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Prevalence of depression and its related factors among older adults in Indonesian nursing homes

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Abstract

Background: Depression is one of the most severe mental disorders experienced by older adults worldwide. The prevalence of depression among older adults in nursing homes is three-time higher than in the community. Therefore, knowing the incident rates of depression and its related factors would help provide appropriate intervention and prevention programs in the future.

Objectives: The study aimed to determine the prevalence of depression and compare the difference in depression status according to the sociodemographic characteristic of the older adults in the Indonesian nursing homes.

Methods: A descriptive cross-sectional study design was used in this study, which involved 116 participants selected using convenience sampling from five different general nursing homes in Bandung City, Indonesia. The Short Form (SF) of the Geriatric Depression Scale (GDS) was used to evaluate depression among older adults in nursing homes. The *t*-test and one-way ANOVA were used for data analysis.

Results: Of the total participants, 56.9% had depression, which 7.8% with mild depression, 37.1% with moderate depression, and 12% with severe depression. In addition, there were significant differences in depression according to age, gender, marital status, educational background, ethnicity, disease history, duration of stay, and the visitor frequency among the older adults in nursing homes (p <.001).

Conclusion: A high rate of depression among older adults in Indonesian nursing homes was identified. Therefore, attention to caring for more specific needs, such as the psychosocial needs of older adults in nursing homes, is urgent.

Keywords

depression; nursing homes; older adults; Indonesia

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Background

The aging population has become a trend worldwide due to longer life spans and lower birth rates (Tarakci et al., 2015). Based on predictions by the United Nations, by 2050, there will be more than 400 million population with aged over 80 years old. It is triple that in 2019, 143 million older adults worldwide (United Nations, 2019). The aging adult population in Indonesia has grown exponentially. The number of older adults increased from 18 million people (7.56%) in 2010 to 25.9 million people (9.7%) in 2019 and is expected to continue to rise, wherein 2035 to be 48.2 million people (15.77%) (Indonesian Ministry of Health, 2019).

Older people often encounter several difficulties and face many susceptible biological and psychological. Symptoms of depression are the most common psychological problems for older adults (Helvik et al., 2016). Moreover, seven percent of the world's aging population encountered symptoms of depression (World Health Organization, 2017). In addition, the finding from several previous studies about depression among older adults revealed that the prevalence of depression among older adults living in nursing homes is high (Pramesona & Taneepanichskul, 2018; Santiago & Mattos, 2014). Moreover, according to a study conducted in China, the depression rates among older adults in nursing homes are more than three times higher than those living in the community setting (Sun et al., 2017). In addition, a previous study conducted in Indonesia found that more than 40% of the 181 older adults living in nursing homes experienced depression, of which 31.5% were women and 11% were men (Pramesona & Taneepanichskul, 2018).

Depressed older adults are characterized by low mood, lack of motivation, loss of physical strength, failure to feel pleasure, difficulty sleeping, lack of concentration, feelings of helplessness, hopelessness, and lack of self-worth (National Institute of Mental Health, 2021). Furthermore, the depressive recurrence rate in older adults is very high, and in many cases,

depression is chronic (Ismail et al., 2013). In addition, depression harms older adults' quality of life (Wilson et al., 2008). Moreover, if depression in older adults is not treated, this can make the diagnosis of depression more complicated, and it can be increased mortality or morbidity (Feng et al., 2013).

Despite the prevalence and impact of depression among older adults in nursing homes, many sufferers are not recognized as having depression, and many of them report not receiving adequate care from healthcare professionals (Mitchell et al., 2009). In addition, responsibility for treating mental disorders is usually divided between medical and non-medical health professionals. In this case, nurses probably have more contact with patients than other health professionals. However, many earlier studies reported that nurses' knowledge and skill in the treatment of mental disorders were less than ideal (Bagley et al., 2000; Crosland & Kai, 1998; Gray et al., 1999; Rapp & Davis, 1989; Ross et al., 1994; Thomas & Corney, 1993). In addition, nurses considerably often have difficulty identifying depression accurately. Generally, comprehensive nursing care, such as wound care, dietary modification, and other specific interventions related to elderly diseases provided by nursing homes in Indonesia were minimal. Therefore, nurses need to have knowledge and skills in identifying the potential risk factors of depressive symptoms among older adults in nursing homes.

