

Depression among ethnic minority elderly in the Central Highlands, Vietnam

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Abstract

This cross-sectional study is to examine the prevalence of depression and associated factors among 110 ethnic minority elderly in Kon Tum city, Vietnam. Depression was assessed using 30-items Geriatric Depression Scale. Multivariate linear regression analysis was employed to identify factors associated with depression. The prevalence of depression among participants was 25.5%. All were classified as mild depression level. Depression was significantly associated with age, gender, educational level, chronic diseases, stressful life events in the past 12 months, and family history of depression. These risk factors can help formulate effective public health programs to improve mental health among ethnic minority elderly.

Keywords

depression, elderly, ethnic minority, Geriatric Depression Scale, Vietnam

Introduction

Depression is a mental disorder that significantly contributes to the global burden of diseases. It is estimated to affect more than 264 million people of all ages and in diverse communities across the world (WHO, 2020). In older adults, the prevalence of depression varies depending on cultural situations and the measurements used to assess its occurrence (Barua et al., 2011; Pilaiania et al., 2019). A systematic review, which included 74 studies conducted in various countries, showed that the median prevalence rate of depressive disorders for individuals aged 60 years and over was 10.3% (interquartile range, 4.7%–16.0%) (Barua et al., 2011). Later-life depression is an important public health problem. For elderly people that experience depression, the depression is associated with higher rates of morbidity and mortality, increased healthcare utilization, and economic costs (Chapman and Perry, 2008; Pocklington, 2017; Sivertsen et al., 2015). Further, research has reported that the presence of depression complicated the course and outcome of concurrent diseases among older people and suicide rates were higher in this age group than in any other (Chapman and Perry, 2008). Risk factors related commonly to the development of depression in the elderly are female,

chronic diseases, stressful life events, and poor social support (Fiske et al., 2009).

Vietnam, a low middle-income country, is facing a rapid increase in aging population. Older population, accounted for 10.2% of the country's population in 2014, has expanded much greater than the preceding years with an expected grow to reach almost 20% of the population by 2035 (VNCA and UNFPA, 2019). Unavoidably, Vietnamese elderly have faced aging-related issues, especially morbidity and disability that could negatively impact their quality of life (Nguyen et al., 2012; Tran et al., 2016; UNFPA, 2011; VNCA and UNFPA, 2019). Depression has increasingly been considered the most common mental health problem besides dementia in the country (Tran et al., 2016).

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Although samples have been derived from different areas of the country and diversified scales measuring depression have been used, previous studies show a significant prevalence of depression among the elderly in Vietnam. Dao et al (2018) using Zung Self-rating Depression Scale reported a prevalence of depression among 299 older people living in urban Vietnam of 66.9% (Dao et al., 2018). Using Geriatric Depression Scale-4 items, another study, which was conducted on 523 elderly living in a rural area of north Vietnam, found 26.4% were at risk for depression (Vu et al., 2019). A survey using national representative data in 2012 also reported 39.62% of older people experienced depression (Giang et al., 2019). The aforementioned studies mainly measured depression prevalence in the Kinh ethnic elderly—a majority ethnic group in Vietnam. Besides Kinh ethnic group, Vietnam has 53 other ethnic groups accounting for 15% of the total population. Most of the ethnic minorities live in remote, highland regions in northern, central and western Vietnam. Each ethnic minority group has its own specific language, lifestyle, and culture. Ethnic minorities are considered as vulnerable groups in Vietnam because of their poorer socio-economic conditions (UNFPA, 2009, 2011). The present study is to investigate prevalence of depression and to identify its risk factors among ethnic minority elderly living in the central highland Vietnam. The findings could provide more evidence of the mental health problems among the elderly in the country.

Methods

Study design

This was a community-based cross sectional study.

