Indonesian Journal of Global Health Research
Volume 7 Number 1, February 2025
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

DIFFERENCES IN MENTAL HEALTH BASED ON AGE AND GENDER OF THE ELDERLY IN SOCIAL SHELTERS

Farsida*, Syahrizal Mahara, Umi Sjarqiah, Tri Ariguntar Wikanningtyas, Rahmini Shabariah
Universitas Muhammadiyah Jakarta, Jl. K.H. Ahmad Dahlan, Cireundeu, Ciputat Timur, Tangerang Selatan, Banten 15419, Indonesia
*farsi@umj.ac.id

ABSTRACT
Mental health in older adults is shaped by physical and social environments, life experiences, and aging-related challenges like declining capacity, reduced functionality, and psychological stress. The 2019 Global Health Estimates (GHE) reports mental disorders account for 10.6% of elderly disability, with 14% of those aged 60 and over affected, primarily by depression and anxiety. Objective: This study aims to examine the differences in mental health based on age and gender among the elderly in social shelters. Methods: A cross-sectional study was conducted at the social shelter, in September-October 2023. A sample of 80 elderly individuals was selected using purposive sampling. Data were collected through interviews using a questionnaire with the DASS 21 (Depression Anxiety Stress Scales) instrument. Data analysis was performed using chi-square tests. Results: Most had normal mental health: depression (43.8%), anxiety (61.2%), and stress (76.2%). Gender correlated with anxiety ($p<0.001$) but not depression or stress, while age showed no significant relationships. Conclusion: Most elderly in the shelter had normal mental health, with gender linked to anxiety and age unrelated to depression, anxiety, or stress. These findings emphasize the importance of considering gender factors in efforts to improve mental health among the elderly.

Keywords: anxiety; depression; elderly; mental health; stress

How to cite (in APA style)
Farsida, F., Mahara, S., Sjarqiah, U., Wikanningtyas, T. A., & Shabariah, R. (2025). Differences in Mental Health Based on Age and Gender of the Elderly in Social Shelters. Indonesian Journal of Global Health Research, 7(1), 1153-1160. https://doi.org/10.37287/ijghr.v7i1.5342.

INTRODUCTION

The phenomenon of an aging population has brought about such extraordinary changes and implications that it is considered one of the most significant social transformations of the 21st century. Countries around the world are being urged to formulate policies to address the impacts of an aging society, ensuring not only physical health but also guaranteed psychological well-being (Bengtsson & Scott, 2010).Every country is facing an increase in both the number and proportion of elderly populations. The WHO estimates that by 2030, one in six people worldwide will be aged 60 or older. The number of elderly individuals is projected to rise from 1 billion in 2020 to 1.4 billion by 2050, with the global population aged 60 and above doubling to 2.1 billion. Additionally, the number of individuals aged 80 and above is expected to triple during the period from 2020 to 2050, reaching 426 million (WHO, 2024a).

Globally, approximately 500 million elderly individuals with an average age of 60 are estimated to experience depression. In Indonesia, according to data from the Non-Communicable Disease Information Center, the prevalence of depression among the elderly reaches 11.6%, which impacts decreased concentration and the emergence of suicidal ideation (Kemenkes Rl, 2012).Almost every country in the world will experience a significant increase in the population aged 60 and above between 2015 and 2030. This increase is expected to be particularly pronounced in less developed regions. For example, Latin America and the Caribbean are projected to experience an increase of more than 70% in the number of elderly

individuals over the next 15 years (United Nations et al., 2015).

