THE PREVALENCE OF PLANTAR FASCIITIS AMONG SCHOOL TEACHERS: AN OBSERVATIONAL STUDY

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Abstract : **Background:** Plantar fasciitis is a common cause of heel pain in adults, and jobs with long hours of standing and walking are a known risk. Teachers spend much of the working day on their feet, yet there is little data on how often they develop it, especially in India. This study set out to find the prevalence of plantar fasciitis among school teachers.
Methods: This observational study ran for six months and included 172 school teachers aged 30 to 60 years, each with at least one year of continuous teaching experience. We recorded age, height, weight and teaching experience, and screened every teacher with the Windlass test. A test that reproduced the teacher's familiar heel pain was counted as positive. The data were analysed descriptively, and prevalence is given with 95% confidence intervals.
Results: The mean age was 42.92 ± 5.04 years, and 118 teachers (68.60%) were female. In all, 115 of 172 teachers tested positive, a prevalence of 66.86% (95% CI 59.29–73.84%). It was 67.80% in females and 64.81% in males. By age group, 47.06% of those aged 30–39, 77.00% of those aged 40–49 and 66.67% of those aged 50–59 tested positive. Positive teachers were a little older (43.44 ± 4.73 vs 41.88 ± 5.51 years) and had taught longer (12.59 ± 4.18 vs 10.58 ± 4.37 years). No statistical comparisons were made, so these differences are descriptive only.
Conclusion: About two in three school teachers screened positive on the Windlass test, so foot problems appear common in this group. The Windlass test is a screening tool and not a full diagnosis, so this is a screening-based prevalence. Teachers would benefit from early assessment and physiotherapy advice. Larger studies with a fuller clinical assessment are needed.

IndexTerms **- Plantar fasciitis, prevalence, school teachers, Windlass test, heel pain, occupational health.**

INTRODUCTION

Plantar fasciitis is one of the commonest causes of heel pain in adults. It is a degenerative irritation, with some inflammation, of the plantar fascia, a thick band of connective tissue that runs from the medial tubercle of the calcaneus to the proximal phalanges of the toes. The fascia holds up the medial longitudinal arch and takes the mechanical load of weight-bearing activities such as walking and running. Patients describe a sharp or aching pain under the heel, usually worst with the first few steps in the morning or after a long period of rest. The pain can also get worse on walking, climbing stairs and standing for long. Plantar fasciitis is a major cause of limited mobility, reduced work capacity and poorer quality of life [1,2,3,17,18].

The plantar fascia is also central to how the foot works. It supports the longitudinal arch through the different phases of gait and takes repeated tensile forces, mainly during stance and push-off. It acts through the windlass mechanism: when the toes extend, tension in the fascia rises and the medial longitudinal arch lifts, which turns the foot into a rigid lever for push-off. If the biomechanics of the foot change, or the loading is excessive, tension on the plantar fascia goes up and heel pain can follow [4,20,30].

Plantar fasciitis used to be seen as an inflammatory condition. The current understanding is that it is mainly degenerative and comes from repetitive mechanical stress, not from inflammation alone. Repeated loading causes microscopic damage to the fascia, with collagen degeneration, thickening and structural change. If the tissue keeps being loaded without enough recovery, these changes can progress and lead to lasting pain and functional limitation. Changes in connective tissue, reduced elasticity and an altered healing response may also be part of the process [1,3].

The condition is multifactorial, with both intrinsic and extrinsic risk factors. Intrinsic factors include increasing age, gender, obesity or high BMI, foot arch abnormalities such as pes planus and pes cavus, reduced ankle dorsiflexion and tightness of the gastrocnemius-soleus complex. These change how force is distributed across the foot and raise the stress on the plantar fascia. Extrinsic factors are mostly linked to work and lifestyle: prolonged standing, repetitive walking, heavy weight-bearing, walking on hard surfaces and footwear without proper arch support. Together these increase the repetitive tensile stress on the fascia and can lead to symptoms [1,5,6,7,22,23,26].

Jobs that involve long periods of standing and repetitive weight-bearing are especially important contributors to plantar heel pain. Teaching is one such job. Teachers stand for long stretches while lecturing, writing on the board, supervising students and moving around the classroom, often with few chances to rest or change posture. Standing and walking continuously, particularly on hard classroom floors or in shoes with poor support, loads the plantar fascia for long periods. Over time this can irritate the tissue and cause degenerative change [21,25].

Several studies have looked at foot pain and plantar heel pain in teachers. Research on female teachers has reported plantar fasciitis in this group [8], and studies on school teachers have reported foot pain and plantar heel pain as important occupational health problems. These findings show why the link between teachers' work and foot-related musculoskeletal problems needs attention [9,10,29].

Clinically, plantar fasciitis presents with pain and tenderness over the medial plantar aspect of the calcaneus. A characteristic feature is pain on the first few steps after waking up or after sitting for a long time. The pain often eases after a few minutes of walking but

returns or increases after prolonged standing, walking or other weight-bearing activity. People may find it hard to walk, climb and descend stairs, stand for long periods or take part in recreational activities. At work, these symptoms can affect performance, reduce physical activity and affect functional independence [2,3,11,19].

