

Handgrip Strength, Pinch Grip Strength, and Screen Time in College-Age Adults and Older Adults

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ABSTRACT

Smartphones have become an essential part of daily life for people of all ages, serving as a vital tool for communication, information, and entertainment. However, excessive smartphone use can lead to addiction-like behavior and musculoskeletal issues with the extent and characteristics of problematic usage varying by age. **PURPOSE:** The purpose was two-fold: (1) Investigate the differences in handgrip strength (HGS), pinch grip strength (PGS), and total screen time between college-age individuals (18-to-25 years-old; $n = 50$) and older adults (50+ years old; $n = 50$); (2) Explore correlations between HGS, PGS, and total screen time in college-age individuals and older adults. **METHODS:** Participants' weeklong screen time was retrieved directly from their smartphone. HGS and tip, key, and palmar PGS were measured using dynamometers. Participants completed three consecutive maximum effort trials of HGS and PGS with dominant (D) and non-dominant (ND) hands. **RESULTS:** Independent samples t -tests were used to determine differences in all dependent variables between the two groups. There were significant differences in HGS (D and ND), tip, key, and palmar PGS (D and ND) between groups, favoring college-aged individuals. The college-age group had significantly more screen time compared to the older adults. Pearson's bivariate correlations examined relationships among all variables separately for both groups. In the college-age group, a weak positive relationship between total screen time and ND HGS was found ($r = 0.296$; $p < 0.01$). In older adults, strong to moderate relationships between total screen time and HGS (D and ND), and all PGS were found ($r = 0.643$ to 0.828 ; $p < 0.05$). **CONCLUSION:** This study underscores the impact of age on HGS, PGS, and screen time habits. Younger individuals tend to exhibit greater HGS/PGS and increased screen time. Interestingly, HGS was weakly correlated to screen time in young adults, but strong correlations between HGS, PGS, and screen time were found in older adults. These findings offer valuable insights into the relationships between physical health and smartphone usage with potential implications for future research and interventions aimed at promoting well-being in an increasingly digitalized world.