



# The relationship between family support and stress in the elderly with type 2 diabetes mellitus in the work area of the Pidie Health Center, Pidie Regency

Azhar Mu'alim<sup>1</sup>, Ismuntania<sup>2</sup>, Nurlela Mufida<sup>3</sup>, Muhammad Iqbal<sup>4</sup>, Fakhryan Rakhman<sup>5</sup>

<sup>1,2,3</sup>Lecturer in the Nurul Islam STIKes Medika Nursing Study Program, Sigli

<sup>4</sup>Lecturer in the Abulyatama University Nursing Study Program

<sup>5</sup>Lecturer in the Clinical Pharmacy Study Program at STIKes Medika Nurul Islam

## Article Info

### Article history:

Received September 19, 2023

Revised October 20, 2023

Accepted November 13, 2023

### Keywords:

Elderly;  
Family Support;  
Stress;  
Type 2 Diabetes Mellitus.

## ABSTRACT

The high incidence of diabetes mellitus cannot be separated from the problem of low family support, especially for the elderly. The aim of the research was to determine the relationship between family support and the incidence of stress in elderly people with type 2 diabetes mellitus. The method used analytical research with a cross-sectional design on 65 elderly people in the Pidie Health Center Working Area. Implementation time starts from 14-20 July 2023. Sample collection uses purposive sampling technique. The data analysis used was the Chi-Square Test. The results of the research show that there is a relationship between family support and the incidence of stress in elderly people with type 2 diabetes mellitus in the work area of the Pidie Health Center ( $p$  value 0.002)  $\alpha = 0.005$ ). The conclusion is that the majority of elderly people with type 2 diabetes mellitus do not receive family support with mild stress, namely 28 elderly people (43.1%), the majority of elderly people with type 2 diabetes mellitus experience severe stress with less supportive family support, namely 9 elderly people (13.8%), there is a significant relationship between family support and the incidence of stress in elderly people suffering from type 2 diabetes mellitus in the work area of the Pidie Health Center, Pidie Regency in 2023, with the Chi-Square statistical test obtaining a P-value of  $0.002 < 0.05$ . The suggestion is that elderly families can provide good family support so as not to cause stressful events and can prevent stress in elderly people with type 2 diabetes mellitus.

*This is an open access article below the CC BY-NC license.*



## Corresponding Author:

Azhar Mu'alim

Lecturer in the Medical ICT Professional Study Program, Nurul Islam.

STIKes Medika Nurul Islam Sigli,

9X93+6H7, Cot Teungoh, Pidie, Aceh, Indonesia, 24112,

azharmualim27@gmail.com

## 1. INTRODUCTION

Diabetes is one of the ten main causes of death worldwide (Kartika et al, 2022). In 2016, there were 21.3 million elderly people suffering from type 2 diabetes. It is estimated that 300 million people aged 60 to 79 years will be living with type 2 diabetes in 2025 (WHO Global Report on Diabetes, 2016).

A person is considered old if he is 65 years old or more. Aging is not a disease but an advanced stage of a vital process characterized by a reduced ability of the body to adapt to environmental pressures (Muhith, 2016). Advanced age brings setbacks such as physical decline, which manifests itself

in sagging skin, gray hair, loss of teeth, hearing loss, blurred vision, slow movements and a disproportionate physique (Erda, Tamara & Yona, 2020).

Between 10% and 15% of the population over the age of 65 and almost 50% of the population over the age of 85 suffer from cognitive changes such as dementia. This disorder is a serious problem, cognitive decline occurs rapidly in older people and it is estimated that by 2050 the number of people with cognitive disorders will increase to around 14 million. Falls are a common problem among older people, with one third aged 65 years or older and half of people aged over 85 years (Erda, Jannah & Yunaspi, 2018).

Indonesia is the sixth largest country in the world, after China, India, the United States, Brazil and Mexico, with around 10.3 million people aged 20 to 79 years suffering from diabetes (Branch for Disease Prevention and Control, 2019). According to Riskesdas (2018) people diagnosed with diabetes in Aceh reached 41,596 people. Furthermore, data obtained in 2013 on cases of type 2 diabetes mellitus in Aceh in the elderly had a percentage of 1.2% and increased in 2018 with a percentage of 1.8% (Infodatin, 2018). In Pidie Regency, Diabetes Mellitus in the elderly is included in the 10 highest diseases with a percentage of 26.99% and is in second place out of 10 other non-communicable diseases (Pidie Regency Health Service, 2022).

