

ORIGINAL ARTICLE

The Differences in Depression Levels in Elderly Living at Tresna Werdha Nursing Home and at Home

Laili Nur Hidayati, Ervina Kusuma Wardani

Nursing Science Study Program, Faculty of Medicine and Health Science, Universitas Muhammadiyah Yogyakarta, 55183 Yogyakarta, Indonesia

ABSTRACT

Introduction: Elderly is a person who has reached 60 years and above. The older the elderly are, the more they experience physical or mental illness. Depression is one of the mental disorders frequently experienced by the elderly. Depression is a condition in which someone feels excessively sad, or excessively disappointed, which is categorized as a mental health problem. Thus, this project aims to find out whether there are differences in depression levels in the elderly living in Tresna Werdha Nursing Home and at home. **Materials and methods:** It applied a quantitative method with a descriptive comparative cross-sectional method. The research instrument used a geriatric depression scale questionnaire with 15 questions. The number samples were 150 respondents with a purposive sampling technique. The data were analyzed with the Mann-Whitney test. **Results:** The results of the Mann-Whitney test show that the p-value = 0.000, meaning that there is a significant difference in depression levels in the elderly living in BPSTW and at home. **Conclusion:** There are differences in the depression levels of the elderly living in nursing homes and at home. The results of this study can be used by nurses to pay more attention to psychological needs and prevent depression among the elderly.

Malaysian Journal of Medicine and Health Sciences (2025) 21(SUPP3): 98-104. doi:10.47836/mjmhs.21.s3.15

Keywords: Depression, Elderly, Geriatric depression scale, Mental Health Problem, Nursing Home

Corresponding Author:

Laili Nur Hidayati, Ns.,Sp.Kepl
Email: lailinurhidayati@umy.ac.id
Tel : +6285643075590

INTRODUCTION

The elderly are a stage in the life journey experienced by everyone. Elderly people experience physical problems and psychological problems as they age. Commonly, physical or body functional decline is known as a degenerative process. The elderly generally look increasingly wrinkled, have reduced hearing and vision functions, feel tired quickly, have whiter and thinner hair, usually cannot move as fast as young adults, and often get sick as the elderly's immune system has decreased. Psychologically, the elderly often forget things and are not very enthusiastic about activities or interactions with other people, feeling lonely and bored (1).

Law No. 13 of 1998 concerning the welfare of the elderly states that the elderly are a person who has reached the age of 60 and above. The elderly who are older than 60 years old are usually still able to carry out activities and produce goods or services, if the elderly are unable to carry out some activities, then they will depend more on other people in their life. Elderly people experiencing

physical and psychosocial disorders are typically no longer effective in carrying out their work and social roles (2). WHO. (3) suggests several classifications of elderly, namely: 1) Elderly, is the age group of 60-74 years. 2) Senile (old elderly) is the age group of 75-90 years. 3) Long-livers (very old elderly), an age group over 90 years old (4). The prevalence of depression mood was 11,49% in elderly (5).

In the elderly population in Indonesia, there are 8 provinces that have entered the old population structure, namely the percentage of the elderly population is greater than ten percent. The eight provinces are the Special Province of Yogyakarta (15.52%), North Sulawesi (12.74%), Lampung (10.22%), Central Java (14.17%), Bali (12.71%), South Sulawesi (11.24 %), East Java (14.53 %), and West Java (10.18 %). If seen from gender, the ratio of female to male is higher for the female elderly which is 52.32% to 47.68%. Based on the place of living, there are more elderly people in urban areas than elderly people in rural areas, namely 53.75% to 46.25% (6). Thus, the highest prevalence of elderly in Indonesia is in Yogyakarta with a result of 15.52%.

The following population is those experiencing depression in Indonesia. In the adolescent age range (15 – 24 years), it shows a prevalence of 6.2%. At the

age of 65-74 years, it is 8.0% while among 55-64 years, it is 6.5%. As age increases, depression also increases. The highest increase occurs in those aged 75 years, and above which is 8.9% (7).

