

Assessment of Hand Grip Strength and Dexterity in Healthy School Going Children aged 6-12 Years: A Cross Sectional Study

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ABSTRACT

Background: Grip strength and dexterity are considered as crucial components of hand function evaluation. Physiotherapists, Hand Therapists, often require reference values of hand grip strength and dexterity while assessing hand function among children. However, due to scarcity of literature on reference values among children aged 6 - 12 years in Indian population, this study was undertaken.

Methods: In this cross - sectional study, 300 healthy children of both genders aged 6 - 12 years were evaluated. Hand grip strength and manual dexterity was assessed using Camry electronic dynamometer and nine peg - hole dexterity test respectively.

Results: Mean hand grip strength for children aged 6 - 12 years was 12.44 kg \pm 3.52 (dominant side), 11.33 kg \pm 3.43 (non - dominant side). Mean time required to complete nine peg hole dexterity test was 20.59 sec \pm 2.49 (dominant side), 22.79 sec \pm 2.99 (non - dominant side). Comparison of these hand functions among genders showed a statistically significant difference (p value <0.05).

Conclusion: This study provided reference values of hand grip strength and dexterity in children aged 6 - 12 years for clinical set up. Boys had 17% more hand grip strength than girls on dominant and non - dominant side. However, girls had 4.3% better dexterity than boys on both sides. In addition, hand dexterity functions were performed better with dominant side compared to non - dominant side of children.

Keywords: Dexterity, Dynamometer, Grip strength, hand, Nine - peg hole test