Assessment starts with a detailed history and a physical examination. The history covers the onset, duration, location and intensity of pain, and what makes it better or worse. The examination includes palpation of the medial calcaneal tubercle, ankle range of motion, foot posture and calf muscle flexibility. The Windlass test is an important clinical test for the plantar fascia. The examiner passively extends the metatarsophalangeal joints, which tightens the plantar fascia, and reproduction of the patient's familiar heel pain suggests involvement of the plantar fascia. The test rests on the windlass mechanism and links toe extension to plantar fascia tension [4,12,27].

Management is generally conservative. Physiotherapy helps to reduce pain, improve flexibility, restore normal foot biomechanics and improve function. Treatment can include plantar fascia-specific stretching, gastrocnemius and soleus stretching, strengthening of the intrinsic and extrinsic foot muscles, manual therapy, activity modification and footwear advice. Orthoses, heel cushions and education on avoiding activities that overload the foot may also be used. Identifying the problem early and managing it properly can reduce symptoms and prevent persistent functional difficulty [2,3,14,24].

School teachers are a useful group in which to study plantar fasciitis, because their work involves prolonged standing and repetitive weight-bearing. The constant demand on their feet during working hours may lead to plantar heel pain and make it hard for them to work comfortably. Individual factors such as age, BMI, teaching experience, foot posture and footwear may also change the mechanical demand on the plantar fascia [8,9,10,29].

Foot pain and plantar heel pain have been studied in several occupational groups, but the occurrence of plantar fasciitis specifically among school teachers still needs to be understood [15,21,23,28]. Earlier studies in teachers point to a work-related burden of foot pain and plantar heel pain [8,9,10]. Finding the prevalence in teachers would show how large this occupational musculoskeletal problem is, and could raise awareness of early recognition, clinical assessment and prevention [5,7].

The present study therefore aims to find the prevalence of plantar fasciitis among school teachers, using clinical assessment and evaluation of associated symptoms. The importance of clinical assessment and of identifying plantar fascia involvement has been discussed in earlier literature [2,3,4,12]. Knowing the prevalence will give an idea of the burden in school teachers and underline the need for occupational awareness, early identification and appropriate physiotherapy management [8,9,10].

NEED OF THE STUDY.

Plantar fasciitis is the most common cause of heel pain and can disturb daily activities like standing, walking and working. It affects an individual's ability to perform routine tasks comfortably and may reduce overall functional capacity. Teachers stand for long hours while teaching and managing students, which puts extra stress on their feet and makes them more likely to develop plantar fasciitis. Continuous weight-bearing and prolonged standing increase strain on the plantar fascia, especially over time. If not treated early, this condition can lead to chronic pain, reduced work performance and absenteeism from school. Persistent heel pain may affect a teacher's efficiency and productivity in the workplace. There is very little research on plantar fasciitis among teachers in India, so the exact burden in this group is not clearly known. Hence, there is need to assess the prevalence in this specific population. This study will help to find out how common plantar fasciitis is among school teachers and will provide useful information for early diagnosis and prevention.

AIM

To find the prevalence of plantar fasciitis among school teachers.

OBJECTIVES

To determine the prevalence of plantar fasciitis among teachers using windlass test.

REVIEW OF LITERATURE

1. Tseng W-C, Chen Y-C, Lee T-M, Chen W-S (2023) - Plantar fasciitis: an updated review. The review describes plantar fasciitis as a common cause of heel pain and discusses its pathology, risk factors, diagnosis (including the role of ultrasound imaging) and the available treatment options [1].
2. Alnefaie AM, Alzahrani H, Alshehri MA (2025) - Physiotherapy management of plantar fasciitis: a national cross-sectional survey in Saudi Arabia. The survey found that physiotherapy practice in Saudi Arabia largely follows international guidelines, but outcome assessment varies and advanced modalities are underused. The authors argue for national clinical guidelines and targeted training so that care becomes more consistent and evidence-based and patient outcomes improve in Saudi Arabia [2].
3. Latt LD, Jaffe DE, Tang Y, Taljanovic MS (2020) - Evaluation and treatment of chronic plantar fasciitis. The article reviews the clinical evaluation and imaging of chronic plantar fasciitis and the non-operative and operative options for its treatment [3].
4. Bolgla LA, Malone TR (2004) - Plantar fasciitis and the windlass mechanism: a biomechanical link to clinical practice. The article reviews the windlass mechanism of the foot, in which extension of the toes tensions the plantar fascia and raises the medial longitudinal arch, and links this biomechanical principle to the clinical examination and management of plantar fasciitis [4].
5. Khired Z, Najmi MH, Akkur AA, et al. (2022) - The prevalence and risk factors of plantar fasciitis amongst the population of Jazan. The study reports that plantar fasciitis is a common and disabling condition that clearly affects quality of life. Long working hours spent walking or standing were linked to developing it, and the authors call for health education of the population on its risk factors and management [5].
6. Ali Q, Long Y, Ali M (2024) - Prevalence, causes, and treatment of plantar fasciitis in young females of a medical college. The study found a high prevalence of plantar fasciitis in females who wear high heels. A longer total time spent in hard-soled high heels went with more symptoms. The paper lists rest, stretching, strengthening, changing shoes, arch supports, orthotics, night splints and anti-inflammatory drugs as treatment options, and reports that steroid injections gave the best results [6].
7. Goweda RA, Alfalogy EH, Filfilan RN, Hariri GA (2015) - Prevalence and risk factors of plantar fasciitis among patients with heel pain attending primary health care centres of Makkah, Kingdom of Saudi Arabia. The study found plantar fasciitis to be very

common among patients with heel pain in primary health care. Obesity, a sedentary lifestyle, unsuitable footwear, frequent running and prolonged standing were identified as risk factors [7].