The status of family support problems for the elderly is > 40%, indicating that the elderly do not receive good family support. High family support reduces the risk of stress in elderly people with type 2 diabetes (Luecknotte & Meiner, 2006). A preliminary study conducted on July 2 2023 at the Pidie Community Health Center, Pidie Regency to determine the relationship between family support and the incidence of stress in elderly people with type 2 diabetes, was carried out on 10 elderly respondents with a history of type 2 diabetes. 8 elderly people reported being stressed, anxious and nervous. . Physically, in type 2 diabetes, there is a decline in physical and mental function, there are long-term physical complications, blurred vision, kidney and heart failure, and anxiety and fear of disease appear in mental function. Stressful events reduce life expectancy and increase morbidity (Nwanko and Nandy B, 2010).

Preventive measures will be very beneficial for seniors with type 2 diabetes, including glycemic control and diet. Type 2 diabetes that is not well controlled can cause acute and chronic complications. Family support is very helpful in making elderly people with type 2 diabetes feel safe and comfortable, which increases their motivation in dealing with the disease. This condition prevents stress in elderly people with type 2 diabetes (Nabyl, 2009).

## 2. RESEARCH METHOD

**Design** This research is a correlational study with a cross sectional design. Cross sectional is a research to study the dynamics between risk factors and effects, by means of an observational approach or collecting data simultaneously at one time. This research examines the relationship between risk factors and the consequences that occur in the form of certain diseases or health conditions at the same time (Sandu, et al, 2015). This research is to look at the relationship between family support and the incidence of stress in the elderly with type 2 diabetes mellitus in the work area of the Pidie Health Center, Pidie Regency in 2023. The population is the entire research subject (Sujarweni, 2021). The population in this study was all 65 elderly people in the Pidie Community Health Center working area, Pidie Regency. The research was carried out in the Pidie Community Health Center working area, Pidie Regency on 14 – 20 July 2023. The sampling method used in this research was purposive sampling, namely a method for determining samples which was carried out by determining targets from the population elements that were thought to be most suitable for collecting data. , with a non-probability sampling technique, namely a technique used for sampling that does not provide the same chance or opportunity for each member of the population or each element to be selected as a sample (Sugiyono, 2016).

### 3. RESULTS AND DISCUSSIONS

#### Results

Table 1. Frequency Distribution of Respondent Characteristics Based on Gender (n=65)

No	Gender	Frequency	Percentage (%)
1.	Man	44	67.7
2.	Woman	21	32.3
	Amount	65	100

Based on table 1 above, it shows that the majority of elderly people with Type 2 DM are male with a total of 44 elderly people (67.7%).

Table 2. Frequency Distribution of Respondent Characteristics Based on Education (n=65)

No	Education	Frequency	Percentage (%)
1.	elementary school	24	36.9
2.	JUNIOR HIGH SCHOOL	25	38.5
3.	SENIOR HIGH SCHOOL	11	16.9
4.	PT	5	7.7
	Amount	65	100

Based on Table 2 above, it shows that the majority of seniors with type 2 DM are junior high school with a total of 25 seniors (38.5%).

Table 3. Frequency Distribution of Family Support for Elderly Type 2 DM at Pidie Community Health Center, Pidie Regency in 2023.

No	Family support	Frequency	Percentage (%)
1.	Support	23	35.4
2.	Less Supportive	42	64.6
	Total	65	100

Based on Table 3 above, it shows that the majority of elderly people with type 2 DM lack family support with a total of 42 elderly people (64.6%).

Table 4. Frequency Distribution of Stress Events for Elderly Type 2 DM at Pidie Community Health Center, Pidie Regency in 2023

No	Type 2 DM Stress Events	Frequency	Percentage (%)
1.	Light	33	50.8
2.	Currently	17	26.2
3.	Heavy	15	23.1
	Total	65	100

Table 4. Frequency Distribution of Stress Events for the Elderly Type 2 DM at the Pidie Community Health Center, Pidie Regency in 2023.

