



Comparison of the Rate of Depression in Early and Late Elderly Women with Diabetes Mellitus

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Abstract: Elderly people with Diabetes Mellitus (DM) have a greater risk of experiencing depression compared to the elderly who do not suffer from DM. The Ministry of Health divides the elderly into two categories based on age, namely the early elderly (46-55 years old) and the late elderly (56-65 years). Objective: to analyze the comparison of depression levels in early and late elderly women with DM. An analytic observational design with a cross-sectional approach. The sample in this study were 33 elderly (15 early elderly and 18 late elderly) with DM in two health centers, namely Bontobangun health center and Tanete health center, Bulukumba district. The level of depression was measured by the Depression Anxiety Stress Scales 21 questionnaire. Data analysis used the Pearson chi-square test with SPSS software. The early elderly tends to feel the level of mild depression (46.7%) even 6.7% of the early elderly do not experience depression. The late elderly tends to feel the level of severe depression (50%) even 5.6% of the late elderly have very severe depression. The results of statistical tests showed that there was a significant difference between the level of depression in the early elderly and the late elderly ($p = 0.026$). Women with DM aged 56-65 years are very susceptible to depression with a more severe level when compared to women with DM aged 46-55 years. The need for special treatment that makes the elderly as the main target to reduce the depression they experience

Keywords: Depression; Diabetes mellitus; Early elderly; Late elderly

Introduction

Major depression is the only mental disorder included in the World Health Survey. Depression is the third leading cause of disability worldwide in 2017 and is the disease with the greatest economic burden in high- and middle-income countries. It is projected to become the leading cause globally by 2030 (Bommer et al., 2018).

The reported prevalence of Diabetes Related Depression (DRD) in Europe and the US is between 15% and 20% (Kalin, 2020). Depression experienced by DM sufferers is associated with poor glycemic control and reduced adherence to undergoing treatment programs. Depression has also been linked to an increased risk of diabetes complications, particularly cardiovascular disease and retinopathy. Reducing the incidence of depression improves glycemic control and reduces the risk of complications (Sharif et al., 2019). Pharmacotherapy for depression may be poorly

tolerated or may not be sufficient to produce full remission in as many as 50% of diabetic patients with major depression. However, currently the benefits of non-pharmacological approaches to depression management, such as psychotherapy, have not been widely practiced (Fernández-de-Las-Peñas et al., 2020).

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diabetes complications, particularly cardiovascular disease and retinopathy (Harding et al., 2019).

The older a person is, the easier it is to experience anxiety and depression when experiencing type 2 DM. Old age is a risk factor for anxiety and depression. Depression experienced by type 2 DM patients in the elderly may have a basic biological relationship, where the elderly experience reduced neuro transmitters related to mood and emotions (Laird et al., 2019).

The purpose of this study was to analyze the comparison of depression levels in the early and late elderly in women with DM (Woo et al., 2022).

Method

The design of this study was analytic observational with a cross-sectional approach which was carried out in two health centers, namely the Bontobangun Health Center and the Tanete Health Center, Bulukumba Regency (Herlianti, 2022).

The population in this study were all DM patients in the working area of the Tanete Public Health Center, Bulukumba Regency. Samples were taken by considering the inclusion criteria a) willing to take part in the study by signing a consent form; b) type II DM patients who experience depression, c) early elderly (age 46-55 years) and late elderly (56-65 years). The sampling technique used purposive sampling and obtained 33 elderly people with DM (Sari et al., 2021).

Depression levels were measured using the Depression Anxiety Stress Scales 21 (DASS 21) questionnaire developed by Lovibond and Lovibond (1995) to measure depression, anxiety and stress in various populations. Data analysis used the Pearson chi-square test with the help of SPSS software (Gholamzadeh et al., 2019).

Result and Discussion

There were 33 elderly people with diabetes who were involved in this study, all of whom were female. The elderly who are in the age range of 46-55 years or commonly called the early elderly are 15 people (45.5%) and those who are in the early 55-65 age group or commonly called the late elderly are 18 people (54.5%) (Hidayati et al., 2023). The level of depression in the elderly is presented as Table1.