One of the biggest causes of depression in the world is physical illness that attacks the elderly and neglect by family and marital status. Most of the elderly in Indonesia experience depression, which is the condition when a person feels sad and disappointed when the person experiences a change, loss, or failure resulting in a person being unable to adapt (8). Elderly depression is a psychiatric disorder and mental health problem that often occurs among the elderly. The signs and symptoms of depression include loss of interest, loss of excitement, reduced energy leading to fatigue, decreased activity, lack of concentration and attention, and disturbed sleep patterns (9). The impacts of depression on the elderly, among others, are many elderly people commit suicide, experience sleep disorders, have disruption at work, suffer eating disorders, and experience destructive behavior such as drug and alcohol use (10).

In Indonesia, health services for the elderly are good, but if the elderly are constrained by costs, many elderly people will not come to the hospital. Based on the author's research, many elderly people are undergoing long-term care such as in community health centers or hospitals. Elderly people who live at home mostly live with their families until the end of their lives, but it is possible for elderly people who live alone to live alone until the end of their lives. Based on the author's research, all the elderly who live in nursing homes are not alone with their parents and there are only around 10 elderly people who live at home who do not live with their families, only husband and wife.

In Indonesia, every family cares about the elderly and is assisted by the state to improve the welfare of the elderly, one of which is health services, ease of obtaining facilities and infrastructure in general, ease of legal services, social protection. Apart from the physical services provided by the government to the elderly, the government also provides religious and psychological services to the elderly. The children are responsible for taking care of the elderly people and the elderly who are depressed need more care from family members. Therefore, children must be willing to look after and care for their parents as taught by Islam. Islamic religious teachings state that children should love and care for their parents as they love and care for their children as stated in the Qur'an, surah Al-Ankabut verse 8 which means:

"And we oblige humans (to do) good to their parents. But, if both urge you to associate Me with what you have no knowledge of, then do not obey them. To Me, you will all return, and then I will inform you of what you have used to do".

Elderly people have some problems such as psychological problems. Thus, dhikr can be done to overcome some psychological problems. It is mentioned in the Qur'an, Surah Al-Ahzab verses 41-42 which means:

"O believers, always remember Allah often. And glorify Him morning and evening".

The study aims to analyze and find out if there are differences in the depression levels in the elderly living in Tresna Werdha Nursing Home and at home so that follow-up can be carried out to overcome the depression levels among the elderly.

MATERIALS AND METHODS

This study applied quantitative methods with a descriptive comparative design by comparing two unpaired groups using a cross-sectional method. The sample for this research was 75 elderly living at Nursing home Yogyakarta and 75 elderly living at home. The sampling technique used was purposive sampling. This study's nursing home is a state-owned establishment. This study utilized the Geriatric Depression Scale questionnaire with 15 questions. This research has received ethical approval from the Health Research Ethics Committee with No. 048/EC-KEPK FKIK UMY/I/2023.

This study used the Geriatric Depression Scale (GDS) questionnaire. GDS is an instrument for measuring a person's level of depression, GDS was created by Yesavage & Brink (11). The GDS has 30 questions, but this is a lot and was further developed into 15 questions which are used to detect depression in the elderly. The 15-question GDS has a classification of 4 categories, namely 0-4 normal, 5-8 mild depression, 9-11 moderate depression and 12-15 severe depression. In this study, researchers used the Geriatric Depression Scale questionnaire to measure the level of depression in the elderly.

The results of univariate analysis to distribute the demographic characteristics of the elderly consist of age, gender, education level, marital status, and comorbidities. Bivariate analysis was carried out by testing the depression levels in elderly people living in Nursing home and at home. Before that, a data normality test was carried out by applying the Kolmogorov-Smirnov test. The normality results obtained were $\text{sig} < 0.05$ so the data were not normally distributed, and then the data were tested using the Mann-Whitney Test.

