International Journal of Allied Medical Sciences and Clinical Research (IJAMSCR)

ISSN:2347-6567

IJAMSCR |Volume 10 | Issue 2 | Apr - Jun - 2022
www.ijamscr.com

Research Study Medical research

Prevalence of Plantar Fasciitis in Post-menopausal women

Ashwini Umesh Kedar*[1], Mandar Malawade[2]

Intern[1], HOD[2] Department of Pediatric Physiotherapy, Krishna College of Physiotherapy, Krishna Institute of Medical Sciences "Deemed To Be University", Karad, Maharashtra, India

Corresponding Author: Ashwini Umesh Kedar

ABSTRACT

Background

Plantar fasciitis is extremely common overuse injury in people nowadays. It's most typical in postmenopausal women, due to various hormonal changes taking place after menopause. This research aims to find out prevalence of plantar fasciitis in postmenopausal women and difficulties faced by them and severity of their condition.

Methods

Postmenopausal women were chosen from Krishna Hospital Karad. The purpose and nature of study was explained to the participants, a consent form was filled by the participants. The questionnaire has been copyrighted and given to willing participants were then given a questionnaire to be filled. The study was carried out by giving them a questionnaire; based upon the inclusion and exclusion criteria a total of 89 subjects were studied. The responses were collected and all the data was entered into a database on Microsoft excel. The score was calculated and graded into mild/moderate/severe.

Results

The present study shows that postmenopausal women's are more vulnerable to plantar fasciitis. At the same time, the participants also some had restriction in doing daily activities. About 87.6% of subjects had plantar fasciitis. When assessed about the prevalence of plantar fasciitis in postmenopausal women, the participants exhibited a very poor score.

Conclusion

Based upon the responses collected from survey questionnaire, the women's are prone to plantar fasciitis which also hampers their daily activities. The awareness regarding the condition its causes and prevention methods will reduce no. of plantar fasciitis and even exercises for same are often very helpful in avoiding further risk factors.

Keywords: Women, Postmenopausal, weight gain, plantar fascia, overuse.

INTRODUCTION

Plantar fascia plays a very important role in our day to day life. It provides support to foot. It also acts as a resilient pad when weight is being loaded to foot and this muscle also helps in increasing the balance in ankle[1]. In sole of foot it is a thick belt of fascia which is triangular in shape. It originates from medial tubercle of the calcaneum, proximal to attachment of flexor digitorum brevis and then divides into five processes near the heads of metatarsal bones where it inserts. The plantar fascia protects deeper structures and also fixes the skin of sole. It muscles of 1st layer of sole originates from here[2]. When there is overuse of this muscle it causes plantar fasciitis and due which there is heel pain. It is not always that due to overuse only this condition occurs instead it can affect those also who have sedentary lifestyle[3]. There are various risk factors which causes plantar fasciitis among which some are Obesity, Sedentary lifestyle, Excessive running, prolonged weight-bearing, flat feet, Overtraining, Reduced estrogen levels, recent stress fracture, poor footwear, walking barefoot[4]. And to reduce this risk factors early detection of signs and symptoms is necessary so the signs for early detection are pain on sole of foot, pain while taking your first step of the day in morning when you wake up from bed, pain on prolonged weight bearing, increase in physical activity,

and pain on prolonged standing, excessive running or jumping activities, sudden weight gain[5].

Menopause is a natural process. It is diagnosed after 1year of complete cessation of menstruation. Before menopause that is in perimenopause women's experience physiological changes in their body such as hot flashes, fatigue, irregular or absence of menstrual cycle[6]. Also there are various hormonal changes such as after menopause there is reduction within the levels of estrogens and androgens. Now this decreasing level of estrogens and androgens causes various changes in our body which produces various signs and symptoms which is reduced bone density, changes in mood and energy, loss of pubic hair and effects on sexual function[7]. Now this reduction affects plantar fascia as estrogen levels play a very important role in the maintaining plantar fascia elasticity and length[8]. To find out prevalence of plantar fasciitis in post-menopausal women's in karad**.**