In Indonesia, studies about depression among older adults in nursing homes have been extensively conducted recently (Gustryanti et al., 2017; Pramesona & Taneepanichskul, 2018). In addition, they found several risk factors significantly associated with depression among older adults living in Indonesian nursing homes, including age, marital status, gender, lack of social support, chronic disease, family history, perceived health status, activities daily living, and unreceived treatment (Gustryanti et al., 2017; Pramesona & Taneepanichskul, 2018). Meanwhile, another study was conducted in other Asia countries. For example, a study in Singapore found that length of stay, history of depression, and pain were correlated to the incidence of depression among older adults in nursing homes (Tiong et al., 2013).

However, the previously published studies in Indonesia did not consider ethnicity as their predicting variable for depression incidents among the older population in the nursing homes (Gustryanti et al., 2017; Pramesona & Taneepanichskul, 2018). A study conducted by Li et al. (2019) in the USA found that different ethnic backgrounds were significantly associated with the prevalence of depressive symptoms among older adult populations living in nursing homes with various ethnic, such as Hispanics, non-Hispanics, blacks, and Asians.

Since Indonesia is a multi-ethnic country, it is necessary for further study about depression among elder adults living in nursing homes to consider ethnicity as the variable of the study. Thus, this recent study evaluated ethnicity as one of the predicting variables that might significantly influence the incidence of depression among older adults at nursing homes in Indonesia. In addition, knowing the incidence rate and associated factors to the incidence of depression in the older adults in institutions can help nurses provide essential information in developing appropriate interventions to help older adults deal with their depression and assist the nursing homes staffs in developing interventions to prevent depression among the residents. Therefore, the study's objective was to determine the prevalence of depression and compare the difference in depression status according to the sociodemographic characteristics of the older adults in nursing homes in Bandung City, Indonesia.

Methods

Study Design

This research employed a descriptive cross-sectional design in five general nursing homes in various sub-districts in Bandung City, West Java, Indonesia.

Samples/Participants

A convenience sampling method was used to select samples in this study. A list of eligible nursing home residents was provided by a nurse manager from each nursing home. The number of the samples in this study was 116 older adults from 159 of the total population. A G* power 3.1 version was used for sample size calculation, with alpha equal to 0.05, power set at 0.8, and an incomplete 10% additional questionnaire (Faul et al., 2007). The inclusion criteria of the sample were: (1) older adults fluent in Bahasa Indonesia, (2) agreed to participate and signed the consent form, (3) age at least 60 years, and (4) must be a permanent resident of the nursing homes in Bandung. The exclusion criteria were (1) care providers, (2) did not sign a consent form after receiving the explanation of this study, and (3) had dementia.

Instruments

Demographic questionnaires were used to record age, gender, educational level, marital status, ethnicity, and chronic diseases. In addition, the Geriatric Depression Scale (GDS), designed by Yesavage et al. (1982), was used to evaluate depression status among older people. The design of the Short Form (SF) of GDS is easier to use because it has a simple format and only needs less than ten minutes to answer all the items, with easy-to-read questions and responses from physical illness and mild to moderate dementia patients with limited attention spans and feel tiredness quickly (Greenberg, 2012). In addition, the GDS short form (SF) has been examined and used mainly with the older population to assess depression in older adults.

This instrument contains 15 questions with five response categories, including somatic concern, decreased effect, cognitive deterioration, loss of future orientation, and lack of self-esteem over the past week (Greenberg, 2012). If the answer shows a score range of 12 to 15 for major depression, a score range of 9 to 11 for moderate depression, then a 5 to 8 score range indicates mild depression, and last, a score from 0 to 4 shows no depression (Gallo et al., 1998). In this study, the Indonesian version of the GDS questionnaire by Himawan et al. (2014) was used, with good reliability and validity (Cronbach's alpha 0.8). Requests for permission to use the questionnaire were obtained from the original authors/developers. The reliability value (Cronbach's alpha) in this study was 0.71. In addition, several studies have also

tested the reliability, with Cronbach's alpha of 0.88 (Gallo et al., 1998; Greenberg, 2012; Himawan et al., 2014).

