantar fasciitis - 4% of males and 17% of females. The study concluded that female nurses have higher likelihood of developing plantar fasciitis compared to their male counterparts.[18]

In 2019, Abidin Haneef conducted a cross-sectional study among the police force in Peshawar to assess the prevalence of plantar fasciitis. He sent his 364 questionnaires. 360 have cooperated well. In the 360 population, 38 had had heel pain and 322 had not. In 38 population only 5 had plantar heel pain other 32 had not. [19]

Binu conducted a study comparing 100 individuals diagnosed with heel pain to a control group of people with no history of heel pain. Both groups completed a questionnaire assessing environmental and lifestyle factors. Among those with heel pain, the majority lived in homes with mosaic flooring, followed by marble, vitrified tile or carbonate flooring. However, when analyzing both groups, the highest prevalence of heel pain was found in individuals living in marble-floored houses. In contrast, the lowest incidence was seen in those residing in wooden floored or traditional cow-dung floored houses. The study suggests that type of flooring may influence the development of plantar fasciitis with marble flooring being associated with the highest incidence. [20]

The purpose of this study is to ascertain if plantar fasciitis occurs among physiotherapists because of their prolonged standing and lengthy workdays. Data was collected through self-reported forms completed by

physiotherapists, utilizing a visual analog scale to assess the severity and frequency of the condition. This approach aimed to evaluate the correlation between their occupational demands and the occurrence of plantar fasciitis.

MATERIALS AND METHODS

Study Design: This research was conducted as a cross-sectional study

Setting: Data was collected from different departments of physical therapy in different hospitals of Lahore i.e.:

- Pediatrics neuro-rehabilitation center of the University of Lahore Teaching Hospital,
- Physiotherapy Department of Wazir Hospital
- Al Shabir Health Care Center.

Duration of study: The study was finished within 6 months.

Sample Technique: It was Nonprobability purposive sampling.

Sample size: A total of 64 participants were included in the study. The sample size was determined by using the epi tool.

Sample selection criteria:

Inclusion Criteria:

- Willing to divulge details about pain.
- Windless test was used.
- Both gender male and female physiotherapists are included.
- Between the age of 25-50 years
- Working hours 7-8

Exclusion Criteria:

- Plantar fasciitis history before entering the field of physiotherapy.
- Physiotherapists who have not been working in the field for at least one year.
- Physiotherapists who have a past history of fracture.

Data collection procedure

This was an observational study conducted as a project involving physiotherapists in Lahore. The participants ranged in age from 25-50 years. A sample size of 64 was calculated using 5% margins of error and 95% of confidence intervals through the epi tool. To diagnose plantar fasciitis, windlass test was administered. Additionally, relevant demographic and medical information such as age, gender, weight, and medical history was collected using a predesigned proforma. Planar fasciitis pain scale (PFPS) questionnaires was also distributed among participants, consisting of pain related and control

questions specifically targeting symptoms of plantar fasciitis. After the approval of synopsis data was collected from a questionnaire used to gather the information. The SPSS-24.0 version was used to analyze the collected data for descriptive statistics. Frequency distribution was utilized to display the participant's demographic data. After the data analysis, the findings were summarized in accordance with the consultation with the statistician.

RESULTS:

There were 64 participants in this study. the participant's age ranges from 25-50 years the minimum age is 25 and the maximum age is 50. There were 64 participants of which 28% were male and about 72% were female. There were 64 participants, of which about 70.3 % were alright and 29.3% were suffering from planter fasciitis

		Frequency	Percent
Age groups	25-30	44	68.8
	31-35	10	15.6
	36-40	1	1.6
	41-45	2	3.1
	46-50	7	10.9
Gender	Male	18	28.1
	Female	46	71.9
Windlass test	Positive	19	29.7
	Negative	45	70.3

DISCUSSIONS

Plantar Fasciitis is the swelling of plantar fascia and tissue in the foot used during walking and foot movement. The windless test is used as a diagnostic procedure to assess plantar fasciitis. Khired and Najmi conducted an online cross-sectional survey. The total number of people who took part in the study was 695. Plantar fasciitis was observed to affect 37% of the individuals. And our study concluded about 29.3% of prevalence of Plantar fasciitis among physiotherapists.[18]

Abidin Haneef conducted a cross-sectional study in 2019 to investigate the prevalence of plantar fasciitis among security personal in the police force of Peshawar. The finding revealed that 10.6% of participants reported experiencing heel pain, while the prevalence of plantar fasciitis specifically was higher, at 13.2%.[21]

Pallavi Yamini completed her studies in 2020. He recruited 100 people for the trial. From Galgotias University. The findings revealed that 20% of the participants experienced a stretch in the plantar fascia, and 7% tested positive on the windlass test. Notably, 19% of individuals in our study demonstrated a positive windlass test result, which is significantly higher compared to the previously mentioned study. This suggests a greater prevalence of plantar fasciitis indicators in our sample. [20]

CONCLUSION

According to this study, Most of the Physical therapists from Lahore did not suffer from plantar fasciitis because they wear appropriate shoes but 46.9% suffered from plantar fasciitis because they wear inappropriate shoes

LIMITATIONS:

The study had a small sample size, the results may not be statistically significant or may lack the power to detect meaningful differences or associations. A small size can limit the reliability and validity of the findings. Height and body mass index were not reported, which had impact on how generalizable the findings were.

RECOMMENDATIONS

To improve the generalizability of the findings, researchers could aim for a larger and more diverse sample This would help capture a broader range of experiences and potential risk factors. Investigate the specific workplace factors contributing to plantar fasciitis pain, such as physical demands, workload, and adherence to ergonomic guidelines. Assessing these factors would help identify modifiable elements that can be targeted for intervention.

