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Original Study

Eating Alone as Social Disengagement is Strongly Associated With Depressive Symptoms in Japanese Community-Dwelling Older Adults

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A B S T R A C T

Objectives: Depression in later life poses a grave challenge for the aging countries. The reported key risk factors include social disengagement, but the lack of social companionship during mealtimes, namely eating alone, has not been examined extensively, especially in relation to living arrangement. Past studies on changes along geriatric trajectories in the association between social engagement and depression also remain inadequate. This study aims to examine the association between social engagement and depressive symptoms with a particular focus on eating alone and how the association changes along the aging and mental frailty trajectories.
Design: A cross-sectional study.
Setting: Kashiwa-city, Chiba-prefecture in Japan.
Participants: A total of 1856 community-dwelling older adults.
Measurements: The 15-item Geriatric Depression Scale was used to measure depressive symptoms. The indicators used to assess social engagement included eating alone, living arrangement, reciprocity of social support, social participation, social stressors and social ties.
Results: Social engagement was significantly associated with depressive symptoms. Those who live with their families yet eat alone were found to be at particular risk (odds ratio = 5.02, 95% confidence interval 2.5–9.9 for young-old; odds ratio = 2.41, 95% confidence interval 1.2–4.8 for old-old). Younger and less mentally frail populations showed stronger associations.
Conclusions: Eating alone was a key risk factor for depressive symptoms in community-dwelling older adults. The living arrangement in which they eat alone is important in identifying those with the greatest risk. Mental health management for older adults requires comprehensive assessment of their social relations that takes into account their companionship during mealtimes. Social preventive measures need to involve early interventions in order to augment their effectiveness against mental frailty.

The problem of depression in later life has become a pressing global concern, as the population aging continues worldwide.[1] It undermines well-being and quality of life while adding to healthcare costs, with potential consequences on a wide range of health outcomes.[2] The problem poses a grave socioeconomic burden on aging countries, not least in Japan where the unprecedented level of aging threatens to undermine its social security system.[3] The prevalence of

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depression among community-dwelling older adults varies enormously and has been reported to be as high as 35%.[4]

The key reported predictors of depressive symptoms include female gender, cognitive and functional impairments, medical disorders, low level of education, and social disengagement.[1,5–10] Social engagement is an "umbrella concept for the various components of an individual's social behavior and social structure"[11] and its different aspects have consistently been found to predict mortality, disease outcomes, disability, cognitive decline as well as depressive symptoms.[12–16] While the conceptualization of social engagement lacks a strong consensus,[17] this should not be viewed as a weakness but as an invitation to explore its unexamined aspects in a search for the most relevant screening questions to identify older adults at risk.[11] This study, thus, aims to examine new concepts and ideas that remain under-explored, especially in relation to depression.

One such aspect is the social behavior during mealtimes. Commensality (ie, the act of eating with others) provides opportunities for social interactions and exchange of information and support by facilitating participation in shared social activities of mealtimes.[18] Eating alone deprives older adults such valuable social opportunities. Eating alone has been studied in relation to dietary intake, but research in relation to depression and wider health outcomes remains limited.[19] To our knowledge, none has examined its association with depression in combination with other components of social engagement nor investigated it in relation to the living arrangement. Living alone is often cited as a key risk factor for older adults, as does the Ministry of Health, Labor and Welfare, Japan, but eating alone is rarely discussed. A shared living arrangement may result in increased opportunities for commensality, but does not guarantee it,[18,19] requiring independent considerations.

Furthermore, past studies have not adequately examined how the association between social engagement and depression changes along geriatric trajectories such as aging and frailty. Frailty is not only a physical but a multidimensional concept,[20] and mental frailty, one important dimension, may manifest as depressive states. The role of social engagement vis-à-vis depression is expected to change as older adults age or become more mentally frail, influencing the effectiveness of social intervention measures.

The purpose of the present study is 2-fold. The first objective is to examine whether social engagement is associated with depressive symptoms with a particular focus on eating alone and its relation to the living arrangement. Second, effects of geriatric trajectories, namely aging and mental frailty trajectory on the above association, are examined in order to better identify the most effective social intervention sites for depressive symptoms.

Methods

Study Design

The study was cross-sectional.

Setting and Participants

This study was based on data from 1856 randomly selected community-dwelling older adults (independent or those requiring support), aged 65–94, who participated in the first year health assessment of a 3-year cohort study between 2012 and 2014 in Kashiwa city, Japan. A total of 2044 persons participated in the assessment and 188 persons were excluded due to missing items of data.

Measurements

Depressive symptoms

The 15-item Geriatric Depression Scale (GDS) was used. Scores of ≥6 were defined as "depressive symptoms,"[21] 6–9 as "mild depression," and ≥10 as "severe depression."[4]

Social engagement

Seven components were assessed: (1) living arrangement; (2) eating arrangement; (3) reciprocal social support; (4) social participation; (5) social stressors; (6) social ties with family; and (7) social ties with friends. The following questions were asked regarding each item: (1) Do you live with your family: yes or no? (No = living alone); (2) Do you eat your meals with anyone else, at least once a day: yes or no? (No = eating alone); (3) Do you give advice and a helping hand to your family or friends: yes or no? (No = low reciprocal social support); (4) Are you going out less frequently compared to last year: yes or no? (The Kihon Check List, Ministry of Health, Labor and Welfare) (No = fewer frequency of going out); and (5) Did you experience any major changes in life in the past year, such as moving home, retirement, loss of relatives, financial troubles, troubles in the relationships with people: yes or no? (Yes = major change in life). For (6) and (7), the abbreviated Lubben Social Network Scale-6 and its Family and Friends subscales[22,23] were used. Living arrangement and eating arrangement were crossed to construct 4 dummy variables: "living and eating alone," "living alone yet eating with others," "living with others yet eating alone," and "living and eating with others" (reference).

Sociodemographic variables

Age and the years of education were included in the analysis as continuous variables. Health literacy was measured by 5 items developed for Japanese persons.[24] Information on economic status was obtained as income ranking based on long-term care insurance premiums. Logistic regression was performed with the income ranking and depressive symptoms as the independent and dependent variables, respectively. The odds ratios were plotted to observe changes in the trend and those with less than 1.4 million Japanese Yen per person were categorized as the "low income" group.

Medical histories

Medical histories of hypertension, osteoporosis, cerebrovascular diseases, diabetes, heart diseases, and malignant neoplasm were obtained through medical interviews by nurses.

Number of medications

The total number of oral medications was recorded as a continuous variable, as polypharmacy is known to be associated with increased depressive symptoms.[25]

Physical health and functions

Instrumental activities of daily living (IADL) was measured using the Tokyo Metropolitan Institute of Gerontology index of competence.[26] Mobility was assessed by Life-Space Assessment,[27,28] measured with the Elderly-Status Assessment Set.[29,30] The highest level of life-spaces (level 5) was used. To assess usual and maximum gait speeds, participants were instructed to walk over an 11-m course and the time spent in the middle 5 m was recorded.[31]

Cognitive function

The Mini-Mental State Examination was used, and its score was included in the analysis as a continuous variable.

Oral health and functions

The Japanese version of the General Oral Health Assessment Index (GOHAI)[32,33] was used to measure the oral health-related quality of