



Original Article

Pain and Difficulty Level in Working Females having Plantar Fasciitis of Multan City

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ABSTRACT

Plantar fasciitis is an inflammation of the plantar fascia that is most commonly seen in the working population with prolonged standing and inappropriate shoe wear. Plantar fasciitis is presented with heel pain, resulting in disturbances of activities of daily life. **Objective:** To determine the pain and difficulty level in working females of Multan having plantar fasciitis. This will help them in reducing pain and difficulties by reducing risk factors that can cause plantar fasciitis. **Methods:** A cross-sectional study was conducted with 150 working females of Multan having plantar fasciitis. Data were collected through the plantar fasciitis pain scale, visual analogue scale, and windlass test. Data were obtained non-randomly from different working places of Multan. (Hospitals, Schools, Colleges, Salons, and Malls). 150 respondents were of age group 30-50 years were included in the study. **Results:** The pain and difficulty level in working females of Multan having plantar fasciitis was 72%. Surface pain was 46% and deep pain was 54%. 34% of subjects suffer from pain throughout the day with regular intervals. 18% had pain only when they first get up. 67% of women feel comfortable walking on toes while 33% feel uncomfortable. Pain interferes with athletics and weight-bearing activities of 53% of women. **Conclusion:** The pain and difficulty level in working females of Multan having plantar fasciitis is 72%. It increases with an increase in associated risk factors, such as prolonged standing, long working hours, inappropriate shoe wear, and postural malalignment.

INTRODUCTION

A cross-sectional study was conducted on 150 working females of Multan having plantar fasciitis, to find out the level of pain and difficulty. The duration for this study was six months after the approval of the synopsis. The working ladies of age 30-50 years having a minimum of five years of experience, were selected to figure out the pain and difficulty level that is present. Plantar fasciitis is a disorder of the insertion site of the ligament on the bone characterized by micro tears, breakdown of collagen, and scarring. The plantar fascia plays an important role in the normal biomechanics of the foot and is composed of three segments, all of which arise from the calcaneus. The fascia itself is important in providing support for the arch and providing shock absorption [1]. Plantar fasciitis, a chronic

degenerative process that causes medial plantar heel pain, is responsible for approximately 1 million physician visits each year [2]. In America, two million people receive the treatment for plantar fasciitis each year [3]. When plantar fasciitis occurs, the pain is typically sharp and usually unilateral (70% of cases). Bearing weight on the heel after long periods of rest worsens heel pain in affected individuals. Individuals with plantar fasciitis often report their symptoms are most intense during their first steps after getting out of bed or after prolonged periods of sitting. Symptoms typically improve with continued walking. Common symptoms include numbness, tingling, swelling, or radiating pain. Typically, there are no fevers or night sweats [4]. Since inflammation plays either a lesser

