demonstration of the technique and provision of an illustrated guide. Subsequent sessions were self-administered and remotely supervised.
Results: Thirty-five participants were included in the study (GSS = 18; GCB = 17). After 4 weeks of intervention, both stretches promoted pain reduction (GSS: MD = -2.17 points; 95% CI = -3.13 to -1.21; GCB: MD = -1.54 points; 95% CI = -2.53 to -0.55), but there was no difference between the groups (MD = 0.14; 95% CI = -1.21 to 1.48). The IR deficit was reduced in both groups. The GSS showed a reduction of -14.69° (95% CI = -19.48 to -9.89), and the GCB showed a reduction of -14.77° (95% CI = -19.70 to -9.84). There was no significant difference between the groups (MD = 3.08°; 95% CI = -1.74 to 7.89).
Conclusion: For competitive-level overhead athletes with IR deficit and shoulder pain, both the sleeper stretch and the cross-body stretch are effective in improving pain and mobility after four weeks of intervention, with no superiority between the techniques.
Implications: In addition to improving the established outcomes, no athlete experienced adverse effects from the techniques throughout the protocols. Therefore, both can be appropriate strategies for reducing pain and improving glenohumeral mobility in overhead athletes.
Keywords: Overhead athletes, shoulder pain, glenohumeral internal rotation deficit

Conflict of interest: The authors declare no conflict of interest.
Funding: CNPq.
Ethics committee approval: No.4.763.025.
Registration: Not applicable.

https://doi.org/10.1016/j.bjpt.2025.101322

60

IMMEDIATE AND SHORT-TERM EFFECTS OF LOW-LEVEL LASER ON ATHLETE'S FUNCTIONAL PERFORMANCE: A DOUBLE BLINDED RANDOMIZED CLINICAL TRIAL

Luana Brito Vaz, Dayane Araújo Barreiros, João Felício Diniz Neto, Cleuton Braga Landre, Renan Lima Monteiro
Universidade Federal do Amapá (UNIFAP), Macapá, AP, Brazil

Background: Recovery from exercise-induced muscle fatigue is crucial for optimizing athletic performance, as maintaining appropriate functional capacity helps prevent injuries. Low-level laser therapy (LLLT) has shown potential benefits in muscle tissue recovery. However, its immediate and short-term effects on functional performance remain largely unexplored.
Objectives: This study aimed to evaluate the immediate and short-term effects of LLLT on the functional performance of athletes experiencing exercise-induced muscle fatigue.
Methods: This study is a double-blind, randomized, placebo-controlled clinical trial. A total of 24 athletes were included based on the following criteria: they were handball or volleyball players, aged 18 to 35 years, with a consistent training routine of at least two sessions per week. Participants were randomly assigned to either the Intervention Group (IG, n = 12) or the Control Group (CG, n = 12). The study involved a daily fatigue protocol targeting the quadriceps muscles, consisting of 30 repetitions of jump squats, followed by either laser therapy or a placebo treatment for five consecutive days. The physiotherapist administering the laser therapy and the evaluator assessing the outcomes were both blinded to the participants' group assignments. Functional performance was assessed using the horizontal jump test, immediately after the laser or placebo therapy, using a modified hop test. Immediate effects and short-term effects were evaluated by comparing functional performance between groups after laser therapy or a placebo treatment on the first and fifth day, respectively.
Results: No significant differences were observed between groups regarding the immediate or short-term effects of LLLT on functional performance [p = 0.099, 95% CI (130 ± 34.2 to 146 ± 32.0)]; [p = 0.996, 95% CI (145 ± 31.9 to 165 ± 37.3)], respectively.
Conclusion: This study found that LLLT, when applied immediately after exercise-induced muscle fatigue and over five consecutive days, did not significantly improve functional performance compared to placebo.
Implications: In this study, LLLT was applied post-fatigue based on the hypothesis that it could enhance functional performance. However, the findings do not support this premise, as current evidence remains insufficient to confirm that immediate post-fatigue LLLT application enhances functional outcomes. Further research is needed to establish its efficacy in this context.
Keywords: Laser Therapy, muscle fatigue, functional performance

Conflict of interest: The authors declare no conflict of interest.
Funding: PIBIC.
Ethics committee approval: Not applicable.
Registration: PROSPERO-CRD42024523252.

https://doi.org/10.1016/j.bjpt.2025.101323

61

PREVALENCE AND ASSOCIATED FACTORS OF URINARY INCONTINENCE IN BRAZILIAN FEMALE RUNNERS: PRELIMINARY RESULTS FROM THE STATE OF AMAPÁ, AMAZON