Table 1 shows that the level of depression in the elderly mostly experienced severe depression, namely 33%, mild depression 27.3%, moderate depression 24.2%, and moderate depression 24.2%. This research is in line with research conducted by Hartutik (2021) which shows the results of the age of the elderly who experience depression during the 2021 pandemic are mostly elderly, namely aged 60-74 years (Kusumaningtyas, 2021).

Table 1. Level of Depression in Elderly People with DM

Total Depression Level	Total Depression Level	Total Depression Level (%)
Normal	1	3.00
Light	9	27.30
Currently	8	24.20
Critical	11	33.30
Awfully	4	12.10

Based on the results of this study, it was found that the majority of elderly depression levels were severe compared to adults (Islam et al., 2021). This can happen because along with increasing age it causes a slowdown in metabolism and physique, in addition to that there is a psychological disturbance in the form of Denial experienced in the form of the patient's insincerity in accepting his illness so that he thinks catastrophically (looking at the DM disease he suffers is a disaster) which has an impact on the patient's physique such as feeling inadequate helpless and tired. Sufferers then label themselves useless, become a burden and even think about ending their life (Calkins et al., 2023).

This study is in accordance with previous research which showed that the incidence of depression increased in line with the increasing age of the elderly which was in line with the increase in the age of the elderly (Luo et al., 2019). Along with increasing age, there will be an increase in the risk of death, a decrease in health status, and exposure to stress and life experiences that cause psychological disorders that make it easier for the elderly to experience depression (Branquinho et al., 2020).

Table 2. Differences in the Level of Depression in the Early and Late Elderly with DM

Depression levels	Early elderly	Late elderly
Normal	1 (6.7)	0 (0)
Light	7 (46.7)	2 (11.1)
Currently	2 (13.3)	6 (33.3)
Critical	2 (13.3)	9 (50)
Awfully	3 (20)	1 (5.6)
<i>p-value*</i>		0.026

**uji pearson chi-square*

Table 2 shows the results of testing the difference in the level of depression in the early and late elderly, it was found that there was a significant (significant) difference with a p value <0.05. This is supported by the distribution of data which shows that most of the elderly initially experience mild depression (46.7%), while the majority of elderly elderly experience severe depression (50%) (Livana et al., 2019). It can be said that there is a significant difference in the level of depression between the early elderly and the late elderly (Ilmi et al., 2018).

This is in line with the opinion expressed by Miller, 2008 which said that the existence of biological factors such as physical illness is also one of the factors that can

increase depression in the elderly (Yunus et al., 2021). The risk of depression in DM sufferers is caused by chronic psychosocial stressors due to chronic illness (Jamil, 2018). Conversely, depression can be a risk factor for DM. The mechanisms underlying depression as a risk factor for DM are not yet clear. In theory, this results from increased secretion and action of counterregulatory hormones, altered glucose transport function, and increased inflammatory activation. According to a study, the incidence of anxiety and depression in female DM patients is higher than in male DM patients (Ma'arif et al., 2021).

The significant difference in depression levels between early and late elderly can be caused by several things, including psychological changes in the elderly such as loneliness, loss, and grieving which can increase the incidence of depression. Loneliness can make a person susceptible to illness, depression, suicide, and even death in the elderly (Harahap et al., 2021).

The relationship between depression and diabetes mellitus can be mediated by poor self-care, medication adherence, health-related quality of life and common pathophysiological mechanisms through stress and inflammation (Suparti et al., 2022). Furthermore, even modest levels of depression are associated with a lack of diabetes self-care. Timely diagnosis and treatment of depression can improve quality of life and increase social participation and care givers, patients and families, friends and caregivers. The negative impact of depression on diabetes can be explained by the distress of diabetes. Diabetic distress refers to the emotional distress associated with living with and managing diabetes, not caused by another cause of overall emotional distress or a mental health problem. Many adults with diabetes and depressive symptoms experience high levels of emotional distress stemming from their worries and concerns about diabetes (Ulfah, 2022).

The limitations of this study are the limited number of samples with the existing population, it is hoped that in future studies using other analyzes in collecting data on the incidence of depression in the elderly.

Conclusion

The level of depression in the elderly who suffer from DM disease mostly experience severe depression. Furthermore there is a significant difference in the level of depression between the early elderly and the late elderly. The meaning between the early elderly and the late elderly.

