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THE LEVEL OF KNOWLEDGE OF DIABETES PATIENTS IN PRIMARY HEALTHCARE

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ABSTRACT

Patient involvement in the management of Diabetes Mellitus is very necessary to achieve treatment goals. Knowing about the disease can encourage patients to become fully involved. Patient knowledge about Diabetes Mellitus and its management is one of important things that family doctor must pay attention to. This study was aimed to describe the level of knowledge of diabetes patients in primary health care. A cross-sectional descriptive study was conducted on diabetes patients in primary health care. We used the purposive sampling method to take the samples. Measuring the level of knowledge used the Diabetes Knowledge Questionnaire (DKQ) which consisted of 24 questions whose validity and reliability had been tested. The sample consisted of 86 diabetes patients, 29.1% were male and 70.9% were female, most of whom were in the productive age group. Almost all respondents (80.1%) had higher education. A moderate level of knowledge was obtained in the majority of patients (65.1%), while some patients (27.9%) had a good level of knowledge. Only a few patients (7%) had poor knowledge. The study could be concluded that knowledge level of diabetes patients in primary health care was at a moderate level. So, continuous and appropriate patient education is necessary to increase patient knowledge.

Keywords: *diabetes mellitus, knowledge, DKQ*

1. INTRODUCTION

Diabetes Mellitus is one of the risk factors for catastrophic diseases.[1] Based on the 2023 Indonesian Health Survey, the prevalence of diabetics in Indonesia increased from 10.9% (2019) to 11.7%. (2023).[2] This degenerative disease had used up a lot of health funds.[3]

The most common risk factor for this illness is lifestyle. A person's knowledge can affect their lifestyle which is a risk factor of diabetes.[2,3,4]

Griya Sehat Clinic as a Primary Health Care seeks to provide family medical practices for Diabetes patients through the chronic disease management program (Prolanis). It was hoped that this program could be a promotive and preventive strategy to reduce the incidence rate and prevent complications from diabetes.[5,6] Increasing knowledge and active participation of diabetes patients expectedly reduced the risk of the disease getting worse.[3,7]

Diabetics are said to be well controlled if the HbA1c level is less than 7%.[8,9] In February 2024, Griya Sehat Clinic held HbA1c tests for diabetes patients who were members of Prolanis. Of the 124 participants, 34 people (27.9%) had HbA1c levels less than 7%. This means that two out of three patients had not well-controlled in their blood sugar levels.

Prolanis activities held by Griya Sehat Clinic include group exercise, education, medical consultation, regular medical check up, and medication management.[10] Since 2014, Griya Sehat Clinic has provided this program for diabetes patients. Patients are expected to have good knowledge about Diabetes, its complications, and self-care management.[8,11]

This study was conducted to see the level of knowledge of diabetes patients about their illness. Then the question was whether the diabetes patients had a good level of

knowledge after Prolanis activities had been carried out for so many years?

2. METHOD

Descriptive study was carried out to describe the characteristics and level of knowledge of the subjects. With a cross-sectional approach and purposive sampling carried out over a period of time, it was hoped that it could provide more accurate data.

There were 124 diabetics Prolanis participants at the Griya Sehat Clinic, Karanganyar. After selection using exclusion criteria, 86 people were selected as research subjects. Data was obtained using a questionnaire tool guided by researcher, to reduce bias in the research subjects' understanding of each question given. The questionnaire contained questions regarding the subject's characteristics and aspects of knowledge about Diabetes. Characteristics included gender, age, level of education, and the subject's activeness in Prolanis activities.

Measuring the level of knowledge of research subjects regarding Diabetes Mellitus, used the Diabetes Knowledge Questionnaire (DKQ) which consisted of 24 statements.[12,13,14] Questionnaire had been made necessary changes without changing the meaning of each statement, and so their validity and reliability had been tested before the research been carried out. Subjects were asked to answer True or False of each statement. The level of knowledge was measured based on the percentage of the statements answered correctly. The measurement results were then grouped into good or high knowledge (score 76-100%), moderate knowledge (score 56-75%), and poor or low knowledge (score < 56%).[12,13,14]

3. RESULT

Questionnaires were collected and analyzed descriptively to see the characteristics of the subjects and the research results. Subject characteristics included gender, age, education level, and their activeness in Prolanis activities.

The subject age was grouped into productive age (15-64 years) and non-productive age (> 65 years).

