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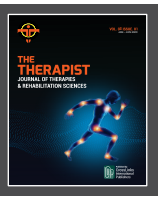

Original Article

Prevalence of Achilles Tendinopathy among Physical Therapists of Pakistan.

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ABSTRACT

It is a degenerative disease that affects the tendon of Achilles, which attaches the gastrocnemius muscle to the heel bone. The rate of prevalence in the general population is about 6 percent, in athletes about 24 percent, 36 percent in short-distance runners, and in middle and long-distance runners about 52 percent. **Objective:** To determine the frequency of Achilles tendinopathy in Physical therapists of Pakistan. **Methods:** The cross-sectional study was done through an online survey among the Physical Therapists of Pakistan. The estimated sample size calculated from the Raosoft.com software was 449 participants. The sampling technique used in this study was convenient. The data was collected through a validated questionnaire named a Victorian Institute of Sports Assessment- Achilles(VISA-A) measurement tool, ranging from 0 to 100 in which higher scores showed least symptoms while lower scores showed severe symptoms. Statistical analysis was done through SPSS version 23.0. **Results:** Out of 449 research participants between the ages of 22 to 50 years were evaluated through a validated questionnaire and the result shows 298 (66.36%) of participants participated in sports activities and the level of pain was evaluated as 95(21.15%) of participants fell in healthy, 238(53%) in mild, 97(21.60%) in moderate however 19(4.23%) participants fall in severe category of pain. **Conclusions:** Our study concluded that the occurance of Achilles tendinopathy is uncommon among the physical therapists population of Pakistan.

INTRODUCTION

In adult people, most occurrences of injuries are related to tendons which can cause repeatedly injuries of strain or tendon rupture [1]. The most common injury that occurs in physical therapists is tendinopathy of Achilles because they prolong standing in a constant position and also perform high-intensity work [2]. The runners most commonly affect the Achilles tendon range from 6 to 10 percent [3]. The rate of prevalence in the general population is about 6 percent, in athletes about 24 percent, 36 percent in short-distance runners, and in middle and long-distance runners about 52 percent [4]. It is a degenerative disease because it includes inflammation of the tendon and inflammation of the bursa which attaches to the calcaneal bone which is mainly caused by internal or external aspects [5]. Internal factors include the overweight of the person, muscle strength of the lower limb, and instability of the ankle, and external factors include repeated use, incorrect training sessions, and sports equipment that is not suitable for the person these are the main factors that affect the physical therapist's

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activities [6]. When Achilles tendinopathy can occur in a person they complain about they feel pain in the early morning, or when they start or end any activity it can affect the daily activities of life and they face many problems to accomplish their task of daily life [7]. When they take a rest from their activity they feel relaxed from their pain. In a later stage, they continue complaining about the pain while they are walking. While a person performs running, long jumps, and roping activities they mostly injure their Achilles tendon because in these positions the weight of the body exerts pressure on the lower limb and affects the tendon [8]. The occurrence of signs and symptoms of Achilles tendinopathy include pain, discomfort, edema, altered functions of activities of daily living, and also feels pain while they are performing any sports activity [9]. It also decreases the dorsiflexion movement of the ankle as well. Furthermore, Achilles tendinopathy also hinders non-professional activities, obese people ultimately decrease their quality of life and affect their economic background [10]. The baseline management of Achilles tendinopathy is conservative or physical therapy treatment, or it can also be managed through medications or steroidal injections. If it is not treated with this approach then it goes for surgery [11]. It can be managed through physical therapy interventions like Soft tissue mobilization to reduce muscle stiffness, providing splints for support and making the area stress-free, Transcutaneous electrical stimulations for managing pain, therapeutic ultrasound for decreasing tendon tenderness, reducing inflammation, and performing stretching, or strengthening exercises to regain the power and ability to return their normal activities of life without any problem [12]. These interventions can reduce their symptoms, decrease their pain intensity, give comfort, and promote their healing process and speedy recovery [13]. The purpose of our study was to find out the frequency of occurrence of Achilles tendinopathy in physical therapists.

METHODS

The cross-sectional study was done through an online survey among the Physical Therapists of Pakistan. The sample size of the study was calculated through Raosoft.com software with a hypothesized 50% population of physical therapists. Statistical conditions were a 99% confidence interval and 1 % margin of error. The estimated sample size calculated from the software was 449 participants. The sampling technique used in this study was convenient. Consent forms were taken before the data collection from research participants. Ethical approval was taken prior to the study inititation from AORC Medical center and Institute with reference no: 061494/physio date May 22, 2023. The duration of the study was May 2023 to Nov 2023. The inclusion criteria were set as the age range between 22 to 50 years, physical therapists who completed 5 years of a doctorate and worked for at least 1 year as a clinical practitioner in a well-reputed healthcare institute. Physical therapists who had rheumatological, pathological, and vascular diseases of ankle or foot, acute trauma, fracture, and surgery, who had no experience in a clinical environment, and who were not willing to participate were excluded from our study. The validated questionnaire named a Victorian Institute of Sports Assessment-Achilles(VISA-A) measurement tool was used ranging from 0 to 100 in which higher scores showed least symptoms while lower scores showed severe symptoms[14]. Statistical analysis was done through SPSS version 23.0.Through which we evaluate the frequencies and percentages of depending variables including: symptoms of sevieritywhile performing activities of daily living, physical activity status and sports participation, and VISA A scoring of research participants.