Study settings

The study was conducted in Kon Tum city, the capital of Kon Tum province located in the Central Highland of Vietnam. The province has a majority population of ethnic minorities including 28 different ethnic groups with diversified culture and customs. Ethnic minorities account for 53% of population of the province (Ethnic Committee of Kon Tum Province, 2019). The city has an area of 432.98 square km and is divided into 21 administrative units including 10 wards and 11 communes. Approximately, 63,473 out of 174,754 people were ethnic minority people, accounting for 36.32% of population; among them, elderly people were 15,452 in 2018. Most of them come from Bahnar, Xo dang, Gie rieng, and Jarai ethnic groups. They often live in villages far from the center of the city (Website of Kon Tum City, 2019).

Participants

One hundred and ten participants were randomly selected from the lists of older persons living at three wards and

three communes among 21 administrative units of Kon Tum city. These units were randomly selected based on administrative areas of the city. These individuals met inclusive criteria as follows: age 60 years and over; ethnic minorities; residents in Kon Tum city; ability to communicate in Kinh language; agreement to participate in the study. Individuals, who had severe physical health issues and dementia, were excluded from the study.

Data collection

Data were collected between June to December 2018 by interviewing directly participants at their house using a structured questionnaire, Perceived Social Support Scale (MSPSS) and 30-item Geriatric Depression Scales (GDS) after obtaining verbal consent. The interviewers, who were the health staff at mental health department of Center for Social Disease Prevention and Control of Kon Tum province, were trained on content of the questionnaire and interviewing skills. The questionnaire was pre-tested on a group of 20 random elderly people in Kon Tum city, then was revised before data collection.

Instruments

Structured questionnaire. The questionnaire included questions about socio-demographic characteristics (age, gender, ethnic group, religion, marital status, educational level, living situation, social activity participation), economic situation (economic classification of household, way of earning), health behavior (smoking, drinking), health status (chronic disease, personal experience of depression, family history of depression), and stressful life events during the past 12 months.

Multidimensional Scale of Perceived Social Support. Multidimensional Scale of Perceived Social Support (MSPSS) was used to measure perceived social support among participants in the study. The association between social support and depression in the elderly was found in previous studies (Fiske et al., 2009; Tengku Mohd et al., 2019). MSPSS has three subscale: family support, friend support, and other person support including 12 items with Likert scale scoring from 1 (very strongly disagree) to 7 (very strongly agree). The assessment of perceived social support was divided into three levels based on total mean score of 12 those items as follows: 1–2.9: low support; 3–5: moderate support; 5.1–7: high support. The current study also used a continuous measure. The higher total score on MSPSS was, the higher level of social support was perceived (Zimet et al., 1988).

Assessment of depression. Generic Depression Scale (GDS), a common tool for screening depression among the older people, was used in previous studies over the world (Barua et al., 2011; Pilania et al., 2019). We employed 30-item GDS

Table 1. Social demographic characteristics and economic situation of participants.

Characteristics		Number of participants	Percentage
Sex	Male	44	40.0
	Female	66	60.0
Age (years)	60–69	78	70.9
	70–79	26	23.6
	80 and above	6	5.5
	Mean (SD)= 66.9 (6.2)		
Ethnic group	Jarai	82	74.5
	Bahnar	20	18.2
	Other	8	7.3
Religion	Yes	47	42.7
	No	63	57.3
Marital status	Married	74	67.3
	Single/divorce/widow	36	32.7
Educational level	Illiteracy	17	15.5
	Primary school	55	50.0
	Secondary school	12	10.9
	High school	24	21.8
	University and above	2	1.8
Living situation	Living alone	10	9.1
	Living with relatives	100	90.9
Sex life	Satisfaction	2	1.8
	Non satisfaction	108	98.2
Economic classification of household	Poor/near poor	50	45.5
	Non poor	60	54.5
Ways of earning	Self	45	40.9
	Other	65	59.1
Participation in a kind of social activity	Yes	88	80.0
	No	22	20.0
Stressful life events in the last 12 months	No	54	49.1
	At least 1 event	56	50.9
Perceived social support	Moderate support	42	38.2
	High support	68	61.8
Total score of MSPSS		Mean (SD): 5.8 (5.4)	

to assess depression among participants in the present study. The tool consists of 30 items with yes/no answers. The range of total score is from 0 to 30, which is used to classify participants into three groups: normal (0–9 points); mild depression (10–19 points); severe depression (20–30 points) (Yesavage et al., 1983). GDS was translated into Vietnamese language and validated in the context of the country.