Data Collection

Data were collected after obtaining ethical approval from the Institutional Review Board (IRB). Study permissions were also obtained from each nursing home, and the schedules for data collection were arranged accordingly based on their activities. The researcher and two trained (studies protocol) research assistants collected the data. The research objective and procedure were clearly and slowly explained to the participants, and each participant was asked to sign an informed consent if they were willing to participate. A face-to-face interview technique using a questionnaire was used to collect the data in this study. Each interview process lasted between 15 to 20 minutes for every older adult in five different nursing homes, following the schedule set by the nursing home manager. The data were carried out from August to September 2019.

Data Analysis

Data were analyzed using statistical computer software (IBM SPSS V. 20). Descriptive statistics, *t*-tests, and ANOVA were used for data analysis.

Ethical Considerations

The IRB Committee of the Social and Welfare Department and the Health Department of Bandung City, Indonesia, approved the study protocols (IRB No. 460/1126-Dinsosnangkis/ PER/2019). All participants have signed an informed consent form prior to data collection. The participants were informed that the information was collected for academic purposes only and would never be used for anything else. The rights of participants were protected, and their confidentiality was carefully maintained. In addition, the participation in this study was voluntary.

Results

Table 1 shows that 71.22 years (*SD* ± 2.868) was the average participant's age, starting from 65 to 76 years. The majority of respondents were female (65.5%). Most of the participants (89.7%) were single (widowers or unmarried), and the majority (67.2%) only finished elementary school or even had no education. More than half of respondents (54.3%) were Sundanese, with most (33.6%) having more than one chronic disease. A high percentage (58.6%) of the respondents stayed at the nursing homes for 3 to 5 years. Further, most of the respondents (35.3%) were visited by visitors less than once a year. Finally, the prevalence of depressive elderly in this study was 56.9%, with a mean score of 7.9 (*SD* ± 3.212), indicating mild depression.

Further, **Table 2** shows a significant difference between depression and the respondent's age, with $F = 12.349$, $p < .001$. It indicates that participants in the 65-68 age group had a lower depression score than the 69-72 age group or more. The level of depression also was found significantly different in other variables, such as gender, education level, and marital status ($t = -2.808$, $p = .006$; $t = -3.532$, $p = .001$; $t = -3.704$, $p = <.001$). Likewise, statistical findings presented a significant difference between depression and the ethnic background of the older adults ($F = 7,292$, $p = .001$). These results revealed that the Batak ethnicity had lower depression scores than other ethnic groups like Jawa and Sunda ethnics. At the same time, the results presented that the variation of having chronically ill in the participants was significantly different ($F = 9.958$, $p = < .001$), and it revealed that the older adults suffering from osteoarthritis had better depression scores than hypertension, diabetes mellitus, stroke, and others.

Table 1 Sociodemographic and depression status of the participants (*N* = 116)

Variables	*n*	%	Mean ± *SD*
Age			71.2 ± 2.868
65-68	16	13.8	
69-72	63	54.3	
73-76	37	31.9	
Sex			
Female	76	65.5	
Male	40	34.5	
Educational level			
Primary & no school	78	67.2	
Senior & junior high school	38	32.8	
Marital status			
Widowed/r or unmarried	104	89.7	
Married	12	10.3	
Ethnicity background			
Batak	11	9.5	
Jawa	42	36.2	
Sunda	63	54.3	
Chronic disease			
Hypertension	21	18.1	
Gout arthritis	18	15.5	
Stroke	15	12.9	
Diabetes mellitus	23	19.8	
Multiple chronic diseases	39	33.6	
Duration of stay			
≤ 2 years	30	25.9	
3-5 years	68	58.6	
> 5 years	18	15.5	
Frequency of visitor			
At least once a month	36	31	
Less than once a year	41	35.3	
At least once a year	29	25	
Never	10	8.6	
Depression status			7.9 ± 3.212
No	50	43.1	
Yes	66	56.9	
Mild depression	9	7.8	
Moderate depression	43	37.1	
Severe depression	14	12	