RESULTS

Based on the Table 1, most of the respondents aged 60-69 are 44% of the elderly in Nursing home and 69.3% of the elderly living at home. Most of the gender is women with 72% of the elderly living at Nursing home and 73.3% of the elderly living at home. The highest

level of education for the elderly is elementary school with 50.7% of the elderly living at Nursing home and 45.3% of the elderly living at home. The marriage status of the elderly is mostly widows/widowers at Nursing home, namely 34.7%. Most elderly living at home are married, namely 64%. Most of the elderly who live at Nursing home have comorbidities with a total of 53.3% and the elderly who live at home mostly do not have comorbidities, namely 52%.

Table I: The Description of Respondent Characteristics

	Nursing home		At home	
	Frequen- cy (n)	Percent- age (%)	Frequen- cy (n)	Percent- age (%)
Age				
60-69	33	44%	52	69.3%
70-79	32	42.7%	23	30.7%
80-89	10	13.3%	-	-
Total	75	100%	75	100%
Mean	70.5		65.9	
Gender				
Woman	54	72%	55	73.3%
Man	21	28%	20	26.7%
Total	75	100%	75	100%
Education				
Not Attending School	17	22.7%	29	38.7%
Elementary School	38	50.7%	34	45.3%
Junior High School	8	10.7%	8	10.7%
Senior High School	9	12.7%	1	1.3%
Higher Education	3	4%	3	4%
Total	75	100%	75	100%
Status				
Married	25	33.3%	48	64%
Widow/ widower	26	34.7%	21	28%
Not married	24	32%	6	8%
Total	75	100%	75	100%
Concomitant Diseases				
No disease	35	46.7 %	39	52 %
With disease	40	53.3 %	36	48 %
Total	75	100%	75	100%

Based on the Table II, most of the elderly who live at Nursing home experience mild depression with a total of 38.7%, and the elderly who live at home mostly do not experience depression as much as 89.3%.

Table II: The Depression Levels in the Elderly

	Nursing home (n: 75)		At home (n: 75)	
	n	Percentage	n	Percentage
Depression Rate				
Normal	26	34.7 %	67	89.3 %
Mild Depression	29	38.7 %	6	8 %
Moderate Depression	16	21.3 %	1	1.3 %
Severe Depression	4	5.3 %	1	1.3 %
Total	75	100%	75	100%

Normality test

After obtaining the results of univariate analysis, the data were analyzed using the Kolmogorov-Smirnov test because there were more than 50 samples. The data analysis obtained a p-value <0.05 which indicated that the data distribution was not normal. The results of the analysis of the data normality test obtained p = 0.000, namely the value of p <0.05, so it was concluded that

the data distribution was not normal. Therefore, it was continued with a non-parametric test using the Mann-Whitney test.

Table III shows the results of the analysis of depression levels with a result of 0.000. These results are stated <0.05 so that there are differences in the depression levels in the elderly living at Nursing home and at home.

Table III: The Analysis of Depression Levels

	Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
GDS	885,000	-7,301	0.000

DISCUSSION

The respondent characteristics

The elderly's characteristics based on age at Nursing home and home are at least 60 years old. The average age of the elderly at Nursing home is 70 years old and 60 years old for the elderly who live at home. The elderly are older individuals who are 60 years old (12). As they get older, more elderly experience depression; therefore, mental health demands increase (13). As age increases and the elderly population increases, the elderly experience stressful living conditions during their lifetime, negatively affecting the physical health and mental health of the elderly, so that many elderly people experience mental disorders, one of which is depression, this statement according to (14). The level of depression increases as people get older. Many elderly start complaining about physical problems, decreasing memory, weight loss, and loneliness. Therefore, as they get older, many experience changes that can lead to depression.