Subject's activeness in Prolanis activities was grouped into active and inactive groups. The active group was subjects who had actively participated, especially in group education and medical consultations, within last six months. While the inactive group was subjects who did not routinely attend any of the group education nor medical consultations within last six months.An overview of the characteristics of the 86 research subjects can be seen in Table 1

Table 1. The Characteristic of Subject

Characteristic	N	%
Sex		
Male	25	29 %
Female	61	71 %
Age		
15-64 yo	63	73 %
>65 yo	23	27 %
Education		
Not attendee	1	1 %
Elementary school	16	19 %
Junior high school	18	21 %
Senior high school	26	30 %
Diploma	10	12 %
Scholar	15	17 %
Activity in Prolanis		
Active	47	55 %
Not active	39	45 %

Female was the majority (71%) of the subject's gender. Prolanis members at Griya Sehat Clinic were also mostly female. Likewise, the number of Diabetes Mellitus patients.

Most of the research subjects (73%) were of productive age, namely between 15 and 64 years of age. Meanwhile, 27% of subjects were over 65 years old. These characteristics were similar to the number of Prolanis members and Diabetes Mellitus patients at Griya Sehat Clinic.

Most (80.1%) of the subjects had completed nine years of basic education (graduated from junior high school), so it was expected that the subject would have better understanding abilities.

The subject's activeness in Prolanis was assessed based on whether the subject regularly participated in all activities or not. In this study, 45% of Prolanis members were less active in Prolanis activities. Most of them were not regularly attend group education. Subject activity was seen from the attendance list for group exercise activities, group education, and history of consultation with family doctors every month, for the last six months.

Based on the gender, age category, and education level of the subjects, researchers assumed that the subjects had a good or high level of knowledge about Diabetes. This assumption was supported by various studies that there was correlation between gender, age, and education level with a person's level of knowledge.

According to the activeness of the subjects in Prolanis, there was a tendency that most of the subjects had a poor understanding of Diabetes. However, this study showed that most subjects (56%) had a moderate level of knowledge. The subject's level of knowledge can be seen in Table 2.

Table 2. Level of Knowledge

Level of knowledge	N	%
Low / poor	6	7 %
Moderate	56	65 %
High / good	24	28 %

Looking at Table 2, it can be seen that 93% of subjects had sufficient knowledge about Diabetes. A moderate level of knowledge was obtained if the subject could answer correctly more than 56% of the statement in the DKQ-24.

DKQ-24 is a questionnaire consisting of four aspects of statements. The first aspect is about knowledge about Diabetes in general. The second aspect is a statement about complications of Diabetes. The third aspect is a statement about the type of Diabetes disease. The fourth aspect is a statement about self-care for Diabetics.[12]

Of the four aspects, based on the answers given by the subjects, the statement regarding self-care was the one most often answered incorrectly by the subjects. Followed by statements regarding general knowledge of Diabetes, types of Diabetes, and the least incorrect answers regarding complications of the disease.

4. DISCUSSION

In this study, the subjects were predominantly female, of productive age, and well-educated. In understanding information, this certainly made it easier for the subject.[8,15]

Women had a higher awareness of their health conditions. However, women were also more susceptible to Diabetes Mellitus than men.[15,16] Women who suffer from Diabetes Mellitus would try to keep their disease from getting worse, including by seeking various information about health.[17] The large number of women with Diabetes Mellitus who were members of Prolanis at the Griya Sehat Clinic was proof of this.

Productive age helps someone understand a problem. At this age, it is easier for someone to find the information they need.[15,18] Various information media available today make it easier for someone to obtain information. Especially with the internet at your fingertips.

Information and experience obtained while still in productive age will be kept until they grow old.[19] However, for the elderly, the orientation of the information sought is different. Elderly are more likely to look for the information they need for the next phase of life.[20] Health information about the disease they suffer from is no longer a priority to seek.

The level of education is strongly correlated with a person's ability to understand the information they receive. The higher the education he has, the better he will be at receiving information.[18,21] If the education he has is applied well in his life, it will influence his lifestyle, especially in maintaining health.[22,23]

In addition to the three factors which had been mentioned before, the subject's participation in Prolanis activities, which include group exercise, group education, and family doctor consultations, has an influence on improving the quality of life of diabetes patient.[7,24,25] Knowledge about Diabetes and its treatment will be received during group education and family doctor consultations. Every month, each Prolanis member is expected to attend group education and consultation with a family doctor at least once.[12]

Asyifa in her research stated that 46.1% of their samples were not exposed to intensive education about Diabetes because they were not active in Prolanis activities.[12] This condition was almost in line with the Prolanis members who were the subjects of this research.

