Prevalence of Plantar Fasciitis and its Associated Factors among Teachers of a Medical College in Jalgaon City

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Abstract

Background: Plantar fasciitis is a leading cause of heel pain and is commonly linked to prolonged standing, altered foot biomechanics, and increased body mass index. Teachers are especially susceptible due to extended standing during teaching activities. Despite this, there is limited local evidence on the prevalence of plantar fasciitis and its contributing factors among medical college teachers in India.

Aim: To assess the prevalence of plantar fasciitis and identify its associated factors among teachers of a medical college in Jalgaon city.

Methodology: A cross-sectional observational study was conducted involving 52 teachers aged between 24 and 60 years at a tertiary healthcare institution in Jalgaon. Participants were selected through convenience sampling according to predefined inclusion and exclusion criteria. Data collection comprised demographic details, daily standing duration, body mass index (BMI), Windlass test outcomes, and pain intensity measured using the Numerical Pain Rating Scale (NPRS). Statistical analysis was carried out using SPSS software, with associations analyzed through the Chi-square test.

Results: Plantar fasciitis was identified in 51.92% of participants based on positive Windlass test results. The mean participant age was 29.96 ± 3.75 years, and females represented 75% of the sample. A significant association was observed between longer standing duration and positive Windlass test findings ($p = 0.048$). Pain severity, as measured by NPRS, demonstrated a highly significant association with plantar fasciitis ($p < 0.001$). No significant associations were found with age, gender, or BMI.

Conclusion: This study reveals a high prevalence of plantar fasciitis among medical college teachers in Jalgaon, with prolonged standing identified as a major contributing factor. The findings highlight the need for early screening and preventive interventions, including ergonomic adjustments, adequate rest intervals, and the use of supportive footwear, to minimize the impact of plantar fasciitis in this occupational group.

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Keywords: Plantar Fasciitis; Medical College Teachers; Prevalence; Windlass Test; Heel Pain; Prolonged Standing; Numerical Pain Rating Scale (NPRS)

Introduction

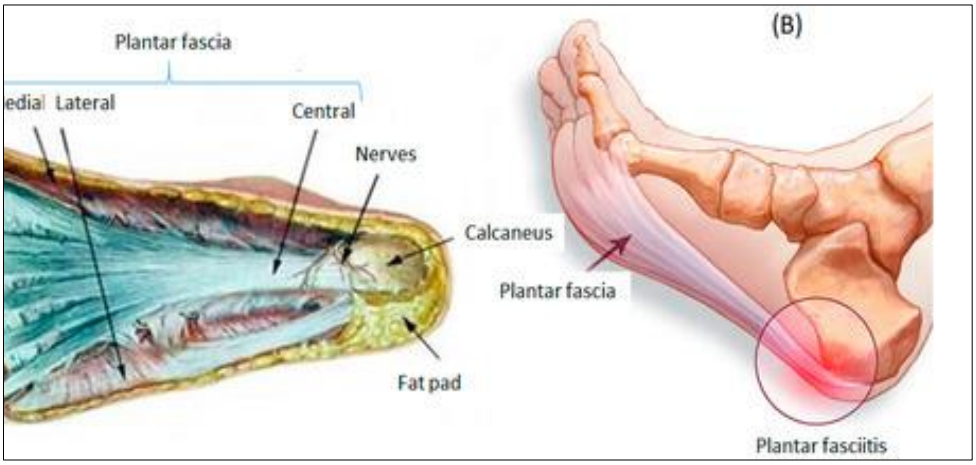
Approximately one in ten individuals experience plantar fasciitis at some point in their lives, and about 2 million people worldwide seek treatment for it each year. However, many cases are managed within primary healthcare settings and never reach specialized clinics. Often, patients delay seeking medical attention until the symptoms become chronic. Referrals to orthopaedic clinics usually occur only when the condition becomes resistant to initial management. The highest incidence of PF is seen

among individuals aged 45 to 65 years. Fortunately, around 90% of patients experience complete symptom relief within 12 months of conservative treatment.[1]

It has been suggested that plantar fasciitis represents a form of tennis elbow at the heel with the condition being caused by repetitive microtrauma at the point of insertion. Inflammation triggered by microtrauma might also explain why the condition sometimes responds to local steroid injection. [2].

Prevalence studies on plantar fasciitis have been conducted across a variety of populations, including soccer players [3], security guards [4], young female medical students [5], members of the United States military [6], pharmacists [7] and housewives. [8]

The plantar fascia is a dense, fibrous connective tissue structure that extends from the medial tuberosity of the calcaneus to the metatarsophalangeal joints of the toes. It is composed of three distinct parts: the medial, lateral, and central bands.[3] The origin of the plantar fascia, located at the medial calcaneal tuberosity of the heel and the surrounding perifascial structures.[9] The blood supply to the plantar fascia is provided by small branches originating from the posterior tibial artery, which supplies the fascia on the plantar surface of the foot. The Nerve supply of plantar fascia is the lateral and medial plantar nerves. The medial compartment covers hallucis muscles and flexor hallucis longus, central compartment covers flexor digitorum brevis, the tendon of flexor hallucis longus, the tendon of musculature of flexor digitorum longus and lateral compartment cover over abductor digiti minimi and flexor digiti minimi brevis.[10]



(**A**) Frontal plane of the plantar fascia with its different types insertions (**B**) Posterior insertion of plantar fascia in calcaneus

Fig 1: Plantar fascia and plantar fasciitis (PF):

.The plantar fascia plays an essential role in the normal biomechanics of the foot and comprises three segments arising from the calcaneus. The fascia is essential in supporting the arch and providing shock absorption.[9]

The exact cause of plantar fasciitis remains unclear and is likely multifactorial. [11] It is most often considered an overuse injury resulting from repetitive strain and micro-tears in the plantar fascia, though trauma and other contributing factors may also play a role. Predisposing factors include pes planus, pes cavus, restricted ankle dorsiflexion, prolonged standing or jumping, and excessive pronation or supination. In individuals with pes planus, excessive tension develops at the fascia's origin, whereas in pes cavus, limited shock absorption and reduced eversion increase stress on the heel. [9]

