Iqra Journal of Health Sciences
Vol.01, No 1, (January 2026)

PREVALENCE OF FOOT PAIN AMONG TEACHERS OF ALLIED HEALTH PROFESSIONS DUE TO PROLONGED STANDING IN DIFFERENT UNIVERSITIES OF KARACHI

[1]Neelam Zehra and [2]Reeta

Abstract: *The foot plays an important role in a person's quality of life as the foot enhances the overall well-being. During prolonged standing, feet are continuously exposed to strain in individuals, especially in teachers, due to heavy workload and longer standing durations. The anatomy and function of the foot have great significance in foot health. To find out the prevalence of foot pain among teachers of allied health professions due to prolonged standing in different universities of Karachi, an observational cross-sectional study was conducted among teachers of Allied Health Professions with 191 sample size which was calculated through OpenEPI. The software used for data analysis was IBM SPSS, licensed version 21. Our study incorporated 191 teachers from different universities in Karachi. Among these 191 subjects 119 participants were female and 72 participants were male (Table no.4). The ages of participants ranged from 25-65 years more precisely 45% of (25-35), 38.2% of (36-45), 13.6% of (46-55) and 3.1% of (56-65) years of age. Out of 191 participants, 103 reported that they have foot pain with the intensity of mild (43.7%), moderate (39.8%), and severe (16.5%), respectively. The overall result showed that the prevalence of foot pain was high in teachers, mostly having mild to moderate pain. A few participants reported severe pain*

Keywords: *Allied health professionals, Foot pain, Prevalence, Prolonged Standing, Teachers.*

Received: 28/04/2025 *Revised: 22/09/2025* *Accepted: 20/11/2025*

Institution(s) Name: [1,2] Sindh Institute of Physical Medicine & Rehabilitation

Corresponding Author's Email: drzehraneelam@gmail.com

 Published by ORIC, Iqra University, Main Campus, Karachi-Pakistan

Introduction

Feet are a very important structure that helps to maintain balance, stability, and steadiness. They are the supporting structures and are essential for mobility. But this is the most ignored and underrated structure of the body. The whole weight of our body depends upon our feet because it has a crucial role in ambulation, gait, and posture as well, so we have to be very careful regarding our foot health because if anything goes wrong with our feet, the whole body suffers. It's a key element of our general health.

Foot pain has the propensity to minimize work productivity, regular activity, and can have a worse effect on our quality of life. Foot pain is an irritating and troublesome experience followed by recognized injury of any type of tissue distal to the tibia and fibula, including bones, joints, ligaments, muscles, and tendons. The ankle is composed of 26 small bones and 30 articulations, which are plot for carrying weight and strength equally. The anatomical structure of the ankle has Great significance because it gives us 3 arches (Medial longitudinal arch, lateral longitudinal arch, and anterior transverse arch), which are shaped by the metatarsal and tarsal bones and braced by the tendons and ligaments of the foot. These arches are responsible for effective weight bearing and simultaneously avoiding the contraction of the plantar neurovascular structure, thus preventing the injury [1].

Foot pain is the most common issue and persistent problem among the general population, specifically in older adults and professions that require hard work, like teaching. According to an analysis, the preponderance of foot/ankle pain in adults aged>/= 18 years' ranges from 17% to 24% [2]. A systematic review showed that 55%, 42% and 36% population of nurses experienced low back pain, neck pain, and lower limb pain in the previous year, respectively. [3]

Foot pain is not a systemic disease itself, but later it can cause reciprocal foot pain, another joint pain, or an arthritic state. Foot pain, including heel ache, has a very strong connection with reduced ability, improper balance, structural deformity, postural problems, uneven plantar pressure distribution, slow walking speed, abnormal gait pattern, risk of falling due to pain, and certain injuries may also include psychological, job-related anxiety and depression.

Although across the board on this pain, such as site, causes, signs and symptoms of the pain in the foot/ankle, has not yet been studied well and inscribed properly among teachers or the general population as compared to LBP or neck pain. The prevalence or the occurrence of ankle/foot pain was quite high in the general population. However, the teachers were at Great risk of musculoskeletal pain, specifically foot/ankle pain.

The amplitude of this risk can be increased if they are associated with other professions as well like teachers with Allied health professions (physical therapist, occupational therapist, dietitian, etc.), due to great physical effort such as prolonged standing and sitting, postural imbalance, increased workload, and anxiety due to low peer/ colleague support. Constant or recurrent foot/ankle pain can be a cause of voiltion related to job and diminish the efficiency of work. Moreover, it may be the cause of being absent from work and in severe cases it may cause early retirement. [4]

Awareness regarding general foot health is very important, this study helped us to focus on our foot health and foot related conditions. In a previous study it was revealed that there was a very deep connection between foot pain and prolonged standing which clearly showed professions like teaching were more prone to foot health diseases and injuries. In September 2020 a study had been conducted in Saudi Arabia Abha sector in which 1439 sample of teachers from different areas of the Abha sector were included.