8. Hashmi R, Naeem L, Arif S, Habiba U, Irfan R, Zafar M (2021) - Frequency of plantar fasciitis among females in teaching profession. Plantar fasciitis was found in female teachers, most often in the middle part of the sole. It was positively associated with age, whereas standing hours and BMI showed no association with it [8].
9. Alqahtani TA (2020) - The prevalence of foot pain and its associated factors among Saudi school teachers in Abha sector, Saudi Arabia. Most of the teachers reported foot pain, especially after standing for long. It was commoner in older teachers and in those with a heavy teaching load, and it went along with pain at other sites, mainly the lower back and knee. More than three quarters said the pain disturbed their daily activities, yet very few had sought medical advice [9].
10. Alrashidi Y, Alsaygh EF, Khoshhal MS, et al. (2022) - Prevalence of plantar heel pain among school teachers in Medina Region, Saudi Arabia: a cross-sectional study. The study suggests that people who work in jobs needing prolonged standing or weight-bearing are more prone to plantar heel pain than others in the Medina region, obese women with a history of earlier foot problems being especially at risk. The authors recommend further research on these factors and on management plans for the likely causes, so that outcomes for patients improve [10].
11. Thompson JV, Saini SS, Reb CW, Daniel JN (2014) - Diagnosis and management of plantar fasciitis. The article gives an overview of the diagnosis and management of plantar fasciitis in primary care. It describes the condition as a chronic degenerative process that causes medial plantar heel pain and accounts for about a million physician visits each year, with pain worst on the first steps of the day or after standing for long. Routine imaging is not advised at first and is kept for ruling out other conditions. The prognosis is good when several conservative treatments are combined, and referral to a specialist is sometimes needed [11].
12. Alshami AM, Babri AS, Souvlis T, Coppieters MW (2007) - Biomechanical evaluation of two clinical tests for plantar heel pain: the dorsiflexion-eversion test for tarsal tunnel syndrome and the windlass test for plantar fasciitis. The study biomechanically evaluated the windlass test, used for plantar fasciitis, alongside the dorsiflexion-eversion test, used for tarsal tunnel syndrome, as clinical tests for plantar heel pain [12].
13. Beeler S, Viehöfer AF, Wirth SH (2026) - Windlass Shield Test, a novel test for detection of plantar fasciitis: a proof of concept study on 45 patients. In this proof-of-concept study of 45 patients, the Windlass Shield Test showed higher sensitivity but lower specificity than the conventional Windlass test. A positive result had a positive predictive value of 81%, whereas a negative result could not reliably rule out plantar fasciitis [13].

METHODOLOGY

- **Study type:** Observational Study
- **Study Duration:** 6 Months.
- **Study Population:** Teachers currently employed in schools who are aged 30-60 years and have at least one year of continuous teaching experience.
- **Sample size:** 172

MATERIALS

1. Chair
2. Stepper
3. Anthropometric tools
4. Consent form.

INCLUSION CRITERIA

1. Currently employed in schools.
2. Age 30-60 years.
3. Minimum 1 year of teaching experience.
4. Willing to participate and provide informed consent.

EXCLUSION CRITERIA

1. School administrative staff not engaged in regular classroom teaching.
2. History of recent foot trauma or fracture (since 1year).
3. Pregnant women.

OUTCOME MEASURES

Windlass test: Clinical diagnostic test for plantar fasciitis.

Scale	Reliability	Validity	Reference
Windlass Test	Excellent-high reliability: (0.96-0.99)	Valid it is effective at correctly identifying plantar fasciitis.	Bolgla LA, Malone TR. Plantar fasciitis and the windlass mechanism: a biomechanical link to clinical practice. J Athl Train. 2004 Jan;39(1):77-82. PMID: 16558682; PMCID: PMC385265 [4].

Screening Tool

Windlass test: Clinical diagnostic test for plantar fasciitis.

Testing Methodology

The windlass test is a clinical test used to identify plantar fasciitis. It is performed during the examination of school teachers, who experience heel pain due to prolonged standing and walking.

Procedure:

1. Ask the teacher to stand on a step stool.
2. Foot positioning: The affected foot is positioned so that the head of the metatarsals (the ball of the foot) rest on the edge of the step, while toes hang completely over the edge.
3. Ensure the teacher is adequately supported to prevent falls.
4. The examiner stabilizes the ankle with one hand and uses the other hand to passively pull the big toe upward (dorsiflexion at the first metatarsophalangeal joint).
5. The toe is extended to its end range or until pain is triggered.
6. Positive result: Bending the toe reproduces the teacher's exact, familiar heel or arch pain (specifically at the medial calcaneal tubercle).

