

Frailty and its association with geriatric depression in India: Evidence from the WHO-SAGE

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Introduction: Frailty is a multifactorial syndrome that represents a reduction in physiological reserve and in the ability to resist environmental stressors. It is generally recognized to be age associated, common in older adults, and related to adverse health outcomes including mortality, institutionalization, falls, and hospitalization. There is a growing consensus that markers of frailty include age-associated declines in lean body mass, strength, endurance, balance, walking performance, and low activity, and that multiple components must be present clinically to constitute frailty. Though numerous geriatric interventions have been developed to improve clinical outcomes for frail older adults, limited or no studies have looked into the association between frailty and depression among older adults.

Objective: We aim to investigate the association between frailty and self-reported symptom-based depression in a national sample of older Indians who participated in the national population-based cross-sectional WHO Study on Global Ageing and Adult Health (SAGE wave 1) in 2007.

Methods: Analysis is based on cross-sectional nationally representative survey data of 7150 persons (3623 men and 3527 women) aged 50 years or above, obtained from the 2007 WHO Study on Global Ageing and Adult Health (SAGE) in India. The questionnaire included socio-demographic characteristics, health variables, anthropometric and blood pressure measurements as well as questions on depression symptoms in the past 12 months. A frailty index (based on mean and standard deviation, index value has been categorised as low, medium, high) was calculated based on 40 items including functioning assessment, self-reported chronic conditions, self rated health, pain, sleep, distant vision, close vision, BMI, grip strength, usual walk etc. Multivariate logistic regression analysis was performed to estimate the association between frailty and depression among older adults adjusting for socio-demographic factors and self reported quality of life.

Results: Overall more than half the older adults (55.1%;n=3,614) fall in the high frailty index, followed by one-third (32.9%;n=2,159) in the medium category and above one in ten (12%;n=786) geriatric population belong to low frailty index. Prevalence of symptom-based depression in the past 12 months was 25% (one in four) among older adults belonging to high frailty index. After adjusting for socio-economic and demographic characteristics, high frailty older adults were 15 times (OR:14.86;95%:6.78-32.60;p<0.0001) more likely and medium frail older adults were five time (OR:5.27;95%:2.66-10.43;p<0.0001) more likely to be suffering from self-reported depression symptoms in the past 12 months with reference to low frail older adults.

Poor self-rated quality of life was also associated with two times (OR:2.01;95%:1.44-2.81;p<0.0001) higher likelihood of suffering from depressive symptoms than those who reported their quality of life to be good.

Conclusions: These data support a significant role of frailty as a predictor of depression in older Indian population. Public health care policies should be formulated to improve quality of life among older adults in India. However, more observational research with clinical measures of depression is needed in a developing country setting to validate the findings.

Key words: frailty; self-reported depression symptoms; older adults; India; WHO SAGE