

## ORIGINAL ARTICLE

**Severity of achilles tendinopathy in athletes of The University of Lahore, Lahore**

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**ABSTRACT**

Athletes and the general public both frequently have achilles tendon issues. The nomenclature used to describe the painful Achilles tendon problem is unnecessary, unclear, and frequently does not accurately represent the underlying pathology. Victorian Established Don of Assessment-Achilles (VISA) questionnaire was circulated to 168 athletes and the filled questionnaire were collected back instantly. A separate questionnaire was used to gather demographic data from athletes. Data consisted of 89 females and 79 males. Age range was between 20-40 years old and the average score of body mass index (BMI) was  $24.2 \pm 4.12$  and average VISA score was  $64.7 \pm 24$ . It was concluded that majority of the patient had severity of achilles tendinopathy. The mean value is above 50 it indicates the severity of disease and standard deviation is also high because of outlier.

**INTRODUCTION**

In both athletes and the general public, achilles tendon issues are quite prevalent. The language employed to describe the uncomfortable achilles tendon problem is unnecessary, unclear, and rarely accurately conveys the underlying pathology (1). Achilles tendinopathy still has unknown origins. Numerous ideas link tendinopathies to metabolic, sex, genetic, and abusive strains, poor vascularity, the requirement for flexibility, and abuse stresses. Beyond its physiological threshold, the achilles tendon may respond by irritating its sheath, degenerating its body, or a combination of the two. If the tendon is pressured within its natural capacity then the repeated cumulative micro-trauma connected doesn't give it enough time to heal, and damage to the tendon may result. Microtrauma can be caused by uneven pressure exerted inside the achilles tendon by various individual

gastrocnemius and soleus drive contributions, resulting in abnormal load concentrations inside the tendon and forces of friction between the fibers. According to some descriptions, there are both intrinsic and extrinsic causes of tendinopathy. Common intrinsic factors include pes cavus deformity, gastrocnemius-soleus breakage, age, sex, body weight, and tendon vascularity. The achilles tendon is supposed to experience a "whipping action" when the hindfoot moves excessively in the frontal plane, especially when landing with a horizontal heel strike and severe compensatory pronation. Achilles tendon issues is a calculable forefoot varus which is observed frequently in individuals. Perhaps for these reasons, foot orthoses are recommended as a treatment for persistent Achilles tendinopathy, despite the lack of logical evidence from randomized controlled studies. Extrinsic aspects include modifications to preparatory design, bad

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technique, prior injuries, footwear, and environmental considerations like practicing on challenging, hazardous, or inclining terrain (2). Physical therapy, rest, preparation changes, splinting, taping, electrotherapy, shock wave therapy, heat, and pharmacological agents such as nonsteroidal anti-inflammatory medications (NSAIDs) and other peri tendinous infusions have all been suggested. Through the suppression of cyclooxygenase (COX) activity and a reduction in the production of proinflammatory prostaglandins, NSAIDs can reduce tissue irritation. In an ideal world, management of an anatomically described restorative disease would be based on knowledge of its pathophysiology. Although tendinopathy has a non-inflammatory basis, as was previously mentioned, NSAIDs are often used in therapy as a treatment. Because it provides analgesic effects, lowers the tendon's metabolic rate, and reduces the extravasation of blood and protein from newly formed capillaries present in tendon wounds. Cryotherapy is regarded as a helpful intervention in the severe stage of Achilles tendinopathy (3). Physical therapy technique has been widely used. Concentric fortification, and extending-based conventions, and other administration regimens with accompanying modalities have been the focal points of specific therapy conventions. Of all the modalities, a heavy-load unconventional calf muscle preparation program was tried logically. Unpredictable preparation is prevalent to concentric preparation in diminishing torment in inveterate achilles tendinopathy (4).

By investigating prevalence, risk factors, and impact, it seeks to inform targeted interventions for better athlete well-being. Ultimately, this research contributes to understanding and addressing achilles tendinopathy's effects on athletes in this specific context.