PROCEDURE

1. Ethical clearance will be obtained from the Institutional Ethics Committee and permission will be taken from the school principals.
2. With the help of inclusion and exclusion criteria participants will be selected.
3. The aim and objectives will be explained to the selected participants and written informed consent will be taken before participation.
4. Data collection will be done by using outcome measure.
5. The collected data will be recorded properly.
6. The recorded data will be analysed.
7. The result will be interpreted accordingly.

DATA ANALYSIS AND INTERPRETATION

A total of 172 school teachers underwent Windlass screening. Among these, 115 (66.86%) demonstrated positive findings, while 57 (33.14%) demonstrated negative findings. The overall screening-positive proportion was 66.86% (95% CI [59.29%, 73.84%]). Among female teachers, 80 of 118 (67.80%) screened positive, compared with 35 of 54 male teachers (64.81%). The highest proportion of positive findings was observed in the 40–49-year age group (77.00%), followed by the 50–59-year age group (66.67%) and the 30–39-year age group (47.06%). The mean age of Windlass-positive participants was 43.44 ± 4.73 years, compared with 41.88 ± 5.51 years among Windlass-negative participants. These findings describe the distribution of Windlass screening results by age and gender. The reported proportions represent screening-defined plantar fasciitis prevalence.

Table 1. Demographic Characteristics of School Teachers

Characteristic	Total (N = 172)	Windlass Positive (n = 115)	Windlass Negative (n = 57)
Age (years), Mean (SD)	42.92 (5.04)	43.44 (4.73)	41.88 (5.51)
Height (cm), Mean (SD)	160.89 (7.41)	161.13 (6.41)	160.40 (9.15)
Weight (kg), Mean (SD)	67.14 (8.38)	67.08 (8.36)	67.26 (8.50)
BMI (kg/m²), Mean (SD)	25.96 (3.01)	25.85 (3.09)	26.16 (2.88)
Teaching Experience (years), Mean (SD)	11.92 (4.33)	12.59 (4.18)	10.58 (4.37)
Female, n (%)	118 (68.60)	80 (69.57)	38 (66.67)
Male, n (%)	54 (31.40)	35 (30.43)	19 (33.33)

Interpretation: The study included 172 school teachers, with a mean age of 42.92 ± 5.04 years. Most participants were female (68.60%). Windlass-positive teachers had a higher mean age and teaching experience than Windlass-negative teachers.

Table 2. Overall Gender Distribution

Gender	N	Percentage
Female	118	68.60%
Male	54	31.40%
Total	172	100%

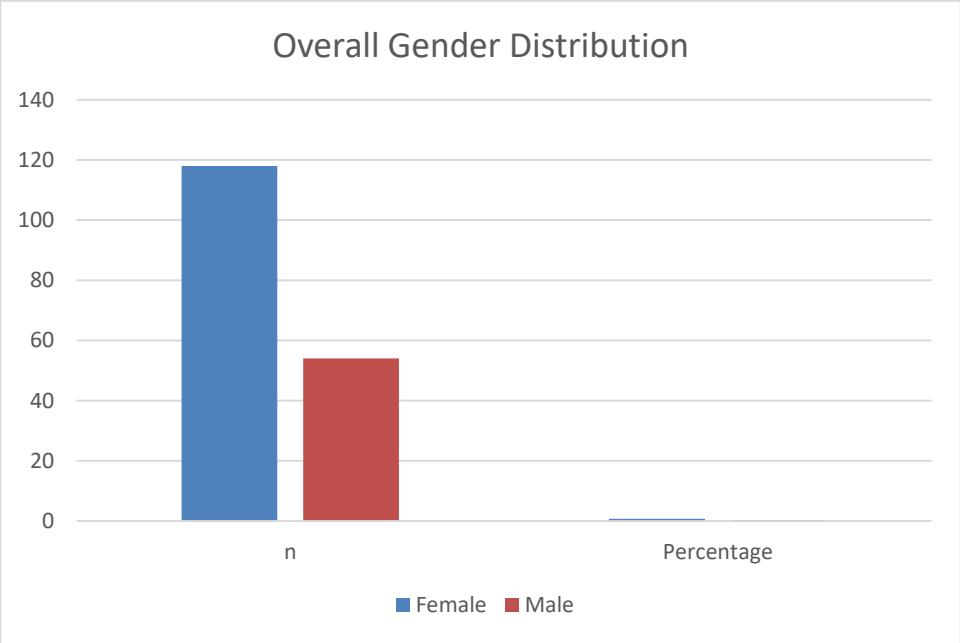


Figure 1. Overall gender distribution of school teachers (N = 172).

Interpretation: Of the 172 teachers, 118 (68.60%) were female and 54 (31.40%) were male. Female teachers constituted the majority of the study population.