Meanwhile, the older adults who stayed at the nursing homes for more than five years had higher depression than those who lasted less than five years ($F = 45.353$, $p = <.001$). Finally, there was a significant difference in the frequency of visitors among the older adults ($F = 31.279$, $p < .001$). The comparison indicated that the older adults who had a visitor at least once a month had lower depression than those who had a visitor at least once a year or never visited by a visitor.

Table 2 Differences in depression level according to social-demographic characteristics (*N* = 116)

Variables	*n*	Mean ± *SD*	*F/t*	*p*-value	Post hoc
Age					
(1) 65-68	16	4.69 ± 1.887	12.394	<.001	(1) < (2)
(2) 69-72	63	8.05 ± 3.013			
(3) 73-76	37	9.03 ± 3.149			
Gender					
Female	76	8.49 ± 3.112	-2.808	.006	
Male	40	6.78 ± 3.117			
Educational level					
Primary & no school	78	8.63 ± 3.050	-3.532	.001	
Senior & junior school	38	6.39 ± 3.045			
Marital status					
Widowed /unmarried	104	8.22 ± 3.125	-3.704	<.001	
Married	12	5.08 ± 2.610			
Ethnicity background					
(1) Batak	11	5.27 ± 2.832	7.292	.001	(1) < (2)
(2) Jawa	42	7.31 ± 2.975			
(3) Sunda	63	8.75 ± 3.131			
Chronic disease					
(1) Hypertension	21	8.05 ± 2.729	9.958	<.001	(1) < (2)
(2) Gout arthritis	18	4.28 ± 1.179			
(3) Stroke	15	9.40 ± 1.993			
(4) Diabetes mellitus	23	7.83 ± 3.186			
(5) Multiple chronic diseases	39	8.95. ± 3.332			
Length of stay					
(1) > 5 years	18	10.33 ± 2.521	45.353	<.001	(1) > (2)
(2) 3-5 years	68	8.79 ± 2.685			
(3) ≤ 2 years	30	4.40 ± 1.522			
Visitor frequency					
(1) At least once a month	36	4.89 ± 2.214	31.279	<.001	(1) < (2)
(2) At least once a year	29	8.03 ± 2.847			
(3) Less than once a year	41	9.85 ± 2.319			
(4) Never	10	10.30 ± 1.889			

F = one-way Analysis of Variance (ANOVA), *t* = Sample t-test, *SD* = Standard Deviation, Post hoc = Scheffe test

Discussion

This study aimed to investigate the depression rate and compare differences in depression levels according to the sociodemographic characteristics of older adults. The result of the research found that the incidence of depression was 56.9%. This finding exceeds the estimated figures in the previous study conducted in China, which states that depression among older adults living in nursing homes was 26.6% (Zhao et al., 2018). Moreover, our study also found that the prevalence rate of depression in the older population in nursing homes was higher than in Indonesia's previous community-based older adults study, 42.5% (Pramesona & Taneepanichskul, 2018). The findings of this study indicated that the incidence of depression in older adults is more often in the more aging adult population in the institution than in those living in the society.

Interestingly, when the results of this study are compared with other similar studies from several countries, such as Norway (28.4%) and the USA (26%), our results are still the highest (Iden et al., 2014; Ulbricht et al., 2017). The differences in the study findings might be due to the various screening tools or measurements used in detecting depression in older adults in institutionalized settings. In addition, the difference in the sensitiveness and specificity of different assessment instruments could result in structured differences in the depression diagnosis.

