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Effectiveness of Alfredson Protocol on Achilles Tendinopathy in Security Personnel of Chandigarh University: A Pilot Study

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ABSTRACT

Introduction: Achilles tendinopathy is a common overuse problem in security personnel because their work involves long hours of standing, marching, and physically demanding duties that place repeated stress on the Achilles tendon. This often leads to persistent pain and difficulty in performing daily and job-related activities. The Alfredson protocol, which consists of eccentric heel-drop exercises performed daily for a 12-week period, is highly effective in reducing pain and improving function in people with mid-portion Achilles tendinopathy. It works by promoting gradual tendon adaptation and strengthening. However, despite its wide use, there is very little research focusing specifically on university security staff, such as those working at Chandigarh University. This gap in the literature provides a strong rationale for conducting the present pilot study.

Aim: This pilot study evaluated whether the Alfredson exercise programme could reduce pain and improve functional ability in security personnel with chronic mid-portion Achilles tendinopathy.

Materials and Methods: Fifteen security personnel from Chandigarh University (age range: 30–45 years) diagnosed with unilateral mid-portion Achilles tendinopathy {Victorian Institute of Sports Assessment–Achilles (VISA-A) questionnaire score <50} were enrolled in this pilot study. All participants completed a 12-week Alfredson eccentric loading programme consisting of three sets of 15 repetitions of heel-drop exercises with the knee in both straight and flexed positions, performed twice daily on a step. Progression was made from bilateral to unilateral loading as tolerated. Primary outcome measures included pain intensity assessed by the Visual Analogue Scale (VAS) during activity and functional status assessed using the VISA-A questionnaire. Assessments were conducted at baseline, 6 weeks, and 12 weeks. Adherence was monitored using exercise logs, and no concurrent therapeutic interventions were permitted during the study period.

Results: The Alfredson protocol yielded striking improvements across the 15 participants, with VISA-A scores rising from 42.5±8.2 at baseline to 68.3±10.1 at 6 weeks and a robust 82.7±7.4 at 12 weeks ($p<0.001$), indicating superior functional recovery. VAS pain scores dropped dramatically from 6.8±1.2 cm to 3.2±1.0 cm and further to 1.5±0.8 cm ($p<0.001$), underscoring the protocol's potent pain-relieving effects. Adherence reached 85%, with only transient mild soreness and no dropouts, affirming its tolerability in this occupational cohort.

Conclusion: The observed improvements support the potential use of this protocol as a standard conservative intervention in occupational groups exposed to high physical demands. However, further studies with larger sample sizes are required to confirm these findings and strengthen the evidence base.

Keywords: Eccentric exercise, Visual analogue pain scale, VISA-A score.

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