RESULTS

There were 449 physical therapists between the ages of 22-50 years old recruited from all over Pakistan. When we were asked about the feeling of stiffness in the Achilles region 31(6.90%) participants responded severely,103(22.93%)responded moderate, 197(43.87%) mild, and 118(26.28%)(participants responded no pain.While asking a question regarding pain in the Achilles tendon during stretching 26(5.79%) participants replied severe, 145(32.29%) with moderate pain, 184(40.97%) with mild, and 94(20.93%) replied no pain.When we asked questions related to pain during walking within 2 hours on a flat surface for 3o minutes: 67(14.92%) responded with severe pain, 158(35.18%) with moderate pain, 196(43.65%) with mild pain, and 28(6.23%) with no pain as shown in table 1.

Table 1: Symptoms Severity along with Multiple Activities

Target activities under consideration	0-2 severe	3-5 Moderate	6-8 mild	9-10 no pain
When you first get up how much stiffness do you feel in the Achilles area?	31 (6.90%)	103 (22.93%)	197 (43.87%)	118 (26.28%)
After warm-up, do you have pain in the Achilles tendon during stretching?	26 (5.79%)	145 (32.29%)	184 (40.97%)	94 (20.93%)
Do you have pain during walking within 2 hours on a flat surface for 30 min?	67 (14.92%)	158 (35.18%)	196 (43.65%)	28 (6.23%)
After walking from downstairs do you feel pain?	13 (2.89%)	95 (21.15%)	205 (45.65%)	136 (30.28%)
Do 10 heel raises on flat surfaces cause pain?	54 (12.02%)	123 (27.39%)	211 (46.99%)	61 (13.58%)
How many Single leg hops you take in pain free manner?	69 (15.36%)	114 (25.38%)	167 (37.19%)	99 (8.68%)

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After receiving data from the research participants about the physical and sports activity of physical therapists we found that 298(66.36%) participants lie in none, 89(19.82%), 43(9.57%) responded moderate, 43(9.57%) with aggressive training while 19(4.23%) lay ion competition with the beginning of symptoms category as shown in table 2.

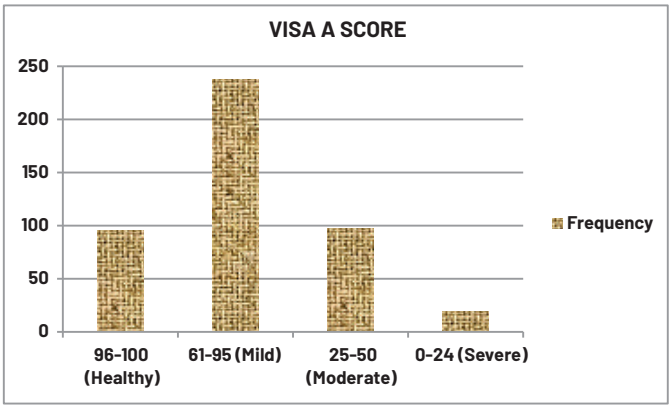

Figure 1: participants visa a scoring

DISCUSSION

This is the preliminary study presenting the prevalence rate of Achilles tendinopathy among Physical Therapists. The purpose of our study was to extract knowledge about the occurrence of Achilles tendinopathy in Pakistan. From our observation and evaluation, it was found that musculoskeletal problems are quite common in physical therapists. The main reason was the incorrect posture as reported in the study conducted in Karad [15]. The effect of prolonged working hours and over workload the ergonomics of physical therapists is severely affected which results in musculoskeletal problems [16]. There are many questionnaires used in research to evaluate Achilles tendinopathy, but we used the VISA-A score because it is a reliable questionnaire available in multiple languages and has been used in many studies before [14]. In our study VISA-A score showed mild pain in 53.00%. of research participants. The overall incidence rate reported in a study is 1.85 per 1000 registered healthcare workers and 2.35 for the adult population each year [17]. Another study done on the nurses' population reported, that 35.5% population of nurses have mild whereas 44.5% have moderate and 19.1% of nurses fall in the severe category of pain after 30 minutes of walking on the flat surface [18]. In comparison to our study, the prevalence rate of Achilles tendinopathy was mostly found with mild severity of pain at 53% in the research participants. Furthermore, the prevalence rate of Achilles tendinopathy was higher than the other tendinopathies like medial and lateral epicondylitis [19]. However, the prevalence rate of Achilles tendon injuries was higher in sportsmen or women as compared to other occupations and the general population [20]. In comparison to this, our study showed only 19.82% of participants were involved in moderate sports activities. The study revealed that age groups between 25 to 30 years are at more risk of musculoskeletal disorders [21]. But in our study the prevalence rate of Achilles tendinopathy was observed in the age group between 22 to 50 years because most of the population of physical therapist are working between this age group. Another research reported the occurrence of musculoskeletal disorder is found in the upper extremity, and lower extremity mainly in the neck, back, and shoulder [22]. While few researchers evaluated the musculoskeletal disorders of the ankle and foot region [23,24]. Achilles tendinopathy is mostly due to prolonged standing but it can also occur due to overuse, over physical activity, sports activities, and other multiple factors [25]. In comparision to this our study results showed the participation of the physical therapists population in sports activities is nill in 66.36%. The study recommended that the appropriate application of ergonomic principles is needed to compensate for the future effects of work-related musculoskeletal issues and reduce long-term illnesses and disabilities [26]. There are a few limitations of our study, our study is not applicable in another country because the study was done in the population of Pakistan so there can be differences in the environmental, social, and other factors that can change the outcome and the purpose of study in different countries.

CONCLUSIONS

From our research, it is observed that the occurrence of Achilles tendinopathy is uncommon among the physical therapists population of Pakistan. The majority of the population of physical therapists lies in the mild pain category and their physical status shows that the majority are not involved in any sports activities.

Authors Contribution

Conceptualization: RR,YI
Methodology: AA, SS
Formal analysis: AA, KZ
Writing-review and editing: RR, YI,SS, SB, KJ, AA
All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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