The study showed pervasiveness of foot pain among selected teachers was 85.5% during the last 12 months which means that foot pain is common problem. The pain was minimal among 17.3% of the

selected teachers and drastic among 25.5% of them. About 39% of the sampled teachers suffered with foot pain due to long standing. [5]

Another Cross-sectional study has been conducted in Japan on the same condition I e foot pain and associated factors among nurses at a university hospital of Japan. This study unveiled that out of 636 nurses who were taken as a sample for analysis the pervasiveness of foot and ankle pain was 23% and 51% by using the Standardized Nordic Questionnaire and the Manchester Foot Pain and Disability Index, respectively. The total cases of foot pain at the time which hold the nurses back from working actively in their job and other daily activities was 17% and 4%, respectively. [6]

A cross-sectional survey was conducted among the nurses of Hayatabad Medical Center in December 2020. A total of 197 participants were included and the response rate was 97%. Aboriginal foot and ankle injury questionnaire was used to collect data and to establish the frequency of foot/ankle pain. The number of participants having no problem were 72 (37.5%) and 71 (37%) and those having moderate problem were 95 (49.5%) and 77 (40.1%). Those having major foot and ankle problem were 19 (9.9%) and 36 (88%) respectively. The result concluded that the frequency of foot/ankle pain was very frequent among the population of nurses. Majority of nurses had moderate and major foot and ankle pain. [7]

In 2019, a cohort study was done in UK to find out the occurrence of heel pain in plantar region in middle and old aged people and their associated factors and how frequently they utilize healthcare. Health Survey Questionnaire were mailed to the people with age greater or equal to fifty years, there were 5109 responders. They found results as 9.6% (95% CI: 8.8, 10.5) of prevalence of heel pain in plantar region and 7.9% (7.1, 8.7) of heel pain that can be disabled.

The causes of pain were low physical activity, less use of heel shoes previously and individuals being overweight. 1-year occurrence of heel pain was obtained in general practitioner that was 43%, physiotherapist was 15.1% and podiatrist was 32.8%. It was concluded that plantar heel pain with disabling symptom is common among middle to old aged adults. [8]

Methodology

Study Design and Sampling Technique: This research study design was observational cross-sectional study. In this research sampling technique was non-probability purposive sampling.

Sample Size and Study Duration: Sample size was calculated through software open EPI. Our study incorporated 191 teachers among different universities of Karachi. The duration of study was 3 months.

Inclusion Criteria: In this research inclusion criteria were teachers belonging to allied health professions who have been actively teaching for more than a year, participants whose ages were between 30-60 and allied health teachers clinically practicing.

Exclusion Criteria: Exclusion criteria were those teachers having any congenital deformity or any other musculoskeletal disorder, teachers with diabetes or calcaneal cancers, teachers with pregnancy or radiculopathy. Obese teachers with BMI >30 was also excluded.

Study Parameters: A self-made piloted questionnaire was used to collect the data for the study of foot pain among teachers of allied health professions in different universities of Karachi.

Data Collection Procedure: Data of the project was collected after the approval of the synopsis. Data was collected from different universities of Karachi (SIPM&R, UOK, DCOP, DIMT, DION, CHK). A written consent form was given to the participants before enrolling them in our research project. Furthermore, a brief description of the research objective was also explained to our participants. To meet our sample requirement, we approached multiple universities. The data was collected through questionnaire that was piloted and the information of our participants was kept confidential. The

questionnaire was provided in English as per the requirement of our participants. The questionnaire consisted of 2 parts the first one was about demographics and the other one had questions related to pain and teaching.

Statistical Analysis: After data were collected it was revised, coded, and fed to statistical software IBM through licensed version 21 of SPSS. Variables were reported through frequencies and percentages.

Results

Our study incorporated 191 teachers among different universities of Karachi. Among these 191 subjects 119 participants were female and 72 participants were male.

Out of 191 participants 103 reported that they have foot pain with the intensity of mild (43.7%), moderate (39.8%) and severe (16.5%) respectively (Table no.2). The remaining 88 participants reported that they have no pain (Table no.1).

Table 1

Foot pain prevalence among teachers of allied health professions in different universities of Karachi

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	103	53.9	53.9	53.9
	no	88	46.1	46.1	100.0
	Total	191	100.0	100.0	

Table 2

Intensity of foot pain among teachers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	mild	45	23.6	43.7	43.7
	moderate	41	21.5	39.8	83.5
	severe	17	8.9	16.5	100.0
	Total	103	53.9	100.0	
Missing	System	88	46.1		
Total		191	100.0		

Table 3

Gender of participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	female	119	62.3	62.3	62.3
	male	72	37.7	37.7	100.0
	Total	191	100.0	100.0	

On associating foot pain with teaching experience of the teachers we found that the total number of teachers with the experience of 1-10 years are 156. Out of 156 participants 87 reported that they have foot pain. Likewise, the teachers with the experience of 11-20 years were 30 in total and 14 reported

foot pain. Similarly, teachers with the experience of 21-30 years were only 5 and only 2 reported foot pain among them. (Table 4).