Juliana da Silva Alves, Jamile Dias Teixeira, Renan Lima Monteiro, Juliana Falcão Padilha, Areolino Pena Matos, Grazielly Marques Nascimento Silva, Ryan Barros Cabral Bahia
Universidade Federal do Amapá (UNIFAP), Macapá, AP, Brazil

Background: Urinary Incontinence (UI) is the most prevalent pelvic floor dysfunction. High-impact sports, such as running, increase in intra-abdominal pressure, which can lead to UI. The prevalence of UI among female runners ranges from 19.6% to 44%. Despite its health benefits, UI may negatively impact on running performance. In northern Brazil, particularly in Amapá, there is a lack of epidemiological data on UI in female runners. This underscores the need for further research to assess risk factors, population characteristics, and the impact on runners' Quality of Life (QoL), ultimately guiding prevention and treatment strategies.
Objectives: This study aims to identify UI prevalence in female runners, analyzing sociodemographic, anthropometric and urogynecological profiles, and UI subtypes: Stress Urinary Incontinence (SUI), Urgency Urinary Incontinence (UUI), and Mixed Urinary Incontinence (MUI). Additionally, we sought to identify risk factors for UI (age, number of pregnancies, obesity, among others). This analysis aims to establish correlations between running, UI and QoL.
Methods: This observational, cross-sectional study followed CHERRIES guidelines. Conducted online in Brazil (2024—2025), it included female runners aged 18—59 who had been running for = 6 months, = 2 times/week. Exclusion criteria included pregnancy, postpartum < 12 months, recent pelvic surgery, and neurological diseases. Data collection was conducted via Google Forms, with participants recruited through social media and running groups. Validated questionnaires (ICIQ-SF, QUID-Br, and 3IQ-Br) were used. Statistical analysis was performed using SPSS and Poisson regression ($p < 0.05$, CI 95%).
Results: From January 2024 to March 2025, 72 women from the metropolitan region of Amapá were contacted. Of these, 7 (13.20%) reported UI. The mean age was 34.38 years (± 13.21), mean weight

was 67.71 kg (± 9.39), and mean BMI was 25.65 kg/m^2 (± 2.83). A total of 57.12% were white. UI episodes in the last three months were reported by 85.71%, with a weekly frequency of once or less (42.86%) and only a small amount of urine loss (85.71%). The most prevalent type was MUI (71.42%), followed by SUI (28.57%). No cases of UUI were reported. UI was not a limiting factor for running. Regarding QoL, 42.86% reported a mild impact, 28.57% moderate, and 14.29% severe.
Conclusion: This study found a low prevalence of UI among female runners, with a predominance of MUI, contrary to the literature which suggests that SUI is the most common in high-impact athletes. UI did not cause limitations in sports practice and had a mild to moderate impact on QoL. Future research should explore associated factors and expand the sample to other regions of Brazil to develop preventive and therapeutic strategies.
Implication: This study contributes to the literature by addressing a gap in knowledge on the prevalence and impact of urinary incontinence in female runners from northern Brazil. The findings may enhance preventive and therapeutic strategies, supporting physiotherapists in pelvic floor rehabilitation. Additionally, they highlight the importance of pelvic health in women's sports, encouraging early interventions to minimize impacts on athletic performance and QoL.
Keywords: Urinary Incontinence, Running, Female

Conflict of interest: The authors declare no conflict of interest.
Funding: PIBIC-AF/CNPq (IC).
Ethics committee approval: CAAE: 68316123.7.0000.5188.
Registration: Not applicable.

https://doi.org/10.1016/j.bjpt.2025.101324

62

ASSOCIATION BETWEEN THE LUMBOPELVIC STABILITY TEST AND MUSCLE STRENGTH IN SWIMMING ATHLETES

Matheus Lemos Dos Santos, Gabriel Alves Dos Santos, Raquel Lins de Sousa Lima, Bruna Gabriella Nascimento Bezerra, Mayara Ribeiro Da Silva, Marlison Douglas Nascimento Silva, Valéria Mayaly Alves de Oliveira, Danilo Harudy Kamonseki
Graduando em Fisioterapia, Departamento de Fisioterapia, Universidade Federal da Paraíba (UFPB), João Pessoa, PB, Brazil