Pathophysiology

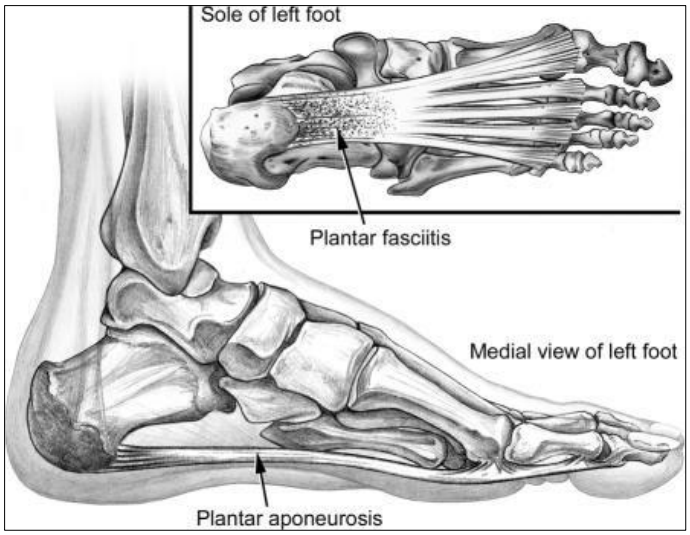
Plantar fasciitis is mainly a degenerative condition. Histological studies show the presence of granulation tissue, micro-tears, and disorganized collagen, with a marked absence of classic inflammatory signs. Ultrasound imaging often reveals calcifications, intra-substance tears, and thickening of the plantar fascia with a heterogeneous echotexture. These sonographic findings suggest a non-inflammatory pathology associated with underlying vascular dysfunction. [9] During sleep, the foot typically rests in a plantar-flexed position. When a person gets out of bed in the morning and begins to walk, the foot shifts into dorsiflexion. Because the plantar fascia shortens slightly overnight, the initial stretching that occurs upon waking likely causes the characteristic morning pain. Plantar fasciitis is more frequently seen in individuals with limited ankle dorsiflexion, those who spend prolonged periods standing, and those with a body mass index (BMI) exceeding 30 kg/m².[1] Plantar fasciitis is also known by several other names, including jogger's heel, tennis heel, policeman's heel, and gonorrhoeal heel.[5]

Windlass Mechanism

Hicks described the foot and its ligaments as a triangular, arch-like truss. In this model, the calcaneus, midtarsal joint, and metatarsals form the arch of the medial longitudinal truss, while the plantar fascia functions as the tie-rod, extending from the calcaneus to the phalanges. Vertical forces from body weight descend through the tibia and tend to flatten the medial longitudinal arch. At the same time, ground reaction forces rise upward through the calcaneus and metatarsal heads, counteracting the flattening effect since these forces are applied both posterior and anterior to the tibia. The plantar fascia plays a key role in preventing foot collapse due to its anatomical orientation and tensile strength. Originating from the base of the calcaneus and extending distally to the phalanges, the plantar aponeurosis resists separation of the calcaneus and metatarsals under load, thereby maintaining the integrity of the medial longitudinal arch. The term windlass refers to the tightening of a rope or cable. In the foot, the plantar fascia functions like a cable anchored to the calcaneus and the metatarsophalangeal joints. During the

propulsive phase of gait, dorsiflexion of the hallux winds the plantar fascia around the metatarsal head. This winding action reduces the distance between the calcaneus and the metatarsals, thereby elevating the medial longitudinal arch. The resulting shortening of the plantar fascia during hallux dorsiflexion represents the fundamental principle of the windlass mechanism.

The triangle shows the truss formed by the calcaneus, midtarsal joint, and metatarsals. The hypotenuse (horizontal line) represents the plantar fascia. The upward arrows depict ground reaction forces. The downward arrow depicts the body's vertical force. The orientation of the vertical and ground reaction forces would cause a collapse of the truss; however, increased plantar- fascia tension in response to these forces maintains the truss's integrity



The plantar aponeurosis originates from the base of the calcaneus and extends distally to the phalanges. [12]

Need Of Study

Plantar fasciitis is a common cause of heel pain that affects mobility and work performance.

Teachers are particularly vulnerable due to prolonged standing during lectures.

There is limited local evidence on the prevalence and associated risk factors of plantar fasciitis among teachers in India.

Studying its occurrence and contributing factors among medical college teachers in Jalgaon will help:

1. Develop targeted preventive strategies such as ergonomic and footwear interventions.
2. Promote early detection and management of the condition.
3. Inform workplace health policies aimed at reducing pain, absenteeism, and long-term disability

Aim And Objectives

Aim: To determine the Prevalence of Plantar Fasciitis and Its Associated Factors Among Teachers of a Medical College in Jalgaon City

Objectives: To estimate the prevalence of plantar fasciitis among teachers by windlass test and NPRS scale

Review Of Literature

Hira Ikram, Wishal Khalid, Amir Ahmad, Jibran Khan, Shehneela Ahmed Khan Shamskhel1, Hafiz Yaseen Khan *et al* (2025) conducted study on Prevalence of Plantar Fasciitis and Non-Specific Chronic Low Back Pain and Its Association with Body Mass Index among Teachers of Private Schools in Peshawar, Plantar fasciitis and non-specific chronic low back pain (NSCLBP) are common among teachers, often related to prolonged standing, poor ergonomics, and occupational stress. This study aimed to determine the prevalence of plantar fasciitis and NSCLBP among private school teachers and to examine their

association with body mass index (BMI).

A cross-sectional study was conducted among 383 private school teachers in Peshawar using cluster sampling. Teachers aged 25–40 years with at least six months of teaching experience were included. Administrative staff, pregnant teachers, and those with foot deformities or traumatic low back pain were excluded. Plantar fasciitis was assessed using the Windlass test, pain severity with the Numerical Pain Rating Scale, and BMI was classified according to WHO criteria. Data were analysed using SPSS version 27. Most participants were female (73.9%). The prevalence of NSCLBP was 60.1%, and plantar fasciitis was 65.5%, with mild pain being the most commonly reported severity. BMI showed no significant association with either condition; however, a significant linear trend was observed between increasing BMI and chronic low back pain ($p = 0.034$).