Based on gender, there are more women than men in this research. The research at Nursing home found that many elderly women experienced mild depression. Meanwhile, several elderly women living at home experienced mild depression. This research is in line with the research of Lee et al. (15) stating that female elderly are more likely to experience depression. Women experience depression at a higher rate than men due to epidemiological and psychosocial factors because women are more vulnerable to social losses in terms of lower social roles compared to men, according to this statement (16). Depression in women occurs more often than in men because emotional disorders and anxiety disorders in women occur more often, according to this statement (17). Research according to Yang et al., (18) shows that depression in women is greater than in men because of different brain volume or capacity, in men the brain volume capacity is greater than in women. Based on the researcher's analysis of the results obtained, depression in women is higher than in men because of the smaller brain capacity of women and the high level of emotional disturbance in women. The education level of the elderly varies from attaining no education to university. Most elderly people living in Nursing home have elementary school education with

a total of 38 people. Similarly, most elderlies living at home also have an elementary school education with a total of 34 people. Based on the research conducted by Kim et al. (19), the level of education affects elderly depression. Therefore, the higher a person's level of education, the lower the level of depression, and the lower the level of education, the higher the level of depression. The higher the level of education, the lower the level of depression because higher education can maintain household income, according to this statement (20). Education is the main influencing factor that shapes mental and physical health, someone with low education is more likely to have symptoms of depression (21). In line with this research, many of the elderly people studied have a low level of education. This happens because education in Indonesia in the past was still low; therefore, there are still many elderly people who have not had adequate education. These elderly people can read even though they have not gone to school because they have attended education for reading and writing. Many elderly people living in Nursing home who have a low level of education experience depression.

Many elderly people in this research are widows/widowers and married. At Nursing home, there are 26 widows/widowers while 48 married elderlies are living at home. Marital status greatly affects depression in the elderly because those who live alone can feel lonely making them feel useless which leads to depression. Based on the results of research conducted by Sok et al., (22), elderly people who have a partner are more likely to experience depression than elderly people who do not have a partner because elderly people who have a partner are usually one of them who has been hospitalized for a long time, resulting in depression. The research conducted by Buckman et al. (23) found that people who are not married or single have more depression rates than people who are married or married for 3-4 months. Furthermore, the research conducted by Seddigh et al. (24) stated that individuals who do not have a partner experience more depression because they feel lonely and don't have anyone to communicate with. Marital status can influence the level of depression, someone who still has a partner has a lower level of depression than someone whose husband or wife has left, according to this statement (25). Based on the researcher's analysis, most of the elderly who live in Nursing home or live at home and unmarried elderly have a high prevalence of depression compared to married ones because they do not have a place to share and no one to communicate with.

Forty (40) elderly people living in Nursing home have comorbidities. Meanwhile, there are more elderly people living at home who do not have comorbidities, namely 39 people. Comorbidities that are experienced by the elderly can lead to depression because they affect the condition of the body which can affect their daily

life. This research is in line with the research conducted by Etxebarria et al. (26) stating that a person who has a chronic disease has a higher average level of stress, anxiety, and depression than someone who does not have a chronic disease because chronic disease can also affect a person's psychological condition. Physical illness has a close relationship with depression because physical problems can affect limitations in carrying out 54 daily activities, according to this statement (27). In women and men who have chronic illnesses it can affect the level of depression because chronic illnesses can affect a person's quality of life, according to this statement (28). Therefore, comorbidities suffered by the elderly can affect their quality of life and can cause anxiety about their condition because the average elderly individual thinks about whether the disease can be cured or not, which can affect their psychological condition and cause depression.

The elderly living at Nursing home most often experience mild depression at 38.7%, and the elderly living at home most often do not experience depression or are borderline normal at 89%. The level of depression experienced in the elderly varies from mild depression to moderate depression and severe depression.

The elderly who experience depression have decreased interest in activities, have excessive sadness, and feel useless. This is consistent with the signs and symptoms of depression, namely anhedonia or decreased interest or pleasure in all activities (29).

For elderly people who experience depression, one of the signs and symptoms is sleep disorders such as insomnia, narcolepsy, breathing problems during sleep, and anxiety (30). Depression in elderly people can also cause malnutrition due to loss of appetite and decreased food intake resulting in weight loss; therefore, it is necessary to detect depression early to get immediate follow-up (31). The elderly who experience depression usually have mood disorders, a history of violence, and abandonment, so they experience loneliness making them want to commit suicide. Suicide is the result of severe depression as stated by Melhem et al. (32).