Table 3. Overall Age Distribution

Age group (years)	n	Percentage
30–39	51	29.65%
40–49	100	58.14%
50–59	21	12.21%
Total	172	100%

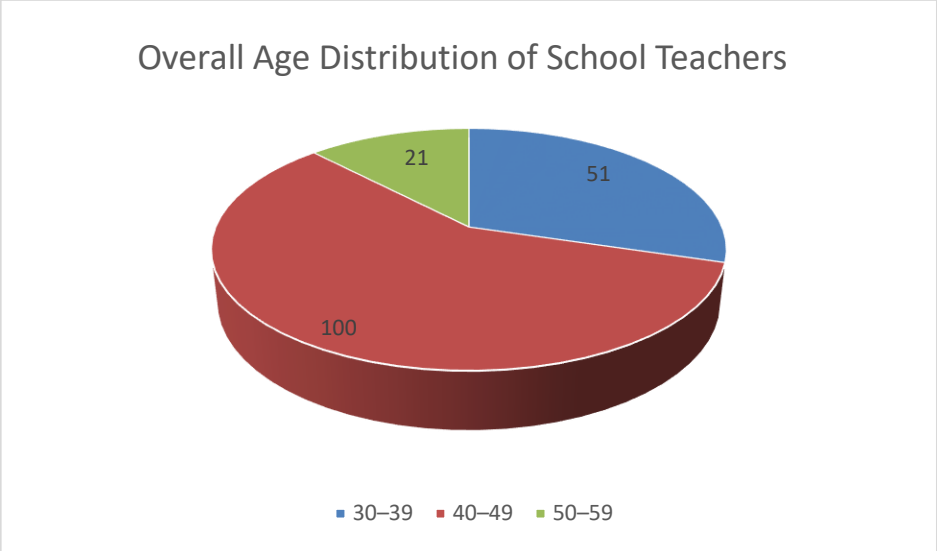


Figure 2. Overall age distribution of school teachers (N = 172).

Interpretation: Among the 172 teachers, 100 (58.14%) belonged to the 40–49 years age group, 51 (29.65%) were aged 30–39 years, and 21 (12.21%) were aged 50–59 years. The 40–49 years age group represented the largest proportion of participants.

Table 4. Age Distribution According to Gender

Age group (years)	Female	Male	Total
30–39	44	7	51
40–49	63	37	100
50–59	11	10	21
Total	118	54	172

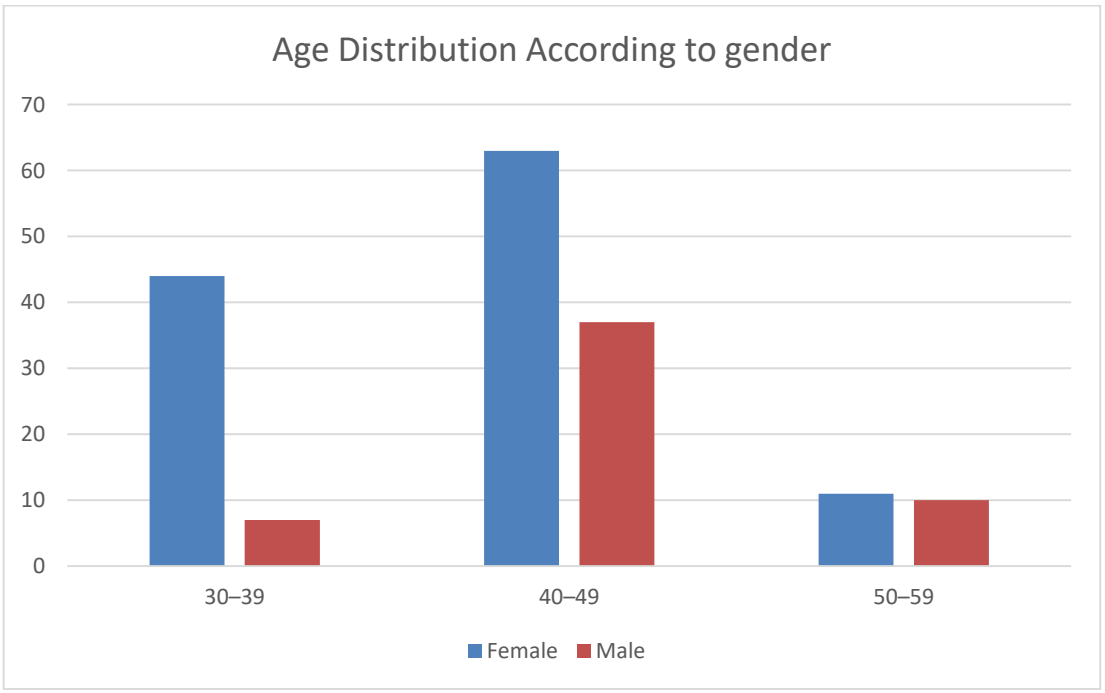


Figure 3. Age distribution according to gender.

Interpretation: Among teachers aged 30–39 years, 44 were female and 7 were male. In the 40–49 years group, 63 were female and 37 were male, while in the 50–59 years group, 11 were female and 10 were male. Female teachers were more numerous in the first two age groups, whereas the gender distribution was more balanced in the oldest group. No statistical comparison was conducted.

