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Title of the Ph.D. Thesis: Studies on Understanding the Role of Physiotherapeutic Interventions in University Athletes with Chronic Low Back Pain

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ABSTRACT

Study ‘I A’ aimed to explore the prevalence of chronic low back pain (CLBP) among university-level athletes across different sports, to examine risk factors contributing to CLBP, and to examine the association of sports discipline and chronicity of low back pain (LBP) with certain variables in athletes having CLBP. The main findings of the study were: (a) sports discipline-specific differences in the prevalence of CLBP: cricket (18.5%), basketball (15.6%), volleyball (20%), football (11.4%), badminton (7.7%), and tennis (7.7%); (b) higher body mass index leads to an increase in the risk of CLBP [Odds ratio (OR): 2.53]; (c) greater number of years at university-level participation was a risk factor for CLBP (OR: 4.00); (d) smokers were at more risk of developing CLBP (OR: 2.59); (e) athletes with greater anxiety levels were at more risk of developing CLBP (OR: 2.25); (f) the number of missed days of training was significantly associated with the chronicity of LBP. The study ‘I B’ aimed to record the prevalence of back extensor fatigability in university athletes with CLBP and investigate if Sorensen test time is a predictor of CLBP. The results revealed that athletes with CLBP have higher fatigability when compared to age-matched healthy athletes, the prevalence of back extensor fatigue was 91.1%. Back extensor endurance was found to be a significant predictor of CLBP (OR: 1.92). ‘Study II’, a two-arm parallel randomized controlled trial, aimed to evaluate the effectiveness of an eight-week combined stabilization exercise (SE) and back extensor endurance exercise (BEEE) intervention versus a BEEE alone intervention on the outcome measures. The study's primary outcome measures encompassed muscle fatigability, muscle activation, and balance, while secondary outcome measures included pain, disability, health-related quality of life, function, sports performance, strength, and sleep difficulty. The combined SE and BEEE group demonstrated significantly greater improvements in pain levels, disability, function, holding time of the Sorensen test, last 5s median frequency, muscle activations, limits of stability (end-point excursion), sway index during eyes closed foam surface condition, sway index and overall stability index during squatting, and sports performance compared to the BEEE alone intervention group.