MATERIAL AND METHODOLOGY

A cross-sectional study was carried out from July 2020 to December 2020 in a rural tertiary care hospital in karad. This study included postmenopausal women's who had heel pain after 1 year of menopause. A questionnaire was made for this purpose and been copyrighted. Patients who were co-operative, patients who were willing to participate considering the inclusion and exclusion criteria were given the questionnaire. A consent form was signed by the participants before filling the data collection sheet with all the details explained in Marathi. The respondents were informed about the aim of the study as well as the fact that participation in the questionnaire survey was totally voluntary. The data collection sheet consisted of a questionnaire which assessed the prevalence of plantar fasciitis in postmenopausal women's in karad with a total of 19 questions and each question with a yes/no response and other multiple choice. The questionnaire was in English as well as in Marathi, was assessed. The questionnaire was validated by the experts from Institutional Ethics Committee. All the data were entered into a database on Microsoft excel. Microsoft excel and Microsoft word have been used to generate the tables and graphs.

QUESTIONNAIRE

DEMOGRAPHIC DATA:

Name

Age

Occupation

Phone number

Height

Current weight

Weight before complete stoppage of periods?

QUESTIONS	RESPONSE/REPLY
1. Do you have heel pain?	Yes/No
2. Site of pain (mark from image given below)	Forefoot/Hindfoot and Midfoot.
3. Does your daily activity include prolonged standing?	Yes/No
4. Since when you started experiencing heel pain?	0-3 months/3-6 months/Above 6 months
5. Does the pain aggravate on activity?	Yes/No
6. At what age your periods started?	11-13 age/13-16 age
7. At what age your periods stopped permanently?	40-50 age/50-60 age
8. Have you gained weight after your complete stoppage of periods?	Yes/No
9. Is your heel pain associated with climatic changes?	Yes/No
10. Do you take any painkillers for heel pain?	Yes/No
11. How many minutes do you walk in a day?	30-40 minutes/More than 1 hour
12. Which type of footwear you use?	Flats/High Heels
13. Which type of sole your footwear has?	Soft/Hard
14. Any recent ankle surgery?	Yes/No
15. Any recent ankle fracture?	Yes/No
16. Do you find any difficulty while doing your work?	Yes/No
17. Do you feel pain in morning when you take your first step after getting out of bed?	Yes/No
18. If you have pain in morning then does it go off with walking?	Yes/No
19. Do you have pain at night?	Yes/No

All questions were assessed and score was given based on the options selected by the participant. A maximum of 20 and a minimum of 0 marks were allocated. Grading system was used to analyse the results.

Demographic variables

Variable	Number of Participants	% Of Participants
Age		
40-45	1	1.1%
46-50	41	46.1%
51-55	34	38.2%
56-60	12	13.5%
Weight(before menopause)		
40-50kg	10	11.2%
51-60kg	46	51.7%
Above 60kg	33	37.0%

Weight(after menopause)		
40-50kg	1	1.1%
51-60kg	50	56.2%
Above 60kg	38	42.7%

RESULTS

The number of population who have heel pain so this shows that out of 89 participants only 2 participants didn't have pain that is 97.8% subjects have heel pain and likewise 92.1% subjects daily activities included prolonged standing. 87 subjects pain aggravated while doing any activity which is about 97.8% whose pain aggravated on activity and same was about weight gain after menopause 97.8% subjects had weight gain. And about 69.7% had their pain associated with climatic changes while the remaining 30.3% didn't have pain on climatic changes. 58.4% subjects used to take painkillers for heel pain and about 73% percent subjects have heel pain at night as shown in Fig 1.

