International Journal of Advanced Culture Technology Vol.6 No.2 9-15 (2018)
DOI https://doi.org /10.17703/IJACT.2018.6.2.9

IJACT 18-2-2

Risk Factors of Depressive Symptoms among Community-Dwelling Elderly

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Abstract

The purpose of this study was to assess risk indicators of depressive symptoms such as demographic, socio-economical domains (age, gender, marital status, education, child, religion, income, health, friendship) and personality domains (neurotic personality, self-esteem and life goal attitude) of community dwelling elderly persons. A total of 300 community-residing elderly participants aged 65+ in a metropolitan city in Korea, were recruited for this interview survey. The interview covered demographic and socio-economic characteristics, and administration of the 20-item Korean Version of CES-D, the 10-item Self-esteem, the 19-item Neuroticism and the 10-itm Goal Instability scale. The prevalence of significant depressive symptoms (CES-D scale >= 21) was 31%. Logistic regression analysis showed high risk for depression was associated with high neuroticism, less intimate friendship, high goa1 instability, and childlessness, respectively in the order of significance. Factors in the personality domains were more strongly associated with depressive symptoms than factors in the socio- economical domains. Both cultural and universal meaning of the findings was discussed with regard to intervention

Keywords: *depression, risk indicators of depressive symptoms, childlessness, intimate friendship, goal instability, neuroticism*

1. Introduction

According to the World Health Organization[1], unipolar depression is the third leading cause of disease burden and it is projected to be the leading cause of disease burden globally by 2030. Depression is a common and serious clinical problem in all age groups, especially among elderly adults. With the growth of the elderly population in the worldwide, elderly depression has been one of the international critical issues. Varying degree of prevalence of depression among elderly has been reported across nations[2]. According to health statistics from the Organization for Economic Cooperation and Development (OECD), 33.5 out of every 100,000 Koreans committed suicide in 2010, marking the highest rate among 34 OECD nations[3] .

It is alarming to note the increase of suicides committed by elderly Koreans. The suicide ratio for those aged over 65 jumped to 77 per 100,000 population in 2009, Elderly suicides on rise in S. Korea: study an over five-fold surge from 14 recorded in 1990, according to Hallym University's Institute of Aging Studies [5].

Manuscript received: : June 15, 2018 / revised: June 20, 2018 / Accepted: June 22, 2018
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Depression is known to be an important factor leading to suicides especially among elderly people[6, 7, 8]. It is reported that around 15-20% of depressive patients commit suicide (Goodwin and Jamison, 1990). Therefore it is imperative to know those risk factors of depressive symptoms. This allows preventive care for those vulnerable to depressive symptoms earlier in their elderly years.

A number of risk factors linking to depression have been identified by previous research. Among the demographic factors, depressive symptoms were more associated with age increase[9, 10, 11), female gender[10, 12]), less education[2,11, 12]), widowhood[2, 8, 11, 8), low economic status [10,11]), and poor health[9, 10, 11]). Perhaps more interesting association for preventive intervention is that depression is found with lack of intimate friendship [11], childlessness [13], low self-esteem [11]) and neuroticism [14]. In order to be prepared for preventive care, researchers and clinicians need to understand the antecedents and accompanying psychological factors of depression.

Population of Korean elderly is growing larger due to increased life expectancy. They no longer enjoy previously revered position and find themselves as a burden to the society. As a consequence, many develop depressive symptoms and some even commit suicides. The present study investigated the prevalence of depressive symptoms in the elderly with main purpose of identifying the risk factors of geriatric depression in a metropolitan area. For this purpose, factors known to be associated with depression, such as self-esteem, neuroticism, goal instability, social support, and demographic factors, were employed for their relative amount of influence on the manifestation of depressive symptoms among community-dwelling elderly.

2. Method

2.1 Paticipants

Participants were 300 elderly volunteers ranging from 65 to 84 years of age. The non-clinical sample was randomly selected from a larger pool of 4,172 elderly people enrolled at a senior health center which was located in a metropolitan city of 1.2 million population in South Korea. The average age was 74.60 (*SD* = 5.04) and 89% was female (265). All respondents were given a brief oral description of the study and its purposes prior to providing informed consent. Before their inclusion in the study, all participants gave voluntary consent for their participation.

2.2 Procedures

All participants individually interviewed by trained interviewers who conducted a structured interview using questionnaire. Prior to the interview, participants were asked to give their informed consent and acknowledged that they were 65 years or older. The interviewer read the questionnaire items to each participant and recorded their answers. The interviews lasted thirty to forty minutes and were conducted in the senior health center. .

2.3 Measures

Depression scale. A Korean translated version of the Center for Epidemiologic Studies Depression (CES-D)[15] scale was used on the four-point response format. The reliability index for internal consistency was .91 in the present study. The total score can vary from 0 to 60, with higher scores indicating a greater number of symptoms.