REFERENCES

1. Mahmood T, Salam A, Waseem I, Khalid A, Maqsood U. The Attitude of Physical Therapy Students Towards their Profession and Education in Punjab. Journal of Islamabad Medical & Dental College. 2022 Sep 28;11(3):182-7.
2. Mahmood T, Afzal MW, Waseem I, Arif MA, Mahmood W. Comparative effectiveness of routine physical therapy with and without instrument assisted soft tissue mobilization for improving pain and disability in patients with neck pain due to upper crossed syndrome. Annals of Punjab Medical College. 2022 Mar 31;16(1):45-50.
3. Jessup RL, Oates MJ, Johnston RV, Buchbinder R. Shockwave therapy for plantar heel pain (plantar fasciitis). The Cochrane Database of Systematic Reviews. 2019 Nov;2019(11).
4. Wearing SC, Smeathers JE, Urry SR, Hennig EM, Hills AP. The pathomechanics of plantar fasciitis. Sports medicine. 2006 Jul;36:585-611.

5. Hashmi R, Naeem L, Arif S, Habiba U, Irfan R, Zafar M. Frequency of Plantar Fasciitis among Females in Teaching Profession. Journal of Aziz Fatimah Medical & Dental College. 2020;2(2):53-7.
6. Dudoniene V, Balnytė M, Kuisma R. Comparison of static balance and gait between subjects with plantar fasciitis and age-matched controls. Journal of Back and Musculoskeletal Rehabilitation. 2022 Nov 10(Preprint):1-8.
7. Palomo-López P, Becerro-de-Bengoa-Vallejo R, Losa-Iglesias ME, Rodriguez-Sanz D, Calvo-Lobo C, López-López D. Impact of plantar fasciitis on the quality of life of male and female patients according to the Foot Health Status Questionnaire. Journal of pain research. 2018 Apr 27:875-80.
8. Latt LD, Jaffe DE, Tang Y, Taljanovic MS. Evaluation and treatment of chronic plantar fasciitis. Foot & ankle orthopaedics. 2020 Feb 5;5(1):2473011419896763.
9. Sandhu TB, Jamil A. Muscle energy technique versus passive manual soft tissue therapies on planter fasciitis: a systemic review. Pakistan Journal of Rehabilitation. 2023 Jul 6;12(2).
10. Sharma D, Rawat SK, Vadher S, Mani C, Shah F. Prevalence of Plantar Fasciitis Among Post Graduate Medical Students.
11. Hansen L, Krogh TP, Ellingsen T, Bolvig L, Fredberg U. Long-term prognosis of plantar fasciitis: a 5-to 15-year follow-up study of 174 patients with ultrasound examination. Orthopaedic journal of sports medicine. 2018 Mar 1;6(3):2325967118757983.
12. Rasenberg N, Bierma-Zeinstra SM, Bindels PJ, van der Lei J, van Middelkoop M. Incidence, prevalence, and management of plantar heel pain: a retrospective cohort study in Dutch primary care. British Journal of General Practice. 2019 Nov 1;69(688):e801-8.
13. Aiman U, Malik L, Zahoor a. pain and difficulty level in working females having plantar fasciitis of multan city: Pain & Difficulty in Working females with Plantar Fasciitis. Pakistan BioMedical Journal. 2022 Aug 31:46-50.
14. Sung KC, Chung JY, Feng IJ, Yang SH, Hsu CC, Lin HJ, Wang JJ, Huang CC. Plantar fasciitis in physicians and nurses: a nationwide population-based study. Industrial health. 2020;58(2):153-60.
15. Cornwall MW, McPoil TG. Plantar fasciitis: etiology and treatment. Journal of Orthopaedic& Sports Physical Therapy. 1999 Dec;29(12):756-60.
16. Arshad S, Sharif MW, Waseem I, Mahmood W, Ilyas HS. Individual and organizational barriers faced by physiotherapists in implementing evidence based practice-an analytical study. JPMA. The Journal of the Pakistan Medical Association. 2022 Oct;72(10):2030-3.
17. Khired Z, Najmi MH, Akkur AA, Mashhour MA, Bakri KA, Najmi M, Mashhour M, Bakri K. The

prevalence and risk factors of plantar fasciitis amongst the population of Jazan. Cureus. 2022 Sep 21;14(9).

18. Pallavi S, Yamini S, Megha Y, Jyoti S, Mangalam K, Sakshi A. To Compare the Prevalence of Plantar Fasciitis among Females Wearing Flat Foot Wear and Heels in Young Adults. Indian Journal of Physiotherapy & Occupational Therapy Print-(ISSN 0973-5666) and Electronic–(ISSN 0973-5674). 2020 Apr 25;14(2):177-80.
19. Bhoir KS, GD VV. Prevalence of Plantar Fasciitis Among Nurses at a Tertiary Care Centre in a Rural Area: A Cross Sectional Study. Int J Physiother Res. 2021;9(4):3900-06.
20. Abidin SZ, Haneef K, Malik NR, Mashal M, Zeb A, Rahman MU. Prevelance and Associated Risk Factors For Plantar Fasciitis Among Security Forces Personnel In Peshawar. Annals of Allied Health Sciences. 2019 Dec 31;5(2):20-3.
21. Binu MG, Iesa M, Vinodini C, Nizar A. Relationship of Prevalence of Plantar Fasciitis to the Type of Flooring-A Community Based Observational Study. Indian Journal of Public Health Research & Development. 2013 Apr 1;4(2): 54-56