The findings indicate a high burden of plantar fasciitis and NSCLBP among teachers. Although BMI was not significantly associated, the observed trend emphasizes the importance of ergonomic measures, regular screening, and weight management strategies to improve teachers' occupational health.

Benjamin K. Buchanan; Reddog E. Sina; Donald Kushner. *et al* (2024) conducted study on Plantar Fasciitis, Plantar fasciitis is a common condition caused by degenerative irritation at the plantar fascia's origin on the medial calcaneal tuberosity. Despite its name, it is not inflammatory. The plantar fascia's three bands support foot biomechanics, maintain the arch, and absorb shock. Overuse is the primary cause, leading to sharp heel pain and occasional heel spurs. Although most cases respond to conservative care, recurrent symptoms can be challenging. This continuing education activity provides a streamlined review of plantar fasciitis, covering its pathophysiology, biomechanics, evaluation, and treatment. It emphasizes the value of coordinated care among primary physicians, orthopaedic specialists, and physical therapists to improve patient outcomes.

Qasim Ali1, Yang Long1 and Muhammad Ali *et al* (2024) conducted study on Prevalence, causes, and treatment of plantar fasciitis in young females of a medical college Plantar fasciitis is a common source of heel pain, often linked to inflammation caused by excessive activity, improper footwear, or biomechanical factors. This study aimed to assess its prevalence, causes, and treatment among young female medical students in Pakistan, with a focus on high-heel use. A cross-sectional survey of 100 participants was conducted using a structured questionnaire on heel pain, footwear habits, and treatment practices. The Windlass test supported diagnosis, and SPSS was used to analyse associations related to heel type and duration of wear. Although 66% reported heel pain while wearing high heels, only 6% were diagnosed with plantar fasciitis, while the remaining 60% had pain from other causes. Treatments included steroid injections (2%) and ice therapy (12%). Prolonged or frequent use of high heels, especially those with hard soles, was linked to increased symptoms. Education, ergonomic awareness, and appropriate treatment may help in prevention and management.

Nimra Nadeem, Iqra Nisar, Atif Ali Attar, Asma malik, Arti Lohana, Hanifa Suleman, Shahzaib Hassan Syed, Shabana Nawaz, Intsam Aslam *et al* (2024) conducted study on Prevalence of Plantar Fasciitis Among Security Guards, Plantar fasciitis is a common cause of heel pain, particularly among individuals who stand for long periods. It occurs due to irritation at the plantar fascia's attachment on the calcaneal tuberosity and can affect daily functioning. This cross-sectional study assessed plantar fasciitis prevalence and risk factors among 177 male security guards in Gujranwala, Pakistan. Data were collected through a questionnaire, the Windlass test, and VAS, and analysed using SPSS v25.Plantar fasciitis was present in 7.9% of guards. Nearly half worked more than 8 hours daily. Significant associations were found with age >50 years, BMI >25, and prolonged standing.

Matthew Bourne; Aditi Talkad; Matthew A. Varacallo *et al* (2023) conducted study on Anatomy, Bony Pelvis and Lower Limb, Foot Fascia, the foot is a complex structure consisting of bones, joints, ligaments, muscles, and tendons that support upright posture and coordinated movement. It lies below the ankle joint, which is formed by the talus and the distal tibia and fibula. The foot's 26 bones—grouped into the hindfoot, midfoot, and forefoot—are stabilized by cartilage-covered joints, capsules, and ligaments. Movement is controlled by 29 muscles connected to the bones through tendons. The area has a rich blood supply from the anterior tibial, posterior tibial, and peroneal arteries, and is innervated by the tibial, deep peroneal, and sural nerves. Additional soft tissues, including fascia, fat, and skin, help maintain its structure. Due to its complexity and continuous use, the foot is vulnerable to acute injuries, repetitive stress, and degenerative or inflammatory conditions, which can lead to long-term disability if not properly managed.

Maria Mustafa, Rabia Majeed *et al* (2023) conducted study on Prevalence of Plantar Fasciitis Among Housewives: A Survey-Based Study, Plantar fasciitis is a common cause of heel pain linked to prolonged standing and walking. Housewives, who frequently engage in such activities, may be at increased risk. This study examined its prevalence and related factors in 127 housewives aged 25–60 years using a structured questionnaire and pain scales (VAS, NRS). The prevalence was 4.72%, with the highest rate in women aged 35–44 years. Most participants lived in urban areas, used saddle-type footwear, reported gradual right-sided pain, and had low exercise levels. Moderate pain was most common, and heel spurs and Achilles tendinopathy were frequent associated conditions. Plantar fasciitis is an important concern among housewives, especially middle-aged women in urban settings. Early diagnosis, physical activity, and proper footwear may help reduce its impact

Anuja S. Jumle1, Dr. Leena Zore *et al* (2023) conducted study on Prevalence of Plantar Fasciitis in Pharmacists Plantar fasciitis, a frequent cause of plantar heel pain linked to prolonged standing, may be particularly common among pharmacists due to long work hours on their feet. This study assessed its prevalence using the Foot Function Index (FFI) in 100 pharmacists aged 46–60 years. All participants underwent the Windlass test, and those who tested positive completed the FFI. Results showed a 54% prevalence of plantar fasciitis, with rates increasing with age. Overall, older pharmacists experienced greater pain, disability, and activity limitations.

David C Noriega, Angel Cristo, Alejandro Leon, Belen García-Medrano, Alberto Caballero-García, Alfredo Cordova-Martinez *et al* (2022) conducted study on Plantar Fasciitis in Soccer Players A Systemic Review Soccer is one of the most widely played sports worldwide, yet plantar fasciitis (PF) is rarely reported despite the high frequency of lower-extremity injuries. This

review aimed to update current knowledge on PF in soccer players using PRISMA guidelines and database searches of PubMed, Cochrane, and Scopus with PICO criteria. Only eight relevant studies were found—five general PF treatment reviews and three focused on soccer, two of which were single case reports. None of the studies included the Silfverskiöld test to evaluate ankle dorsiflexion. Evidence indicates that soccer players do experience plantar foot pain consistent with PF, but underdiagnosis is common, as highlighted by Suzue *et al*. The scarcity of published data likely underestimates PF prevalence and may obscure related lower-limb injuries in this population.