Regarding factors related to depression, this study found that all variables in the sociodemographic characteristic of the participants were significantly associated with depression among institutionalized older adults. These factors were (1) age, (2) gender, (3) education, (4) marital status, (5) ethnicities, (6) chronic disease among the older adults, (7) no or lack of social interaction, and (8) the older adults living more than two years or above. These findings were in line with previous studies in Indonesia or other countries such as Netherlands and Singapore, which found some similarities regarding factors associated with depression in institutionalized older adults (Jongenelis et al., 2004; Tiong et al., 2013). However, these previous studies did not mention gender and ethnicity as the possible risk factors that were significantly correlated to the incidence of depression among the older adults in nursing homes in their studies (Jongenelis et al., 2004; Tiong et al., 2013). The differences between these studies might be due to the study's methodological use and the study's different sample characteristics and size. Therefore, various research methodologies and tools to diagnose depression need to be considered.

In our study, lack of social interaction was the first risk factor significantly related to depression among older people living in nursing homes in Indonesia. This finding was in line with a previous study conducted by Zhao et al. (2018), which found a strong positive correlation between loneliness and geriatric depressive symptoms. Social interaction shapes

older people's social support, affecting the incidence of depressive older adults in nursing homes. In addition, previous studies have found that the limited social interaction of older adults affects their emotional situation. When relatives or friends do not frequently visit the older adults in nursing homes, they often experience loneliness due to a lack of emotional support. The findings suggest that increasing social support may help prevent depressive symptoms among the elderly in nursing homes. Further, when social support was higher, it increased the resilience, and depressive symptoms were weaker (Zhao et al., 2018).

Another factor related to the incidence of depression in the older adults living in institutions was the history of duration of stay. This is because most nursing home institutions do not yet have adequate mental health facilities or sources of health personnel who are incompetent in fulfilling the psychological needs of each occupant (Grabowski et al., 2010). The physicians in the nursing home are often unavailable to make the psychiatric diagnosis, and external yearly mental health condition evaluations are not sufficient to manage the complex depressive syndrome of nursing home residents. Furthermore, because nursing home psychiatrists usually work on a consultation basis, the primary physician's recommendations are not always followed up (Grabowski et al., 2010). As a result, depression that is not detected and does not receive optimal treatment can affect the mental health of older adults and can even reduce the overall quality of life. The consequences will be more significant for the older adults who have lived in nursing homes for more extended periods. This is related to the lack of activities carried out by the older adults while in the orphanage and supported by inadequate health service facilities such as counseling services for their institutional residents who experience psychological problems. Furthermore, loneliness and lack of social interaction can trigger more severe symptoms of depression in these residents (Sadang & Palompon, 2021).

There was also a significant difference in depression according to gender. This study revealed that mostly older female adults experienced more depression than males. This finding was similar to the previous study that found female older adults were dominant in experiencing depression in nursing homes (Grabowski et al., 2010). In addition, an epidemiological study stated that about 81% of studies reported similar results that sex was related to depression in older adults. Indicating that female elderlies were more likely to have depression or more depressive symptoms when compared to male older adults residents (Girgus et al., 2017). There are many possible reasons women are more prone to depression, especially when they are older, such as biological, physical, and psychological changes accompanying development through puberty. Increased levels of sex hormones coordinate the biological changes that occur during puberty. Previous research by Mendle et al. (2010) has found that sex hormone levels alone cause little difference in depressive symptoms during adolescence. On the other hand, it is found that early puberty consistently carries an increased risk of depression for women of older age (Mendle et al., 2010). However, another study stated that the factors related to the incidence of depression in women are very complex, and sometimes the methods used to find these facts are contradictory (Girgus et al., 2017).

Finally, our study found a significant difference in depression according to ethnicity among older adults. This finding is similar to a previous study from the United States, which found that different depressive symptoms among elderly living in nursing homes were significantly related to ethnic diversity, such as Hispanics, non-Hispanics, blacks, and Asians (Li et al., 2019). In addition, this study revealed that Sunda ethnic were more depressed than other ethnic groups, such as Batak or Jawa. Ethnic differences among older adults in nursing homes in Indonesia may influence differences in coping strategies used, and how they express depressive symptoms reflects their culture. Therefore, efforts should be made to improve the overall quality of behavioral health care in nursing homes, such as cultural sensitivity due to its residents' ethnic diversity and cultural background. Additional training for nursing home staff is needed to help them understand cultural differences in coping strategies and how to communicate mood symptoms for early detection of mood disorders and culturally and linguistically appropriate treatment for depressed residents.

