# Comparison of Achilles Tendinopathy in regular and irregular prayer offers

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***Abstract*- Background:** Achilles tendinopathy (AT) is a typical overuse injury, distinguished by pain encountered at the injured site with weight-bearing activities. It takes place where the tendon inserts into the calcaneus, which is in the middle of the tendon.

**Objective:** To determine the Occurrence of Achilles Tendinopathy in Regular and Irregular prayer offers

**Methods:** The cross-sectional survey employed non-probability convenient sampling, enrolling 384 male participants aged between 25-55 years with Achilles tendinopathy. Tendinopathy was assessed using the VISA-A questionnaire. The sample population to 384 people who were divided into two groups which were regular and irregular prayer offers from different mosques in Lahore and Sheikhupura, Pakistan. Data analysis was done by using the IBM SPSS Statistics 25.

**Results:** Mean ±SD for the age of regular prayer respondents was (39.0938±8.940) years. The mean±SD for the Age of irregular prayers respondent was (38.3594±8.17) years. In regular prayer offers, there were 79.7% (n=153) participants had asymptomatic Achilles tendinopathy, while 20.3% (n=39) participants had Symptomatic Achilles tendinopathy. In Irregular prayer offers there were 40.1% (n=77) participants reported asymptomatic Achilles tendinopathy while 59.9% (n=115) participants had symptomatic Achilles tendinopathy. Impact of prayer on regular prayer offers and irregular prayer offers p value showed a significant (P=.039) association between Regular prayer offers and irregular prayer offers.

**Conclusion:** Prayer has a positive impact on the Achilles Tendon among Regular and Irregular prayer offers. Pearson chi-square showed a significant (P=0.039) association between regular and irregular prayer offers. This study concluded that prayer improves the Achilles Tendon activity in regular prayer offers.

***Index Terms*-** Achilles Tendinopathy, prayer, Kinesiophobia, Quality of life

## I. INTRODUCTION

The Achilles Tendon, the longest and most powerful human Ttendon, is most common in athletes and the public. Its damage is prevalent. Salat/Namaz, the Muslim equivalent of prayer, strengthens joints, balance, and equilibrium through postures and repetitions.[1, 2]

Achilles tendinopathy (AT) is a common injury in runners, characterized by pain and edema. It's often caused by biomechanical factors and increased LDL-C, a risk factor for cardiovascular diseases. Treatments include lifestyle changes and aerobic exercise.[3-5]. Achilles tendinopathy, a severe condition requiring long-term care, can be effectively treated with exercises like rollers and foam rolling, focusing on insertional tendinopathy and physiotherapists' prescribed therapy.[6, 7]

Cold temperatures can cause tension in the body and increase mortality rates. Outdoor exercise can reduce the temperature of the Achilles paratenon, increasing friction and the risk of Achilles tendinopathy. Warming up before training is essential to control Achilles tendinopathy. Older adults walk slowly and with reduced metabolic power, contributing to a gradual walking gait and improved power consumption.[8-10] Salat, a Muslim invocation, involves postures and motions for spiritual reflection and Quran recitation. Muslims perform salat at least five times daily, with specific rakaat for each prayer. LL-BFR exercises are crucial for examining tendon adaptations.[11, 12]

A 2021 study by S. Anton J., et al. found psychological deficits in patients with patellar or Achilles tendinopathy during recovery. These deficits were linked to rigidity, process, participation, and dignity. The study suggests physical therapists should recognize individuals with a lack of psychological readiness for sports and kinesiophobia or catastrophizing ideas.[13]

Mallows, Adrian, et al.'s 2022 study on patients' opinions on exercise-based Achilles tendinopathy correction found that patients appreciate a reasonable system that acknowledges the biopsychosocial influence of AT.[14]

Silva et al. 2022 conducted an assessment on Are static foot posture and ankle dorsiflexion range of motion are associated with Achilles tendinopathy. the study found that less ankle dorsiflexion range of motion is linked to more sign rigidity in individuals with Achilles tendinopathy.[15]

Imamoğlu O worked on the Benefits of prayer as a physical activity. According to study findings, Namaz balances the body's biochemical processes, providing health and fitness benefits. It boosts brain blood flow, improves memory, enhances focus, and prevents indigestion. Muslims should reduce morning rakaat to avoid indigestion, while regular exercise aids weight loss and brain function.[16]

The study aimed to determine how Muslim prayer movements affected the lower limb, particularly the Achilles Tendon. The muscles flexibility is different in regular and irregular prayer offers This study explores the effect of Salat on the Achilles Tendon. There is limited research on the occurrence of Achilles tendinopathy among prayer offers. The prior research did not place as much attention on this. This study intended to observe these factors and the occurrence of Achilles Tendinopathy in regular and irregular prayer offers. We are sure to get prevention

and interventions that in the future give less occurrence of Achilles Tendon in the community.

## II. IDENTIFY, RESEARCH AND COLLECT IDEA

This cross-sectional survey employed non-probability convenient sampling, enrolling 384[17] male participants with ages ranging from 25-55[18] years with Achilles tendinopathy. Data was collected from different mosques of Lahore and Sheikhupura, Pakistan within 6 months after approval of Ethical Review Committee HU-ECRB-DPT-2023-34 from January 2023 to July 2023. Tendinopathy was assessed using the VISA-A questionnaire.[1] All the participants were divided into two groups; regular and irregular prayer offers. The specified inclusion criteria encompass the Achilles tendon which may experience pain or discomfort when individuals engage in weight-bearing planter flexion actions, such as running or leaping. [19] Participants with a history of total Achilles tendon rupture, other therapies, exercise limitations, or pain from insertional tendinopathy or bursitis were excluded.[18] The result was analyzed by using the IBM SPSS Statistics 25.

