

Relationship between handgrip strength and fear of falls among older adults in selected elderly homes in Kalutara District, Sri Lanka

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Rapid population aging poses a challenge to health and long-term care. Handgrip strength (HGS) is a useful method for evaluating the general muscle strength of elderly individuals. Fear of falls (FOF) is another component that increases the risk of falls by impairing balance and causing an unsuitable stride. FOF is particularly significant because it deconditions the person, increasing the risk of falls in the future, and it affects mental health by causing depression and anxiety. This study aimed to determine the relationship between handgrip strength and fear of falling among older adults residing in elderly care homes. This relationship is particularly important in geriatric assessment, as both connected characteristics affect functional independence mobility, and fall prevention. A cross-sectional study involved 126 older adults aged 60 and above in selected elderly homes in Kalutara District, Sri Lanka, using the convenient sampling method. HGS was measured using a Jamar dynamometer, while fear of falls was assessed using the Falls Efficacy Scale-International (FES-I). The Spearman's correlation test and the Mann-Whitney U test were used for data analysis in SPSS v23. The study population consisted of 38 males (30.15%) and 88 females (69.85%), with a mean age of 72 years (± 7.98). Regarding the Falls Efficacy Scale-International, 67.5% of participants were classified as having a high fear of falls, 7.9% as having moderate, while 24.6% of participants fell under the low fear of falls. There was a significant difference in handgrip strength among males and females ($p < 0.01$). Males have higher grip strength than females. There was no significant difference between Fear of falls and gender ($p = 0.461$). The study found a significant negative correlation between handgrip strength and fear of falls ($r = -0.380$, $p < 0.01$). According to the findings, strength-enhancing activities in routine care may not only improve physical function but also reduce fear of falls. Emphasizing the critical role of assessing and addressing muscle strength in interventions targeting fall risk and psychological well-being among older adults, highlighting the potential advantages of incorporating strength assessments and targeted physical exercises into fall prevention strategies for those living in institutional settings.

Keywords: *Sri Lankan older adult, Fear of Fall, Handgrip strength*