The March 2023 Susenas data shows that 11.75% of the population consists of elderly individuals, with a projected elderly dependency ratio of 17.08. This means that every 100 productive-age individuals (aged 15-59 years) support approximately 17 elderly individuals. There are more elderly women than men (52.82% compared to 47.72%), and more elderly individuals live in urban areas than in rural areas (55.35% compared to 44.65%). Of the elderly population, 63.59% are categorized as young elderly (60-69 years), 27.76% as middle-aged elderly (70-79 years), and 8.65% as old elderly (80 years and above). Yogyakarta has the highest proportion of elderly individuals (16.69%), followed by East Java and Central Java (Badan Pusat Statistik, 2023).As people age, they are more likely to experience physical, physiological, mental, spiritual, economic, and social issues. A fundamental problem among the elderly is health issues caused by the gradual decline of bodily functions, leading to tissue or organ damage (Culberson et al., 2023; Dziechciaż & Filip, 2014).

According to the 2018 Basic Health Research, the most common health issues among the elderly are non-communicable diseases, including high blood pressure (hypertension), joint inflammation (osteoarthritis), diabetes mellitus, heart disease, stroke, chronic kidney failure, and cancer. These issues can result in the inability of elderly individuals to perform daily activities and meet their own needs, requiring long-term care (Kemenkes RI, 2019).Approximately 14% of adults over the age of 60 live with mental disorders. According to the 2019 Global Health Estimates (GHE), these conditions account for 10.6% of total disability (in disability-adjusted life years, DALYs) among the elderly. The most common mental health conditions are depression and anxiety. The 2019 GHE indicates that globally, about a quarter of suicide deaths (27.2%) occur among individuals aged 60 and above. Mental health conditions among the elderly are often underrecognized and undertreated, with stigma surrounding these conditions discouraging individuals from seeking help (WHO, 2023). The 2018 Basic Health Research in Indonesia reports that the highest prevalence of depression in the country is found among individuals aged >75 years, at 8.9% (Kemenkes RI, 2019).

According to research by Cao and Rammohan (2016), age, gender, and urban or rural residence are aspects that can contribute to depression. Elderly women are more likely to experience depression than elderly men due to emotional factors and a lack of optimal coping abilities. Furthermore, elderly individuals with low education levels are more vulnerable to depression (Popy & Widagdo, 2018).Gender is an important factor in mental health, influencing the incidence, clinical manifestations, and treatment outcomes. Common mental disorders such as depression and anxiety are more prevalent in women than men. However, the gender disparity in prevalence decreases among the elderly compared to young adults. The reason for this decline is unclear, but the risk increases for women over the age of 65 (Nair et al., 2021).Research on depression and its associated factors among the elderly population in Indonesia remains limited, with some studies involving only small samples. Given the rising trend and high burden of disease, further research on depression in Indonesia is crucial. This study aims to examine the differences in mental health based on age and gender among elderly residents in social care institutions.

METHOD

This descriptive study with a cross-sectional approach was conducted at the Tresna Werdha Budi Mulia 1 Social Institution in Cipayung, East Jakarta, from September to October 2023. The study population consisted of all elderly residents living in the social institution, totaling

240 individuals. The sample was selected using purposive sampling with Slovin's formula, resulting in a sample size of 80 individuals who met the inclusion criteria (no communication disorders, registered as residents of the institution, willing to participate as respondents, and able to complete the questionnaire) and exclusion criteria (having communication disorders, suffering from severe illnesses, and refusing to participate as respondents).

The independent variables in this study were the age and gender of the elderly, while the dependent variable was mental health. The research instrument used was a questionnaire that included questions about the elderly's age, gender, and mental health, utilizing the DASS 21 (Depression Anxiety Stress Scales) instrument to measure levels of depression, anxiety, and stress. The research instrument utilized a questionnaire adapted from a previous study, which demonstrated satisfactory reliability. The Cronbach's alpha values for each dimension were as follows: depression ($\alpha = 0.86$), anxiety ($\alpha = 0.81$), stress ($\alpha = 0.70$), and the overall scale ($\alpha = 0.91$) (Oei et al., 2013). Data collection in this study involved both primary and secondary data using questionnaires, which were administered directly to the elderly through interviews conducted by a trained team. Data analysis employed bivariate analysis with the chi-square test to examine the relationship between age, gender, and the mental health of the elderly. This study received ethical approval from the Health Research Ethics Committee of the Faculty of Medicine and Health, Universitas Muhammadiyah Jakarta, with approval number 218/PE/KE/FKK-UMJ/XI/2023.