S Cutts, N Obi, C Pasapula, W Chan *et al* (2012) conducted study on Plantar fasciitis, This article summarizes the causes of plantar fasciitis, key differential diagnoses for heel pain, and the evidence behind major treatment approaches. A literature search of PubMed and MEDLINE using terms such as "plantar fasciitis," "plantar heel pain," and "heel spur" was performed, with additional studies identified through reference lists. Plantar fasciitis is common and can be disabling, yet its natural history remains unclear, making it difficult to distinguish spontaneous recovery from treatment effects. Most patients improve with conservative management, while plantar fascia release is effective for those who do not. Emerging options like endoscopic release and extracorporeal shockwave therapy show promise but are limited by availability, so traditional treatments remain standard

Danielle L Scher, Philip J Belmont Jr, Russell Bear, Sally B Mountcastle, Justin D Orr, Brett D Owens *et al* (2009) conducted study on The incidence of plantar fasciitis in the United States military, Plantar fasciitis is the leading cause of heel pain, yet its true incidence remains unclear. This study examined U.S. military records to identify incidence rates and demographic risk factors. Using ICD-9-CM code 728.71 from the Defense Medical Epidemiology Database, cases were analyzed through multivariate Poisson regression adjusting for sex, race, rank, service branch, and age. The overall incidence was 10.5 per 1000 person-years. Women had nearly double the risk compared with men, and Black service members had a slightly higher risk than white service members. Incidence was elevated across all ranks except junior officers. Personnel in the Army and Marines also demonstrated higher rates than those in the Air Force. Risk increased substantially with age, particularly among individuals aged 40 years and older. Overall, the major risk factors identified were female sex, Black race, higher rank, Army or Marine service, and advancing age

Lori A Bolgla, Terry R Malone *et al* (2004) conducted study on Plantar Fasciitis and the Windlass Mechanism A Biomechanical Link to Clinical Practice, Plantar fasciitis is common, yet optimal treatment remains debated. This review presents a systematic, biomechanically based approach grounded in the windlass mechanism model. MEDLINE, SPORTDiscus, and CINAHL (1966–2003) were searched using keywords related to plantar fasciitis and foot biomechanics. The windlass mechanism model is used to clarify the biomechanical factors contributing to plantar fasciitis and to guide targeted evaluation and treatment strategies Understanding the biomechanical causes of plantar fasciitis can improve clinical decision-making by addressing underlying dysfunction rather than only symptoms. This approach may enhance outcomes and supports future research on treatment effectiveness.

Methodology

Study Setting: Tertiary health care hospital Jalgaon

Study Design: Observational

Sample Size: 52

$$n = \frac{Z1^2 pq}{d^2}$$

p	Your guess of Population P (any value<1)	0.65
q	1-p	0.35
1-α	Confidence level set by you	0.95
Z	Z value associated with confidence	1.96
d	Absolute precision	0.13
n	Minimum sample size	52

1. Duration of study: 6 months
2. Target of study population: plantar fasciitis
3. Method of sampling: - convenient

Materials

1. Consent form
2. Pen
3. Paper
4. NPRS scale

Selection Criteria

Inclusion Criteria

- Participants must be currently employed as teachers
- 24-60 years
- Participants who are willing to participate in the study.

Exclusion criteria:

- Teachers with a history of recent foot or ankle trauma, fractures, or surgery
- Those with systemic inflammatory conditions (e.g., rheumatoid arthritis, ankylosing spondylitis, gout, psoriatic arthritis) that can cause heel pain.
- Individuals with congenital or structural foot deformities (e.g., clubfoot, severe flatfoot, caves foot) unrelated to plantar fasciitis.
- Pregnant women (since pregnancy can cause temporary heel/foot pain due to weight and hormonal changes).
- Teachers with a history of chronic systemic illness (e.g., uncontrolled diabetes mellitus with neuropathy, peripheral vascular disease) that may mimic or mask plantar fasciitis symptoms.

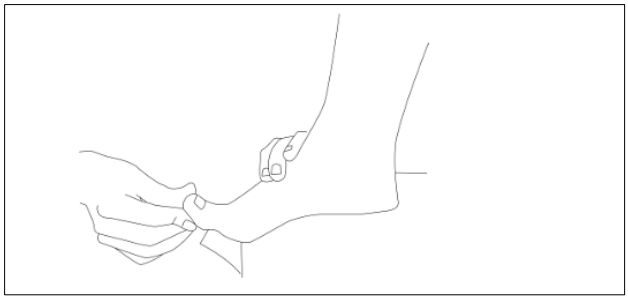
Outcome Measures

1. Windlass Test

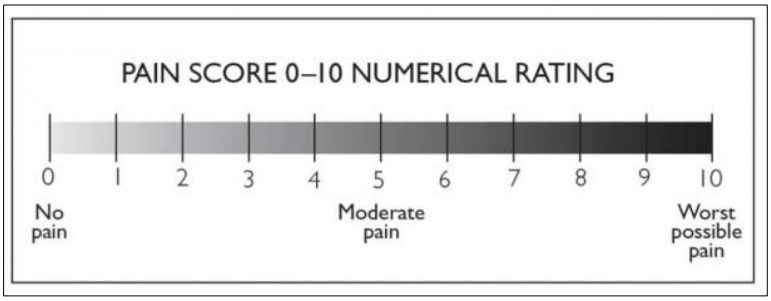
Test procedure:

1. Have the patient stand on a ground.
2. Instruct the patient to place weight on both feet.
3. Passively extend the first metatarsophalangeal joint until the end range, letting the interphalangeal joint flex if needed.