**Results**

Descriptive statistics were calculated for 384 (192 for each group), A cross-sectional survey was done to find the occurrence of Achilles tendinopathy in regular and irregular prayer offers. The mean age of regular prayer respondents was (39.093±8.940) years while the mean age of irregular prayer respondents was (38.359±8.176) years.

The VISA-A questionnaire was administered to all participants to assess the tendinopathy. In regular prayer offers there were 11.5% (n=22) participants had stiffness for 50 minutes in the Achilles region when they first got up, and 88.5% (n=170) participants had stiffness for 0 minutes in the Achilles region when they first got up. In Irregular prayer offers there were 55.2% (n=106) participants had stiffness for 100 minutes in the Achilles tendon when they first got up, and 44.8% (n=86) participants reported stiffness for 50 mins in the Achilles tendon when they first got up.

Additionally, in Regular prayer offers there were 79.7% (n=153) participants had Asymptomatic AT, 20.3% (n=39) participants had Symptomatic AT, and In Irregular prayer offers there were 40.1% (n=77) participants who had Asymptomatic AT while 59.9% (n=115) participants had Symptomatic AT.

Pearson chi-square showed a significant (P=.039) association between Regular prayer offers and irregular prayer offers.

**Table 1**: **Mean Age (years) of both groups**

| Characteristics | Mean | St. Deviation |
|---|---|---|
| **Age of regular prayer respondent** | 39.093 | 8.940 |
| **Age of irregular prayer respondent** | 38.359 | 8.167 |

St.= Standard

**Table 2: Symptomatic and Asymptomatic AT of Regular Prayer Offers**

| Regular Prayer Offers | | |
|---|---|---|
| | Frequency | %age |
| **Asymptomatic AT** | 153 | 79.7 |
| **Symptomatic AT** | 39 | 20.3 |
| Total | 192 | 100.0 |

AT=Achilles Tendinopathy, %age=percentage

**Table 3: Symptomatic and Asymptomatic AT of Irregular Prayer Offers**

| Irregular Prayer Offers | | |
|---|---|---|
| | Frequency | %age |
| **Asymptomatic AT** | 77 | 40.1 |
| **Symptomatic AT** | 115 | 59.9 |
| Total | 192 | 100.0 |

AT=Achilles Tendinopathy, %age=percentage

**Table 4: Chi-Square test between Regular prayer offers and irregular prayer offers**

| | Total Participants | P-value |
|---|---|---|
| Pearson chi-square test between regular and irregular prayer offers | 384 | .039 |

**Discussion**

This cross-sectional study, conducted at different Masjids of Lahore and Sheikhupura, Pakistan, aimed to determine the occurrence of Achilles tendinopathy in regular and irregular prayer offers. This finding resonates with the work of Jalal AH. 2021, which emphasized the morphological, neuromuscular, and cardiovascular disease risk profiles among asymptomatic sedentary males performing Salaah (Islamic prayer). Jalal AH. Examined that CVD risk and prevention among male Salaah participants, finding that older individuals are becoming more aware of CVD dangers. It also suggests Salaah movements,

particularly low-intensity aerobic exercise, can provide physiological benefits.[20]

Another study by Chukwuemeka et al. 2022, worked on the Prevalence and Risk factors of Achilles Tendinopathy among soccer players. Islam encourages combative activity to strengthen the body and cooperation, while non-confrontational movement enhances fighting alone. Sports can improve muscle strength, bone protection, and organ function. They can revive the body and mind through a fusion of inside and outside. Physiology and mind must be in harmony, and Kowtow can prevent Achilles tendon rupture, improve flexibility, and support the entire body. Chinese Muslims are less aware of Achilles tendon ruptures than non-Muslims. Health preservation and fitness can be achieved by coordinating the mind, bones, and muscles.[1]

A study by İmamoğlu O.2021, conducted almost a similar investigation on the Benefits of prayer as a physical activity. This study explored the Namaz balances the body's biochemical processes, providing health and fitness benefits. It boosts brain blood flow, improves memory, enhances focus, and prevents indigestion. Muslims should reduce morning rakaat to avoid indigestion, while regular exercise aids weight loss and brain function.[16]

Another study by Smith MD, et al. 2022, investigated on symptoms and characteristics in office workers using standing workstations. The study explores patients' opinions on exercise-based treatment for Achilles tendinopathy, revealing that the senses offer a platform for experimenters and doctors to observe distance and patients appreciate a reasonable system that acknowledges the biopsychosocial influence of AT.[21]

To contextualize and validate the study's findings, it is crucial to compare them with relevant previous articles. Many studies have explored the occurrence of Achilles Tendinopathy in people.

The current study showed the Impact of prayer on regular prayer offers and irregular prayer offers. Pearson chi-square showed a significant (P=.039) association between Regular prayer offers and irregular prayer offers. Studies showed in Regular prayer offers there are 79.7% (n=153) participants have Asymptomatic AT, 20.3% (n=39) participants have Symptomatic AT, and In Irregular prayer offers there are 40.1% (n=77) participants have Asymptomatic AT, 59.9% (n=115) participants have Symptomatic AT.

## Conclusion

Muslim prayer has a positive impact on the Achilles Tendon among Regular prayer offers. Pearson chi-square showed a significant (P=.039) association between regular and irregular prayer offers. This study concluded that prayer improves the Achilles Tendon activity in regular prayer offers. Future research on this topic ought to involve various population numbers and geographical locations and targeting strategies could include neurological populations.

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