

Frequency of Plantar Fasciitis Among Traffic Wardens of Lahore

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ABSTRACT

Background and Objective: Plantar fasciitis is the commonest musculoskeletal disorder seen in subjects with history of frequent running and prolonged standing. This study was designed to determine the frequency of plantar fasciitis among traffic wardens of Lahore.

Methods: This was cross-sectional study comprising of consenting 147 traffic wardens from city of Lahore. A modified plantar fasciitis pain scale (PFPS) questionnaire was used to record the sociodemographic information, past history of heel pain and risk factors of plantar fasciitis. Diagnosis was based on patient history and physical examination using visual analogue scale (VAS). The data was gathered and SPSS version 23.0 was used to analyze the data.

Results: The frequency of plantar fasciitis among 147 wardens was 38.7%. A total of 90 (61.2%) subjects were having morning stiffness while 85 (57.8%) had pain on palpation of medial plantar calcaneal region. Ninety six (65.3%) wardens reported of having 4-8 hours daily standing work while VAS revealed severe pain experienced by 42 (28.6%) subjects. There was a significant relationship between plantar fasciitis, prolonged standing and frequent running ($P > 0.001$).

Conclusion: Plantar fasciitis is very common among traffic wardens that may be attributed mainly to prolonged standing. It is highly recommended that Traffic Police Department may take measures for creating awareness and promotion of preventive aspects among these important professionals.

KEYWORDS: Plantar fasciitis, Traffic wardens, Modified plantar fasciitis pain scale, Visual analogue scale.

INTRODUCTION

Plantar fasciitis is the most commonly seen musculoskeletal disorders of foot characterized by pain in the anterior-internal region of the calcaneus. Physical function and mobility is affected due to degeneration occurring in collagen tendinitis and necrosis of fascia respectively.¹ Plantar fasciitis occurs due to repetitive traction at origin of plantar fascia. It shows that 80% of heel pain and 8-10% injuries occurred due to running.^{2,3}

The causes of heel pain are multiple but in the majority of cases it occurs due to trauma or due to overuse stress respectively.⁴ Other risk factors are pregnancy, obesity, impaired biomechanics, occupational activity, limitation in range of motion of dorsiflexion of talocrural region, use of thin heel pads, prolonged walking and prolonged standing, dancing, tennis, players of basketball, step aerobics, standing on hard surfaces, mechanical flat feet and high arch, tight shoe fitting and inappropriate use of shoe fits. Plantar fasciitis may take months to years to resolve as it is a self-limiting problem making a challenging situation for the clinicians.⁵⁻⁷ Intrinsic and extrinsic risk factors

can be seen as well. The extrinsic risk factors include the equipment training and the intrinsic risk factors include structural, functional and degenerative changes.⁸

The treatment protocol of plantar fasciitis consists of medical treatment, surgical treatment and physical treatment. Non-steroid anti-inflammatory drugs (NSAIDs) and icing, shoe insert, stretching of calf muscles, Achilles tendon and the plantar fascia itself, corticosteroid injections are frequently used treatments.⁹⁻¹¹

Different studies have shown different provenances among professionals.^{12,13} The rationale of this study was to find out the frequency of plantar fasciitis or heel pain among traffic wardens of Lahore and to find out the profession associated risk factors associated with it.

METHODS

This was a cross-sectional study, in which 147 traffic wardens were recruited on the basis of convenient sampling technique after taking written informed consent. The study was approved by Ethical Board of

University of Lahore. The data was collected by using modified plantar fasciitis pain scale (PFPS) which consisted of sociodemographic information (e.g. age and gender), visual analogue scale (VAS) and mobility function test. Patient with a history of heel pain on palpation of the medial plantar calcaneal region, pain at the bottom of the heel, morning pain and stiffness, prolonged standing up to 4-8 hours daily, age between 30-60 years and without any history of trauma or surgery were included in this study. On the other hand patient presenting with any history of systemic disease, trauma, prior heel surgery, standing position less than 4 hours and having any injection history on the heel within last 3 months were excluded. Analysis of plantar fasciitis was depended on the patient's history and physical examination.¹⁴ According to the history, it was found out that patient felt severe pain, stiffness and tightness after waking up early in the morning and after prolonged sitting. On physical examination, there was tenderness on palpation of the medial plantar calcaneal region and pain at the bottom of the heel.

STATISTICAL ANALYSIS

Statistical package for social sciences, SPSS, 23.0 was used for data analysis. The categorical variables were presented using frequencies (percentages). The continuous variables were calculated for continuous statistics such as mean and standard deviation, while to see association Chi Square was applied. *P-value* ≤ 0.05 was considered as significant.

Table -1: Factors associated with pain on palpation of medial plantar calcaneal region

Risk Factors	Pain on palpation of medial plantar calcaneal region		P-value*
	Yes	No	
Morning Pain or stiffness	Yes 57 (63.33%)	33 (36.67%)	0.080
	No 28 (49.12%)	29 (50.88%)	
Standing hours/day	1-4 hour 15 (29.41%)	36 (70.59%)	<0.001
	4-8 hour 70 (72.92%)	26 (27.08%)	

*Chi square test

RESULTS

The mean age of the recruited wardens in the present study was 34.13 ± 8.68 years. The frequency of plantar fasciitis in this study was 38.7%. A total of 90 (61.2%) subjects were having morning pain and stiffness while 85 (57.8%) subjects were having pain on palpation of medial plantar calcaneal region. Another 96 (65.3%) wardens complained of 4-8 hours in standing posture daily during work; of these 42 (28.6%) were having severe pain on VAS while 102 (69.4%) subjects

experienced tenderness at bottom of the heel on palpation only. There was a statistically significant relationship between plantar fasciitis, prolonged standing, and frequent running (*P* > 0.001) (Table- 1).

DISCUSSION

Plantar fasciitis is a common issue and most frequent in 40 or above age group. This disease becomes debilitating especially when it is difficult to take few step after resting.^{15,16}

In the present study, the frequency of plantar fasciitis was 38.8% in which 61.2% subjects were having morning stiffness. Most of the wardens were in middle age group which is in accordance with global World Health Organization statistics.¹⁷ In the current study there was a significant relationship between plantar fasciitis with long standings and frequent running which accords with the findings of Riddle et al.¹⁸ who found that risk factors included overuse such as from long periods of standing, increase in exercise, and obesity.

In contrary, a cross-sectional interview questionnaire based study was conducted on 270 patients with heel pain attending five randomly selected primary health care centers at Kingdom of Saudi Arabia. The study concludes that sedentary lifestyle, instead of frequent running and prolonged standing is the most significant variable associated independently to plantar fasciitis.¹³ Therefore in a setting with no health education programs for common people as well as professionals who are linked to jobs with frequent walking, running and standing, this debilitating, but preventable disorder, calls for attention by public health personnel in our country.

CONCLUSION

The study concluded that most of the wardens were having plantar fasciitis which was due to long standing and frequent running. Adoption of better working postures and prevention strategies like stretching or taking rest during work should be used as preventive measures. Health education programs on policy level are highly recommended.

LIMITATIONS OF STUDY

In the present study, only male wardens were included and that too from selected places in one city (Lahore). More such studies at larger scale as well as in community subjects with obesity may be carried out for wider reporting and plausible future actions to be taken by policy makers.

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AUTHOR'S CONTRIBUTION

FAQ: Conception of idea and study design, data collection and drafting the article.

QI: Acquisition of data.

SA: Data Analysis.

AA: Revising manuscript critically for important intellectual content and final approval of the manuscript to be published.

CONFLICT OF INTEREST

None to declare.

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None to disclose.

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