RESULT

Table 1 shows that the majority of respondents were aged 60-74 years (categorized as Elderly), totaling 63 respondents (78.8%), while 17 respondents (21.2%) were aged 75-90 years (categorized as Old Elderly). In terms of gender, 45 respondents (56.3%) were female, while 35 respondents (43.8%) were male. Regarding the mental health of the elderly, the majority were in the normal depression category (43.8%), although there were still elderly individuals in the severe depression category at 6.3%, and very severe depression at 5.0%. For anxiety levels, the majority of respondents had normal anxiety levels (61.2%), although some elderly individuals fell into the severe anxiety category at 8.8% and very severe anxiety at 11.3%. As for stress levels, most elderly individuals were in the normal stress category (76.2%), although a small proportion were in the severe stress category at 3.8%.

Table 1.
Characteristics of the elderly (n= 80)

Characteristics	f	%
Age		
Elderly (60-74 years)	63	78.8
Old Elderly (75-90 years)	17	21.2
Gender		
Male	35	43.8
Female	45	56.2
Mental Health		
Depression		
Normal 0-4	35	43.8
Mild 5-6	14	17.5
Moderate 7-10	22	27.5
Severe 11-13	5	6.2
Very Severe >14	4	5.0
Anxiety		
Normal 0-3	49	61.2
Mild 4-5	13	16.2
Moderate 6-7	2	2.5
Severe 8-9	7	8.8
Very Severe >10	9	11.3
Stress		

Normal 0-7	61	76.2
Mild 8-9	9	11.2
Moderate 10-12	7	8.8
Severe 16	3	3.8

Table 2 shows that the majority of elderly respondents experienced abnormal depression (61.9%), while the majority of old elderly respondents experienced normal depression (64.7%). However, this indicates that age is not significantly associated with depression levels in the elderly (p=0.050). Among elderly individuals, both males and females mostly experienced abnormal depression, with proportions of 51.4% and 60.0%, respectively. Based on the bivariate analysis using the chi-square test, there was no significant association between gender and depression levels in the elderly (p=0.443).

Table 2.
The relationship between age and gender with depression in the elderly

Characteristic	Depression		p-value	OR (CI 95%)
	Abnormal f(%)	Normal f(%)		
Age			0.050	2.979 (0.975-9.105)
Elderly	39(61.9)	24(38.1)		
Old Elderly	6(35.3)	11(64.7)		
Gender			0.443	0.706 (0.289-1.722)
Male	18(51.4)	17(48.6)		
Female	27(60.0)	18(40.0)		

Table 3 shows that the majority of respondents in the elderly and old elderly categories experienced normal anxiety, with proportions of 61.9% and 58.8%, respectively. This indicates that age is not significantly associated with anxiety levels in the elderly (p=0.817). Most elderly males experienced normal anxiety (82.9%), whereas the majority of elderly females experienced abnormal anxiety (55.6%). Based on bivariate analysis using the chi-square test, there was a significant association between gender and anxiety levels in the elderly (p<0.001; AOR=0.166; 95% CI= 0.057-0.477). These results indicate that elderly females are 0.16 times more likely to experience anxiety compared to elderly males.