Data analysis. Descriptive statistics such as frequency and percentage were used to summarize the personal characteristics and classify levels of depression of participants. Multivariate linear regression model was employed to identify the potential factors associated with the presence of depression among the elderly. In the model, total score of GDS was considered a dependent variable. Predictor variables included participants' characteristics such as socio-demographic characteristics, economic situation, health behavior, health status, stressful life events during the past 12 months

and perceived social support. All categorical predictor variables were converted to a dichotomous format with two levels (0 and 1). An alpha level of 0.05 was considered statistically significant.

Results

General characteristics of the study population

Table 1 describes general characteristics of 110 the older persons who were ethnic minorities in Kontum city. It showed that three-fourths of the sampler were Jarai ethnicity and two-thirds of them were female. Participants aged 60 to 69 years were the majority with mean age of 66.9 (SD: 6.2). 67.3% of them were maintaining marital status; however, only two persons, accounting for 1.8% of respondents, reported that they felt satisfactory about their sex life. 42.7% of the elderly had a religion.

Table 2. Health behavior and health of participants.

Characteristics		Number of participants	Percentage
Drinking behavior	Yes	32	29.1
	No	78	70.9
Smoking status	Yes	33	30.0
	No	77	70.0
Chronic disease	No	23	20.9
	At least 1 disease	87	79.1
Personal history of depression	No	101	91.8
	Yes	9	8.2
Family history of depression	No	100	90.9
	Yes	10	9.1

Educational levels of respondents were low with 84% of them attaining secondary school and below; especially, there were 15.7% of the elderly who were illiterate. Ten percent of the participants were living alone and 40.1% of them were working to earn their living. Nearly half of the interviewee's households were classified as poor or near poor. Most of them (80%) reported having participated in some kind of social activity. More than half of respondents reported that they suffered at least one stressful event in the last 12 months. All participants perceived social support available to them. Sixty-eight respondents (61.8%) self-rated social support resource as being high level.

Health characteristics and behavior of the respondents are presented in Table 2. 29.1% and 30% of them reported their alcohol consumption and smoking, respectively. Most of them got at least one chronic disease. Ten elderly persons (9.1%) stated that their family had some member with depression and nine respondents (8.2%) experienced depression in the past.

Main findings

The mean GDS score for the study sample was 9.3 (SD 3.5) with the scores ranging from 4 to 17. The prevalence of depression according to GDS-30 in the studied elderly population was 25.5%. All of them were classified as mild depression level (Table 3).

Results of the multivariate linear regression analysis were presented in Table 4. The strength of the relationship between the models and the response variables was not high with *R*-squared of 0.39. Age, gender, educational level, chronic diseases, stressful life events in the past 12 months, and family history of depression were associated with depression in ethnic minority elderly. An inverse association was observed between age and depression in the study. As age of the elderly increased by 1 year, their GDS score decreased by 0.14 points. The elderly, who were women, suffered stressful life events in the last 12 months, got chronic diseases and family history

Table 3. Depression among participants.

Depression		Number of participants	Percentage
Classification	No	82	74.5
	Mild depression	28	25.5
Total mean score of GDS (SD)		9.3 (3.5); Range: 4–17	

of depression, were more likely depressed than their counterpart. The GDS score for female was 2.2 points more than that of male. Respondents with chronic diseases or family history of depression got GDS scores of 2.09 points and 2.61 points more than those who were healthy or had no family history of depression, respectively. When the number of stressful events that an older person experienced in the last 12 months increased by 1, the GDS score increased by 1.48 points. Depression was also revealed a relationship with educational level of respondents. The elderly, who attained secondary school education and below, had a GDS score of 1.97 points lower than one of those with higher educational level. The study did not find significant association between depression and any other variables including ethnic group, religion, marital status, living situation, sex life, economic situation, perceived social support, participation in social activities, health behavior, and personal history of depression.

