

論文の内容の要旨

論文題目 Frailty and adverse health outcomes in older people in Kathmandu Valley, Nepal: a cross-sectional study

(ネパールカトマンドゥ地域における高齢者のフレイルとその健康への悪影響)

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Background

Frailty is likely to increase in low- and middle-income countries such as Nepal which poses a public health challenge. The number of older people is rising rapidly in Nepal. This increase is rapid and sudden, and most low-income countries are not prepared to deal with frailty and associated challenges such as decreased quality of life, increased healthcare utilization, falls, and disability. Frailty is defined as a state of being vulnerable to adverse health outcomes and has recently emerged as a multidimensional concept encompassing physical, social, cognitive, and psychological aspects. The objectives of this study were to identify the factors that affect frailty state and to examine the association of frailty status with adverse life outcomes that were quality of life (QOL), healthcare utilization, falls, and disability.

Methods

This study was conducted in three districts of Kathmandu Valley which were Kathmandu, Lalitpur, and Bhaktapur. Data were collected from April to June 2019 from 694 older people using convenience sampling from various communities and old age homes. The older people included in this study were aged 60 years and above. Exclusion criteria were known cognitive disability, severe hearing impairment and mental illness, and inability to communicate in Nepali language. Simple and multiple linear regression analyses along with hierarchical analyses were conducted to examine the association of frailty with various sociodemographic and health characteristics. Hierarchical linear and logistic regression analyses were also performed to assess the association between the adverse health outcomes and frailty.

Results

A total of 694 older people were interviewed for this study, of which 193 resided in old age homes and 501 resided in the community. The mean of older people was 73.8 years (Standard Deviation [SD] 8.9, range 60-104) and 179 (25.8%) were aged 80 and above. Among 694 who participated in this study, 387 (55.5%) were women. The number of illiterate older people was 345 (49.7%). The income level

of 439 (63.3%) was below 20 USD and 67 (9.7%) were dissatisfied with their home living environment. The number of frail older people (GFI score of 4 or higher) was 420 (60.5%). Only 183 (26.4%) self-rated themselves as healthy. Frailty was more prevalent among older people in old age homes (71.5%) compared to those in the community (56.3%). The number of older people who perceived themselves to have a healthy lifestyle was 37 (19.2%) in old age homes compared to 146 (29.1%) in the community.

After adjusting for covariates and confounders, it was seen that frailty increased with higher age (Standardized beta coefficient [β] = 0.14; 95% CI = 0.02, 0.08) and those who rated their lifestyle as unhealthy had higher frailty scores (β = 0.16; 95% CI = 0.62, 1.65). On the other hand, frailty scores were lower in older people who received education (β = -0.09; 95% CI = -1.04, -0.03), and those who were satisfied with their home living environment (β = -0.20; 95% CI = -2.83, -1.37).

The disability score was higher in those who suffered from physical frailty (β =0.52). The sensory QOL score was lower in those with higher scores in physical (β =-0.31), cognition (β =-0.08), and social frailty domains (β =-0.12). Physical frailty was related to the sensory and social QOL (β =-0.14), whereas cognition frailty was only associated with sensory QOL (β =-0.08). High social frailty scores led to lower sensory (β =-0.12), social (β =-0.08), and intimacy QOL scores (β =-0.09). Those with higher psychological frailty scores were more likely to have lower scores for autonomy (β =-0.09), activities (β =-0.11), social (β =-0.11), and death domains (β =-0.23) of QOL. Older people with higher physical frailty scores were more likely to be hospitalized (AOR=1.29), receive informal care (AOR=1.14) and experience fall (AOR=1.25). Those with higher cognition frailty scores were less likely to receive nursing support (AOR=0.38) and informal care (AOR=0.56).

Conclusion

This thesis highlights higher frailty in older people residing in old age homes. Education, lifestyle, and satisfaction with the living environment are modifiable factors associated with frailty both among old age homes and the community. Both self-rated lifestyle and satisfaction with the living environment affect frailty and related adverse health outcomes. All aspects of frailty (physical, cognition, social, and psychological) should be taken into account for future interventions as they affect various facets of adverse health outcomes.

Implications and recommendations

This study helps us understand the frailty status of the older people residing in the community and various old age homes in Nepal. The findings of this study can be used to formulate policies to address the healthcare needs of frail older people and develop strategies for integrated care targeted to support them so that they receive the right combination of services. Older people should be included in policy

formulation as they can tell the best about their needs. Public health sectors in the government can collaborate with local communities to implement community interventions through health education and health promoting activities.

The results of this study call for provisions to prevent frailty and its adverse outcomes by focusing on the modifiable risk factors. The management of frailty should include health education through disseminating information and increasing awareness on frailty in the community. It promotes behavioral changes, health-seeking behavior, and enhances positive attitude towards health, and improves long-term adherence to strategies for frailty management. Similarly, provisions for informal or vocational education should be provided to older people who want to be able to read and write as the number of illiterate older people in Nepal is high. Lack of basic literacy skill can both be a cause and effect of poverty, unemployment, abuse and isolation, and oppression. Education can empower the older people, especially the older women, by improving their skills and competencies, and enable them to socialize and remain active.

A randomized controlled trial suggested that the progression of frailty can be dealt with resistance exercises and addition of nutritional supplements in diet which lead to increase in lean body mass improving strength, tolerance to physical activity, and walking speed. Some frail older people with reduced mobility are unlikely to get adequate sun exposure which results in lack of intrinsic vitamin D production. They can be supplemented with vitamin D. Similarly, those who are underweight, can be supplemented with dietary protein and increased calorie intake. Cognitive training by stimulating short-term memory, enhancing attention and problem solving can enable older people to cope with daily life activities. This can decrease frailty and improve quality of life.

Along with these, living spaces should be made age-friendly so that older people are satisfied with their home-living environment. At the same time, increasing facilities for physical activity and social connections would elevate the QOL of older people. Assessment of frailty may help in the reduction of related adverse life outcomes such as healthcare utilization and falls, and improve the QOL of older people. A longitudinal study is important to evaluate the predictive power of the instrument to detect older people who are at risk of developing adverse health outcomes and also to measure cause-effect interpretations of the associations between frailty and adverse life outcomes. The results should be correlated with clinical assessment of frailty.