Table 3.
The relationship between age and gender with anxiety in the elderly

Characteristic	Anxiety		p-value	OR (CI 95%)
	Abnormal f(%)	Normal f(%)		
Age			0.817	0.879 (0.295-2.619)
Elderly	24(38.1)	39(61.9)		
Old Elderly	7(41.2)	10(58.8)		
Gender			<0.001*	0.166 (0.057-0.477)
Male	6(17.1)	29(82.9)		
Female	25(55.6)	20(44.4)		

Table 4 shows that the majority of respondents in the elderly and old elderly categories experienced normal stress, with proportions of 73.0% and 88.2%, respectively. However, this indicates that age is not significantly associated with stress levels in the elderly (p=0.191). Among elderly males and females, the majority experienced normal stress, with proportions of 74.3% and 77.8%, respectively. Based on the bivariate analysis using the chi-square test, there was no significant association between gender and stress levels in the elderly (p=0.716).

Table 4.
The relationship between age and gender with stress in the elderly

Characteristic	Stress		p-value	OR (CI 95%)
	Abnormal	Normal		

	f(%)	f(%)		
Age			0.191	2.772 (0.573-13.414)
Elderly	17(27.0)	46(73.0)		
Old Elderly	2(11.8)	15(88.2)		
Gender			0.716	1.212 (0.431-3.406)
Male	9(25.7)	26(74.3)		
Female	10(22.2)	35(77.8)		

DISCUSSION

This study aims to determine the relationship between mental health (depression, anxiety, and stress) based on age and gender among the elderly in social care facilities. The results showed that most respondents were aged 60-74 years, categorized as elderly, with females dominating the study population. The levels of depression, anxiety, and stress among the elderly were predominantly within the normal range.Previous studies found that the majority of elderly individuals were aged 60-74 years, male, and their depression levels were within normal limits (Livana et al., 2018). This aligns with research conducted in a nursing home in Bandung City, which showed that elderly individuals aged 60-74 years and female dominated the study population. However, the study in Bandung found that most elderly experienced mild depression, differing from the findings of this study, which observed that the majority of elderly had normal depression levels (Mumulati et al., 2020).The prevalence of anxiety levels in this study aligns with research conducted in Wedani Village, Cerme, Gresik, which found that 56.0% of elderly individuals did not experience anxiety (Rindayati et al., 2020). In contrast, previous research found that most elderly individuals experienced severe anxiety, accounting for 42.5% (Sani et al., 2022). This discrepancy may be attributed to differences in the research instruments used.

The stress levels in this study also differ from the findings of research conducted at the Elderly Social Assistance Center, which found that most elderly individuals experienced mild physical and psychological stress (Kaunang et al., 2019).This study found that most elderly respondents experienced abnormal depression, predominantly among females. However, there was no significant relationship between age and gender with the level of depression among the elderly.Depression tends to increase with age due to longer life expectancy, heightened social and psychological pressures, and the rising prevalence of chronic diseases associated with aging. However, research conducted in urban areas of Indonesia found no significant relationship between age and depression levels among the elderly (Idris & Hasri, 2023). This aligns with previous studies that found that elderly individuals aged 60-65 years were more likely to experience depression. According to that research, as age increases, morbidity rises, functional status declines, and exposure to various risk factors and life experiences grows, affecting the psychological well-being of the elderly and increasing their risk of depression (Sari, 2020).

Older women are more vulnerable to mental health issues, elder abuse, and a lower quality of sexual life (Nair et al., 2021). This study is also consistent with findings by Sutinah and Maulani (2017), which showed that depression prevalence was higher among elderly women, reaching 78.6%. This is attributed to factors such as loss, living alone, and weak social support. Additionally, women are thought to seek medical treatment more often, leading to higher rates of diagnosed depression. Women are also more frequently exposed to environmental stressors and have a lower threshold for stressors compared to men.Gender is an important factor in mental health, with differences in the incidence, clinical manifestations, and treatment outcomes. Common mental disorders such as depression and anxiety are more prevalent among women than men. However, gender differences in prevalence diminish among older adults compared to younger adults. This decline is unclear, but the risk of

common mental disorders remains high for women over 65 across countries (Nair et al., 2021).Our study also found that the majority of both elderly and older elderly categories had normal anxiety levels, indicating no significant relationship between age and anxiety levels among the elderly.