## MATERIALS AND METHODS

For this observational study data was collected from young adults. The study was completed within 6 months between September 2021 and March 2022. Sample size for this study was 168

participants. Non probability convenience sampling technique was used. The sample was selected according to the predefined inclusion criteria. Young healthy adults, aged 18-25, both male and female, can perform the task on their own.

The permission to approach the sports complex for conducting the study was taken from the sports complex by visiting The University of Lahore and providing the study procedure details to The University of Lahore. The board of studies of The University of Lahore approved the study decorum. For seeking permission from the participants, each participant signed the written consent form. The confidentiality of data was maintained. The sample taken for the study comprised of participants from the 1<sup>st</sup> to 10<sup>th</sup> semester The University of Lahore. VISA questionnaire was circulated to 168 athletes and the filled questionnaire was collected back instantly. A separate questionnaire was used to gather demographic data from athletes.

Data was analyzed using SPSS 21. Quantitative data was presented in the form of mean  $\pm$  standard deviation and histogram were plotted. Qualitative data was expressed in form of frequency and pie chart and bar charts was drawn.

## RESULTS

There were 168 total participants, with 89 female individuals and 79 male ones. The mean  $\pm$  standard deviation was  $1.52 \pm 0.50$  as shown in Table 1.

Table 1. Descriptive analysis of Sample

Gender	Freq.	Mean $\pm$ S.D.
Male	79	
Female	89	$1.52 \pm 0.50$

The mean score and standard deviation of VISA scale was found to be 64.7, and 24.4 respectively. The high value of standard deviation in Table 1 indicated that there were variety of patients with minimum and maximum values. Minimum VISA

score was 2 whereas maximum score was 100 as shown in Figure 1.

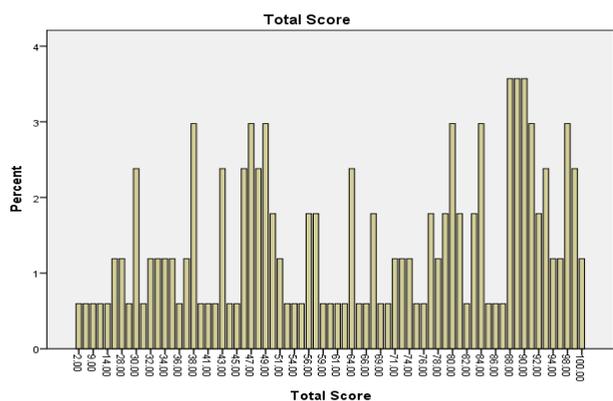


Figure 1. VISA Score

## DISCUSSION

The objective of the current study was to assess severity of achilles tendinopathy among athletes of the University of Lahore. It was a cross-sectional study conducted between September 2021 to March 2022. Pieters *et al.* (2022) investigated the role of exercise in reducing achilles tendon injuries. To assess the severity of achilles tendinopathy, the authors used the VISA scale (5). Authors found severity of symptoms among subjects, while, the current study additionally found whether the patients had discomfort during the next two hours after walking on level ground for 30 minutes. Half of the respondent reported that they had not suffered from pain while, other reported discomfort and severity of symptoms (5).

In order to determine if continuing sports with achilles tendon loading effects the strengthening. In this context, Silbernagel *et al.* (2007) undertook research in 2007 (6). Authors assess the severity of achilles tendinopathy using the VISA scale, it was discovered that achilles tendon loading strengthened the tendon (6). The result of the current study supported the findings of the above-mentioned study.

The present study found the effect of performance, on achilles tendinopathy more than half subjects felt they have no pain while, other reported severe and acute pain. These results are in line with previous studies (7, 8).

Abate *et al.* (2012) conducted a study with the aim of determining how much BMI can affect achilles tendon thickness in type II diabetes. The authors found that it has an effect on achilles tendinopathy (9).

The result found to be inconsistent with previous study. The level of pain is different that has found in Nørregaard *et al.* (2007) research (10).

## CONCLUSION

The majority of the patients were found to have significant Achilles tendinopathy. A VISA score with a mean value greater than 50 suggests that the severity of tendinopathy is severe.

## CONFLICTS OF INTEREST

The authors declared no conflict of interest.

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