Background: The trunk plays an important role in transferring energy to the distal body segments during sports gestures. This region can be assessed through the lumbar-pelvic stability test, where the degree of pelvic tilt is observed, and muscle weaknesses can be identified by the presence of pelvic drop. In swimmers, the factors associated with lumbopelvic stability are poorly understood, including the isometric muscle strength of the muscles of the trunk, shoulder, hip, and knee.
Objectives: To evaluate the association between the lumbopelvic stability test and isometric muscle strength of regions of trunk, shoulder, hip, and knee in swimming athletes.
Methods: This is a cross-sectional study approved by the research ethics committee. The inclusion criteria were swimmers athletes of both sex, age between 18 and 60 years old, with competitive practice in the past one year, and regular training for at least twice a week. Lumbopelvic stability was assessed using the one-legged bridge test with spherical markers on the anterior superior iliac spines, where the pelvic tilt (in degrees) was observed and recorded. Two-dimensional analyses were conducted using Kinovea 0.9.5 software (Kinovea Open Source Project) for Windows®. Additionally, the peak of isometric muscle strength of the shoulder elevators, shoulder internal and external rotators, lower trapezius, serratus anterior, trunk extensors and flexors, hip extensors, abductors, and rotators (HIPSIT), hip flexors, and knee extensors were assessed using a hand-held dynamometer (Lafayette, Model 01165A). The association between the lumbopelvic stability test and strength was verified using multiple linear regression. Data analysis was performed using SPSS Inc., Chicago, IL version 23.0.
Results: A total of 27 athletes participated in the study, with mean age of 32.78 ± 14.64, 6.96 ± 6.05 years of sports practice, and 15 (56 %) were men. The results of the lumbopelvic stability test showed a significant association (p = 0.026) with the muscle strength of the hip flexors, explaining 15% of the test. Additionally, the standardized beta (ß = -0.42) showed a negative result, indicating that the greater the strength of this muscle group, the smaller the pelvic tilt. All other muscles were not significantly associated with lumbopelvic stability tests.
Conclusion: The lumbopelvic stability test is associated with the muscle strength of the hip flexors in swimming athletes.
Implications: The study suggests the importance of thoroughly evaluating the strength of the hip flexor muscle group in swimming athletes, as it is the main influencing group in the lumbopelvic stability test, which can affect the pelvic tilt, leading to biomechanical imbalance and potentially becoming a risk factor for pain or injuries.
Keywords: Kinetic chain, risk factors, athletes

Conflict of interest: The authors declare no conflict of interest.
Funding: Empresa Brasileira de Serviços Hospitalares (Ebserh).
Ethics committee approval: CAAE: 77278524.4.0000.0121.
Registration: Not applicable.

https://doi.org/10.1016/j.bjpt.2025.101325

63

SLEEP QUALITY IN SWIMMERS WITH AND WITHOUT SHOULDER PAIN: A CROSS-SECTIONAL ANALYSIS

Raquel Lins de Sousa Lima, Gabriel Alves Dos Santos, Sávio Douglas Ferreira Santana, Bruna Gabriella Nascimento Bezerra, Mayara Ribeiro Da Silva, Marlison Douglas Nascimento Silva, Valéria Mayaly Alves de Oliveira, Danilo Harudy Kamonseki
Graduanda em Fisioterapia, Departamento de Fisioterapia, Universidade Federal da Paraíba (UFPB), João Pessoa, PB, Brazil

Background: Musculoskeletal injuries are common in high-performance overhead athletes. Current studies indicated that injuries can be influenced by various factors, including psychological, biological, and social aspects. Sleep quality is an essential factor for the physical and mental health of athletes and can be influenced by several variables, such as anxiety, stress, and nutrition. Poor sleep quality may increase the risk of injury. Therefore, clinicians should assess sleep quality using validated instruments, such as the Pittsburgh Sleep Quality Index (PSQI). Nevertheless, it is still unclear the role of sleep quality in the shoulder pain of swimmers, due to the lack of studies directly evaluating the relationship between these factors. Our study hypothesizes that athletes with shoulder pain will present poorer sleep quality, compared to those without shoulder pain.
Objectives: To compare sleep quality between swimmers with and without shoulder pain.
Methods: This is a cross-sectional observational study, which was approved by the Ethics Research Committee. We included competitive swimmers with or without musculoskeletal shoulder pain, of both sexes, aged between 12 and 60 years, with at least one year of competitive experience and a training regimen of at least twice a week. Sleep quality was assessed using the PSQI, which consists of