Table 5. Windlass Test Results and Screening Prevalence

Population	Total N	Positive, n (%)	Negative, n (%)	95% CI for Positive (%)
All School Teachers	172	115 (66.86)	57 (33.14)	59.29-73.84
Female Teachers	118	80 (67.80)	38 (32.20)	58.57-76.10
Male Teachers	54	35 (64.81)	19 (35.19)	50.62-77.32

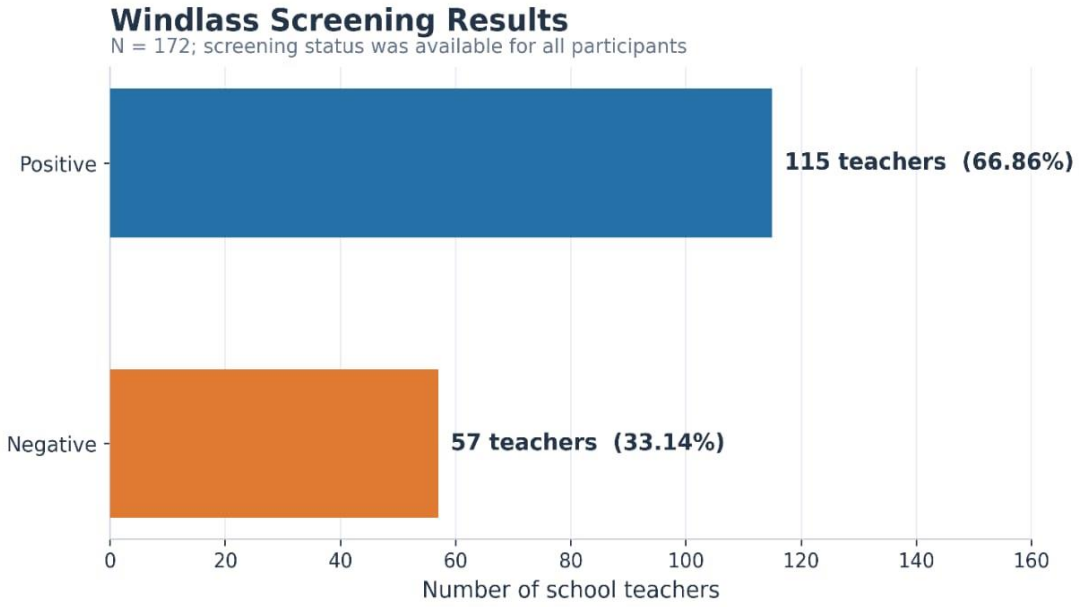


Figure 4. Windlass screening results (N = 172).

Interpretation: Among 172 school teachers, 115 (66.86%) screened positive on the Windlass test. The screening-positive proportion was 67.80% among females and 64.81% among males. These findings indicate a substantial proportion of positive screening results in the studied population.

Table 6. Mean Age According to Windlass Test Results

Population	N	Mean age (SD), years	95% CI
All teachers	172	42.92 (5.04)	42.17–43.68
Windlass positive	115	43.44 (4.73)	42.57–44.32
Windlass negative	57	41.88 (5.51)	40.41–43.34

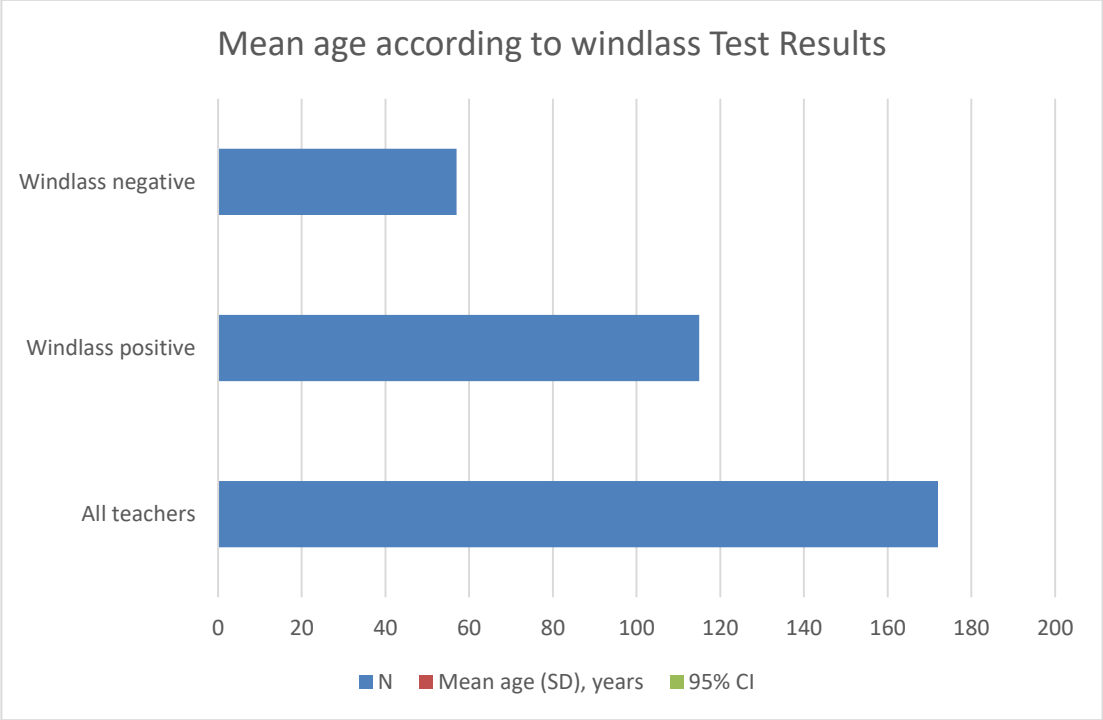


Figure 5. Mean age according to Windlass test results.