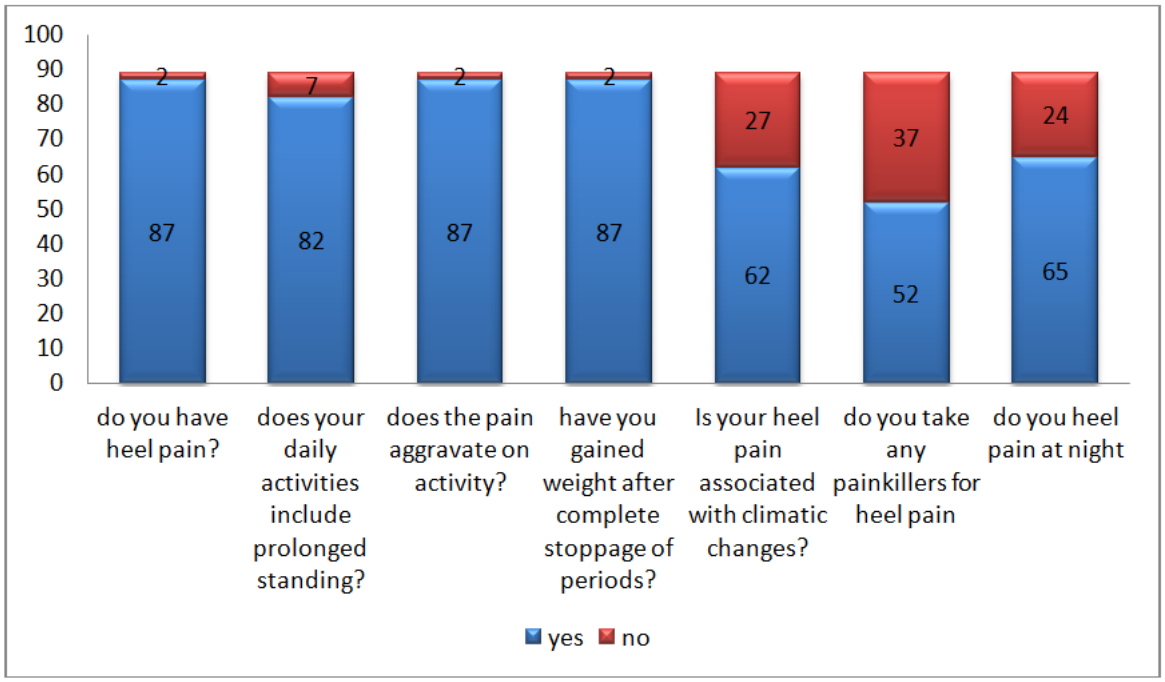


Fig 1: Heel pain at night

The subjects had any signs and symptoms or any other cause of plantar fasciitis other than menopause. This shows that about 98.9% subjects didn't have undergone any ankle surgery only 1.1% had undergone surgery. Only 2.2% subjects had recent ankle fracture while the other 97.8% didn't have any recent fracture. 75.3 participants had difficulty while doing their work while other 24.7% had difficulty doing their work. While taking 1st step of day when getting up from bed in morning 95.5% participants have heel pain. And in 92.1% participants this morning pain goes off with walking, also in 89.9% participants this pain which had gone with walking or doing activity it reoccurs when we take rest as shown in Fig 2.