or no role, a review proposed it be renamed as "Plantar Fasciosis", "Painful Heel Syndrome", "Runner's Heel", "Tennis Heel", "Calcaneal Peritonitis", and "Heel Spur Syndrome". During normal circumstances, the plantar fascia acts like a biomechanical shock absorber, supporting the arch in the foot but, if the tension on the plantar fascia exceeds the limits of the tissue, small tears can develop in the fascia. Repetitive tension, stress, and subsequent tearing can cause the fascia to become inflamed and painful. Plantar fasciitis is regarded as a self-limiting disease, and over 90% of patients will be cured within 6 months with non-operative scenarios [5]. Laboratory investigation performs to rule out underlying endocrine and inflammatory conditions. X-rays are required to rule out other causes of heel pain, specifically calcaneal stress fractures and not calcaneal spur, as its rules in the pathogenesis of PF are controversial [6,7]. MRI is performed in patients who are resistant to treatment, to exclude alternative diagnoses that were not observed on the X-ray, such as a calcaneal stress fracture, calcium deposit, or soft-tissue tumor. Ultrasonography is the study imaging of choice due to its low cost when the diagnosis of plantar heel pain is unclear, but it requires a specialized training personal [8]. Between 4% and 7% of the general population has heel pain at any given time about 80% of these are due to plantar fasciitis [9]. Approximately 10% of people have the disorder [10]. Conservative treatment includes: physical treatment such as low dye strapping, therapeutic orthotic insoles, orthotic devices, night splints, Achilles and plantar fascia stretching; pharmacotherapy such as oral inflammatory medication, cortisone injections, and botulinum toxin injections. Treatment should start with stretching of the plantar fascia, ice massage, and nonsteroidal anti-inflammatory drugs. Many standard treatments such as night splints and orthoses have not shown benefit over placebo. These days, the treatment options available include autologous plasma transfusions, corticosteroid injections, physiotherapy-like strength training, and Extracorporeal Shock Wave Therapy (ESWT). Recalcitrant plantar fasciitis can be treated with injections, extracorporeal shock wave therapy, or surgical procedures, although evidence is lacking. Endoscopic fasciotomy may be required in patients who continue to have pain that limits activity and function despite exhausting nonoperative treatment options. ESWT is comparable to surgical plantar fasciotomy without any operative risks and yields good long-term effects [11, 12]. Effective treatment is predicated on the modification of risk factors and the implementation of an evidence-based treatment approach. Ultimately, a good prognosis is expected. Approximately 85% to 90% of patients with plantar fasciitis can be successfully treated without

surgery. Methods include rest, Over-the-Counter (OTC), Nonsteroidal Anti-Inflammatory Drugs (NSAIDs), stretching, counter-strain technique, orthoses, corticosteroid injections, Extracorporeal Shock Wave Therapy (ESWT), and ultrasound therapy [2]. The natural history of PF is often self-limited and resolve in 80% of the patients with-in 1-4 years regardless of the treatment [13, 14]. What makes the patients seek medical attention is either the irritation or the incapacitating pain at the time of an attack. For that, trial of conservative therapies is advised before more invasive treatments are attempted [8, 15].

METHODS

A cross sectional study was conducted in general population of Multan city. The study was completed within "6 months" after the approval of synopsis. Sample selection was based upon the inclusion and exclusion criteria. The sample size was taken by using the non- probability purposive sampling technique. The sampling tools were the plantar fasciitis pain/disability scale, visual analogue scale, and windlass test. Inclusion criteria; working females of 30 to 50 years' age with minimum 5 years of working experience. Exclusion criteria; presence of fracture in foot bones, recent surgery of foot, mentally unstable working ladies, having musculoskeletal disorders and other comorbidities, pathological disease, osteoporotic females, and congenital diseases of foot. On the initial appointment the patients were assessed to rule out the possibility of presence of any of the signs mentioned in the exclusion criteria. After that they were requested or offered to participate in the study. A detailed consent form was duly signed by each patient willing to participate in the study and the filled out plantar fasciitis pain/disability index questionnaire. The main aim of the study is to search out pain and difficulty levels in working females having plantar fasciitis. This study can facilitate in reducing pain and difficulties in those operating females having plantar fasciitis.

RESULTS

The pain and difficulty level in working females of Multan having plantar fasciitis is 72% above age group 50. Signs and symptoms of plantar fasciitis increased with prolonged standing and relieved by rest. Surface pain was 46% and deep pain was 54%. 34% of subjects suffer from pain throughout the day with regular intervals. 18% women have pain only when they first get up. 67% of women feel comfortable walking on toes while 33% feel uncomfortable. Hence, it is comfortable to walk on toes than walk flat footed for patients. Pain interferes with athletics and weight-bearing activities of 53% of women. The associated risk factors account for pain and difficulty in working

females having plantar fasciitis are prolonged standing 49.01%, bad posture 18.30 %, inappropriate shoes 10.45%, Obesity 12%, and Others 14 %. Pain and difficulty levels affect most commonly women above 50 years of age.