Interpretation: The mean age of the 172 teachers was 42.92 ± 5.04 years. Windlass-positive teachers had a higher mean age (43.44 ± 4.73 years) than Windlass-negative teachers (41.88 ± 5.51 years).

RESULT

Participant Characteristics: A total of 172 school teachers were included in the study. All participants had recorded Windlass screening results, and no participant records were excluded from the descriptive analysis. The mean age of the participants was 42.92 years (SD = 5.04), ranging from 32 to 56 years. Among the participants, 118 (68.60%) were female and 54 (31.40%) were male. The mean height was 160.89 cm (SD = 7.41), mean weight was 67.14 kg (SD = 8.38), and mean BMI was 25.96 kg/m² (SD = 3.01). The mean teaching experience was 11.92 years (SD = 4.33). Among the 115 Windlass-positive teachers, the mean age was 43.44 years (SD = 4.73), compared with 41.88 years (SD = 5.51) among the 57 Windlass-negative teachers. The mean teaching experience was 12.59 years (SD = 4.18) in the positive group and 10.58 years (SD = 4.37) in the negative group. The corresponding mean BMI values were 25.85 kg/m² (SD = 3.09) and 26.16 kg/m² (SD = 2.88). The demographic characteristics of the participants are presented in Table 1. The continuous variables were summarized descriptively.

Prevalence Based on Windlass Test Findings: Of the 172 school teachers screened, 115 (66.86%) demonstrated a positive Windlass test, whereas 57 (33.14%) demonstrated a negative test. The overall Windlass-screen-defined prevalence was 66.86% (95% CI [59.29%, 73.84%]).

Among female teachers, 80 of 118 (67.80%) screened positive, with a 95% CI of [58.57%, 76.10%]. Among male teachers, 35 of 54 (64.81%) screened positive, with a 95% CI of [50.62%, 77.32%]. The screening-positive proportion was descriptively higher among female teachers than male teachers. However, no inferential comparison between sexes was performed. The distribution of Windlass test findings and the corresponding sex-specific screening-positive proportions are presented in Table 5.

DISCUSSION

Plantar fasciitis is a common musculoskeletal condition of the foot, especially in people whose jobs involve prolonged standing and repetitive weight-bearing. School teachers face these demands while lecturing, writing on boards, supervising students and moving around classrooms. Continuous loading of the plantar fascia may lead to plantar heel pain and interfere with their daily work. The present study was therefore carried out to find the prevalence of plantar fasciitis among school teachers using the Windlass test.

The study included 172 school teachers aged 30 to 60 years with at least one year of teaching experience. All of them were screened with the Windlass test to pick up possible plantar fascia involvement. A considerable proportion tested positive, which points to a substantial burden of plantar heel symptoms in these teachers.

Of the 172 teachers, 115 had a positive Windlass test, a screening-positive proportion of 66.86%, and the remaining teachers were negative. This suggests that plantar fascia-related symptoms are an important concern in this group. These figures, however, should be read as prevalence defined by the Windlass screen and not as a definitive diagnosis made through a full clinical assessment.

The findings of the present study are in line with earlier research on people in the teaching profession. A study on the frequency of plantar fasciitis among female teachers also noted plantar fascia-related problems in this group [8]. Research on school teachers likewise found foot pain to be a considerable occupational health concern, especially after prolonged standing and multiple teaching sessions [9]. Such findings support looking for foot-related musculoskeletal problems in teachers, whose work involves continuous weight-bearing.

Another study, on plantar heel pain in school teachers, stressed occupational loading and individual factors such as body weight and earlier foot problems, and suggested that people in jobs needing prolonged standing and weight-bearing may be more prone to plantar heel pain [10,29]. The present findings add to the case for assessing plantar fascia-related symptoms in teachers, since their daily work can put repeated mechanical stress on the feet.

Most of the participants were female, and the screening-positive proportion was slightly higher in female teachers than in male teachers. This difference was descriptive only; no statistical comparison was done, so no significant link with gender can be claimed. An earlier study in female teachers also reported plantar fasciitis in this group [8]. Even so, the present findings do not show that gender on its own influences the development of plantar fasciitis.

Age may also play a role. Teachers with a positive Windlass test had a slightly higher mean age than those with a negative test, and the proportion of positive results was greater in the middle-aged group. This may mean that plantar heel symptoms are common among teachers in their middle working years, possibly because repetitive occupational loading builds up stress on the plantar fascia over time. Earlier research in teachers has described similar findings on age and foot-related complaints [8,9]. However, the present study does not establish a statistically significant relationship between age and a positive Windlass test.

Teaching experience may matter as well, because teachers with longer service may have spent many years standing and walking repetitively. The mean teaching experience was descriptively higher in teachers with a positive Windlass test, which could reflect cumulative occupational exposure. Since no inferential analysis was done for teaching experience, it cannot be concluded that longer experience directly causes plantar fasciitis.