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Author Contributions

Fatmawati: find research ideas, Andi Suswani: processing research data, Nurlina: drafting manuscripts and administration.

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Conflicts of Interest

No conflict of interest between authors.

References

- Bommer, C., Sagalova, V., Heesemann, E., Manne-Goehler, J., Atun, R., Bärnighausen, T., & Vollmer, S. (2018). Global economic burden of diabetes in adults: projections from 2015 to 2030. *Diabetes Care*, 41(5), 963–970. <https://doi.org/10.2337/dc17-1962>
- Branquinho, C., Kelly, C., Arevalo, L. C., Santos, A., & Gaspar de Matos, M. (2020). "Hey, we also have something to say": A qualitative study of Portuguese adolescents' and young people's experiences under COVID-19. *Journal of Community Psychology*, 48(8), 2740–2752. <https://doi.org/10.1002/jcop.22453>
- Calkins, K., Guttormson, J., McAndrew, N. S., Losurdo, H., Loonsfoot, D., Schmitz, S., & Fitzgerald, J. (2023). The early impact of COVID-19 on intensive care nurses' personal and professional well-being: A qualitative study. *Intensive and Critical Care Nursing*, 76, 103388. <https://doi.org/10.1016/j.iccn.2023.103388>
- Fernández-de-Las-Peñas, C., Florencio, L. L., Plaza-Manzano, G., & Arias-Burúa, J. L. (2020). Clinical reasoning behind non-pharmacological interventions for the management of headaches: A narrative literature review. *International Journal of Environmental Research and Public Health*, 17(11), 4126. <https://doi.org/10.3390/ijerph17114126>
- Gholamzadeh, S., Pourjam, E., & Kalyani, M. N. (2019). Effects of continuous care model on depression, anxiety, and stress in Iranian elderly in Shiraz. *International Journal of Community Based Nursing and Midwifery*, 7(1), 13. <https://doi.org/10.30476%2FIJCBNM.2019.40842>
- Harahap, D. R., & Amalia, I. (2021). Pengaruh Perceived Burdensomeness, Thwarted Belongingness, dan Religiusitas Terhadap Ideasi Bunuh Diri pada Lansia. *TAZKIYA: Journal of Psychology*, 9(1), 16–28.