Risk Factors of Plantar Fasciitis

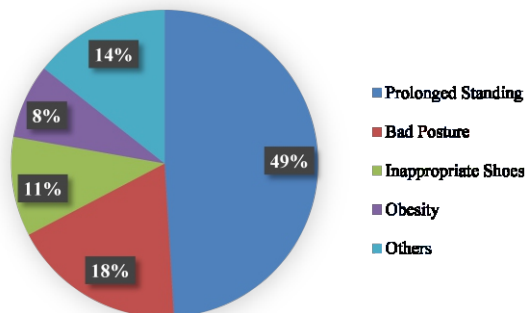


Figure 1: Percentage of risk factors influencing pain and difficulty level in plantar fasciitis

Ratings of Pain

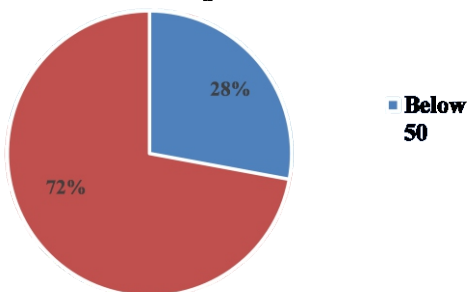


Figure 2: Ratings of pain depending on patient age

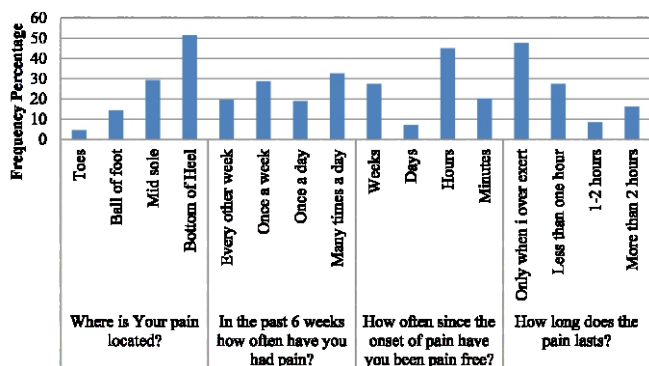


Figure 3: Location of pain, frequency of pain, duration of pain, and pain free time

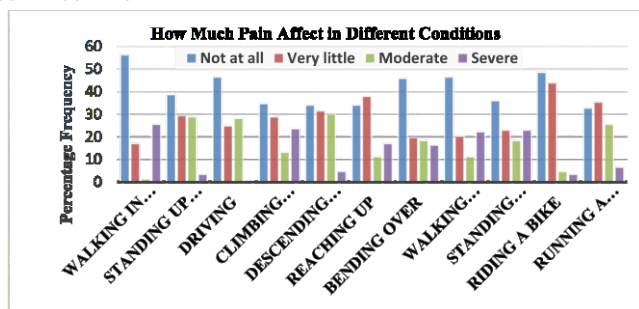


Figure 3: Location of pain, frequency of pain, duration of pain, and pain free time

Thus by concluding this study, it is found out that pain and difficulty level in working females having plantar fasciitis increases (72%) with age as in this study, above 50 years of age. Women are having more troubles in facing prolonged standing (49%), walking (14%), and running (11%). Pain level was intense when they took their first step in the morning and during long standing working hours. Obesity (8%), inappropriate shoe-wear (10%), and postural abnormalities (18%) may influence difficulty level. Hence, we can improve and reduce pain and difficulty level by keeping in mind the above mentioned risk factors and taking precautionary measures accordingly.