This aligns with previous findings that anxiety disorders are less prevalent among older adults (aged 60 and above) compared to younger adults (aged 18-59) (Flint et al., 2010). Other research also showed that age is not significantly associated with anxiety levels among the elderly (Welzel et al., 2019).Female elderly individuals experience higher levels of abnormal anxiety compared to their male counterparts. This indicates that gender is associated with anxiety levels in the elderly (p=0.001, AOR=0.166, 95% CI: 0.057-0.477), with females being 0.166 times more likely to experience anxiety than males.This study aligns with research conducted by Purwiyanti and Hansari (2022) at the UPT Pelayanan Tresna Werdha Batoro Katong Ponorogo, which found that 71.0% of elderly women experienced anxiety. According to the elderly respondents, their anxiety was caused by feelings of loneliness due to the loss of family members.Previous studies also indicate that women are more likely to experience anxiety disorders than men. This research found that gender plays a significant role in the epidemiology of anxiety disorders (McLean et al., 2011). Other studies have also revealed that women are at least twice as likely to suffer from anxiety disorders compared to men, regardless of age (Canuto et al., 2018).

Anxiety issues in the elderly reduce their quality of life, disrupting daily activities, and making them more vulnerable to illness due to a weakened immune system. It can worsen existing conditions and increase the risk of new diseases. If untreated, anxiety in the elderly can lead to worsened health, physical symptoms can intensify, and in some cases, may even lead to death (Annisa & Ifdil, 2016; Rindayati et al., 2020; Sani et al., 2022). Anxiety is one of the most common mental disorders in the United States, affecting approximately 40 million adults aged 18 and older, or about 18.1% of the population annually. Women are twice as likely to experience anxiety compared to men. Additionally, according to the WHO, 1 in 13 people worldwide suffers from anxiety (WHO, 2024b).In Indonesia, the 2013 Riskesdas data recorded that about 14 million people aged 15 and above, or about 6% of the total population, experience emotional mental disorders, including symptoms of depression and anxiety. This number increased in 2018, with a prevalence of 9.8% among people aged 15 and above (Kemenkes RI, 2019; Kemenkes Rl, 2013).In this study, the stress levels in the elderly based on age showed that individuals aged 60-74 experienced more stress compared to those aged 75 and older. However, there was no significant relationship between age and stress levels in the elderly. Based on gender, there were no differences in stress levels between males and females, indicating no association between gender and stress levels in the elderly.

Several studies have shown that older adults are better at handling acute stress compared to younger individuals. A survey conducted at the University of Michigan in 2021 during the COVID-19 pandemic found that two-thirds of adults aged 50-80 in the US had excellent mental health, and they reported that their mental health was just as good as it was 20 years ago (Malani et al., 2021).According to one study, elderly individuals can be highly vulnerable to the health impacts of chronic stress. Stress responses in the brain cause the release of cortisol to quickly respond to perceived threats. However, elevated cortisol levels in the elderly can also increase stress, impair cognitive performance, and negatively affect brain structures related to memory, such as the hippocampus (Lavretsky & Newhouse, 2012). Other research has found that chronic stress leading to high cortisol levels can cause increased cholesterol, triglycerides, blood sugar, and blood pressure, which are risk factors for heart disease (University of Rochester Medical Center, 2020).

CONCLUSION

The mental health of the elderly at Panti Sosial Tresna Werdha Budi Mulia 1 is mostly categorized as normal for depression, anxiety, and stress, although some experience mental disorders at varying levels of severity. Gender is found to be associated with anxiety levels, but not with depression and stress levels. Age does not show any association with depression, anxiety, or stress levels in the elderly.

REFERENCES

Annisa, D. F., & Ifdil, I. (2016). Konsep Kecemasan (Anxiety) pada Lanjut Usia (Lansia). Konselor, 5(2), 93–99. https://doi.org/10.24036/02016526480-0-00

Badan Pusat Statistik. (2023). Statistik Penduduk Lanjut Usia. In Badan Pusat Statistik (Vol. 20). Badan Pusat Statistik.