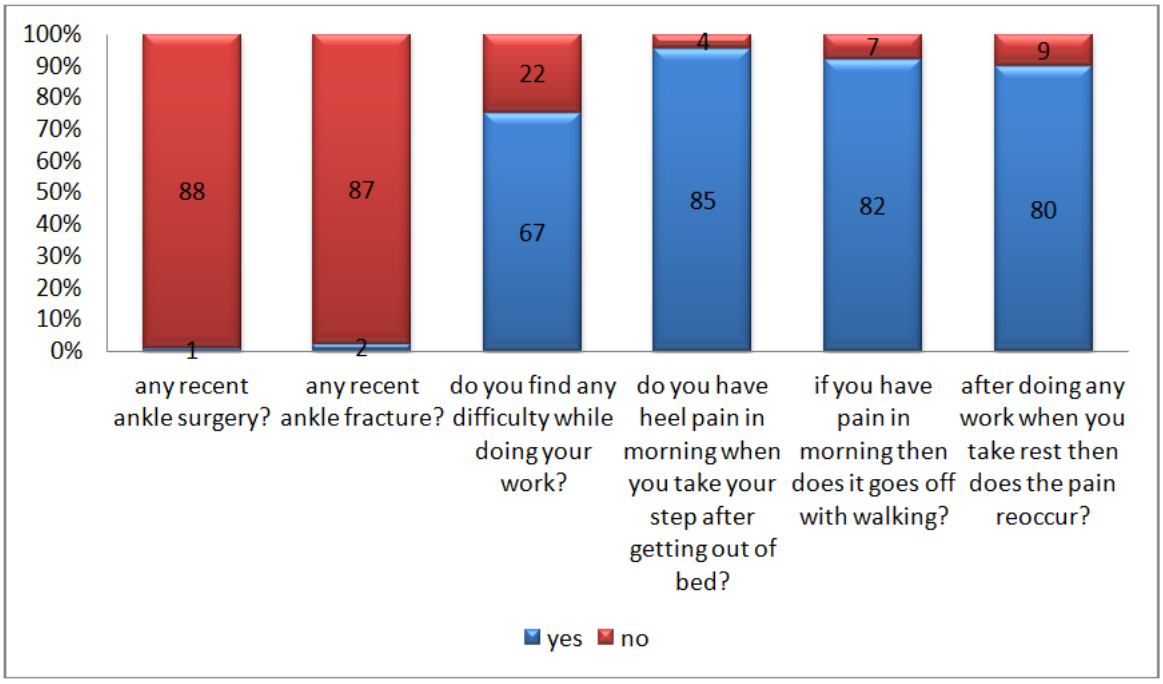


Fig 2: Doing activity it reoccurs

Percentage of participant's menopausal age who had their menopause between 40-50years and between 51-60 years. And this shows about 44% participants had menopause between 40-50years and remaining 56% had menopause between 51-60years as shown in Fig 3.

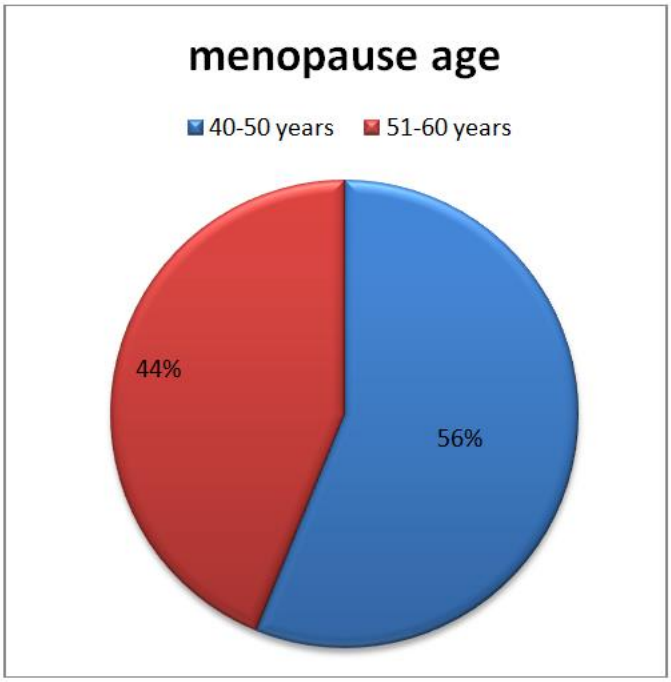


Fig 3: Menopause Age

The exact site of heel pain the participant's have.so this chart shows that 97% have pain at midfoot and forefoot while only 3% have pain at forefoot as shown in Fig 4.

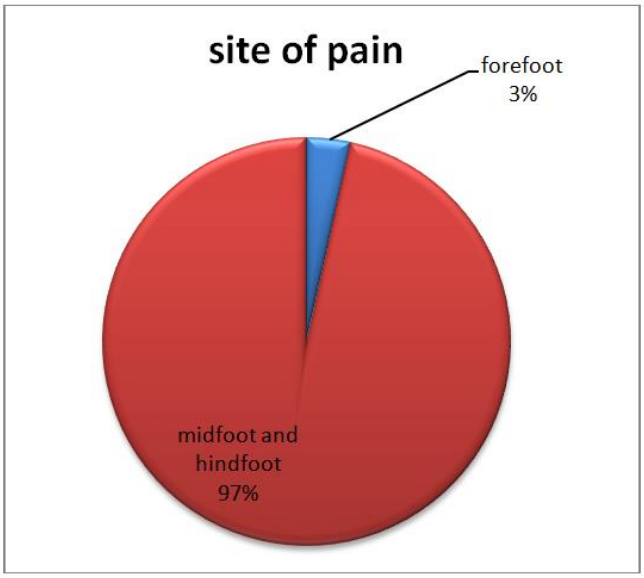


Fig 4: Site of pain

The duration of pain that is since when the participant's started experiencing pain so 30% have pain in 1st 0-3 months, 36% have pain in 4-6 months and remaining 34 have pain above 6 months as shown in Fig 5.



Fig 5 : Duration of pain

DISCUSSION

In the present study we aimed toward assessing the extent of plantar fasciitis in postmenopausal women who are residing in karad.