Body weight and foot biomechanics are also relevant. Higher mechanical loading can change how force is distributed across the foot in standing and walking, and earlier studies have named obesity, unsuitable footwear, prolonged standing and repetitive weight-bearing as possible contributing factors [5,7,22]. BMI was recorded here as part of the demographic and anthropometric data, but no significant association between BMI and Windlass test results was established. BMI is therefore treated as a descriptive characteristic of the sample and not as a confirmed contributing factor.

The Windlass test was the main clinical screening tool. It works on the principle that extending the metatarsophalangeal joints raises tension in the plantar fascia and lifts the medial longitudinal arch, and reproduction of familiar plantar heel pain during this manoeuvre may point to involvement of the plantar fascia [4,20]. The test is a clinically useful way to look at the relationship between toe extension, plantar fascia tension and heel pain. Earlier biomechanical work has also evaluated it as part of assessing plantar heel pain [12,16,30], and a modified Windlass Shield Test has recently been proposed, with higher sensitivity but lower specificity than the conventional test [13]. In this study the test helped identify teachers with positive clinical findings on screening.

The findings also point to the need for occupational awareness and early identification of plantar fascia-related problems in school teachers. Standing and walking continuously through the working day can repeatedly stress the plantar fascia, particularly when rest, suitable footwear and chances to change posture are limited. Earlier research has likewise stressed prolonged standing and walking at work in relation to plantar fasciitis and plantar heel pain [5,7,10,25,29].

From the physiotherapy point of view, early identification matters because persistent heel pain interferes with walking, long standing and routine work. Conservative physiotherapy, including plantar fascia-specific stretching, calf stretching, strengthening, footwear advice and activity modification, may improve symptoms and function [2,3,14,24]. Awareness of foot health and good working practices may also help teachers see why early assessment and proper management are important.

Overall, a considerable proportion of the participating school teachers had positive Windlass screening findings. This is broadly consistent with earlier literature that identifies foot pain and plantar heel pain as occupational health concerns in teachers. Differences by age, gender and teaching experience were seen only descriptively and should not be taken as statistically established associations. The study underlines the value of clinical screening, occupational awareness and proper physiotherapy assessment for plantar fascia-related problems in school teachers.

CONCLUSION

This observational study was done to find the prevalence of plantar fasciitis among school teachers using the Windlass test.

Of the 172 school teachers, 115 had a positive Windlass test, a screening-positive proportion of 66.86%. This suggests that plantar fascia-related symptoms are an important musculoskeletal concern in this group of teachers.

The findings show why the effects of prolonged standing and repetitive weight-bearing on foot health should be recognised. Early identification, proper clinical assessment and physiotherapy may help reduce symptoms and improve function in affected teachers.

The study concludes that a considerable proportion of the participating school teachers had positive Windlass screening findings, and that there is a need for more awareness of plantar heel pain and its early management in the teaching profession.

CLINICAL IMPLICATION

1. The findings highlight the importance of routine screening for plantar fascia-related symptoms among school teachers, particularly those involved in prolonged standing and repetitive walking activities.
2. The Windlass test can be considered a useful clinical screening component for identifying possible plantar fascia involvement and determining the need for further clinical assessment; teachers with positive findings can be referred for appropriate physiotherapy management.
3. Physiotherapists should educate teachers regarding appropriate foot care, suitable footwear and the importance of avoiding excessive continuous weight-bearing activities.
4. Teachers should be encouraged to take short breaks, change their standing posture periodically and avoid unnecessary prolonged static standing whenever possible.
5. The findings may help physiotherapists and school healthcare professionals develop preventive awareness programmes focusing on foot health and occupational musculoskeletal problems among teachers.

LIMITATION OF THE STUDY

1. The study was conducted among a specific occupational population of school teachers; therefore, the findings may not be generalised to the entire population.
2. The study had a relatively limited sample size of 172 participants.
3. The study used the Windlass test as the primary screening tool. A comprehensive clinical assessment involving multiple diagnostic procedures was not performed to confirm every case.

4. The observational study design limits the ability to establish cause-and-effect relationships between occupational activities and plantar fasciitis.
5. The study was conducted over a limited duration and did not include long-term follow-up to assess the progression or resolution of symptoms.

FUTURE SCOPE OF THE STUDY

1. Future studies can be conducted with a larger sample size involving teachers from different schools and geographical regions to obtain a broader understanding of plantar fasciitis in the teaching population.
2. Further research can include a detailed clinical assessment using multiple diagnostic methods along with the Windlass test to improve the identification of plantar fasciitis.
3. Additional studies can evaluate the influence of intrinsic factors such as BMI, foot posture, ankle dorsiflexion, calf muscle flexibility and footwear characteristics.
4. Comparative studies can be conducted between teachers and other occupational groups involving prolonged standing to understand differences in the occurrence of plantar fascia-related problems.
5. Future research can assess the effectiveness of physiotherapy interventions, including plantar fascia stretching, calf muscle stretching, strengthening exercises and footwear modifications, in reducing pain and improving functional performance.
6. Preventive physiotherapy and ergonomic education programmes can be developed and evaluated to improve foot health and reduce occupational musculoskeletal problems among school teachers.

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