DISCUSSION

This present study was conducted to determine pain and difficulty level in working females of Multan having plantar fasciitis. Previous studies report that plantar fasciitis is common with prolonged standing and weight-bearing tasks like running and walking and as the duration of these activities increases, a cross-sectional study by Robert and his colleagues "Risk Factor of Plantar Fasciitis among Assembly Plant Workers" working at least for last 6 months with full-time employment. It was concluded that as time spent standing increases the prevalence of plantar fasciitis increases. In the current study, we selected working females who spent most of their time standing inappropriately with postural mal-alignment. Plantar fasciitis is commonly present with heel pain. The research was conducted in 2015 to find out the prevalence and risk factors of plantar fasciitis in heel pain patients. Goweda et al, [16] used the cross-sectional method and selected 270 patients from 5 health centres of Makkah, KSA. The authors designed a self-structured interview questionnaire in which demographic data and risk factors of plantar fasciitis were evaluated. Patients height, weight, BMI was also calculated. This research found that 57.8% had plantar fasciitis among heel pain in which 56.4% were male, 66.7% were obese, 58.3% were wearing inappropriate shoes, and 89.7% had a sedentary lifestyle. In the present study, we selected 150 female workers by using the (PFPS) Plantar Fasciitis Pain/Disability Scale. This present study was conducted to determine pain and difficulty level in working females of Multan having plantar fasciitis. Nahin RL, et al [17] conducted a research on "Prevalence and Pharmaceuticals Treatment of Plantar Fasciitis" in "United States" in 2018. It revealed that 85% of sample was diagnosed as plantar Fasciitis with pain. Higher prevalence was seen in women (1.19%) versus men (0.47%) in age group of 45-64 years (1.33%) versus age group of 18-44 years (0.53%), in obese (1.48%) versus those who have body mass (less than 25) (0.29%). 41.04% of PF were seen using prescribed medications for pain. (4.01%) NSAID's, (2.21%)

opioids were the most prevalent prescribed drugs for PF pain. They were also seen using analgesics for pain management. In this study we have observed only working females with 150 working size. We have studied women both with obese and lean body mass. Rasenberg N. et al, conducted a research on "Incidence, Prevalence, and Management of Plantar Heel Pain". A retrospective cohort study in "Dutch Primary Care". The overall incidence of PHP was 3.83 cases per 1000-year. The incidence of female was 4.64 and of males was 2.98. Overall prevalence of PHP was 0.4374%. The incidence of PHP was seen on its peak in September and October of each year [18]. In this study we have conducted research on working females only during Eid festivals and long working-hour durations. They reported heel pain during this time. Patricia Palomo-Lopez [19] did a cross-sectional descriptive study to evaluate and compare the impact on Quality of Life (QoL) related to foot health and general health between males and females with PF [20]. Physical examination, data, and the self-reported Foot Health Status Questionnaire (FHSQ) declared that females with PF showed a worse health-related QoL for foot pain, foot function, footwear, and general foot health than males. In the current study the prevalence of plantar fasciitis is per 150 working females. We have observed working females of Hospitals (House Officers), Schools (Teachers), Malls (Sales Girls), and Salons (Beautician) suffer more from foot disorders, plantar fasciitis, and face more difficulty in standing and walking.

CONCLUSIONS

It is concluded that pain and difficulty level in working females of Multan having plantar fasciitis was common. Signs and symptoms of plantar fasciitis increased with prolonged standing and relieved by rest.

