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The Relationship between Knowledge and Attitudes of the Chronic Disease Management Program with Diabetes Mellitus Control Actions at the Tikala Baru Health Center

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Abstract

Diabetes is a metabolic disorder that occurs in the pancreas, which is characterized by an increase in blood sugar caused by a decrease in the amount of insulin in the pancreas. Diabetes mellitus has a significant relationship with the body, especially if it is not managed correctly. The program to overcome the problem and control the problem of diabetes mellitus is to carry out partnerships. The government's program in controlling diabetes mellitus, namely the collaboration between BPJS and health facilities, developed the Prolanis partnership program. The prolanis program, organized by BPJS and the government, positively impacts education and the treatment of chronic diseases, namely, hypertension and diabetes. To determine the relationship between the knowledge and attitude of prolanists and diabetes mellitus control actions. This study uses quantitative research. The type of research uses Cross-Sectional research to determine the relationship between participants' knowledge and attitudes and diabetes mellitus control measures. The analysis results of this study obtained a correlation coefficient value between knowledge and action with a significant level of 0.793, and for the result of a correlation coefficient value between attitude and action with a significant level of 0.042. There is no relationship between knowledge and prolanist actions in controlling diabetes mellitus. There is a relationship between prolanist attitudes and actions in controlling diabetes mellitus.

Keywords: Diabetes mellitus, Knowledge and Attitude, Action

Abstrak (Indonesian)

Diabetes merupakan penyakit gangguan metabolisme yang terjadi pada organ yang ditandai dengan peningkatan gula darah yang disebabkan menurunnya jumlah insulin dalam pankreas. Diabetes melitus memiliki hubungan yang signifikan terhadap tubuh, terutama jika tidak dikelola dengan baik. Program untuk mengatasi permasalahan dan mengendalikan masalah diabetes melitus adalah dengan melakukan kemitraan. Program pemerintah dalam pengendalian diabetes melitus yaitu kerjasama BPJS dan fasilitas kesehatan menyusun program kemitraan Prolanis. Program prolanis yang diselenggarakan BPJS bersama pemerintah memiliki dampak positif dalam edukasi dan penanganan penyakit kronis yakni, hipertensi dan diabetes. Untuk mengetahui hubungan pengetahuan dan sikap prolanis dengan tindakan pengendalian diabetes melitus. Penelitian ini menggunakan penelitian kuantitatif. Jenis penelitian menggunakan jenis penelitian *Cross-Sectional*, untuk mengetahui hubungan peserta pengetahuan dan sikap dengan tindakan pengendalian diabetes melitus. Hasil dari analisis penelitian ini diperoleh nilai koefisien korelasi antara hubungan pengetahuan dan tindakan dengan taraf signifikan 0.793 dan untuk hasil nilai koefisien korelasi antara sikap dan tindakan dengan taraf signifikan 0.042. Tidak ada hubungan pengetahuan dan tindakan prolanis dalam pengendalian diabetes melitus. Adanya hubungan sikap dan tindakan prolanis dalam pengendalian diabetes melitus.

Kata Kunci: Diabetes Melitus, Pengetahuan Dan Sikap, Tindakan Pengendalian

INTRODUCTION

Diabetes is a metabolic disorder that occurs in organs characterized by increased blood sugar due to decreased insulin in the pancreas (Lestari, 2021).

The International Diabetes Federation states that the global prevalence of diabetes in 20-79 years in 2021 is estimated at 10.5%, increasing to 12.2% in 2045. The prevalence in 2021 is estimated to be higher in urban areas at 12.1% compared to rural areas at 8.3% (IDF, 2021). Based on data from the Indonesian Health Survey in 2023, the prevalence of diabetes mellitus in Indonesia was 1.7% with 877,531 cases and patients with diabetes mellitus.

>15 years was 2.2% with 638,178 cases (SKI, 2023). Based on data from the North Sulawesi Health Office, the number of diabetes mellitus cases in 2022 was 13,981, up from 6,804 in 2020. The 2022 surveillance report states that diabetes mellitus is included in the 10 most prominent common diseases in North Sulawesi (North Sulawesi Health Office, 2022).

