ABSTRACT

- **Background:** Football (association football) is one of the most popular sports worldwide and is characterized by intermittent high-intensity activities such as sprinting, kicking etc. From a biomechanical standpoint, the football kick is a complex, coordinated. Efficient execution of this movement relies on optimal neuromuscular coordination, muscle strength, flexibility, and effective utilization of the stretch-shortening cycle (SSC). Various training methods are used to improve lower limb power and neuromuscular efficiency in football players. Among them, plyometric training and Proprioceptive Neuromuscular Facilitation (PNF) combined with strength training are commonly applied interventions. This study aimed to compare the effectiveness of both groups on kicking velocity in U21 football players using the Bushnell Velocity Gun.
- **Methodology:** The present study was designed as a **comparative experimental** study including population of **male U21 football players** actively participating in regular football training programs. Using G power, the required sample size is **38 participants** in each group. Kicking velocity was measured at Week 0 (pre-test), Week 2, and Week 4 using the Bushnell Velocity Gun. Descriptive statistics including mean and standard deviation were calculated, and One-Way ANOVA was used to analyse differences within groups over time.
- **Results:** The Plyometric Training Group showed progressive improvement in mean kicking velocity from 73.57 km/h at Week 0 to 82.43 km/h at Week 4. In contrast, the PNF combined with Strength Training Group showed minimal overall improvement, with mean values changing from 88.71 km/h at baseline to 88.00 km/h at Week 4. ANOVA analysis indicated greater improvement trends in the Plyometric Training Group compared to the PNF + Strength Training Group.
- **Conclusion**: The study concluded that plyometric training was more effective than PNF technique combined with strength training in improving kicking velocity among U21 football players over a 4-week intervention period.

- *Keywords: Kicking velocity, PNF, Strength training, Plyometrics*

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