Discussion

Prevalence of depression

The prevalence of depression among studied sample was 25.5% based on 30-GDS and was classified as mild depression level. As mentioned above, the previous studies using different scales to assess depression showed higher rates of depression among the older population in Vietnam (Dao et al., 2018; Giang et al., 2019; Vu et al., 2019). A systematic review reported that GDS was shown to be more sensitive in detecting people at risk for depression therefore the prevalence rate of this disorder in the elderly was found higher in the studies using this tool (Barua et al., 2011; Pilania et al., 2019). Those evidences can imply that prevalence of depression among ethnic minority elderly in the Central highland was lower than that in older adults in Vietnam. The perception of social support available to participants could be a reason for this finding (Table 1). High social support results in improved health and greater quality of life, therefore it could bring overall benefits to the old people (Tengku Mohd et al., 2019). Another explanation could be that community—respective culture of ethnic minorities and many ethnic groups living together for generations in Central highland may have developed a strong sense of ethnic identity among ethnic minority people there, especially in elderly adults—the most respected group in the community. Ethnic identity includes a sense of commitment and belonging to an ethnic

Table 4. Factors affecting depression among elderly ethnic minorities.

Factors	B	SE	p value	95% CI	
Age (years)	-0.14	0.06	0.014	-0.25	-0.03
Sex* (female = 1)	2.20	1.07	0.043	0.07	4.32
Ethnicity* (Bahnar = 1)	0.81	0.78	0.301	-0.74	2.35
Educational level* (secondary school & below = 1)	-1.97	0.78	0.013	-3.52	-0.43
Marital status* (single/divorce/widow = 1)	0.15	0.72	0.841	-1.29	1.58
Religion* (no = 1)	-0.79	0.63	0.214	-2.04	0.46
Living situation* (living with relatives = 1)	1.11	1.25	0.378	-1.38	3.59
Economic classification* (no poor = 1)	-0.42	0.68	0.535	-1.76	0.92
Ways of earning* (self = 1)	0.32	0.71	0.651	-1.09	1.74
Social activity* (yes = 1)	0.32	0.80	0.69	-1.27	1.91
Sex life* (satisfaction = 1)	-1.17	2.32	0.942	-4.78	4.44
Stressful life event (number of events)	1.48	0.50	0.004	0.49	2.48
Total score of MSPSS	0.19	0.35	0.586	-0.50	0.88
Chronic disease* (yes = 1)	2.09	0.83	0.013	0.45	3.74
Personal history of depression* (yes = 1)	2.08	1.15	0.074	-0.20	4.37
Family history of depression* (yes = 1)	2.61	1.15	0.025	0.33	4.89
Smoking status* (yes = 1)	1.60	1.24	0.201	-0.87	4.08
Drinking behavior* (yes = 1)	1.14	0.86	0.186	-0.56	2.84

*Dummy variables with two levels (0 and 1).

group, positive feelings about the group, and behaviors that indicate involvement with the ethnic group. It will be meaningful only when two or more ethnic groups come into prolonged contact (Williams et al., 2012). This was proved as a protective factor against mental health disorders in African America communities in the United States (Bailey et al., 2012). It will be necessary for future studies to measure ethnic identity among ethnic minority elderly in Vietnam in order to strengthen these viewpoints.