- <https://doi.org/10.15408/tazkiya.v9i1.19272>
- Harding, J. L., Pavkov, M. E., Magliano, D. J., Shaw, J. E., & Gregg, E. W. (2019). Global trends in diabetes complications: a review of current evidence. *Diabetologia*, 62, 3–16. <https://doi.org/10.1007/s00125-018-4711-2>
- Herlianti, L. (2022). Collaboration of Actors in the Network in Stunting Prevention Programs in Bulukumba District. *Enrichment: Journal of Management*, 12(2), 2021–2026. <https://doi.org/10.35335/enrichment.v12i2.487>
- Hidayati, P. H., Jamal, R. A., Irmayanti, I., Kanang, I. L. D., & Rahmawati, R. (2023). Karakteristik Pasien Tirotoksikosis Di Rumah Sakit Ibnu Sina Makassar Tahun 2018-2020. *Jurnal Kesehatan Kusuma Husada*, 93–103. <https://doi.org/10.34035/jk.v14i2.1009>
- Iلمي, N., & Sutria, E. (2018). Problem Depresi Lansia Dan Solusi Dengan Terapi Spritual (Literature review: Problem Depression of erderly and the solution with spiritual therapy. *Journal of Islamic Nursing*, 3(1), 32–39. <https://doi.org/10.24252/join.v3i1.5473>
- Islam, M. Z., Disu, T. R., Farjana, S., & Rahman, M. M. (2021). Malnutrition and other risk factors of geriatric depression: a community-based comparative cross-sectional study in older adults in rural Bangladesh. *BMC Geriatrics*, 21(1), 572. <https://doi.org/10.1186/s12877-021-02535-w>
- Jamil, J. (2018). Sebab dan akibat stres, depresi dan kecemasan serta penanggulangannya. *Al Amin: Jurnal Kajian Ilmu Dan Budaya Islam*, 1(01), 123–138. <https://doi.org/10.36670/alaman.v1i1.6>
- Kalin, N. H. (2020). The critical relationship between anxiety and depression. *American Journal of Psychiatry*, 177(5), 365–367. <https://doi.org/10.1176/appi.ajp.2020.20030305>
- Kusumaningtiyas, D. P. H. (2021). Factors related to anxiety level in the elderly in the time of the Covid 19 pandemic in elderly posyandu lelateng village. *STRADA Jurnal Ilmiah Kesehatan*, 10(1), 1287–1296. <https://doi.org/10.30994/sjik.v10i1.785>
- Laird, K. T., Krause, B., Funes, C., & Lavretsky, H. (2019). Psychobiological factors of resilience and depression in late life. *Translational Psychiatry*, 9(1), 88. <https://doi.org/10.1038/s41398-019-0424-7>
- Livana, P., Susanti, Y., Darwanti, L. E., & Anggraeni, R. (2019). Description of Elderly Depression Levels. *Nurscope: Jurnal Penelitian Dan Pemikiran Ilmiah Keperawatan*, 4(2), 80. <https://doi.org/10.30659/nurscope.4.2.80-93>
- Luo, Y., Zhang, L., & Pan, X. (2019). Neighborhood Environments and Cognitive Decline Among Middle-Aged and Older People in China. *The Journals of Gerontology: Series B*, 74(7), e60–e71. <https://doi.org/10.1093/geronb/gbz016>
- Ma'ruf, M. A., & Palupi, D. L. M. (2021). Hubungan antara tingkat stres dengan kualitas hidup penderita diabetes melitus di wilayah kerja rumah sakit umum surakarta. In *Prosiding Seminar Informasi Kesehatan Nasional* (pp. 400–410). <https://doi.org/10.22437/jini.v1i2.13516>
- Rudolfson, N., Dewan, M. C., Park, K. B., Shrimel, M. G., Meara, J. G., & Alkire, B. C. (2018). The economic consequences of neurosurgical disease in low-and middle-income countries. *Journal of Neurosurgery*, 130(4), 1149–1156. <https://doi.org/10.3171/2017.12.JNS17281>
- Sari, R. Y., Muhith, A., Rohmawati, R., Soleha, U., Faizah, I., Afiyah, R. K., & Rahman, F. S. (2021). Spiritual Emotional Freedom Technique against Anxiety and Psychological Well-being of Type 2 DM Patients during the COVID-19 Pandemic. *Open Access Macedonian Journal of Medical Sciences*, 9(G), 260–265. <https://doi.org/10.3889/oamjms.2021.7217>
- Sharif, S., Raza, M. T., Mushtaq, S., Afreen, B., Hashmi, B. A., & Ali, M. H. (2019). Frequency of depression in patients with type 2 diabetes mellitus and its relationship with glycemic control and diabetic microvascular complications. *Cureus*, 11(7). <https://doi.org/10.7759/cureus.5145>
- Suparti, L. T., Maria Yunita Indriarini, & Wijaya, Y. M. (2022). Karakteristik Penderita Long Covid. *Jurnal Kesehatan*, 10(1), 60–66. <https://doi.org/10.55912/jks.v10i1.53>
- Ulfah, R. (2022). Hubungan Tingkat Stres dengan Kualitas Hidup Penderita DM Tipe 2 di Wilayah Kerja Puskesmas Pasundan Kota Samarinda. *Suparyanto Dan Rosad (2015, 5(3), 248–253*. Retrieved from <https://dspace.umkt.ac.id//handle/463.2017/2610>
- Woo, D., Jae, S., & Park, S. (2022). U-shaped association between age at first childbirth and mortality: a prospective cohort study. *Maturitas*, 161, 33–39. <https://doi.org/10.1016/j.maturitas.2022.01.015>
- Yunus, M., Aditya, I. W. C., & Eksa, D. R. (2021). Hubungan Usia dan Jenis Kelamin dengan Kejadian Hipertensi di Puskesmas Haji Pemanggilan Kecamatan Anak Tuha Kab. Lampung Tengah. *Jurnal Ilmu Kedokteran Dan Kesehatan*, 8(3), 895–900. <https://doi.org/10.33024/jikk.v8i3.5193>