CODE: ABS 007

ESTABLISHMENT OF NORMATIVE DATA FOR HANDGRIP STRENGTH USING MODIFIED SPHYGMOMANOMETER AMONG YOUNG ADULTS.

Jeyanthi. S[1], C. Pretheka[2].
[1]Principal & Professor, Sri Venkateshwaraa College of Physiotherapy, Pondicherry University, Associate Dean- Research, Sri Venkateshwaraa Group of Institution, Pondicherry, India.
[2]BPT student, Sri Venkateshwaraa College of Physiotherapy, Pondicherry University, Pondicherry, India.

Background: Handgrip strength (HGS) is widely recognized as a simple, reliable, and non-invasive indicator of overall muscle strength and general health status. It is commonly used in clinical and research settings to assess functional capacity, nutritional status, and risk of morbidity. Reduced handgrip strength has been associated with various health conditions, including musculoskeletal disorders, neurological impairments, and decreased functional independence. Establishing normative reference values is essential for identifying muscle weakness, monitoring rehabilitation progress, and guiding clinical decision-making. Although the hand dynamometer is considered the gold standard for measuring HGS, its high cost and limited availability restrict its use in many low-resource settings. The modified sphygmomanometer offers a practical, low-cost alternative for measuring HGS.

Purpose: To establish normative data for handgrip strength using a modified sphygmomanometer among young adults aged 18–25 years.

Methods & Materials: A cross-sectional study was conducted among 400 healthy young adults (200 males and 200 females). Handgrip strength of both hands was measured using a modified sphygmomanometer in a standardized position. Three trials were taken for each hand, and the average value was analysed using descriptive statistics and an unpaired t-test.

Results: Males demonstrated higher grip strength (right: 176.53 ± 39.39 mmHg; left: 148.22 ± 40.08 mmHg) than females (right: 94.94 ± 26.47 mmHg; left: 80.10 ± 22.78 mmHg), showing a statistically significant difference ($p < 0.0001$). Slight variations were observed across ages 18–25 years, with peak values between 19 and 21 years.

Conclusion: This study established normative reference values for handgrip strength using a modified sphygmomanometer among young adults. The device proved to be a reliable, valid, and cost-effective tool for assessing upper limb strength in clinical and research settings.

Keywords: Handgrip strength, Modified sphygmomanometer, Normative data, young adults, Muscle assessment.