Self-esteem scale. A Korean translated version of the Rosenberg's global self-esteem scale[16] was used on five-point response format. The reliability index for internal consistency was .85 in the present study.

Goal instability scale. The goal instability scale, developed by Robbins and Patton [17], was translated into Korean by Lee[18]. The scale consisted of ten items on six-point response format. This scale measures the level of confusion about respondent's present and future goals. Total scores range from 10 to 60, and low scores indicate greater goal instability. The reliability index for internal consistency was .85 in the present study.

Neuroticism scale. We took scales for neuroticism out of the Korean version of NEO PI-R [19], which was developed based on the original 5 factor personality scale by Costa and McCrae. Scale consisted of 19 items on 5-point response format. The reliability index for internal consistency was .80 in the present study.

Demographic and socio-economic scales. Participants were asked to provide demographical informations such as age, gender, spouse, children, education level and religion. The participants answered on 5-point scales their subjective evaluation of income level (very poor-very affluent), their health (very poor-very good), and relations with friends (very bad – very good).

2.4. Statistical Analysis

Descriptive statistics such as means and standard deviation were calculated for each variable. Inferential statistics such as chi-square tests and t-tests were computed for group differences and for degree of association. Depending on the setting and the target of investigation various cut-off scores (16~25) of the CES-D were recommended to differentiate depression-prone from normal[20]. Following Cho and Kim[21] who used the cut-off point of 21 to discriminate between a community sample and a clinical sample of Korean, we used 21 as the cut-off between depressed and nondepressed elderly. With this cut-off point, the CES-D had a sensitivity (percentage of clinical depressed cases with a score equal to or above the cut-off point) 95.6% and specificity (percentage of nodepressed case below the cut-off point) 69.5% for Korean, as compared with a structural clinical interview for clinically relevant depression[21]. For the main analysis, logistic regression was employed to see which factors were independently associated with depressive symptoms. For this analysis, all independent variables were dichotomized[1]. Dichotomization of scores was carried out at the median of each variable. SAS for Windows-version 9.3 was used for data analysis.

3. Results

The mean age of the 300 participants was 74.2 years (*SD* = 5.0). Most participants were female, mostly living with spouse, have children, have a religious belief, and have education level less than 6 years (see Table 1).

Table 1. Sample Characteristics and Their Relations with Depression Status

Variable	*N* (%)	Depressed (%)	Nondepressed (%)	χ^2
Gender				$\chi^2(1, N=300)=.50$, *ns*
Male	33 (11.0)	12 (36.4)	21 (63.6)	
Female	267 (89.0)	81 (30.3)	186 (69.7)	
Marital Status				$\chi^2(1, N=300)=3.12$, *ns*
With spouse	183 (61.4)	22 (23.9)	70 (76.1)	
No spouse	117 (38.6)	71 (34.1)	137 (65.9)	
Children				$\chi^2(1, N=298)=3.50$, *ns*
One more Child	270 (90.6)	79 (29.3)	191 (70.7)	
No Child	28 (9.4)	13(46.4)	15 (53.6)	
Current religion				$\chi^2(1, N=300)=1.90$, *ns*
Religion	243 (81.0)	71 (29.2)	172 (70.8)	
No religion	57 (19.0)	22 (38.6)	35 (61.4)	
Education				$\chi^2(1, N=300)=3.12$, *ns*
Less than 6 years	208 (69.3)	71 (34.1)	137 (65.9)	
More than 6 years	92 (30.7)	22 (23.9)	70 (76.1)	
Age(years)				$\chi^2(1, N=300)=5.77$, p<.05
Less than 75 years	160 (53.3)	40 (25.0)	120 (75.0)	
More than 75 years	140 (46.7)	53 (37.9)	87 (62.1)	
Self-rated income				$\chi^2(1, N=297)=21.40$, p<.01
Poor	71 (23.9)	38 (53.5)	33 (46.5)	
Good	226 (76.1)	55 (24.3)	171 (75.7)	
Self-rated health				$\chi^2(1, N=297)=21.26$, p<.01
Poor	124 (41.8)	57 (46.0)	67 (54.0)	
Good	173 (58.3)	36 (20.8)	137 (79.2)	
Self-rated friendship				$\chi^2(1, N=300)=23.67$, p<.01
Poor	62 (20.7)	35 (56.5)	27 (43.6)	
Good	238 (79.3)	58 (24.4)	180 (75.6)	
Goal instability				$\chi^2(1, N=300)=49.30$, p<.01
Low	148 (49.3)	74 (50.0)	74 (50.0)	
High	152 (50.7)	19 (12.50)	133 (87.5)	
Neuroticism				$\chi^2(1, N=300)=66.52$, p<.01
Low	156 (52.0)	81 (51.9)	75 (48.1)	
High	144 (48.0)	12 (8.3)	132 (91.7)	
Self-esteem				$\chi^2(1, N=300)=52.38$, p<.01
Low	139 (46.3)	72 (51.8)	67 (48.2)	
High	161 (53.7)	21 (13.0)	140 (87.0)	

Note: Nondepressed elderly (n = 207), Depressed elderly (n = 93).