The number of people with diabetes mellitus in 2021 has increased rapidly over the last ten years. The number of people with diabetes has skyrocketed 167% compared to the number of people with diabetes in 2011, which reached 7.29 million. In 2021, the number of deaths caused by diabetes in Indonesia reached 236,711 cases. This number increased by 58% compared to 149,872 cases in 2011 (Pahlevi R, 2021). Diabetes mellitus has a significant relationship with the body, especially if it is not managed correctly. Some of the effects of diabetes on the body are eye disorders, dry skin, and dental and oral disorders. Physical activity is significant for people with diabetes because it can help manage blood sugar levels and prevent complications. Some physical activities recommended for people with diabetes mellitus include fast walking, yoga, and cycling (Lathifah, 2017). In addition to physical activity, people with Type 2 Diabetes Mellitus must also pay attention to diet. The purpose of a diet is to maintain nutritional intake so that blood glucose levels can be controlled. Dietary non-compliance in patients with Type 2 Diabetes Mellitus is an obstacle to successful management. The Type 2 Diabetes Mellitus diet is known as the 3J principle, namely the amount of food, type, and schedule. The purpose of this principle is to control blood glucose levels (Magdalena, 2016). One of the government programs for controlling diabetes mellitus is the collaboration between BPJS and facilities. Health has developed the Prolanis partnership program. Prolanis is a health service system and a proactive approach implemented in an integrated manner involving participants, health facilities, and BPJS Health to maintain participants' health. The purpose of Prolanis is to maintain the health of BPJS participants who suffer from chronic diseases, including diabetes mellitus, in order to achieve optimal quality of life with effective and efficient health service costs.

Based on research by Rosyida Safira Hasna (2019), the Prolanis program, organized by BPJS and the government, positively impacts education and management of chronic diseases, namely hypertension and diabetes.

Based on the results of an initial survey at the Tikala Baru Health Center, it was found that the number of people with diabetes mellitus in 2023 increased by 11% compared to 2022. For the number of visits of people with diabetes mellitus in December 197, visits increased compared to November, as many as 177 visits, and the number of active patients in prolanis in 2023 increased to 24 people, an increase from 2022, where as many as 15 people.

METHODS

This study is a quantitative research with a cross-sectional design. The research was conducted at Tikala Baru Community Health Center from July to August 2024. The independent variables were knowledge and attitude, while the dependent variable was diabetes mellitus control behavior. The population in this study consisted of all Prolanis participants, totaling 34 respondents. The sampling method used was total sampling based on inclusion and exclusion criteria. This study utilized both primary and secondary data. Primary data were obtained directly from respondents through a

questionnaire containing questions administered to them, while secondary data were collected from the annual report of Tikala Baru Community Health Center.

RESULTS AND DISCUSSION

A. RESULTS

1. Respondent Characteristics

Table 1. Distribution of Respondents by Age

Age Group (Year)	Frequency (n)	Percent %
48-50	3	8.8%
51-60	25	73.5%
61-68	6	17.6
Total	34	100 %

Table 1 shows that the largest age group is 51-60, with a percentage of 73.5% (n=25), and the youngest age group is 48-50, with a percentage of 8.8% (n=3).

Table 2. Distribution of Respondents Based on Gender

Gender	Frequency (n)	Percent %
Male	3	8.8%
Female	31	91.2%
Total	34	100 %

Table 2 shows that most respondents were female, with a percentage of 91.2% (n=31), and the least were male, with a percentage of 8.8% (n=3).

Table 3. Distribution of Respondents Based on Last Education

Last Education	Frequency (n)	Percent %
Elementary school	1	2.9%
Junior high school	5	14.7%
High school	27	79.5%
College	1	2.9%
Total	34	100%

Table 3 shows that respondents with the highest level of education are at the high school level, with a percentage of 79.5% (n = 27), and the least are at the elementary school and university levels, with a percentage of 2.9% (n = 1).

Table 4. Distribution of Respondents Based on Knowledge at Tikala Baru Health Center

Knowledge	Frequency (n)	Percent %
Good	15	44.1%
Fair	12	35.3%
Less	7	20.6%
Total	34	100%

Table 4 shows that the most respondents' prolanis knowledge is good knowledge with a percentage of 44.1% (n = 15), and the least respondents are less knowledgeable with a percentage of 20.6% (n = 7).

Table 5. Distribution of Respondents Based on Attitude at Tikala Baru Health Center

Attitude	Frequency (n)	Percent %
Support	16	47%
Not Supportive	18	53%
Total	34	100%

Table 5 shows that most respondents support the prolanis attitude with a percentage of 47% (n = 16), and the least do not support with a percentage of 53% (n = 18).