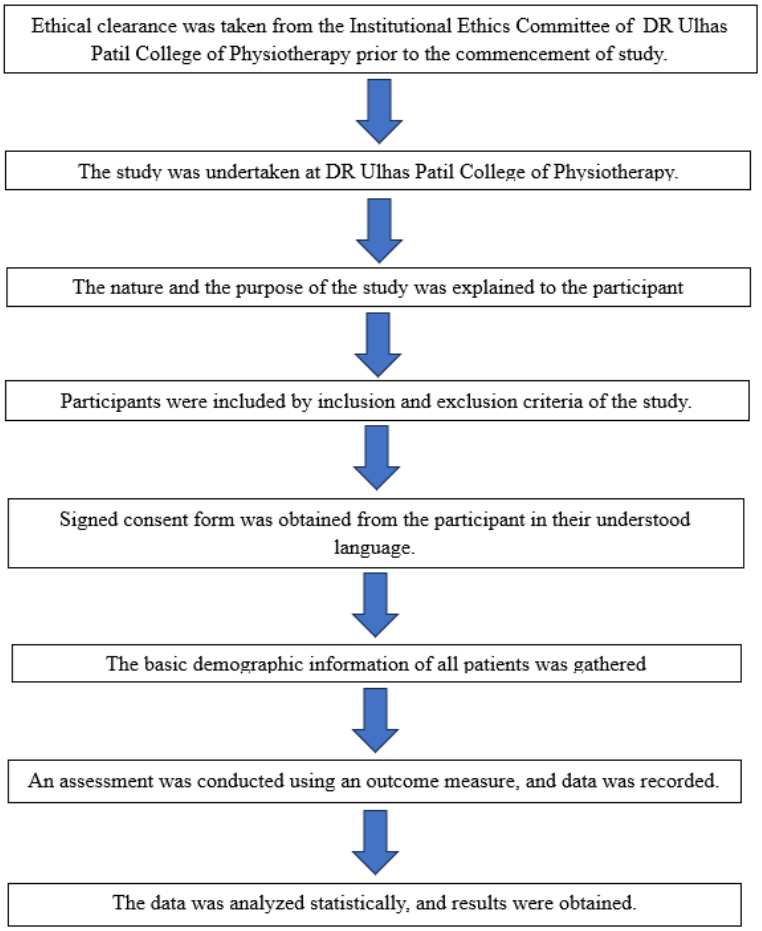
Results:
Negative: The patient does not feel pain, and the arch of the foot rises or is more pronounced during the test.
Positive: Pain is reproduced in the metatarsal, arch, or heal during the test; or there is no increase in tension or there is not enough tension in the plantar fascia to life the arch of the foot



2. NPRS Scale
The Numerical Pain Rating Scale (NPRS) was employed to assess the patients' level of heel pain. Participants rated their current pain intensity on an 11-point scale, where 0 represented no pain and 10 indicated the worst pain imaginable



Procedure



Statistical Analysis

All data was collected and entered into Microsoft Excel. All the results are shown in tabular as well as graphical format to visualize the statistically significant difference more clearly. All the data was analysed using SPSS software.

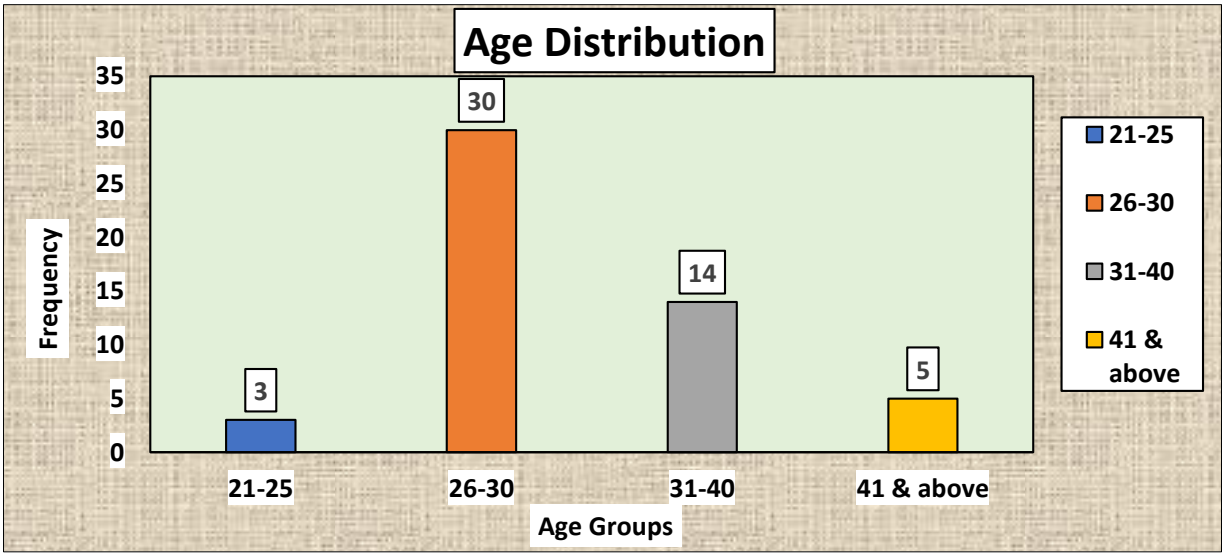
The table and bar chart show that most participants (57.69%) were aged 26–30 years, followed by 31–40 years (26.92%), 41 years and above (9.62%), and 21–25 years (5.77%). The mean age was 29.96 ± 3.75 years, indicating that the sample mainly consisted of young adults around 30 years old.

