

The effects of stance width during barbell hip thrust on power and velocity output among adolescent Silat athletes

ABSTRACT

Background and Study Aim In the physically demanding combat sport of Silat, strength and power dominate. Consequently, applying various stance widths during barbell hip thrusts may tailor athletes' lower-body exercises to individual needs. This has the potential to optimize performance. The aim of this study is to investigate the impact on performance of power, speed, and stance width among Silat combat athletes. **Material and Methods** Participants performed 10RM tests in three stance widths: wider than shoulder width (WSW), normal shoulder width (NSW), and narrower than shoulder width (NRW). This was done using a 72-hour counterbalance cross-over study design. Power and velocity were measured and analyzed using a mixed ANOVA design. **Results** The results indicated a significant main effect of stance width on power ($F(2,56) = 3.086, p < 0.05$) and velocity ($F(2,56) = 3.683, p < 0.03$) output. Both males and females demonstrated the highest power in NRW ($M = 413.26, SD = 131.76$; $M = 239.53, SD = 111.16$), followed by WSW and NSW. A strong positive correlation between power and velocity was observed for all stance widths: WSW ($r(28) = 0.77, p < 0.001$), NSW ($r(28) = 0.79, p < 0.001$), and NRW ($r(28) = 0.89, p < 0.001$). NRW was associated with superior power production, while WSW facilitated higher velocity. **Conclusions** The results of this study demonstrate the importance of considering a variety of stance width techniques during exercise due to their effects on power and velocity during the barbell hip thrust exercise. Coaches can tailor training programs with a velocity-targeted strength and conditioning approach to enhance performance and competitiveness. Further research should investigate different athlete groups and age levels to refine training methodologies.