The resulting logistic regression model yielded a chi-square goodness of fit that indicated that a good fit to the data [logistic regression χ^2 (189, N = 292) = 190.14, p = .463].

Logistic regression analysis (see Table 2) identified five significant independent predictors of the presence of depressive symptoms: childlessness, high goal Instability, high neuroticism and poor intimate friendship. The odds of having depressive symptoms over no depressive symptoms were 1.98 times higher with childlessness, 1.70 times higher with higher goal instability score, 1.80 times higher with less intimate friendship score and 2.70 times higher with higher neuroticism score.

Table 2. Results of the Logistic Regression Analysis

Variable	Odds ratio	95% Confidence interval	p-value[a]
Age (75 years or more)	1.34	.93-1.91	.11
Female gender	.88	.50-1.42	.64
No spouse	1.16	.80-1.68	.43
Childlessness	1.13	.75-1.72	.54
Without religious belief	1.18	.77-1.80	.43
Self-rated poor income	1.16	1.26-1.68	.43
Self-rated poor health	1.30	.92-1.84	.14
Self-rated poor friendships	1.80	1.23-2.65	<.01
High goal instability	1.70	1.16-2.49	<.01
High neuroticism	2.71	1.82-4.04	<.01
Low self-esteem	1.40	.94-2.03	.07

[a]by chi-square tests

4. Discussion

The current study showed that among the community dwelling elderly those who are without child, with higher goal instability, with less intimate friendship, or with higher neurotic tendency are at greater risk of developing depressive symptoms than their counterparts.

The risk factors disclosed in this study contain both universal and cultural characteristics. It is notable that childlessness is a factor of concern than lacking spouse among this sample. Although the sample size for those childless elderly is low, their risk of developing depressive symptoms is not negligible. In fact, they account for 14.1% of CES-D 21 and 10.6 % is female in the current study. With Chinese sample, a study[13] showed similarly the importance of having descendants. In most study of investigating social support, the primary source of strong social support is family. Having solid family is tantamount to having strong social support. In Korean traditional values, adults are expected to take on the responsibility of caring for their aging parents. Having no child is doubly damaging to the elderly. First, their life security may be in jeopardy. Second, they have failed in succeeding familial lineage by not producing the offspring. It is a big shame for the whole family and the blame usually falls on the married women. Therefore, having children is very important to elderly not only in terms of getting social support but also in terms of self-pride. Culturally important to note is the primary social support comes from the spouse in individualistic culture while it may come from the off-springs in Confucius culture. A future study is needed to directly investigate the cultural factors operating in social support.

The personality trait of neuroticism was shown to be the highest risk factor for depressive symptoms in this study. This result is in accordance with previous studies[22, 23). Neuroticism is a predisposition to experience negative affect, therefore those who are high in neuroticism experience more anxiety, depression, hostility, and self-consciousness[24]. Elderly with neurotic disposition should be primary target of screening for elderly Depression.

The present study showed high goal instability is strongly associated with depressive symptoms. People with high goal instability tend to lack orienting goals and values [25]. This study suggests that goal directiveness is central to adjustment in later life. Growing number of people are forced to retire much earlier than they wish in Korea. About 69.3% of people age 65 or above adult are unemployed[26]. Therefore aiding elderly people to develop life goal and teaching them skills for goal setting in later life can help to alleviate current depression and to protect future depression.

Less intimate friendship is associated with depressive symptoms. This result suggests that the presence of close friends could reduce the distress level of elders. Hence, psychosocial interventions for old adults experiencing depressive symptoms should focus on supporting the elderly people to maintain and enhance their social networks.

This study has few caveats for generalization. Because current study was based on a single sample from a metropolitan city, the findings may not be applicable to general population of elderly in Korea. Future research should attempts to include elderly population from various parts of Korea. Another caveat concerns with the predominant female participants in the current study. Despite that the current results may not be applicable to males, greater proportion of elderly population is females in South Korea. And females are more prone to depression than males. Therefore, the sample characteristics here have its strong point. Thirdly, use of an epidemiologic diagnostic survey instrument, rather than clinician administered diagnostic interview may produce diagnoses that are less accurate and less reliable. However, clinician's diagnosis is very costly and unlikely to get in a research setting. For preventive intervention, questionnaire diagnosis has more merits than drawbacks. Finally, because cross-sectional data were used, it cannot distinguish between effects on onset or maintenance of depression. Therefore, it is not possible to specify any causal relationship the risk factors found and depression.

In conclusion, the current study shows the increased risk of depression with childlessness, less intimate friendship, high goal instability and high neuroticism. Our findings of strong relationship between personal factors and depression indicated that strategies for identifying and tackling high-risk personal factors of depressive symptoms among Korean elderly people are urgently required. Additional research is needed to identify other personal variables that may confer risk for depression among old adults.

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