Limitations of the Study

This study has some limitations, starting from selecting the sampling method wherein the researcher used an easy sampling technique due to the limited number of samples. In addition, only government-owned nursing homes were selected as research sites. Therefore, these findings may not represent the overall results, especially for the older adult population in the private sector, where residents of private nursing homes mostly have better facilities and more adequate health facilities. Another limitation is that older people with a history of dementia were excluded due to limitations in answering and interpreting each question item correctly. Last, the current study did not investigate several other risk factors, including the history of depression, support, religious activity, coping style, and emotional impairment. Therefore, future research should consider including other essential factors that may trigger the occurrence of depression in older adults in nursing homes. In addition, the older adults with a history of dementia also need to be recruited as participants to get more detailed results regarding the relationship between dementia and depression among the older adults in Indonesia.

Implications of the Study

This study provides new information on the prevalence of depression rates and the differences between factors associated with depression in the elderly in Indonesian institutions. This information is essential for health professionals, especially nurses, in their community nursing programs. Through community nursing, nurses are expected to develop appropriate interventions to deal with depression in the elderly and design strategies for early detection of depression in the older adult population in Indonesian nursing homes based on this study's findings. The strength of this study is to use a measuring instrument for the incidence of depression in older adults using the GDS questionnaire with a high value of validity and reliability. Furthermore, this questionnaire was tested comprehensively to get the value of validity and reliability in multi settings, such as the older adults individually, the older adults in the community, and the older adults living in institutions.

Conclusion

The result of the study revealed a high prevalence of depression in the older adult population in nursing homes in Indonesia. In addition, this study also revealed the difference between characteristics factors of the older adults with the incidence of depression, such as more extended period of stay, lack of social contact, female gender, cultural differences, etc. The findings of this study can be used as basic information in developing strategies to handle the psychological problem faced by older adults, especially in nursing homes. Thus, further investigation related to the depression among more aging populations needs to consider the multi-setting study to enhance more diverse results and find the comparison result between them. The development of appropriate interventions for depressive older adults in nursing homes is urgently needed. The nursing home managers and their staff in Indonesia should be aware of the ethnic diversity of the residents in terms of understanding the way they express stress and depression. Moreover, the existing standards of health care and medical treatment programs in nursing homes need to be evaluated based on the needs of older adults. In addition, health policymakers and actions need to design appropriate social programs and provide good quality care to reduce the mortality and the prevalence of depression and enhance the overall quality of life of institutionalized older adult patients.

Declaration of Conflicting Interest

The authors indicate no potential conflicts of interest in this study.

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Authors' Contributions

All authors have made substantial contributions to the conception or design of the work, the acquisition, analysis, or interpretation of data for the work, and the compilation or significant revision of the work for important intellectual content in this study.

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Data Availability

The datasets generated during and or analyzed during the current study are not publicly available due to ethical restrictions but are available from the corresponding author upon reasonable request.

References

Bagley, H., Cordingley, L., Burns, A., Mozley, C. G., Sutcliffe, C., Challis, D., & Huxley, P. (2000). Recognition of depression by staff in nursing and residential homes. *Journal of Clinical Nursing*, *9*(3), 445-450. https://doi.org/10.1046/j.1365-2702.2000.00390.x

Crosland, A., & Kai, J. (1998). 'They think they can talk to nurses': Practice nurses' views of their roles in caring for mental health problems. *British Journal of General Practice*, *48*(432), 1383-1386.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175-191. https://doi.org/10.3758/BF03193146

Feng, L., Yap, K. B., & Ng, T. P. (2013). Depressive symptoms in older adults with chronic kidney disease: Mortality, quality of life outcomes, and correlates. *The American Journal of Geriatric Psychiatry*, *21*(6), 570-579. https://doi.org/10.1016/j.jagp.2012.12.020

Gallo, J. J., Cooper-Patrick, L., & Lesikar, S. (1998). Depressive symptoms of whites and African Americans aged 60 years and older. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *53*(5), P277-P286. https://doi.org/10.1093/geronb/53B.5.P277

Girgus, J. S., Yang, K., & Ferri, C. V. (2017). The gender difference in depression: Are elderly women at greater risk for depression than elderly men? *Geriatrics*, *2*(4), 35. https://doi.org/10.3390/geriatrics2040035

Grabowski, D. C., Aschbrenner, K. A., Rome, V. F., & Bartels, S. J. (2010). Quality of mental health care for nursing home residents: A literature review. *Medical Care Research and Review*, *67*(6), 627-656.