5. CONCLUSION

The results of the study illustrated that most subjects had a moderate level of knowledge about diabetes. Further research is needed to determine changes in the level of knowledge after improving the provision of education for Diabetes patients. Family and family doctor support also needs to be increased so that patients will actively participate in Prolanis activities.

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PREFERENCES

1. Mohan, Viswanathan, Pradeepa, Rajendra. Lessons from Prevention and Control of Type 2 Diabetes in India for Other Noncommunicable Diseases in South-East Asia Region. WHO South-East Asia Journal of Public Health [Internet]. 2022;11(2):p 67-70. Available from: DOI: https://doi.org/10.4103/2224-3151.370657
2. Kementerian Kesehatan Republik Indonesia. 2024. Laporan Tematik Survei Kesehatan Indonesia Tahun 2023. Jakarta [Internet]. Available from : https://www.badankebijakan.kemkes.go.id/laporan-tematik-ski/
3. Feby Febriany FF. Kualitas Hidup Peserta Program Penyakit Kronis Diabetes Melitus Tipe II di Indonesia: A Systematic Review. jjkn [Internet]. 2023;3(2):56-64. Available from: https://jurnal-jkn.bpjs-kesehatan.go.id/index.php/jjkn/article/view/169
4. Halimatou A, Waliou AH, Francois D, John E, Cecilia R. Knowledge, attitude, practice and associated factors among patients with type 2 diabetes in Cotonou, Southern Benin. BMC Public Health [Internet]. 2021; 21(339). Available from: DOI: https://doi.org/10.1186/s12889-021-10289-8
5. Brian PB, Juli DP, Devania F, Rudiyanto, Nurul AD. Efektivitas Senam Prolanis terhadap Perubahan Kadar Gula Darah Acak Penderita Diabetes Mellitus. Healthy [Internet]. 2019:7(2):29-42. Available from : https://www.ojsstikesbanyuwangi.com/index.php/healthy/article/view/236.
6. Kiki CM, Firdaus HA. Pengaruh Keikutsertaan Program Pengelolaan Penyakit Kronis terhadap Kendali Glukosa Darah Pasien Diabetes Melitus Tipe 2 di Cabang Pematangsiantar. jjkn [Internet]. 2023;3(1):99-115. Available from : https://jurnal-jkn.bpjs-kesehatan.go.id/index.php/jjkn/article/view/139
7. Eneng D, Rikky GH, Lina M, Meti S. Prolanis Terhadap Tingkat Penurunan Tekanan Darah dan Diabetes Mellitus di Bungursari, Tasikmalaya. ABDIMAS [Internet]. 2020;3(2):292-7. Available from:

https://journal.umtas.ac.id/index.php/ABDIMAS/article/view/851
8. PB PERKENI. 2021. Pedoman Pengelolaan dan Pencegahan Diabetes Mellitus Tipe 2 Dewasa di Indonesia 2021. Jakarta [Internet]. Available from : https://pbperkeni.or.id/wp-content/uploads/2021/11/22-10-21-Website-Pedoman-Pengelolaan-dan-Pencegahan-DMT2-Ebook.pdf
9. Emily E, Ropa N. Hemoglobin A1C. [Updated 2023 Mar 13]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024. Available from: https://www.ncbi.nlm.nih.gov/books/NBK549816/
10. BPJS Kesehatan. 2015. Panduan Praktis Prolanis (Program Pengelolaan Penyakit Kronis). Jakarta.
11. American Diabetes Association. Diagnosis and Classification of Diabetes: Standards of Care in Diabetes - 2024. Diabetes Care [Internet]. 2024;47(Suppl. 1):S20-S42. Available from: https://doi.org/10.2337/dc24-S002.
12. Asyifa M. Perbedaan Tingkat Pengetahuan Mengenai Hipertensi Dan Diabetes Melitus Pada Peserta Prolanis Dan Non-Prolanis Di Puskesmas Kecamatan Kembangan Tahun 2022. Skripsi. UIN Syarif Hidayatullah Jakarta. 2022. Available from : https://repository.uinjkt.ac.id/dspace/handle/123456789/67239
13. Meng-Hsueh Hsieh, Yu-Ching Chen, Chun-Heng Ho, Chung- Ying Lin. Validation Diabetes Knowledge Questionnaire (DKQ) in the Taiwanese Population – Concurrent Validity with Diabetes-Spesific Quality of Life Questionnaire Module. Diabetes, Metabolic Syndrome and Obesity : Targets and Therapy [Internet]. 2022;15:2391-2403. DOI : https://doi.org/10.2147/DMSO.S369552
14. Ikha W, Anisa CW. Hubungan Pengetahuan dan Sikap dengan Kualitas Hidup Penderita Diabetes Mellitus Tipe2 di Surakarta. Jurnal Kesehatan Masyarakat Indonesia [Internet]. 2021;16(3):136-1473. DOI : https://doi.org/10.26714/jkmi.16.3.2021.136-147
15. Siti RN, Vitis VFRU, Hening P. Hubungan Tingkat Pengetahuan terhadap Manajemen Diri Pasien Prolanis Diabetes Mellitus Tipe 2. Acta Pharm Indo [Internet]. 2021;9(2):78-94. DOI : https://doi.org/10.20884/1.api.2021.9.2.4250
16. Ciarambino T, Crispino P, Leto G, Mastrolorenzo E, Para O, Giordano M. Influence of Gender in Diabetes Mellitus and Its Complication. Int J Mol Sci. 2022;23(16):8850. DOI : https://doi.org/10.3390/ijms23168850.
17. Ashley ET, Yvonne A, Baukje M, et all. The influence of gender and other patient characteristics on health care-seeking behaviour: a QUALICOPC study. BMC Fam Pract [Internet]. 2016;17(38):1-7. https://doi.org/10.1186/s12875-016-0440-0
18. Debora ES, Annisa P, Erika IS. Hubungan Usia, Pekerjaan, dan Pendidikan Pasien terhadap Tingkat Pengetahuan DAGUSIBU di Puskesmas Wilayah Lampung Tengah. Jurnal Ilmiah Wahana Pendidikan [Internet]. 2024;10(6):196-204. Available from: https://jurnal.peneliti.net/index.php/JIWP
19. Ebaid D, Crewther SG. Visual Information Processing in Young and Older Adults. Front Aging Neurosci. 2019;11(116). Available from: DOI: https://doi.org/10.3389/fnagi.2019.00116
20. Fahmi MP, Irfan F, Anwar S. Makna Kematian pada Wanita Lanjut Usia yang Melajang. PSYMPHATIC: Jurnal Ilmiah Psikologi [Internet]. 2018;5(2):241-252. Available from: https://journal.uinsgd.ac.id/index.php/

psy/article/view/3086/2341
21. Selamat A. Hubungan antara Tingkat Pendidikan dan Tingkat Pengetahuan dengan Perilaku Hidup Sehat, Berkualitas di Lingkungan Rumah. Edu Society: Jurnal Pendidikan, Ilmu Sosial, dan Pengabdian Kepada Masyarakat [Internet]. 2022;2(3):723-730. Available from : https://jurnal.permapendis-sumut.org/index.php/edusociety.
22. Annisa P, Purwo SN. Hubungan Tingkat Pendidikan dan Usia dengan Kejadian Diabetes Mellitus di Wilayah Kerja Puskesmas Palaran Kota Samarinda Tahun 2019. Borneo Student Research [Internet]. 2019;1(1):1-5. Available from: https://journals.umkt.ac.id/index.php/bsr/article/view/479.
23. Muhasidah, Ruslan H, Indirawaty, Nur WM. Hubungan Tingkat Pengetahuan, Sikap dan Pola Makan dengan Kadar Gula Darah pada Penderita Diabetes Mellitus di Wilayah Kerja Puskesmas Sudiang Kota Makasar. Jurnal Media Keperawatan: Politeknik Kesehatan Makasar [Internet]. 2017;08(02):23-30. DOI : https://doi.org/10.32382/jmk.v8i2.453
24. Susaky W, Nuniek NF. Hubungan Keaktifan dalam Klub Prolanis terhadap Peningkatan Kualitas Hidup Diabetisi Tipe 2. Jurnal Ilmu Kesehatan [Internet]. 2018;11(1):273-286. DOI : https://doi.org/10.48144/jiks.v11i1.87
25. Dicky PP, Anita R, Yuanita W, Novrikasari, Nur AF. Program Pengelolaan Penyakit Kronis Diabetes Mellitus sebagai Pencegahan Penyakit Degenerative Diabetes Mellitus, dan Dampaknya bagi Pekerja di Indonesia. Syntax Literate: Jurnal Ilmiah Indonesia [Internet]. 2023;8(12):6293-6303. Available from: https://doi.org/10.36418/syntax-literate.v7i9.13935.