Table 5. Relationship between family support and stress events in the elderly with type 2 DM in the work area of the Pidie Health Center, Pidie Regency in 2023

Family support	Incidents of Stress in the Elderly with Type 2 DM						Total	P-Value
	Light		Currently		Heavy			
	N	%	N	%	N	%	N	%
Support	5	7.7	9	13.8	9	13.8	23	35.4
Less Supportive	28	43.1	8	12.3	6	9.2	42	64.6
Total	33	50.8	17	26.2	15	23.1	65	100

Based on Table 5 above, it shows that the incidence of stress in elderly people with type 2 DM is mostly mild in families who are less supportive of 28 elderly people (43.1%) and severe in family support

who are supportive of 9 elderly people (13.8%). To find out whether there is a relationship between family support and the incidence of stress in the elderly with type 2 diabetes mellitus in the work area of the Pidie Health Center, Pidie Regency in 2023, a Chi-Square analysis was carried out. Based on the results of the Chi-Square analysis, it is known that the p value is  $0.002 < 0.05$ , so  $H_0$  is rejected and  $H_a$  is accepted, meaning that there is a relationship between family support and the incidence of stress in the elderly with type 2 diabetes mellitus in the Pidie Community Health Center Working Area, Pidie Regency in 2023.

## Discussion

Research was conducted on 14–20 July 2023 on 65 elderly people, from the research results it was found that there was a relationship between family support and the incidence of stress in elderly people with type 2 diabetes mellitus in the Pidie Community Health Center Working Area, Pidie Regency in 2023.

The results of research in the work area of the Pidie Community Health Center showed that of the 65 elderly people, most of whom had no family support, 42 elderly people (64.6%). The results of this research are almost the same as research conducted by Atyanti (2017) entitled *The Relationship between Family Support and Stress on Blood Sugar Levels in Type 2 Diabetes Mellitus patients at Sragen Regional Hospital* with data that some respondents lacked family support, namely 75 respondents out of 96 respondents (86.2%). These results are almost the same as research conducted by Suryani (2017) entitled *The Relationship between Family Support and Stress in the elderly with type 2 DM at PKU Hospital*, with the results falling into the less supportive category, namely 23 respondents out of 68 respondents (45.1%). Family support can take the form of internal social support, for example support from husband, wife or siblings, but also external family support for the nuclear family. This improves family health and adjustment (Friedman, 2010) in (Atyanti et al., 2017).

The family has a strategic importance in health development, because every problem is a family problem and vice versa (Iklima et al, 2023). At the time the research was conducted, almost all elderly people felt a lack of support from family members and a lack of attention to their own health. This is because family members are busy with work making it difficult to help the elderly manage health services. Apart from that, they are not reminded to eat according to the recommended eating pattern. Transportation problems and the physical condition of the elderly are other factors that make families less supportive of the elderly's recovery. Researchers concluded that the elderly did not receive family support because family members worked and did not have family knowledge about type 2 diabetes.

The results of research in the work area of the Pidie Community Health Center from 65 elderly people were mostly in the mild stress category, 33 elderly people (50.8%). These results are almost the same as research conducted by Atyanti (2017) entitled *The Relationship between Family Support and Stress on Blood Sugar Levels in type 2 Diabetes Mellitus patients at Sragen Regional Hospital* with data that some respondents experienced mild stress, namely 85 respondents out of 96 respondents (78, 0%).

These results are almost the same as research conducted by Wahyu (2017) entitled *The Relationship between Family Support and Stress in the elderly with type 2 DM in Paserapan Village, Pasrepan District, Pasuruan Regency*, with the results falling into the mild stress category, namely 45 respondents out of 80 respondents (54.2%). Yusuf (2004), stated that the factors that influence stress in the elderly are physical-biological (diseases that are difficult to cure), psychological (negative thinking, frustration), and social (family support). Almost all elderly people at the time of the research were in the mild stress level category, with behavior that felt like they were still able to control their irritability in the last month, still felt able to solve problems, while elderly people in the moderate stress category sometimes still felt unable to control it. emotions, and feeling irritable in the last 1 month, while for the severe stress category the elderly were more depressed, anxious, felt angry, afraid and felt hopeless due to suffering from type 2 diabetes mellitus for more than 10 years.