Gray, R., Parr, A. M., Plummer, S., Sandford, T., Ritter, S., Mundt-Leach, R., Goldberg, D., & Gournay, K. (1999). A national survey of practice nurse involvement in mental health interventions. *Journal of Advanced Nursing*, *30*(4), 901-906. https://doi.org/10.1046/j.1365-2648.1999.01165.x

Greenberg, S. A. (2012). The geriatric depression scale (GDS). *Best Practices in Nursing Care to Older Adults*, *4*(1), 1-2.

Gustryanti, K., Thongpat, S., & Maneerat, S. (2017). Factors related to depression among older people living in Cimahi, West Java Province, Indonesia. *Belitung Nursing Journal*, *3*(1), 14-22. https://doi.org/10.33546/bnj.50

Helvik, A.-S., Corazzini, K., Selbæk, G., Bjørkløf, G. H., Laks, J., Šaltytė Benth, J., Østbye, T., & Engedal, K. (2016). Health-related quality of life in older depressed psychogeriatric patients: One year follow-up. *BMC Geriatrics*, *16*(1), 1-9. https://doi.org/10.1186/s12877-016-0310-6

Himawan, K., Risnawaty, W., & Henny, W. (2014). Effect of reminiscence group therapy on depressive symptoms: A Pilot Study of Nursing Home Older adults Residence in Tangerang, Indonesia. *The Guidance Journal*, *XL11*, 1-17.

Iden, K. R., Engedal, K., Hjorleifsson, S., & Ruths, S. (2014). Prevalence of depression among recently admitted long-term care patients in Norwegian nursing homes: Associations with diagnostic workup and use of antidepressants. *Dementia and Geriatric Cognitive Disorders*, *37*(3-4), 154-162. https://doi.org/10.1159/000355427

Indonesian Ministry of Health. (2019). *Indonesia enters aging population period [in Bahasa]*. https://www.kemkes.go.id/article/view/19070500004/indonesia-masuki-periode-aging-population.html

Ismail, Z., Fischer, C., & McCall, W. V. (2013). What characterizes late-life depression? *Psychiatric Clinics*, *36*(4), 483-496. https://doi.org/10.1016/j.psc.2013.08.010

Jongenelis, K., Pot, A. M., Eisses, A. M. H., Beekman, A. T. F., Kluiter, H., & Ribbe, M. W. (2004). Prevalence and risk indicators of depression in elderly nursing home patients: The AGED study. *Journal of Affective Disorders*, *83*(2-3), 135-142. https://doi.org/10.1016/j.jad.2004.06.001

Li, Y., Cai, X., Harrington, C., Hasselberg, M., Conwell, Y., Cen, X., & Temkin-Greener, H. (2019). Racial and ethnic differences in the prevalence of depressive symptoms among US nursing home residents. *Journal of Aging & Social Policy*, *31*(1), 30-48. https://doi.org/10.1080/08959420.2018.1485394

Mendle, J., Harden, K. P., Brooks-Gunn, J., & Graber, J. A. (2010). Development's tortoise and hare: Pubertal timing, pubertal tempo, and depressive symptoms in boys and girls. *Developmental Psychology*, *46*(5), 1341-1353. https://psycnet.apa.org/doi/10.1037/a0020205

Mitchell, A. J., Vaze, A., & Rao, S. (2009). Clinical diagnosis of depression in primary care: A meta-analysis. *The Lancet*, *374*(9690), 609-619. https://doi.org/10.1016/S0140-6736(09)60879-5