REFERENCES

- [1] Becker BA, Childress MA. Common Foot Problems: Over-the-Counter Treatments and Home Care. *American Family Physician*. 2018 Sep; 98(5):298-303.
- [2] Thompson JV, Saini SS, Reb CW, Daniel JN. Diagnosis and management of plantar fasciitis. *Journal of American Osteopathic Association*. 2014 Dec; 114(12):900-6. doi: 10.7556/jaoa.2014.177.
- [3] Ghafoor I, Ahmad A, Gondal JI. Effectiveness of routine physical therapy with and without manual therapy in treatment of plantar fasciitis. *Rawal Medical Journal*. 2016 Jan; 41(1):2-6.
- [4] Reb CW, Schick FA, Karanjia HN, Daniel JN. High Prevalence of Obesity and Female Gender Among Patients with Concomitant Tibialis Posterior Tendonitis and Plantar Fasciitis. *Foot & Ankle Specialist*. 2015 Oct; 8(5):364-8. doi: 10.1177/1938640015583511.
- [5] Goff JD, Crawford R. Diagnosis and treatment of plantar fasciitis. *American Family Physician*. 2011 Sep; 84(6):676-82.
- [6] Thing J, Maruthappu M, Rogers J. Diagnosis and management of plantar fasciitis in primary care. *British Journal of General Practice*. 2012 Aug; 62(601):443-4. doi: 10.3399/bjgp12X653769.
- [7] Thompson JV, Saini SS, Reb CW, Daniel JN. Diagnosis and management of plantar fasciitis. *Journal of American Osteopathic Association*. 2014 Dec; 114(12):900-6. doi: 10.7556/jaoa.2014.177.
- [8] Attar SM. Plantar fasciitis: A review article. *Saudi journal of internal medicine*. 2012 Jul; 2(1):13-7. Doi:10.32790/sjim.2012.2.1.3
- [9] Beeson P. Plantar fasciopathy: revisiting the risk factors. *Foot and ankle surgery*. 2014 Sep; 20(3):160-5. doi: 10.1016/j.fas.2014.03.003.
- [10] Young C. Plantar fasciitis. *Annals of internal medicine*. 2012 Jan; 156(1):ITC1-1. Doi: 10.7326/0003-4819-156-1-201201030-01001
- [11] Assad S, Ahmad A, Kiani I, Ghani U, Wadhwa V, Tom TN. Novel and Conservative Approaches Towards Effective Management of Plantar Fasciitis. *Cureus*. 2016 Dec; 8(12):e913. doi: 10.7759/cureus.913.
- [12] Taş S. Effect of Gender on Mechanical Properties of the Plantar Fascia and Heel Fat Pad. *Foot & Ankle Specialist*. 2018 Oct; 11(5):403-409. doi: 10.1177/1938640017735891.
- [13] 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. *Orthopedic Journal of Sports Medicine*. 2018 Mar; 6(3):2325967118757983. doi: 10.1177/2325967118757983.
- [14] Trojian T, Tucker AK. Plantar Fasciitis. *American Family Physician*. 2019 Jun; 99(12):744-750.
- [15] Latt LD, Jaffe DE, Tang Y, Taljanovic MS. Evaluation and Treatment of Chronic Plantar Fasciitis. *Foot & Ankle Orthopedics*. 2020 Feb; 5(1):2473011419896763. doi: 10.1177/2473011419896763.
- [16] Goweda R, Alfalagy E, Filfilan R, Hariri G. Prevalence and risk factors of Plantar Fasciitis among patients with heel pain attending primary health care centers of Makkah, Kingdom of Saudi Arabia. *Journal of high institute of public health*. 2015 Oct; 45(2):71-5. Doi: 10.21608/jhiph.2015.20247.
- [17] Nahin RL. Prevalence and Pharmaceutical Treatment of Plantar Fasciitis in United States Adults. *Journal of Pain*. 2018 Aug; 19(8):885-896. doi: 10.1016/j.jpain.2018.03.003.
- [18] 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 Oct; 69(688):e801-e808. doi:10.3399/bjgp19X706061.
- [19] Palomo-López P, Becerro-de-Bengoa-Vallejo R, Losa-Iglesias ME, Rodríguez-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 PainResearch*. 2018Apr;11:875880. doi:10.2147/JPR.S159918.
- [20] Gamba C, Sala-Pujals A, Perez-Prieto D, Ares-Vidal J, Solano-Lopez A, Gonzalez-Lucena G, et al. Relationship of Plantar Fascia Thickness and Preoperative Pain, Function, and Quality of Life in Recalcitrant Plantar Fasciitis. *Foot & Ankle International*. 2018 Aug; 39(8):930-934. doi: 10.1177/1071100718772041.