Researchers are of the opinion that elderly people with type 2 DM experience more mild stress because the elderly are still able to control themselves over external demands (family, society, social and physical environment) due to a lack of understanding towards their family or sick elderly.

The results of research in the Pidie Community Health Center work area, Pidie Regency, showed that 28 elderly people (43.1%) experienced mild stress due to unsupported family support, while 5 elderly people (7.7%) out of 65 elderly experienced mild stress due to family support. This result is consistent with the chi-square statistical test, which has a P-value of  $0.002 < 0.05$ . This means that there is a significant relationship between family support and the occurrence of stress in elderly people with type 2 diabetes in the work area of the Pidie Community Health Center, Pidie Regency in 2023.

These results are in line with Atyanti's (2017) research entitled *The Relationship between Family Support and Stress on Blood Sugar Levels in Type 2 Diabetes Mellitus Patients at Sragen District Hospital*. The p-value was obtained at 0.005, meaning there is a relationship between the family support variable and the stress variable, the better. family support means the lower the level of stress in the elderly. These results are almost in line with the study by Suryani (2017) entitled "The relationship between family support and stress in elderly people with type 2 diabetes at PKU Hospital" which showed a  $p\text{-value}=0.001 < 0.05$ , indicating that there is a relationship between family support and stress in elderly people with type 2 diabetes.

Family support has a big impact because the family is a group that plays an important role in preventing, adjusting and correcting family health problems. Family support is a form of service behavior, in the form of emotional support (attention and affection), appreciative support (appreciation and positive feedback), informational support (suggestions, information), and instrumental support (effort, money and time) (Srafino, 2011). Researchers concluded that the more family support seniors received, the fewer stressful events seniors experienced, and the less family support they received, the more stressful events they would experience.

#### 4. CONCLUSION

Based on the research results, it was found that the majority of elderly people with type 2 diabetes mellitus did not receive enough family support with mild stress amounting to 28 elderly people (43.1%), the majority of elderly people with type 2 diabetes mellitus experienced severe stress with less supportive family support totaling 9 elderly people (13.8%), There is a significant relationship between family support and the incidence of stress in the elderly with type 2 diabetes mellitus in the work area of the Pidie Health Center, Pidie Regency in 2023, using the Chi-Square statistical test, a P-value of  $0.002 < 0.05$  was obtained.

#### REFERENCES

- Abduh, M., Alawiyah, T., Apriansyah, G., Sirodj, RA, & Afgani, MW (2023). Survey Design: Cross Sectional in Qualitative Research. *Journal of Science and Computer Education*, 3(01), 31-39.
- Afidah, R.U. (2021). Analysis of the relationship between sleep quality and quality of life in diabetes mellitus based on literature studies (doctoral dissertation, Dr. Soebandi University).
- Cahyati, Y., Somantri, HI, Kp, S., Kep, M., Ai Cahyati, SKM, Kep, M., ... & Gz, S. (2021). *Integrated Management of Non-Communicable Diseases (Guidelines for Cadres and the Community)*. Deepublish.
- Pidie Health Department. (2022). Data on the Number of Diabetes Mellitus Sufferers in Pidie Regency in 2021.
- Erda, Roza; Fathiqah Nurul Jannah; Yunasp, D. (2018). The Relationship between Cognitive Function Disorders and the Risk of Falls in the Elderly in the Tanjung Buntung Community Health Center Work Area in 2018. *Proceedings of the National Seminar on Applications of Science and Technology (Senastek)*, 226-229.
- Eryando, T., Ariha, D., Damayanti, YF, & Anggraini, S. (2020, July). Relationship of Age, Working and Education With/Regarding the Quality of Life of Elderly. In *1st International Conference on Science, Health, Economics, Education and Technology (ICoSHEET 2019)* (pp. 231-232). Atlantis Press.
- Ilmua., Mufida, N., & Ismuntania. (2023). The Relationship between Emotion Regulation and Resilience in Families Caring for Family Members with Schizophrenia in Batee District, Pidie Regency. *Serambi Akademica Journal of Education, Science and Humanities*, 11 (1), 37-41.

