International Journal of Gerontology 10 (2016) 81–85

Contents lists available at ScienceDirect

International Journal of Gerontology

journal homepage: www.ijge-online.com

Original Article

Prevalence and Determinants of Depressive Disorders among Community-dwelling Older Adults: Findings from the Towards Useful Aging Study☆

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ARTICLE INFO

Article history:
Received 14 August 2015
Received in revised form
5 January 2016
Accepted 3 February 2016
Available online 11 June 2016

Keywords:
calorie restriction,
education,
geriatric depressive disorders,
neurotic disorder

SUMMARY

Background: Geriatric depressive disorders affect the physical and emotional well-being of older adults. Therefore, this study aims to identify the prevalence of geriatric depressive disorders and their risk factors in a large-scale study comprising community-dwelling older adults in Malaysia.
Methods: A total of 2264 older adults consisting of 1083 (47.8%) men and 1181 (52.2%) women were recruited in this study. An interview-based questionnaire was used to obtain information on socio-demography, presence of comorbidities, nutritional status, dietary habits, lifestyle, practice of calorie restriction, cognitive function, social support, and psychosocial aspects. Geriatric depressive disorder was confirmed if a participant obtained a score of 5 or more in the Geriatric Depressive Scale.
Results: The prevalence of depressive symptoms is 16.5%, and it is higher in women (56.6%) than in men (43.4%). Individuals who are at a higher risk of depressive disorders are most likely to be less educated and to have neurotic disorder, a lower score of instrumental activities of daily living , poor fitness level, hypertension, and osteoarthritis.
Conclusion: Depression affects 16.5% of Malaysian older adults and is associated with factors such as sociodemography, comorbidities, psychosocial function, calorie restriction, physical function, and fitness. There is a need to screen and treat depressive symptoms to prevent their progression to severe mental health problems.

1. Introduction

The prevalence of geriatric depressive disorders in Asian countries is in the range of 12–34% and that in Sri Lanka, Indonesia, Japan, Vietnam, Indian and Malaysia is 27.8%, 33.8%, 30.3%, 17.2%, 12.7% and 27.8% respectively[1–4]. In Malaysia, Sherina et al[5] have compared the levels of geriatric depressive disorders among the urban and rural elderly, and the findings have revealed that the rural elderly (7.6%) tend to be more depressed than the urban elderly (6.3%).

Geriatric depressive disorder is a serious public health problem worldwide, as it contributes to increased health care cost and mortality[6]. Systematic reviews have identified several risk factors of geriatric depressive disorders, including gender, functional limitations, low education level, poor social support, lack of religious practice, chronic diseases, loneliness, and personality abnormalities[7,8].

The risk of geriatric depressive disorders is greatly reduced with religious practice. Muslim elderly who practice occasional calorie restriction (omitting foods and drinks every Mondays and Thursdays) have gained numerous health benefits[9]. Hence, this current study aims to determine the efficacy of a 1-month practice of religious calorie restriction toward reducing the risk of geriatric depressive disorders. Meanwhile, the study by Ibrahim et al[10] among older adults residing in government-aided settlement known as Federal Land Development Authority (FELDA), has shown

☆ Conflicts of interest: The authors declared that they have no conflicts of interest.
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http://dx.doi.org/10.1016/j.ijge.2016.02.001

that information and emotional support lower the risk of geriatric depressive symptoms, which is essential for psychological well-being.

This study aims to screen community-dwelling Malaysian older adults for the presence of geriatric depressive disorders and associated risk factors using a wide range of parameters. This study has obtained permission from local authorities and ethical approval from the Medical Research Secretariat Ethics Committee of University Kebangsaan Malaysia.

2. Materials and methods

2.1. Study population

This large-scale study was part of the "Towards Useful Aging" longitudinal study, the methodology of which was described elsewhere (Suzana et al 2015, accepted for publication)[11]. The multistage random sampling method was used. Maps of living quarters, and name and address of individuals residing in the randomly selected living quarters were provided by the Department of Statistics. The inclusion criteria for this study were older adults aged 60 years and above without dementia and no severe mental illnesses. Eligible participants were given a brief description of the study, and written consent was obtained from them. Data were collected by several trained enumerators from May 2012 till February 2013.

2.2. Research tools

An interview-based approach was used using questionnaires. The questionnaires used in this study were validated and comprised several sections, namely, sociodemography, health status, fitness, psychosocial factor, functional status, anthropometry, lifestyle, dietary pattern, and practice of calorie restriction.

Sociodemographic characteristics included age, gender, religion, marital status, education level, total monthly income, total household income, and living arrangement (living alone or with spouse, children, relatives, or friends). Furthermore, information on health status was obtained by asking respondents whether they were suffering from several common chronic diseases such as diabetes mellitus, hypertension, hypercholesterolemia, heart diseases, osteoarthritis, and cataract or glaucoma.