The study assessed the severity of plantar fasciitis who had it. According to the questionnaire the groups were divided into mild moderate and severe. And therefore the results depicted that average population have moderate condition. At the same time very few people had mild symptoms of plantar fasciitis. The result thus moves our attention towards educating the postmenopausal women about the hormonal changes which are going on and also telling about importance of exercise protocol for them, this will help in building a more positive approach among the community dwelling postmenopausal women towards the rehabilitation and seek a good quality of care. Along with increasing awareness among the postmenopausal women, home based exercise protocol should be taught to patients. Proper implementation of this home based exercise protocol would ensure a subsequent decrease would stop further worsening of condition, reduction in hospital/rehab costs, and a significantly good quality of life.

Previous studies which have been conducted focuses on plantar fasciitis in nurses as a general concept[9]; this study focuses on the plantar fasciitis in postmenopausal women which is very crucial for rehabilitation and prevention of plantar fasciitis. This project successfully developed a validated questionnaire to assess the extent of plantar fasciitis in post-menopausal women. Although the sample size was

relatively small, a study with much larger population can demonstrate better outcomes for plantar fasciitis prevention.

CONCLUSION

According to responses collected, the study indicated very poor knowledge about the condition and preventive measures for same and about further risks if left untreated among the population in karad. This necessitates awareness regarding the knowledge and practice, if such awareness and importance of rehab is created then this will prove helpful in reducing the further risks. This practice would thus lead to an improved quality of life.

REFERENCES

1. Petrofsky J, Lee H. Influence of estrogen on the plantar fascia. 2016 April. Available from: https://lermagazine.com/article/influence-of-estrogen-on-the-plantar-fascia
2. Chaurasia BD. Human anatomy: regional and applied upper limb and thorax. CBS publishers & distributors; 1984.
3. Schwartz EN, Su J. Plantar fasciitis: a concise review. Perm J. 2014;18(1):e105-7. doi: 10.7812/TPP/13-113, PMID 24626080.
4. Dyck Jr DD, Boyajian-O'Neill LA. Plantar fasciitis. Clin J Sport Med. 2004 Sep 1;14(5):305-9. doi: 10.1097/00042752-200409000-00010, PMID 15377971.
5. Roxas M. Plantar fasciitis: diagnosis and therapeutic considerations. Altern Med Rev. 2005 Jun 1;10(2):83-93. PMID 15989378.
6. Greendale GA, Lee NP, Arriola ER. The menopause. Lancet. 1999 Feb 13;353(9152):571-80. doi: 10.1016/S0140-6736(98)05352-5, PMID 10028999.
7. Al-Azzawi F, Palacios S. Hormonal changes during menopause. Maturitas. 2009 Jun 20;63(2):135-7. doi: 10.1016/j.maturitas.2009.03.009, PMID 19372016.
8. Petrofsky J, Lee H. Influence of estrogen on the plantar fascia.
9. Sung KC, Chung JY, Feng IJ, Yang SH, Hsu CC, Lin HJ et al. Plantar fasciitis in physicians and nurses: a nationwide population-based study. Ind Health. 2020;58(2):153-60. doi: 10.2486/indhealth.2019-0069, PMID 31548445.
10. Mckinlay SM. The normal menopause transition: an overview. Maturitas. 1996 Mar 1;23(2):137-45. doi: 10.1016/0378-5122(95)00985-x, PMID 8735352.
11. Burger HG, Dudley EC, Robertson DM, Dennerstein L. Hormonal changes in the menopause transition. Recent Prog Horm Res. 2002 Jan 1;57:257-75. doi: 10.1210/rp.57.1.257, PMID 12017547.
12. Davis SR, Castelo-Branco C, Chedraui P, Lumsden MA, Nappi RE, Shah D et al. Understanding weight gain at menopause. Climacteric. 2012;15(5):419-29. doi: 10.3109/13697137.2012.707385, PMID 22978257.
13. Buchbinder R. Clinical practice. Plantar fasciitis. N Engl J Med. 2004 May 20;350(21):2159-66. doi: 10.1056/NEJMcp032745, PMID 15152061.
14. Orchard J. Plantar fasciitis. BMJ. 2012 Oct 10;345:e6603. doi: 10.1136/bmj.e6603, PMID 23054045.