- Jayanti, AA The relationship between hypertension and stroke incidence in South Sulawesi 2013: analysis of 2013 RISKESDAS data (Bachelor's thesis, UIN Syarif Hidayatullah Jakarta: Faculty of Medicine and Health Sciences, 2015).
- Kartika., Ismuntania., Karmila., & Rakhman, F. (2022). Effectiveness of Variations of Diabetes Self-Management Education (DSME) on Self Care Behavior in Type-2 Diabetes Mellitus Patients in Tengku Chik Ditiro Hospital. *Journal of Health Promotion and Behavior*, 07(01): 77-85.
- Komalasari, S. (2022). Relationship between levels of fat sufficiency, nutritional status and the incidence of hypertension in the elderly in Pekon Add Rejo Barat, Pingsewu Regency. *Aisyah nutrition journal*, 5(2), 52-58.
- Luecknotte & Meiner. (2006). *Gerontology Nursing*. Mosbyyears book.inc.
- Mualim, A., Jannah, SR, Syarif, H., Asniar, A., & Kesuma, ZM (2021). Determinants Associated with the Risk of Depression in the Elderly. *Journal of Telenursing (JOTING)*, 3(2), 510-518.
- Mu'alim, A., Ilmua, I., & Mufida, N. (2023). The Relationship between Family Support and the Risk of Depression in the Elderly in Muara Tiga District, Pidie Regency. *Serambi Akademica Journal*, 11(1), 31-36.
- Mu'alim, A., Mufida, N., Ilmua, I., & Agustia, M. (2023). Factors Associated with the Intellectual Function of the Elderly in Gampong Buangan, Meurah Dua District, Pidie Jaya Regency. *Serambi Akademica Journal*, 11(5), 511-520.
- Nabyl, R.E. (2009). *Easy Ways to Prevent and Treat Diabetes Mellitus*. Aulia Publishing.
- Novitasari, I., Hidayati, W., Kp, S., Kp, M., & KMB, S. (2015). *Description of the Levels of Anxiety, Stress, Depression and Coping Mechanisms of Chronic Kidney Disease Patients Undergoing Hemodialysis at RSUD Dr. Moewardi (Doctoral dissertation, Faculty of Medicine)*.
- Nwanko CH, Nandy B., NB (2010). Factors influencing diabetes management outcome among patients attending government health facilities in South East. *International Journal of Tropical Medicine*, 5(2), 28-36.
- Pidie Health Center. (2022). *Data on the Number of Diabetes Mellitus Sufferers in Pidie District in 2021*. Pidie Rikesdas. (2018). *National Rikesdas Report 2018*. Jakarta: Indonesian Ministry of Health.
- Roza Erda, Fitria Tamara, Trisya Yona, DY (2020). *Indonesian Journal of Global Health Research*. 2(4), 343-350.
- Sari, DP (2017). *The Relationship between Sleep Quality and Physical Activity and Blood Pressure in the Elderly at the Setrorejo Village Elderly Posyandu (Doctoral dissertation, STIKES PKU Muhammadiyah Surakarta)*.
- Sumarta, NH (2020). *The relationship between daily physical activity and the degree of hypertension in the elderly in Batu City (Doctoral dissertation, Maulana Malik Ibrahim State Islamic University)*.
- WHO Global Report on Diabetes. (2016). *Global Report on Diabetes*. Isbn, 978, 6-86. [http://www.who.int/iris/bitstream/handle/10665/204874/WHO\\_NMH\\_NVI\\_16\\_3\\_eng.pdf?sequence=1](http://www.who.int/iris/bitstream/handle/10665/204874/WHO_NMH_NVI_16_3_eng.pdf?sequence=1)[http://www.who.int/about/licensing/copyright\\_form/index.html](http://www.who.int/about/licensing/copyright_form/index.html)<http://www.who.int/about/licens>.
- Yusuf S. (2004). *Psychology of Child and Adolescent Development*. PT. Rosdakarya Teenager.