

PREVALENCE OF HEEL PAIN AMONG GOVERNMENT COLLEGE TEACHERS IN MANSEHRA

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ABSTRACT

Background: Heel pain is most prevalent foot problem, usually caused by plantar fasciitis, characterized by pain and tenderness near the medial calcaneus. The current study explore its prevalence among government college teachers in Mansehra. *Methodology:* A descriptive cross sectional study was conducted at government colleges in Mansehra. Selection for the study included teachers who met the inclusion criteria. The data were examined using SPSS 16 to determine the frequency of heel pain in teachers. *Results:* According to the study's findings, out of 134 teachers, 46.3% reported having heel pain, 22.4% reported having it sometimes, and 31.3% reported not having heel pain at all. In the 46.3% of teachers who reported heel pain, the levels of pain mild in 10.45% , moderate in 27.61% and severe in 8.21% . While 22.4% of teachers who experienced pain sometimes, the intensity was mild among 8.96% and moderate among 13.43%. *Conclusion:* Our study led us to the conclusion that teachers who stood for long periods frequently experienced heel pain. The majority of teachers who complained of heel pain were older and had a heavy workload of teaching sessions. Teachers with heel pain reported a moderate level of discomfort. Heel pain was evident in both genders with barely any differences, but it was slightly more common in women.

Keywords: Heel Pain, Teachers, Prolong Standing.

INTRODUCTION

Heel pain, commonly referred to as policeman's heel, jogger's heel, tennis heel, or plantar fasciitis (1), is one of the most frequent orthopedic complaints (2) and is usually caused by plantar fasciitis, characterized by pain and tenderness near the medial calcaneus (3). Heel pain symptoms may be aggravated by mechanical overload, which can be caused by biomechanical issues, obesity, or work habits (4).

Diagnosis can be challenging due to regional anatomy (2) and overlapping conditions such as gout, spondyloarthropathy, or Achilles tendinopathy, but focused history and examination help differentiate causes (5). Occupational groups, especially teachers, are at higher risk due to prolonged standing, which reduces blood flow, causes pooling in the legs, accelerates fatigue, and contributes to

musculoskeletal pain and varicose veins (6, 7). During walking and running, body weight is distributed across the plantar surface, with the calcaneus and metatarsal heads bearing most of the load, and running further increases vertical foot load up to 2.5 times the body weight, placing higher pressure on the second and third metatarsal heads (8).

Heel pain is most prevalent foot problem, usually mechanical factors are the most common etiology. plantar fasciitis, heel spur, Saver's disease, neuritis, Achilles tendinopathy, and bursitis (1); plantar fasciitis is most frequent (9). Uncommon causes of heel pain are osteomyelitis, stress fracture, or tumor(10). Diagnosis depends on history, exam, and tests; treatment targets the cause(11).

Heel pain occurrence from intrinsic (limb length, ankle ROM, arch height, heel pad, foot type) and extrinsic factors like footwear(12). Most common in women aged 40–60, with medial heel pain, especially in mornings. Risks include reduced heel pad, thickened fascia, pronation, weak calves, spur, high BMI, and limited ankle/MPJ motion (13).

Epidemiological studies report heel pain prevalence rates ranging from 17% to 24% among adults over the age 18 (14), female students at various universities in Faisalabad revealed that 77.5% of the population reported foot pain due to wearing high heels regularly (15). A study was done in March 2022 to determine how common heel spurs are in teachers. According to this study, 44% of teachers do not have heel spurs while 56% of teachers report having them. The results of this study demonstrate that extended standing results in foot pain and biomechanical changes (16).

Teaching is among the professions that require a lot of physical activity, a lot of standing, and a lot of effort. Standing for long periods can flatten and strain the arch, resulting in heel pain or Plantar Fasciitis. A very minimal amount of studies has been done on this significant topic i.e. heel pain among teachers. If our study results prove that there is a

relationship between the teaching profession and heel pain. Then with our study, we can spread awareness to prevent such problems.

Methods

This study use descriptive cross-sectional study to find out the prevalence of heel pain. Data were collected from various government colleges in Mansehra, Pakistan, over a six-month period. Ethical approval was obtained from the institutional review committee, and informed consent was secured from all participants.

A non-probability convenience sampling technique was adopted, selecting individuals who were readily available and willing to participate. The minimum sample size was calculated using RaoSoft, Inc., with a 5% margin of error, 95% confidence level, and 50% response distribution, resulting in a recommended sample of at least 134 participants. Inclusion criteria included teachers who deliver lectures in a standing position for at least 02 hours a day, teachers that hold at least 02 years of working experience and male and female both Gender. Exclusion criteria included individuals with any surgery of the Lumbar Spine, Ankle, or foot, diagnostic disorder or musculoskeletal injury in the lower limb and diagnostic neurological disorder or condition

Data were collected through a self-administered questionnaire. The questionnaire had two parts; Demographic Characteristics and Heel Pain Survey. Data were analyzed using SPSS version 20, with descriptive statistics and frequency distributions presented in tables and graphs.