Based on the GDS interpretation, a score of 0-4 is considered normal, a score of 5-8 is considered mild depression, a score of 9-11 is considered moderate depression and a score of 12-15 indicates severe depression (33). Based on the researcher's analysis, mild depression occurs in someone who experiences signs and symptoms of mood disorders that are not too severe. Meanwhile, moderate depression in someone occurs when someone feels they have lost interest in activities and there is an eating disorder but not too severe. Severe depression occurs in someone if the signs and symptoms have been felt for a long time and are excessive which makes those suffering from it endanger themselves.

The differences in the level of depression in the elderly living at nursing home and home

The results of this research show that the GDS-15 score at Nursing home Yogyakarta is higher than the GDS-15 score at Gendeng Hamlet. With the results that have been processed using Mann-Whitney U with a score of 0.000 which is stated as <0.05 , it is stated that there is a difference in the level of depression in the elderly living at Nursing home and home.

In the research of Gómez et al. (34), depression often occurs in elderly people aged 60 years old and over because the mental, physical, and mental burdens borne by them increase. Being old is experienced by everyone and cannot be avoided and is also a closing period in the age of a person's life span where a person has gone through an earlier period, namely youth (35).

Reaching old age, on the one hand, usually brings a sense of satisfaction, fulfillment, and understanding of the meaning of one's life. However, on the other hand, it can be a source of physical illness and mental illness that leads to dissatisfaction or depression. These changes are caused by limitations in independent living, reduced physical activity, weakening the sense of security, and the ability to make their own decisions so many elderly people experience depression (36).

Many elderly people who live in Nursing home experience depression due to limited activities, and being far from their families, so they cannot communicate with the outside world, and this makes the elderly in Nursing home lonely. Moreover, most of the elderly in Nursing home do not have families, so many experience depression (37). The elderly who live at home experience lower depression because they are usually with their family and receive social support, as well as more care from family members starting from physical, spiritual, and mental care (24).

The seniors who live in Nursing home have more rules set because they live in institutions, so they do not do things carelessly. Meanwhile, the elderly people who live at home have no rules. Therefore, thinking about the rules they must obey at Nursing home makes the level of depression in the elderly greater in Nursing home than that of the elderly living at home.

The elderly living in Nursing home usually share their rooms. Daily conflicts or fights can take place which cause them to become stressed. Whereas the elderly who live at home have no conflicts with friends, only sometimes conflicts with family, which can be handled properly. Thus, the elderly who live in Nursing home have a higher level of depression compared to the elderly who live at home.

The level of depression in the seniors living in Nursing home is higher than that of the elderly living at home

because they do not live with their families, so there is a lack of support and care from their families. Meanwhile, the elderly people living at home live with their families, so they can communicate with their families and people around them and receive more support and care.

CONCLUSION

Most of the elderly are female, and the education level of the elderly is mostly elementary school. For marital status, the elderly are mostly widows/widowers at Nursing home while those living at home are mostly still married. The seniors who are at Nursing home have more comorbidities compared to the seniors living at home. The level of depression of the seniors in Nursing home is mild depression while those living at home do not experience depression or are normal. Based on the overall research results, it can be concluded that there is a significant difference between the depression rates of the elderly living in Nursing home and at home with $p = 0.000$ ($p < 0.05$).

ACKNOWLEDGEMENT

The authors would like to thank Universitas Muhammadiyah Yogyakarta for its financial contribution to this research. We would also like to thank the respondents in Nursing home Abiyoso and Budiluhur Yogyakarta who participated in this study.