Bengtsson, T., & Scott, K. (2010). The Ageing Population. In Demographic Research Monographs. https://doi.org/10.1007/978-3-642-12612-3_2

Canuto, A., Weber, K., Baertschi, M., Andreas, S., Volkert, J., Dehoust, M. C., Sehner, S., Suling, A., Wegscheider, K., Ausín, B., Crawford, M. J., Da Ronch, C., Grassi, L., Hershkovitz, Y., Muñoz, M., Quirk, A., Rotenstein, O., Santos-Olmo, A. B., Shalev, A., … Härter, M. (2018). Anxiety Disorders in Old Age: Psychiatric Comorbidities, Quality of Life, and Prevalence According to Age, Gender, and Country. The American Journal of Geriatric Psychiatry, 26(2), 174–185. https://doi.org/https://doi.org/10.1016/j.jagp.2017.08.015

Culberson, J. W., Kopel, J., Sehar, U., & Reddy, P. H. (2023). Urgent needs of caregiving in ageing populations with Alzheimer's disease and other chronic conditions: Support our loved ones. Ageing Research Reviews, 90, 102001. https://doi.org/https://doi.org/10.1016/j.arr.2023.102001

Dziechciaż, M., & Filip, R. (2014). Biological psychological and social determinants of old age: Bio-psycho-social aspects of human aging. Annals of Agricultural and Environmental Medicine, 21(4), 835–838. https://doi.org/10.5604/12321966.1129943

Flint, A. J., Peasley-Miklus, C., Papademetriou, E., Meyers, B. S., Mulsant, B. H., Rothschild, A. J., & Whyte, E. M. (2010). Effect of age on the frequency of anxiety disorders in major depression with psychotic features. The American Journal of Geriatric Psychiatry, 18(5), 404–412. https://doi.org/10.1097/jgp.0b013e3181c294ac

Idris, H., & Hasri, S. N. (2023). Factors Associated with the Symptom of Depression among Elderly in Indonesian Urban Areas. Jurnal Psikologi, 50(1), 45–64. https://doi.org/10.22146/jpsi.72406

Kaunang, V. D., Buanasari, A., & Kallo, V. (2019). Gambaran Tingkat Stres Pada Lansia. E-Jurnal Keperawatan (e-Kp), 7(2), 2–7. https://doi.org/10.35790/jkp.v7i2.24475

Kemenkes RI. (2019). Laporan Nasional Riskesdas 2018. Badan Penelitian dan Pengembangan Kesehatan.

Kemenkes Rl. (2012). Data dan Informasi Kesehatan Penyakit Tidak Menular. Buletin Jendela Data Dan Informasi Kesehatan.

Kemenkes Rl. (2013). Riset Kesehatan Dasar (RISKESDAS) 2013.

Lavretsky, H., & Newhouse, P. A. (2012). Stress, inflammation, and aging. The American Journal of Geriatric Psychiatry, 20(9), 729–733. https://doi.org/10.1097/JGP.0b013e31826573cf

Livana, Susanti, Y., Darwati, L. E., & Anggraeni, R. (2018). Gambaran Tingkat Depresi Lansia. Jurnal Keperawatan Dan Pemikiran Ilmiah, 4(4), 80–93.

Malani, P., Kullgren, J., Solway, E., Gerlach, L., Singer, D., & Kirch, M. (2021). Mental Health Among Older Adults Before and During the COVID-19 Pandemic. In National Poll on Healthy Aging: University of Michigan (Issue May).

McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. Journal of Psychiatric Research, 45(8), 1027–1035. https://doi.org/10.1016/j.jpsychires.2011.03.006

Mumulati, S. B., Niman, S., & Indriarini, M. Y. (2020). Hubungan pendidikan, usia, jenis kelamin, status pernikahan dan lama tinggal di panti werdha dengan kejadian depresi pada lansia. Jurnal Keperawatan Jiwa, 8(3), 329–336.