Table 1: Age Wise Distribution

Sr. No.	Variable	Groups	Frequency	Percentage
1	Age (in years)	21-25	3	5.77
		26-30	30	57.69
		31-40	14	26.92
		41 & above	5	9.62

Table 2: Gender Wise Distribution of Male and Female

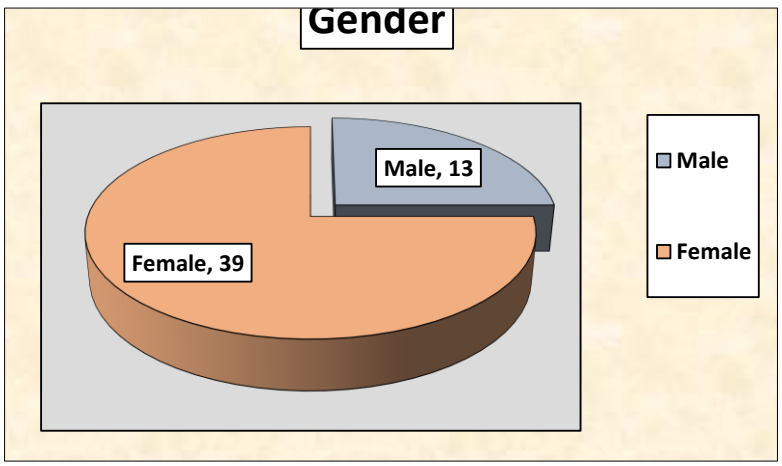
Age	Mean	SD
	29.96	3.75



The frequency distribution table and pie chart present the gender-wise distribution of the study participants. Among the total respondents, 13 (25%) were male, whereas 39 (75%) were female. The pie chart clearly shows that female participants constitute the majority, representing three-fourths of the study population. This indicates that the study sample is predominantly female, with a comparatively smaller proportion of males.

Table 3: Number of Standing Hours

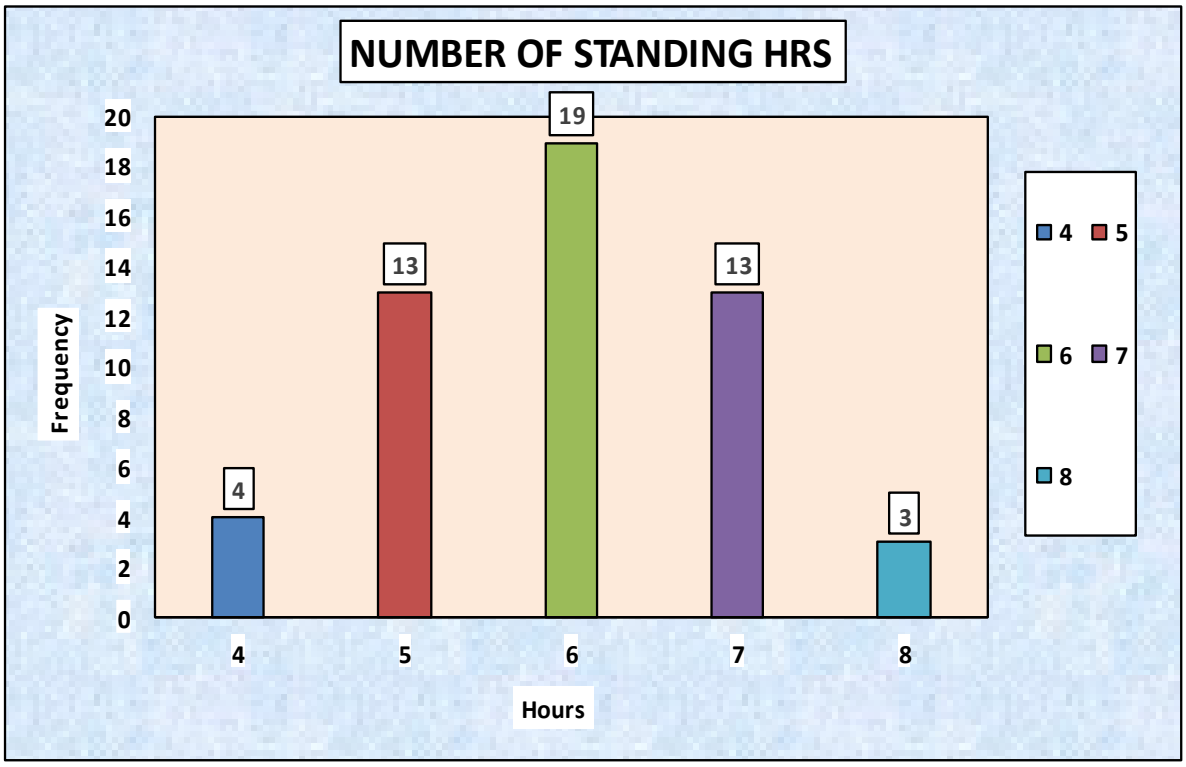
Sr. No.	Variable	Groups	Frequency	Percent
2	Gender	Male	13	25.00
		Female	39	75.00



The table and bar chart show that most participants According to the data, the majority of participants (19 individuals; 36.54%) reported standing for 6 hours daily. An equal proportion of participants (13 individuals; 25% each) stood for 5 hours and 7 hours per day. (4 participants; 7.69%) reported standing for 4 hours, while only 3 participants (5.77%) stood for 8 hours per day. The mean standing time was 5.96 ±1.02 hours, indicating that participants typically stood for about 6 hours daily with little variation.

Sr. No.	Variable	Groups	Frequency	Percentage
3	Number of Standing Hrs	4	4	7.69
		5	13	25.00
		6	19	36.54
		7	13	25.00
		8	3	5.77