REFERENCES

1. Akbar M., Nulhaqim, S.A., Deliarnoor, N.A., & Resnawaty, R. Undang-Undang No.13 Tahun 1998 Tentang Kesejahteraan Sosial Lanjut Usia: Stagnasi atau Revisi. *Journal of Public Administration and Local Governance*. 2023; Vol 7(2):250-260. <http://dx.doi.org/10.31002/jpalg.v7i2.7965>
2. Putri D. Hubungan Fungsi Kognitif Dengan Kualitas Hidup Lansia. *JIP*. 30Aug.2021 [cited 27Mar.2024];2(4):1147-52. Available from: <https://stp-mataram.e-journal.id/JIP/article/view/835>.
3. World Health Organization. Mental Health of older adults. 2021. Available from: <https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults>
4. Tristanto A. Dukungan Kesehatan Jiwa Dan Psikososial (DKJPS) Dalam Pelayanan Sosial Lanjut Usia Pada Masa Pandemi Covid-19. *Sosio Informa*, 6 (2), 205–222. <http://dx.doi.org/10.33007/inf.v6i2.2348>
5. Chomchoei C, Apidechkul T, Keawdounlek V, Wongfu C, Khunthason S, Kullawong N, Tamornpark R, Upala P, Yeemard F. Prevalence of and factors associated with depression among hill tribe individuals aged 30 years and over in Thailand. *Heliyon*. 2020 Jun 23;6(6):e04273. doi: 10.1016/j.heliyon.2020.e04273. PMID: 32613129; PMCID: PMC7322052.