Results

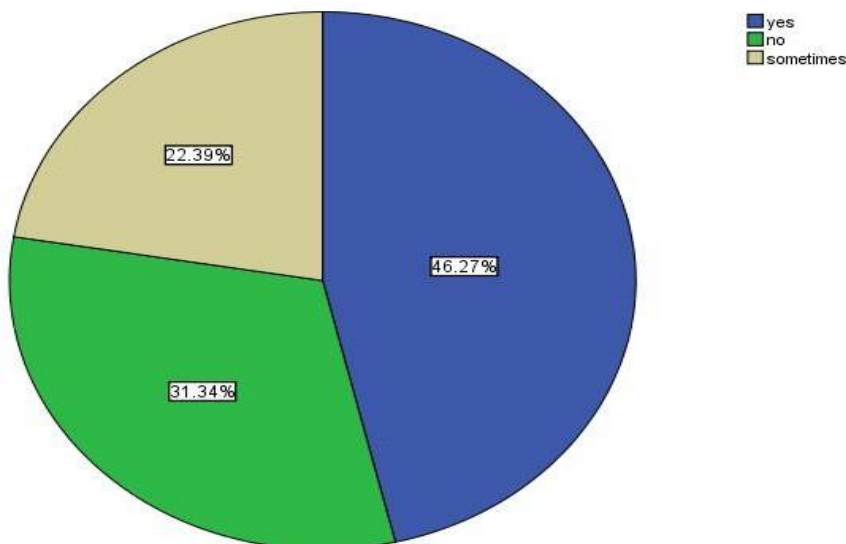
Out of 134 participants, 50.7% were male and 49.3% were female. The mean age was 37.9 years (SD = 8.83), with maximum teaching experience (72.4%) ranging from 2 to 10 years. Regarding BMI, 16.4% were underweight, 54.5% normal, 23.9% overweight, and 5.2% obese.

age of research participants		gender of research participants		Teaching experience		BMI	
N	134	N	134	N	134	N	134
Mean	37.9776	Male	50.7%	2-10 years	72.4%	underweight	16.4%
						overweight	23.9%

Std.deviation n	8.83046	Female	49.3%	11-40 year	27.6%	normal	54.5%
						Obese	5.2%

Table 1: DEMOGRAPHICS OF PARTICIPANTS

Figure 1: prevalence of heel pain



The overall prevalence of heel pain was 46.3%, while 22.4% reported experiencing it “sometimes,” and 31.3% reported no heel pain.(figure 1) Among those with heel pain, 10.45% experienced mild discomfort, 27.61% moderate, and 8.21% severe pain. Bilateral heel pain was more common (50%) compared to unilateral (17.9%) (Table 2). The frequency of heel pain was higher in participants over 40 years of age and among those with overweight or obese BMI. Standing duration also showed a significant relationship with heel pain, with teachers standing more than 4 hours daily reporting greater prevalence.

Intensity of heel pain		One Heel or Both Heel	
1-3 (mild pain)	10.45%	Bilateral	50%
4-6 (moderate pain)	27.61%		
7-10 (severe pain)	8.21%		
		unilateral	17.9%

Table 2: intensity and BL or UL heel pain

Discussion:

The prevalence of heel pain among government college teachers in Mansehra was found to be 46.3%, with 22.4% experiencing pain occasionally. This finding is consistent with previous studies, such as the one conducted by Turki A. Alqahtani in Saudi Arabia, which reported a higher prevalence of foot pain among teachers (85.5%). However, the

difference in sample size (1439 vs. 134) may contribute to the variation in results(14).

A study in India among farmers reported a prevalence of 24% (17), whereas our study found a higher prevalence among teachers (46.3%). This difference may be attributed to the distinct populations and occupations. The Saudi Arabian study found a higher prevalence of foot pain among

teachers above 45 years old (85.1%) and those who weighed more(14). Our study also observed a higher prevalence of heel pain among teachers above 40 years old (47.6%) and those who were overweight or obese (58%).

Both studies found a significant relationship between standing duration and heel pain. The Saudi Arabian study reported 39% of teachers experiencing pain when standing for longer durations (14), while our study found 22.39% of teachers experiencing pain with a standing duration of 4 hours.

The findings of this study highlight the need for awareness and preventive measures to address heel pain among teachers. Future studies should investigate the causes and consequences of heel pain in more detail, and explore strategies for reducing its impact on teachers' daily lives. The study provides valuable insights into the prevalence and impact of heel pain among government college teachers in Mansehra, suggesting that heel pain is a common issue among teachers, particularly those who stand for extended periods. Further research is needed to develop effective interventions and prevention strategies.

Conclusion

From our study, we concluded that the prevalence of heel pain was high among teachers standing for extended period of time. Our outcomes showed that 46.3% of the teachers have pain and 22.4% experienced pain periodically. The majority of teachers that experienced heel pain were above 40 years of age and had a heavy workload of teaching sessions. The level of discomfort among teachers who had heel pain was moderate. Both genders revealed a significant frequency of heel pain with barely any differences but were slightly high among females.

Limitations

There are several limitations that should be considered when interpreting the findings. Firstly, there were few studies on this subject, we lacked sufficient data to compare them with our study. Secondly our small sample size may limit the generalizability of the results. Additionally, the limited resources constrained the scope of the study.

Recommendations:

Based on the findings and limitations of this study, it is recommended that future research should be conducted with a larger and more diverse sample size to improve generalizability and strengthen the validity

of the results. Preventive measures such as ergonomic interventions, proper footwear, scheduled breaks, and awareness programs should also be promoted to reduce heel pain among teachers

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