In comparison with community-based studies conducted in other developing countries, the wide variation in prevalence rates of depression was found even though they used the same screening tool. Qadir et al. (2014) reported prevalence of depression in elderly of 31.5% in Pakistan. Similarly, this disorder was found to be significantly higher among Indian older adults with range between 31.4% and 39.6% (Buvneshkumar et al., 2018; Ganganapalli et al., 2019; Soni et al., 2016; Zalavadiya et al., 2017). However, our finding was found to be higher than in some studies. For example, a survey in Southern Brazil reported generic depressive disorder of 20.4% (Gulich et al., 2016); a prevalence rate of depression of 16.5% in a large-scale study in Malaysia was showed (Vanoh et al., 2016). These different results may be explained by difference in culture, environmental factors, and characteristics of participants.

Factors associated with depression. Among risk factors, the current study found the higher prevalence of depression among older female adults. The finding is consistent with many previous studies in Vietnam as well as worldwide (Buvneshkumar et al., 2018; Babatsikou et al., 2017; Gullich et al., 2016; Padayachey et al., 2017; Vu et al., 2019). Greater

frequency of stressful events in female elderly due to their higher life expectancy and the change in hormonal level at menopause were common reasons for higher rate of depression among older females as many authors suggested (Babat-sikou et al., 2017; Buvneshkumar et al., 2018; Padayachey et al., 2017). Moreover, the higher risk of depression in elderly women of the study may attribute to women's numerous additional tasks that is caused by cultural characteristics of ethnic minorities in Central Highlands. Nowadays, some ethnic minorities in Central Highland still preserve the basic characteristics of matriarchy in which women play an important role in housework management and men are responsible for communicating with community and society. The oldest female member of a family is the decision-maker for everything in her family. She also participates in many farming activities to support the whole family (Photo Newspapers: Ethnic group and Mountainous areas, 2019). The impact of family-centered burden on depression development among female elderly was also showed by a study of Gullich et al. (2016) in Southern Brazil.

In line with studies in the past, our study found that the higher the number of stressful life events to which participants were exposed, the higher GDS scores they got. The stressors were included in the study such as bereavement, illness or accidents or domestic violence, financial difficulties, interpersonal conflict, unintended job loss, broken marriage and legal problem. These adverse life events are indicated to be risk factors for depression regardless of age; however, older adults are at a greater risk due to the accumulation of particular stressors in their life (Fiske et al., 2009; Hassanzadeh et al., 2017; Pocklington, 2017). The study also found that older adults suffered more number of chronic diseases, they

were more at risk of depression. This result is supported by many studies which reported that there was high risk of depressive disorders among those with physical illness (Dao et al., 2018; Fiske et al., 2009; Hassanzadeh et al., 2017; Kafle et al., 2015; Peltzer and Phaswana-Mafuya, 2013; Pocklington, 2017). It is worth noting that the relationship between depression and chronic disease is particularly complex when they coexist. Chronic illness is a risk factor for depression. It may also mask symptoms of depression in older adults. As a result, the disorder would be recognized late. On the other hand, depressive disorder may complicate course and outcome of chronic diseases among elderly (Chapman and Perry, 2008). Depressive symptoms such as feelings of hopelessness, helplessness and negativity may prevent them from seeking health care services among patients and accordingly, their health status will probably be worse (Chapman and Perry, 2008; Fiske et al., 2009). It is recommended that early detection of depression should be part of effective treatment and management for patients with chronic diseases.

The study also found the higher prevalence of depression among participants with family history of depression compared to their counterpart. Depression tends to be familial although genetic risks have not consistently been shown to be associated with occurrence of depression in late life (Fiske et al., 2009). A case-control study in Malaysia reported that the older adults with a family history of depression had four times risk of developing depression (Salimah et al., 2008). It is suggested that those individuals should be informed of their risk so that they can take preventive action.