6. Badan Pusat Statistik Indonesia. Statistik Penduduk Lanjut Usia 2023. 29 Desember 2023 [Diakses pada 19 Januari 2024]. Diakses dari <https://www.bps.go.id/id/publication/2023/12/29/5d308763ac29278dd5860fad/statistics-of-aging-population-2023.html>.
7. Badan Penelitian dan Pengembangan Kesehatan, - *Laporan Nasional Rikesdas 2018*. Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan, Jakarta. Available from: <https://repository.badankebijakan.kemkes.go.id/id/eprint/3514>
8. Hadi, Indriono, et al. "Gangguan Depresi Mayor (Mayor Depressive Disorder) Mini Review." *Health Information*, vol. 9, no. 1, 1 Jun. 2017, pp. 25-40, doi:10.36990/hijp.v9i1.102.
9. Kristanto, B., & Agustina, R. F. (2018). Hubungan Dukungan Keluarga Dengan Tingkat Depresi Pada Lansia. *Kosala : Jurnal Ilmu Kesehatan*, 6(1). <https://doi.org/10.37831/jik.v6i1.142>
10. Syarif, Dulhadi. "Mengenal Depresi Mental, Resiko Yang Ditimbulkan Dan Cara Penanggulannya." *Jurnal Al-Hikmah: Jurnal Dakwah* [Online], 7.1 (2013): 29-38. Web. 18 Jan. 2024; <https://doi.org/10.24260/al-hikmah.v7i1.51.g46> .
11. Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Adey M, Leirer VO. Development and validation of a geriatric depression screening scale: a preliminary report. *Journal of psychiatric research*. 1982 Jan 1;17(1):37-49
12. Kemenkes. Peraturan Menteri Kesehatan Republik Indonesia. 2019;2–3. Available from: <https://peraturan.bpk.go.id/Details/113057/permenkes-no-25-tahun-2016>
13. Corrêa ML, Carpena MX, Meucci RD, Neiva-Silva L. Depression in the elderly of a rural region in Southern Brazil. *Depressão em idosos de uma região rural do Sul do Brasil*. *Cien Saude Colet*. 2020;25(6):2083-2092. doi:10.1590/1413-81232020256.18392018 .
14. Gallardo-Peralta LP, Rodríguez-Blázquez C, Ayala-García A, Forjaz MJ. Multi-ethnic validation of 15-item Geriatric Depression Scale in Chile. *Psicol Reflex Crit*. 2020 May 19;33(1):7. doi: 10.1186/s41155-020-00146-9. PMID: 32430560; PMCID: PMC7237627.
15. Lee JW, Shin W-K, Kim Y (2020) Impact of sex and marital status on the prevalence of perceived depression in association with food insecurity. *PLoS ONE* 15(6): e0234105. <https://doi.org/10.1371/journal.pone.0234105> .
16. Basta M, Micheli K, Simos P, Zaganas I, Panagiotakis S, Koutra K et al. Frequency and risk factors associated with depression in elderly visiting Primary Health Care (PHC) settings: Findings from the Cretan Aging Cohort. *Journal of Affective Disorders Reports*. 2021 Apr;4:100109. doi: 10.1016/j.jadr.2021.100109.
17. Serpytis P, Navickas P, Lukaviciute L, et al. Gender-Based Differences in Anxiety and Depression Following Acute Myocardial Infarction. *Arq Bras Cardiol*. 2018;111(5):676-683. doi:10.5935/abc.20180161.
18. Yang X, Peng Z, Ma X, et al. Sex differences in the clinical characteristics and brain gray matter volume alterations in unmedicated patients with major depressive disorder. *Sci Rep*. 2017;7(1):2515. Published 2017 May 30. doi:10.1038/s41598-017-02828-4.
19. Kim S, Cho S, Morgan MR. Neighborhood and Depressive Symptoms in Older Adults Living in Rural and Urban Regions in South Korea. *Healthcare (Basel)*. 2023;11(4):476. Published 2023 Feb 7. doi:10.3390/healthcare11040476 .
20. Wiesmann D, Goldsmith R, Shimony T, Nitsan L, Keinan-Boker L, Shohat T. Food Insecurity in Israeli Elderly is Associated with Sociodemographic Characteristics, Disability, and Depression: Policy Implications. *Current Developments in Nutrition*. 2023 Feb;7(2):100006. doi: 10.1016/j.cdnut.2022.100006.
21. Xin Y, Ren X. Social Capital as a Mediator through the Effect of Education on Depression and Obesity among the Elderly in China. *Int J Environ Res Public Health*. 2020 Jun 4;17(11):3977. doi: 10.3390/ijerph17113977. PMID: 32512694; PMCID: PMC7312359.
22. Sok SR, Cheon BK, Gu MK, Kim OS. Comparisons of Health Promoting Behavior, Depression, and Life Satisfaction Between Older Adults in Rural Areas in South Korea Living in Group Homes and at Home. *J Nurs Res*. 2019 Jun;27(3):e21. doi: 10.1097/JNR.0000000000000290. PMID: 30289790; PMCID: PMC6553957.
23. Buckman JEJ, Saunders R, Stott J, Arundell LL, O'Driscoll C, Davies MR, Eley TC, Hollon SD, Kendrick T, Ambler G, Cohen ZD, Watkins E, Gilbody S, Wiles N, Kessler D, Richards D, Brabyn S, Littlewood E, DeRubeis RJ, Lewis G, Pilling S. Role of age, gender and marital status in prognosis for adults with depression: An individual patient data meta-analysis. *Epidemiol Psychiatr Sci*. 2021 Jun 4;30:e42. doi: 10.1017/S2045796021000342. PMID: 34085616; PMCID: PMC7610920.
24. Seddigh M, Hazrati M, Jokar M, Mansouri A, Bazrafshan MR, Rasti M, Kavi E. A Comparative Study of Perceived Social Support and Depression among Elderly Members of Senior Day Centers, Elderly Residents in Nursing Homes, and Elderly Living at Home. *Iran J Nurs Midwifery Res*. 2020 Feb 24;25(2):160-165. doi: 10.4103/ijnmr.ijnmr_109_18. PMID: 32195163; PMCID: PMC7055191.
25. Hsu M-Y, Huang S-C, Liu P-L, Yeung K-T, Wang Y-M, Yang H-J. The Interaction between Exercise and Marital Status on Depression: A Cross-Sectional Study of the Taiwan Biobank. *International Journal of Environmental Research and Public*