A 15-item geriatric depression scale (GDS) with a reliability of 0.81 was used to assess the level of depressive disorders among older adults. A score of ≥ 5 indicated a high risk of suffering from depressive disorder[12]. Functional status was measured using activities of daily living[13] and instrumental activities of daily living (IADL)[14].

The Medical Outcome Study Social Support (MOSS) survey, which had reliability of 0.84, was used for assessing social support[15]. Neurotic disorder was identified using neuroticism subscale of the Eysenck Personality Questionnaire (EPQ) with reliability of 0.72[16]. Meanwhile, loneliness was assessed using a "three-item loneliness scale" and it had reliability of 0.72[17]. Perceived Stress Scale, which had reliability of 0.72, was used to assess the perception of stress[18].

Cognitive status was assessed using several test batteries. Global function was measured using the Malay version of Mini Mental State Examination with good reliability (more than 0.70)[19]. The Rey Auditory Verbal Learning Test was conducted to assess verbal memory[20]. The Digit Span Test, which consisted of Digit Span Forward and Backward, was used for measuring attention and working memory[21].

Body weight was obtained using a digital weighing scale (Tanita Corporation of America, Illinois, USA). Leicester Height Measure (CMS Weighing Equipment, London, United Kingdom) was used to measure height. Body mass index was calculated using the World Health Organization formula of body weight (in kilograms) divided by square of standing height (in meters)[22].

Dietary pattern was assessed using open-ended questions that focused on the frequency of intake of fresh fruits, 100% fruit juices, and vegetables. Respondents were asked of their practice of occasional calorie restriction due to religious practice (this included omitting food but allowing drinks, omitting animal-based food, or avoidance of both food and drinks for a specified duration of the day) for the past 1 month.

Lifestyle questionnaire was adapted from the Victoria Longitudinal Study—Activity Lifestyle Questionnaire[23]. The Victoria Longitudinal Study—Activity Lifestyle Questionnaire focused on physical, social, and mental lifestyle activities. The original 70-item questionnaire had been simplified to a 26-item questionnaire for the purpose of this current study, and it had reliability of 0.66.

2.3. Statistical analysis

Statistical Package for Social Sciences (SPSS) software version 20.0 (IBM Corporation, Armonk, New York, USA) was used to analyze the collected data. The association between GDS categories and categorical variables was determined using Pearson chi-square test. Independent t test was employed to explore the relationship between GDS categories with continuous variables. Risk factors for the symptoms of geriatric depression were identified using binary logistic regression with GDS categories as dependent variable (without depressive disorders—reference group and with depressive disorders). Adjusted odd ratio was obtained by controlling the influence of several confounding variables such as age, income, gender, alcohol, and living arrangement. The significance value was set at $p < 0.05$.

3. Results

The prevalence of geriatric depressive disorders in this study was 16.5%, with 15% in men and 17.9% in women. Individuals with depressive disorders were older (69.8 ± 6.4 years old), and had lower household income (MYR 1018.38 ± 136.49) and lower education levels (3.9 ± 3.6 years old) ($p < 0.05$). Hypertension (57.9%), osteoarthritis (34.0%), and swallowing problems (8.3%) were more prevalent in respondents with depressive disorders than in those free of depressive symptoms, as shown in Table 1 ($p < 0.05$).

Table 2 shows that respondents without depressive disorders had better performance in Mini Mental State Examination (23.0 ± 4.8), Rey Auditory Verbal Learning Test (26.3 ± 12.2), and the entire fitness test administered, compared to those with depressive disorders ($p < 0.05$). The IADL score was lower among individuals with depressive disorders (11.7 ± 2.9) compared with their counterparts (12.5 ± 2.3). Furthermore, MOSS scores were higher among individuals without depressive symptoms (40.04 ± 14.7), and this group had further demonstrated a lower score in EPQ-Neuroticism (1.96 ± 2.8), loneliness (3.25 ± 0.9), and perceived stress scale (3.06 ± 3.0) ($p < 0.05$).

Moreover, alcohol intake was higher among individuals with depressive disorders (5.9%) compared with those without depressive disorders (3.6%; $p < 0.05$; Table 2). People without depressive disorders had more frequent consumption of fruits (3.8 ± 2.5 d/wk) and vegetables (5.8 ± 2.1 d/wk) compared with those with depressive disorders (3.5 ± 2.5 d/wk for fruits and 5.5 ± 2.1 d/wk for vegetables). In addition, practice of calorie restriction was more common among older adults without depressive disorders (48.1%) than among those with depressive symptoms (only 38.1%; Table 2).