The association between age and development of depression was revealed inconsistently among studies worldwide. Our study found that prevalence of depression decreased with the increase in age among participants. Similar findings were reported in the study of Ganganapalli et al. (2019) in India and a review of Chapman and Perry (2008) (Ganganapalli et al., 2019; Chapman and Perry, 2008). Many viewpoints might explain this finding. One is that the life experience of older adults has provided them with psychological strategies and ways to manage stresses related to health. Older adults are more likely than younger adults to resolve problems associated with stressful events, and such resolution has been linked to better adaptation after those events (Fiske et al., 2009). Another is a sense of their usefulness in the family and community (Fiske et al., 2009; Nguyen et al., 2012). The culture of ethnic minorities in Central Highland highly appreciates the role of older adults in community. Each village has a council of village old persons headed by a reputable old man (village patriarch). The village council is responsible for morality, traditions, rituals and law of a village (Ethnic Committee of Kon Tum province, 2019); these control actions of its members. Hence, the important role of ethnic minority elderly in family and community may likely be a protective factor against depression among participants of the study. Unlike our findings, Dao et al. (2018) found depression

increased with age among elderly living in urban areas of Vietnam (Dao et al., 2018). Modern lifestyles are changing traditional Vietnamese families, which is more evident in urban areas. "Skip generation" made interaction between the young and the old in a family to be harder (Tran et al., 2016). Young people didn't value highly opinion of older people in the family and community. This elicited perception of being disrespected in the elderly and therefore it negatively impacted on their psychological health (Nguyen et al., 2012). Surprisingly, despite the higher rates of depression among less educated elderly as many studies indicated (Fiske et al., 2009; Ganganapalli et al., 2019; Qadir et al., 2014; Vanoh et al., 2016), the current study found higher risk of depressive disorder in older people who attained high school and post high-school education compared to those with lower educational level. This is in line with few previous studies (Buvneshkumar et al., 2018; Girma et al., 2016). A survey on ethnic minorities in Central Highland Vietnam reported that educational level of ethnic minority groups is low and the percentage of people drop further as the level of education rises and as a result, opportunities to get a job with professional and technical qualifications are limited (Kafle et al., 2015; UNFPA, 2009). People with high levels of education are likely employed in well-paid jobs or appointed to more socially recognizable positions; however, they may be more at risk of having depression when they are retired because of reduction in income and decline in social interaction.

Our study found no significant association between depression and ethnic group, religion, marital status, living situation, economic condition, ways of earning, sex life, participation in social activity, health behavior, personal history of depression and perceived social support.

A number of limitations should be considered for interpreting the findings of the study. The enrollment of participants from 6 out of 21 communes/wards of Kon Tum city and the small sample size of the study could affect generalization of the results. Moreover, the exclusion of elderly, who were not fluent in Kinh language, could result in selection bias. The risk could lead to an underestimation of the prevalence of depression. In addition, the identification of true effect of factors on depression from a multivariable linear regression model adjusting for many risk factors simultaneously might be limited due to small sample size. Despite these limitations, this is the first study to explore the prevalence of depression among ethnic minority elderly in Vietnam. Some risk factors for depression were identified. The results will contribute important information to profile of depression disorder in older adults in the country and will help health policy makers engaged in planning programs to prevent this psychological health problem in older adults.

Conclusion

The prevalence of depression among ethnic minority elderly is lower than that of general elderly population in

Vietnam. Female, chronic diseases, stressful life events and family history of depression were risks for depression development while older age and attaining secondary school education and below faced lower rate of depression. These findings suggested that it is necessary to raise public awareness of early detection and prevention for depression in elderly. Prevention and intervention strategies should target depression-vulnerable groups. The identified risk factors can help formulate effective public health programs to improve mental health among ethnic minority elderly in Central Highlands of Vietnam.

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Ethical approval statement

The study proposal was approved by the Ethics Committee for Biomedical Research of University of Medicine & Pharmacy, Hue University (No: H2018/238, dated May 25, 2018). In addition, approval for data collection at the sites was obtained from Health Department of Kon Tum province and Elderly Association of Kon Tum city. The interview of study subjects was performed with their verbal permission after they were given adequate information about the study.

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