- Health*. 2022; 19(3):1876. <https://doi.org/10.3390/ijerph19031876>
26. Ozamiz-Etxebarria N, Dosil-Santamaria M, Picaza-Gorrochategui M, Idoiaga-Mondragon N. Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. *Cad Saude Publica*. 2020 Apr 30;36(4):e00054020. English, Spanish. doi: 10.1590/0102-311X00054020. PMID: 32374806.
 27. Tegeler C, Beyer AK, Hoppmann F, Ludwig V, Kessler EM. Current state of research on psychotherapy for home-living vulnerable older adults with depression. *Z Gerontol Geriatr*. 2020 Dec;53(8):721-727. doi: 10.1007/s00391-020-01805-3. Epub 2020 Nov 13. PMID: 33185718; PMCID: PMC7661801.
 28. Tena, A. R., SanMartín, M. I. fernandez, Royo, J. M., Casacas, R., Psicodép, G., & Herrera, M. F. Quality of life in people with depression and physical comorbidity from a gender perspective. *Atencion Primaria*. 2021;53(2) <https://doi.org/10.1111/ijn.13157> .
 29. Huflich A, Michenthaler P, Kasper S, Lanzenberger R. Circuit Mechanisms of Reward, Anhedonia, and Depression. *Int J Neuropsychopharmacol*. 2019 Feb 1;22(2):105-118. doi: 10.1093/ijnp/pyy081. PMID: 30239748; PMCID: PMC6368373.
 30. Fang H, Tu S, Sheng J, Shao A. Depression in sleep disturbance: A review on a bidirectional relationship, mechanisms and treatment. *J Cell Mol Med*. 2019 Apr;23(4):2324-2332. doi: 10.1111/jcmm.14170. Epub 2019 Feb 7. PMID: 30734486; PMCID: PMC6433686.
 31. Lozada TA, Carrasco PG, Codina AF. Impact on the risk of malnutrition and depression of a clinical trial with nutritional educational intervention in non-institutionalized elderly subjects receiving a telecare service in Terrassa (Spain). *Nutr Hosp*. 2021;38(2):260–6 doi:10.20960/nh.03269.
 32. Melhem NM, Porta G, Oquendo MA, Zelazny J, Keilp JG, Iyengar S, Burke A, Birmaher B, Stanley B, Mann JJ, Brent DA. Severity and Variability of Depression Symptoms Predicting Suicide Attempt in High-Risk Individuals. *JAMA Psychiatry*. 2019 Jun 1;76(6):603-613. doi: 10.1001/jamapsychiatry.2018.4513. PMID: 30810713; PMCID: PMC6551844.
 33. Mgbeojedo UG, Akosile CO, Ezugwu JC, Okoye EC, John JN, Ani KU, Okezue OC. Cross-cultural adaptation and validation of the 15-item Geriatric Depression Scale (GDS-15) into Igbo language: a validation study. *Health Qual Life Outcomes*. 2022 Feb 5;20(1):22. doi: 10.1186/s12955-022-01928-8. PMID: 35123486; PMCID: PMC8818214.
 34. Hernández Gómez Mercedes A, Fernández Domínguez M Josi, Blanco Ramos Manuel A, Alves Pérez María Teresa, Fernández Domínguez M Jesús, Souto Ramos Ana I et al . Depresión y sobrecarga en el cuidado de personas mayores. *Rev. Esp. Salud Publica [Internet]*. 2019 [citado 2024 Jan 18] ; 93: e201908038. Disponible en: http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1135-57272019000100089&lng=es. Epub 07-Sep-2020.
 35. Hastutik S, Nurrohmah A. Gambaran Tingkat Depresi Pada Lansia Di Masa Pandemi Covid-19. *Cendekia Med J Stikes Al-Ma`arif Baturaja*. 2021;4(1):6–18 <https://doi.org/10.32584/JIKK.V4I1.911> .
 36. Traczyk J, Dębiec-Bąk A, Skrzek A, Stefańska M. Assessment of the Psychophysical Sphere and Functional Status of Women Aged 75-90 Living Alone and in Nursing Homes. *Int J Environ Res Public Health*. 2021 Aug 27;18(17):9028. doi: 10.3390/ijerph18179028. PMID: 34501617; PMCID: PMC8431546.
 37. Gao L, Yang J, Liu J, Xin T, Liu Y. Activities of Daily Living and Depression in Chinese Elderly of Nursing Homes: A Mediation Analysis. *Psychol Res Behav Manag*. 2023;16:29-38 <https://doi.org/10.2147/PRBM.S394787> .