

Are physical, psychological and family functions of community-residing older adults associated with risk of falls?

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Introduction

This study aimed at investigating the difference in physical, psychological and family functions between older adults living in the community who have and do not have fall risk. The association between fall risk and various demographic data and functional outcomes was also explored.

Methods

Cross-sectional analyses were conducted on 120 older adults who were living in the community, able to ambulate independently and had no significant neurological or cognitive dysfunction. The participants were stratified into two groups, with and without risk of falls. Timed Up and Go test (TUG) was used to screen the risk of falls among participants, based on the cut-off point (13.5 seconds) determined for community-dwelling older adults (Shumway-Cook & Brauer, 2000). Upper and lower limb strength, aerobic endurance, balance control and level of independence in basic activities of daily living (ADL) were used to determine physical function, along with depressive symptoms and family support representing psychological and family functions respectively. The differences between participants with and without fall risk were compared using one-way ANCOVA, controlled for age, sex, body mass index and waist-hip-ratio. Multivariate logistic regression was used to determine the association between fall risk and multiple demographic and functional outcomes.

Results

30 (25%) participants had a TUG score higher than 13.5 seconds and were identified as having risk of falls. Compared to those without fall risk, participants with risk of falls had significantly poorer upper and lower limb muscle strength, aerobic endurance, balance control, basic ADL and depressive symptoms. Better lower limb muscle strength and balance control were found to be associated independently with no risk of falls.

Conclusion

Community-dwelling older adults with fall risk may have decreased muscle strength, aerobic endurance, balance control, ADL independence and increased depression symptoms. Lower limb muscle strength and balance control may be associated with risk of falls. Interventions that include strategies in improving a wide range of physical and psychological functions may be warranted in order to lower risk of falls.

References

Shumway-Cook, A., Brauer, S., et al. (2000). "Predicting the probability for falls in community-dwelling older adults using the Timed Up & Go Test." *Physical Therapy* 80(9): 896-903