National Institute of Mental Health. (2021). *Depression*. Bethesda, MD: U.S. Government Printing Office. https://www.nimh.nih.gov/health/publications/depression

Pramesona, B. A., & Taneepanichskul, S. (2018). Prevalence and risk factors of depression among Indonesian elderly: A nursing home-based cross-sectional study. *Neurology, Psychiatry and Brain Research*, *30*, 22-27. https://doi.org/10.1016/j.npbr.2018.04.004

Rapp, S. R., & Davis, K. M. (1989). Geriatric depression: Physicians' knowledge, perceptions, and diagnostic practices. *The Gerontologist*, *29*(2), 252-257. https://doi.org/10.1093/geront/29.2.252

Ross, F. M., Bower, P. J., & Sibbald, B. S. (1994). Practice nurses: Characteristics, workload and training needs. *British Journal of General Practice*, *44*(378), 15-18.

Sadang, J. M., & Palompon, D. R. (2021). The development of Need–Threat Internal Resiliency Theory in COVID-19 crisis utilizing deductive axiomatic approach. *Belitung Nursing Journal*, *7*(2), 72-77. https://doi.org/10.33546/bnj.1300

Santiago, L. M., & Mattos, I. E. (2014). Depressive symptoms in institutionalized older adults. *Revista de Saude Publica*, *48*, 216-224. https://doi.org/10.1590/S0034-8910.2014048004965

Sun, Y., Zhang, D., Yang, Y., Wu, M., Xie, H., Zhang, J., Jia, J., & Su, Y. (2017). Social support moderates the effects of self-esteem and depression on quality of life among Chinese rural elderly in nursing homes. *Archives of Psychiatric Nursing*, *31*(2), 197-204.

Tarakci, E., Zenginler, Y., & Kaya Mutlu, E. (2015). Chronic pain, depression symptoms and daily living independency level among geriatrics in nursing home. *The Journal of the Turkish Society of Algology*, *27*(1), 35-41. https://doi.org/10.5505/agri.2015.14238

Thomas, R. V. R., & Corney, R. H. (1993). The role of the practice nurse in mental health: A survey. *Journal of Mental Health*, *2*(1), 65-72. https://doi.org/10.3109/09638239309016955

Tiong, W. W., Yap, P., Huat Koh, G. C., Phoon Fong, N., & Luo, N. (2013). Prevalence and risk factors of depression in the elderly nursing home residents in Singapore. *Aging & Mental Health*, *17*(6), 724-731. https://doi.org/10.1080/13607863.2013.775638

Ulbricht, C. M., Rothschild, A. J., Hunnicutt, J. N., & Lapane, K. L. (2017). Depression and cognitive impairment among newly admitted nursing home residents in the USA. *International Journal of Geriatric Psychiatry*, *32*(11), 1172-1181. https://doi.org/10.1002/gps.4723

United Nations. (2019). *Department of economics and social affairs populations dynamic: World population perspective 2019*. https://population.un.org/wpp/

Wilson, K., Mottram, P. G., & Vassilas, C. (2008). Psychotherapeutic treatments for older depressed people. *Cochrane Database of Systematic Reviews*(1), CD004853. https://doi.org/10.1002/14651858.CD004853.pub2

World Health Organization. (2017). *Mental health of older adults*. https://www.who.int/en/news-room/fact-sheets/detail/mental-health-of-older-adults

Yesavage, J. A., Brink, T. L., Rose, T. L., Lum, O., Huang, V., Adey, M., & Leirer, V. O. (1982). Development and validation of a geriatric depression screening scale: A preliminary report. *Journal of Psychiatric Research*, *17*(1), 37-49. https://doi.org/10.1016/0022-3956(82)90033-4

Zhao, X., Zhang, D., Wu, M., Yang, Y., Xie, H., Li, Y., Jia, J., & Su, Y. (2018). Loneliness and depression symptoms among the elderly in nursing homes: A moderated mediation model of resilience and social support. *Psychiatry Research*, *268*, 143-151. https://doi.org/10.1016/j.psychres.2018.07.011

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