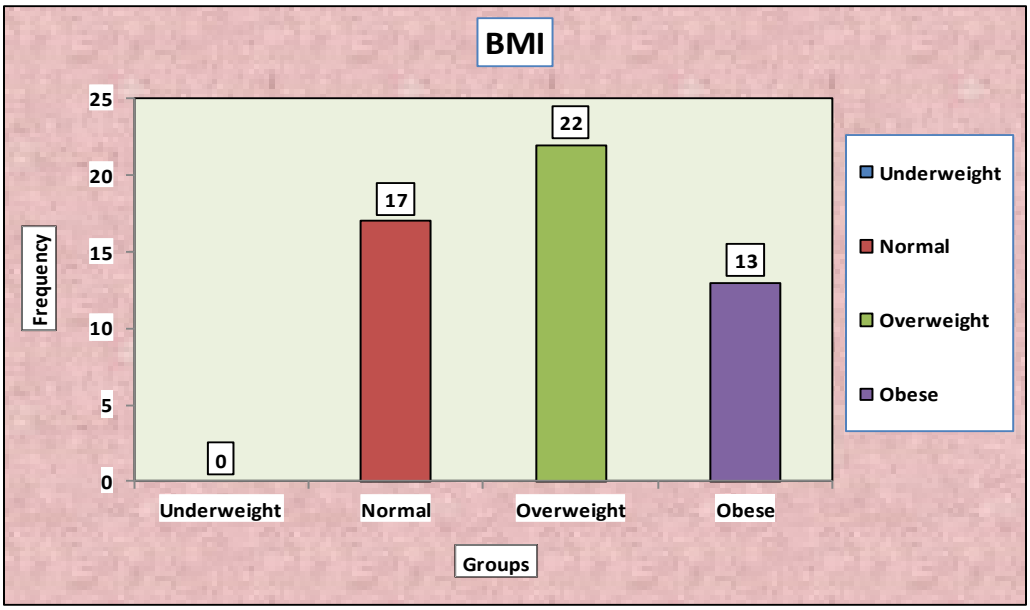
No of Standing Hrs	Mean	SD
	5.96	1.02



The frequency distribution table and bar chart illustrate the Body Mass Index (BMI) classification of the participants. The highest proportion of individuals, 22 (42.31%), were categorized as overweight, followed by 17 (32.69%) who had a normal BMI, and 13 (25%) who were classified as obese. None of the participants fell into the underweight category. Overall, the findings indicate that the majority of participants were either overweight or obese, suggesting a higher prevalence of increased BMI levels among the study population.

Table 4: BMI

Sr. No.	BMI	Groups	Frequency	Percentage
4	Underweight	Below 18.4	0	0.00
	Normal	18.5 – 24.9	17	32.69
	Overweight	25.0 – 29.9	22	42.31
	Obese	Above 30	13	25.00



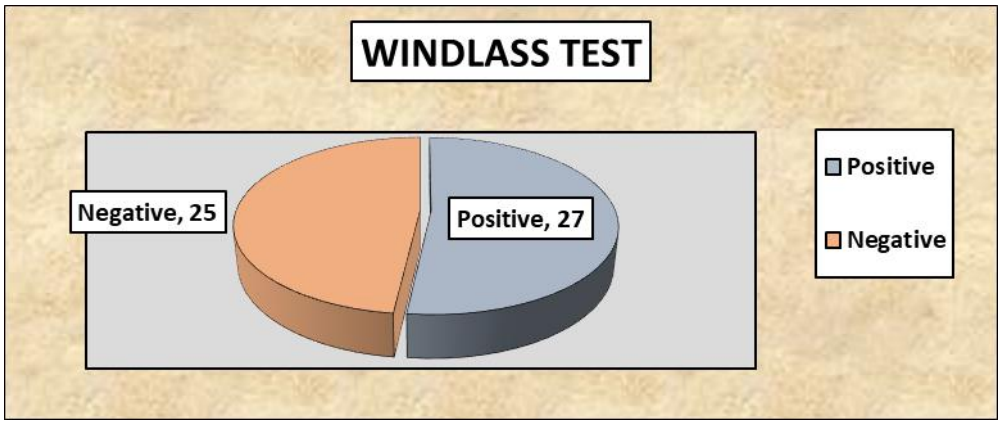
The frequency table and pie chart show that 27 participants (51.92%) had a positive Windlass test, while 25 (48.08%) were negative, indicating a nearly equal distribution. By gender, 61.54% of males and 48.72% of females tested positive. Overall, positive results were slightly higher among males, though the overall distribution was nearly balanced.

Table 5: Windlass Test

Sr. No.	Variable	Groups	Frequency	Percentage
5	windlass test	Positive	27	51.92
		Negative	25	48.08

Table 6: NPRS

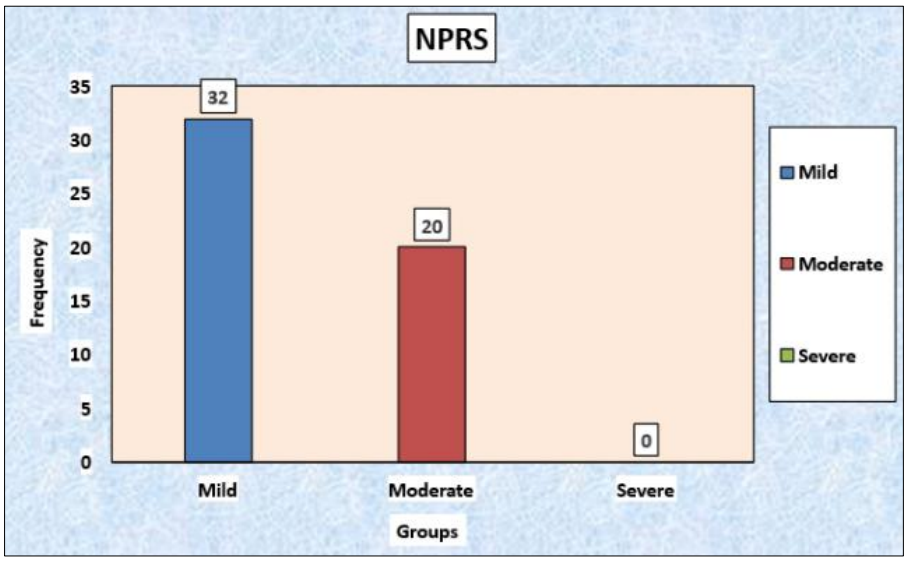
Windlass Test	Male Frequency	Male Percentage (%)	Female Frequency	Female Percentage (%)
Positive	8	61.54	19	48.72
Negative	5	38.46	20	51.28
Total	**13**	**100**	**39**	**100**



The table and bar graph show that most participants (61.54%) reported mild pain (NPRS 0–3), while 38.46% experienced moderate pain (4–7), and none reported severe pain (8–9). The mean NPRS score was 2.32 ± 2.47, indicating generally low pain intensity. The bar graph highlights the predominance of mild pain among participants.

Variable	Score	Groups	Frequency	Percentage (%)
NPRS	Mild	0–3	32	61.54
	Moderate	4–7	20	38.46
	Severe	8–9	0	0.00
Total			52	100

Variable	Mean	SD
NPRS	2.32	2.47



Association of Demographic variables with WINDLASS TEST

The analysis showed that age, gender, and BMI had no significant association with the Windlass test results ($p > 0.05$), indicating these factors did not influence test outcomes. A significant association was found between standing hours and the Windlass test ($\chi^2 = 6.05$, $p = 0.048$), with participants standing 5–6 hours daily showing more positive results. The Numerical Pain Rating Scale (NPRS) demonstrated a highly significant association ($\chi^2 = 24.15$, $p = 0.000$); participants with mild pain were more likely to test positive, suggesting pain intensity strongly influenced Windlass test outcomes.