Table 4
Association between pain & teaching experience

			teaching experience of participants			
			1-10	11-20	21-30	Total
foot pain among teachers	yes	Count	87	14	2	103
		% within foot pain among teachers	84.5%	13.6%	1.9%	100.0%
	no	Count	69	16	3	88
		% within foot pain among teachers	78.4%	18.2%	3.4%	100.0%
Total		Count	156	30	5	191
		% within foot pain among teachers	81.7%	15.7%	2.6%	100.0%

Table 5
Association between pain & ADLs

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.208[a]	3	.530	.656		
Likelihood Ratio	3.371	3	.338	.613		
Fisher's Exact Test	2.069			.656		
Linear-by-Linear Association	1.969[b]	1	.161	.249	.132	.095
N of Valid Cases	104					

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .23.

b. The standardized statistic is -1.403.

Pearson Chi square test was run to look at if there is any association between the pain and the ADLs p= 0.530 shows no significant association found between the pain and the ADLs (Table 5).
Upon asking about physical exercise participants who had pain, 30.4%, 52%, 11%, 7% reported that they never, occasionally, frequently, and daily do physical exercise respectively.

Discussion

As is known, teaching is a hectic profession that requires long-term standing and physical efforts that put pressure on the muscles and bones of the feet. This Cross-sectional study found that foot pain is 53.9 % prevalent among teachers having various years of teaching experience. During this research project, we discovered that teachers with fewer than 10 years of experience are more significantly affected than those with over a decade of experience. This contradicts the other research that has been

done in Saudi Arabia and Japan.

The first reason is that young teachers with less experience participated more than old ones in our study. Another reason relates to the footwear choice among teachers, as the majority of our participants were female and predominantly wore heels and peep toes.

Our aim was to find out the prevalence of foot pain among teachers of allied health professions in different universities of Karachi due to prolonged standing. In this study, obese teachers, individuals with any foot deformity, teachers having experience less than one year and pregnant teachers were excluded. Our result indicates that foot pain among teachers was more evident as the teaching hours increased.

According to our results, the teaching experience is not significantly associated with pain, and the activities of daily living (ADLs) are not significantly compromised due to foot pain. Rather, it was evident that the physical exercise is significantly associated with pain. The participants who have never exercised reported pain. These findings elaborate the importance of physical exercise for preventing pain and other complicated muscular problems of feet.

A similar study was conducted in the Abha region of Saudi Arabia in September 2020. The results revealed that 85.5% of the teachers surveyed experienced foot pain within the past year, highlighting that foot pain is a common problem. Fortunately, this issue is less common in Karachi, Pakistan, where the prevalence stands at 53.9%. However, this does not mean we can overlook it; we must take this seriously and protect our academic health professionals from this significant concern by raising awareness among them.

Most of the time, the teachers are not actively taking care of their health by taking proper sitting breaks and wearing comfortable footwear. It may have a negative impact on their foot and overall health unintentionally. It is very likely that it can go unnoticed when the pain is mild or moderate. But later it may become chronic or more severe and may require medical attention.

In a worst-case scenario, it can lead to some serious medical conditions like planter fasciitis, heel spurs, Achilles tendon injury etc. It could result in the withdrawal of the profession. It is strongly advised to be mindful of the teaching hours and to incorporate breaks during those times. Additionally, it is suggested to engage in regular physical activities such as brisk walking, stretching, and strength Training exercises.

References

1. Hawke F, Burns J, et al. Understanding the nature and mechanism of foot pain. Journal of Foot and Ankle Research. 2009 Dec; 2(1):1-1.
2. Dawe EJ, Davis J, et al. (VI) Anatomy and biomechanics of the foot and ankle. Orthopedics and Trauma. 2011 Aug 1; 25(4):279-86.
3. Jahss MH, et al. Disorders of the foot & ankle: medical and surgical management. In Disorders of the foot & ankle: medical and surgical management 1991 (pp. 1-048).
4. Davis KG, Kotowski SE, et al. Prevalence of musculoskeletal disorders for nurses in hospitals, long-term care facilities, and home health care: a comprehensive review. Human factors. 2015 Aug; 57(5):754-92.
5. 5.Tojo M, Yamaguchi S, Amano N, et al. Prevalence and associated factors of foot and ankle pain among nurses at a university hospital in Japan: A cross-sectional study. Journal of occupational health. 2018 Mar 20; 60(2):132-9.
6. Alqahtani TA, et al. The prevalence of foot pain and its associated factors among Saudi school teachers in Abha sector, Saudi Arabia. Journal of Family Medicine and Primary Care. 2020 Sep; 9(9):4641.

7. Khan AR, Nadeem T, et al. Frequency of foot and ankle pain among nurses of hayatabad medical complex-peshawar. Rehman Journal of Health Sciences. 2022 Jun 30; 4(1):10-3.
8. Thomas MJ, Whittle R, et al. Plantar heel pain in middle-aged and older adults: population prevalence, associations with health status and lifestyle factors, and frequency of healthcare use. BMC musculoskeletal disorders. 2019 Dec; 20(1):1-8.