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Exploring the relationship of rotator muscle strength and rotation range of motion of the shoulder with the duration of play or shoulder pain in volleyball players with and without unilateral shoulder pain

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Overuse injuries are common in the shoulder joint among volleyball players. The current study had 2 aims. The first was to correlate external-internal rotator strength ratio (E/I SR) and passive range of motion (PROM) of the shoulder with the duration of play in volleyball players. The second was to determine whether differences exist between dominant and non-dominant shoulders E/I SR or E/I PROM in volleyball players with and without unilateral shoulder pain. In this cross-sectional study, a convenience sample of 65 male volleyball players, aged 18-40 years, with (n=41) or without unilateral shoulder pain (n=24) was included. Shoulder external and internal rotator isometric strength and PROM were measured with a universal goniometer and a hand held dynamometer, respectively. Pearson correlation coefficient was used to find the association between shoulder E/I SR or E/I PROM and the duration of play in all players. A comparison of dominant and non-dominant E/I SR or E/I PROM among players with and without shoulder pain was done using paired t-test. No significant correlation was found between E/I SR or E/I PROM and the duration of play in players with and without pain. A statistically significant difference between the dominant and non-dominant E/I SR was noted in players with shoulder pain ($p=0.018$). Further, internal rotator strength (11.59±2.82 kg) was found to be more than external rotator strength (10.76±2.43 kg) in this group ($p<0.010$). No such difference was found in players without shoulder pain. No differences in E/I PROM between dominant and non-dominant shoulders were noted in either group. In summary, there was an imbalance in E/I SR with internal rotators being stronger than external rotators on the dominant (painful) side among volleyball players.

Biography

Jay Patel is currently working as a clinical Physical Therapist at Physiomove Rehab, Langhorne, PA, USA. He completed his Master's in Orthopedic and Sports Physical Therapy from Manipal University, India in 2009. Then he migrated to United States and is successfully licensed in NY since 2011, PA 2013 and TX 2014. He also serves as a Clinical Instructor of physical therapy for physical therapy assistant students from all major PA universities. He is a life member of Indian Association of Physiotherapists and Indian Association of Sports Medicine. He is specialized in "Upper and Lower Quarter Neurodynamics", "Mulligan's Techniques" and "Kinesio Taping". Moreover, he has successfully treated wide range of musculoskeletal and sports injuries in patients of different age groups ranging from adolescents to older individuals. His area of expertise includes physiotherapeutic (conservative and pre/post-surgical) management of shoulder, hip, knee and ankle injuries. His philosophy of treating patients' entails evidence based practice with correct education and he is well acclaimed for his clinical expertise.

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