Nair, S., Sawant, N., Thippeswamy, H., & Desai, G. (2021). Gender Issues in the Care of Elderly: A Narrative Review. Indian Journal of Psychological Medicine, 43(Supplement 5), S48–S52. https://doi.org/10.1177/02537176211021530

Oei, T. P. S., Sawang, S., Goh, Y. W., & Mukhtar, F. (2013). Using the Depression Anxiety Stress Scale 21 (DASS-21) across cultures. International Journal of Psychology : Journal International de Psychologie, 48(6), 1018–1029. https://doi.org/10.1080/00207594.2012.755535

Popy, & Widagdo, G. (2018). Faktor-faktor yang berhubungan dengan depresi pada lansia di panti Tresna Wredha Budi Mulia 02 Cengkareng Jakarta Barat tahun 2018. Universitas Muhammadiyah Jakarta.

Purwiyanti, R. E., & Hansari, M. R. (2022). Overview of Anxiety in the Elderly at UPT Tresna Werdha Batoro Katong Ponorogo Services. Journal for Quality in Public Health, 6(1), 221–228. https://doi.org/10.30994/jqph.v6i1.397

Rindayati, R., Nasir, A., & Astriani, Y. (2020). Gambaran Kejadian dan Tingkat Kecemasan pada Lanjut Usia. Jurnal Kesehatan Vokasional, 5(2), 95–101. https://doi.org/10.22146/jkesvo.53948

Sani, F. N., Belo, A. M. A., Susanti, Y., & Ulkhasanah, M. E. (2022). The Relationship of Anxiety Level with Quality of Life In Elderly. Proceedings of the International Conference on Nursing and Health Sciences, 3(1), 223–228. https://doi.org/10.37287/picnhs.v3i1.1151

Sari, L. A. (2020). The depression status in the elderly living with family. Riset Informasi Kesehatan, 9(2), 154–162. https://doi.org/10.30644/rik.v9i2.415

Sutinah, & Maulani. (2017). Hubungan pendidikan, jenis kelamin dan status perkawinan dengan depresi pada lansia. Journal Endurance, 2(2), 209–216. https://doi.org/10.22216/jen.v2i2.1931

United Nations, Department of Economic and Social Affairs, & Population Division. (2015). World Population Ageing 2015. In United Nations. United Nations. https://doi.org/10.1136/ejhpharm-2013-000436.195

University of Rochester Medical Center. (2020). Stress Can Increase Your Risk for Heart Disease. https://www.urmc.rochester.edu/encyclopedia/content?ContentTypeID=1&ContentID=2171

Welzel, F. D., Stein, J., Röhr, S., Fuchs, A., Pentzek, M., Mösch, E., Bickel, H., Weyerer, S., Werle, J., Wiese, B., Oey, A., Hajek, A., König, H.-H., Heser, K., Keineidam, L., van den Bussche, H., van der Leeden, C., Maier, W., Scherer, M., … Riedel-Heller, S. G. (2019). Prevalence of Anxiety Symptoms and Their Association With Loss Experience in a Large Cohort Sample of the Oldest-Old. Results of the AgeCoDe/AgeQualiDe Study. Frontiers in Psychiatry, 10(285), 1–10. https://doi.org/10.3389/fpsyt.2019.00285

WHO. (2023). Mental health of older adults. World Health Organization. https://www.who.int/news-room/fact-sheets--/---detail/mental-health-of-older-adults

WHO. (2024a). Ageing and health. World Health Organization. https://www.who.int/news-room/fact-sheets/detail/ageing-and-health

WHO. (2024b). World health statistics 2024: monitoring health for the SDGs, Sustainable Development Goals. World Health Organization.