Variable	Groups	WINDLASS TEST		Chi-square	d.f.	p value	Significance
		Positive	Negative				
AGE	21-25	2	1	0.88	3	0.83	Not Significant
	26-30	14	16				
	31-40	6	8				
	41 & above	3	2				
GENGER	Male	5	8	0.64	1	0.42	Not Significant
	Female	20	19				
NO OF STANDING HRS	below 4	0	4	6.05	2	0.048	Significant
	5-6.	19	13				
	7-8.	6	10				
BMI	Underweight	0	0	0.24	2	0.88	Not Significant
	Normal	9	8				
	Overweight	10	12				
	Obese	6	7				
NPRS	Mild	24	8	24.15	1	0.000	Significant
	Moderate	1	19				
	Severe	0	0				

Discussion

The study included 52 participants with a mean age of 29.96 ± 3.75 years, mostly aged 26–30 years and predominantly female (75%). The average standing time was 5.96 ± 1.02 hours, and most participants were overweight or obese (67.31%). The Windlass test was positive in 51.92% of participants, more common among males. Most reported mild pain (61.54%) with a mean NPRS score of 2.32 ± 2.47. Significant associations were found between standing hours ($p = 0.048$) and pain intensity ($p = 0.000$) with Windlass test results, while age, gender, and BMI showed no significant association.

The results obtained in our study are similar with the study done Hira Ikram, Wishal Khalid, Amir Ahmad, Jibran Khan, Shehneela Ahmed Khan Shamskhel, Hafiz Yaseen Khan. They conducted research on Prevalence of Plantar Fasciitis and Non-Specific Chronic Low Back Pain and Its Association with Body Mass Index among Teachers of Private Schools in Peshawar and found that 73.9% females and 26.1% males most (94%) taught for about 5 hours daily. The prevalence of NSCLBP was 60.1%, and plantar fasciitis affected 65.5% of participants. Among those with NSCLBP, 45.2% reported mild, 10.7% moderate, and 4.2% severe pain; for plantar fasciitis, 50.1% had mild, 12.8% moderate, and 2.6% severe pain. Chi-square analysis revealed no significant association between BMI and NSCLBP ($p = 0.135$) or plantar fasciitis ($p = 0.486$), though a significant linear trend existed between BMI and NSCLBP ($p = 0.034$), suggesting greater pain likelihood with higher BMI.[13]

The results obtained in our study are similar with the study done Yousef Alrashidi, Ehab F. Alsaygh, Mohammed S. Khoshhal, Obaid F. Alsaedi, Baraa A. Dwmlou, Hamza A. Alandijani, Hussain R. Aynusah, Mohammed S. Aloufi, Hatim K. Omar, Muhammad A. Tobaiq. They conducted research on Prevalence of Plantar Heel Pain Among School Teachers in Medina Region, Saudi Arabia: A Cross-Sectional

Study. Among 465 teachers (mean age 44 ± 6.8 years), 52% were women and 36% were obese. Most (94%) worked in public schools, and 28% reported previous foot problems. The median weekly teaching load was 16 hours. Plantar heel pain (PHP) affected 49% of teachers, limiting daily activities (67%) and prompting 39% to seek medical care. Pain commonly occurred after prolonged standing (61%), and 88% also experienced pain in other areas, mainly the lower back (63%) and knees (40%) Risk factors for PHP included female sex (OR = 3.03), obesity (OR = 1.95), prior foot problems (OR = 4.73), and public-school employment (OR = 3.40). Regular exercise was protective (OR = 0.35), while age, chronic disease, and teaching hours were not associated.[14]

Plantar fasciitis is a common but poorly understood condition. The term is misleading, as the plantar fascia is an aponeurosis, not a true fascia. It resembles "tennis elbow of the heel," resulting from repetitive microtrauma at the fascial insertion, explaining the benefit of corticosteroid injections. During sleep, plantarflexion contracts the fascia, and the first dorsiflexing steps on waking stretch it, causing characteristic morning heel pain. Histological evidence shows degenerative rather than inflammatory changes—more accurately termed plantar fasciosis—though anti-inflammatory treatments remain effective.

Heel pain may also have a neurogenic origin from lateral plantar nerve compression, sometimes linked to S1 root entrapment. In persistent cases, surgical release of the abductor hallucis fascia can provide relief [15]

The prolonged upright posture and physical demands associated with the teaching profession contribute significantly to foot strain and discomfort. This finding supports the idea that maintaining static postures, such as standing for extended periods during lectures, can lead to increased stress on the feet and the development of pain. The results of this study highlight the need for early screening and preventive interventions targeting musculoskeletal disorders among teachers. Implementing such measures can help reduce the prevalence of these conditions, thereby enhancing occupational health, comfort, and overall productivity within this professional group.

Conclusion

In conclusion, the study revealed a high prevalence of plantar fasciitis in teachers of Medical College in rural area of Jalgaon. Prolonged standing increases the risk of developing plantar fasciitis.

The findings emphasize that extended standing time is a key risk factor for plantar fasciitis among teachers. Preventive strategies—such as promoting ergonomic standing practices, encouraging regular rest periods, maintaining a healthy body weight, and wearing supportive footwear—should be implemented to reduce the occurrence of foot pain and related disorders among educators.

Future Scope

1. Longitudinal Studies: Conducting longitudinal studies would help establish causal relationships between occupational factors—such as prolonged standing—and the development of plantar heel pain, rather than just associations.
2. Future studies could incorporate additional variables such as footwear type, teaching experience, surface type, physical activity level, and ergonomic conditions to provide a more comprehensive understanding of contributing factors. Objective Assessment

Using diagnostic imaging tools (e.g., ultrasound or MRI) alongside clinical tests like the Windlass test could improve diagnostic accuracy and validate findings.

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