Table 6. Distribution of Respondents Based on Respondents' Actions at Puskesmas Tikala Baru

Action	Frequency (n)	Percent %
Done	21	62%
Not done	13	38%
Total	34	100%

Table 6 shows that the most respondents' prolanis actions were carried out with a percentage of 62% (n = 21), and the least respondents were not with a percentage of 38% (n = 13).

2. Bivariate Analysis

a. Chi-Square Test Results

Table 7. *Chi-Square* Test of the Relationship between Knowledge and Respondents' Actions with Diabetes Mellitus Control at the Puskesmas

Knowledge	Action				Total		*P Value*
	Done		Not Done				
	N	%	N	%	N	%	
Good	7	21%	10	20%	17	41%	0.793
Less	7	29%	10	30%	17	59%	
Total	14	50%	20	50%	34	100%	

Based on Table 7, it is known that respondents took good knowledge and actions with a percentage of 58.8% (n = 12), while poor knowledge and actions were not taken with a percentage of 14.7% (n = 5). There is no relationship between knowledge and action, p-value≥ 0.05.

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Table 8. *Chi-Square* Test of the Relationship between Respondents' Attitudes and Actions with Diabetes Mellitus Control at the Tikala Baru Health Center

Attitude	Action				Total		*P Value*
	Done		Not Done				
	N	%	N	%	N	%	
Support	8	23%	8	23%	16	58.8%	
Not Supportive	4	12%	14	42%	18	41.2%	0.042
Total	12	35%	22	65%	34	100%	

Based on Table 8, it is known that attitudes are support and are carried out in respondents with a percentage of 50% (n = 17) while attitudes are not support and are not carried out with a percentage of 23% (n = 6). There is a relationship between attitude and action, p-value≤ 0.05.

DISCUSSION

1. Analyzing the characteristics of respondents based on age

In identifying the characteristics of respondents based on age carried out on the elderly at the Tikala Baru Health Center, it can be concluded that most respondents are 51-60 years old (73.5%). This finding highlights the importance of special attention to this age group in the context of diabetes mellitus control.

This study is consistent with previous findings presented by Adib (2016), who stated that diabetes mellitus can occur in the elderly and adults, but usually appears after the age of 30 years. This age group tends to be more susceptible to diabetes mellitus, mainly due to the natural aging process, which decreases the body's metabolic function. Decreased metabolic function of the body. Risk factors such as decreased insulin sensitivity, increased insulin resistance, and less active lifestyle changes are often more prominent in this age group.

In addition, various studies have shown that the risk of diabetes mellitus increases significantly in individuals over 45 years old. This is due to the accumulation of risk factors such as obesity, hypertension, and a family history of diabetes mellitus. With diabetes. According to the *American Diabetes Association* (2018), aging also contributes to changes in the body's composition, such as increased visceral fat mass, which can impair glucose metabolism. Furthermore, the 51-60 year old age group often faces additional challenges, such as decreased physical activity and unhealthy dietary changes, which can worsen the condition of diabetes. Therefore, control and prevention efforts in this age group must be more intensive, including health education focusing on healthy lifestyle management, regular blood sugar monitoring, and increased access to health services to help control diabetes mellitus.

High awareness and early preventive measures in this age group can significantly reduce the risk of long-term complications associated with diabetes mellitus, such as cardiovascular disease, neuropathy, and retinopathy. An integrated approach involving medical interventions, lifestyle changes, and social

support is essential to improving the quality of life of individuals in this high-risk age group (Ketut Suastika et al., 2019).

2. **Analyzing respondent characteristics based on gender**

The identification of sample characteristics based on gender carried out on the elderly at the Tikala Baru Health Center revealed that most of the respondents were female (91.2%). This finding aligns with previous research conducted by the researchers, including previous research conducted by Farsyi et al. (2013), which shows that the prevalence of diabetes mellitus is higher in women than men.

Women are at greater risk of developing diabetes mellitus due to several biological and hormonal factors. For example, women tend to experience significant hormonal changes during pregnancy (*gestational diabetes*) and *menopause*, which can increase the risk of insulin resistance and, ultimately, type 2 diabetes. In addition, women have a higher tendency to experience an increase in body mass index, especially around menopause, which is a significant risk factor for diabetes.

Lower physical activity levels in women than men also contribute to this increased risk. Lack of physical activity not only increases the risk of obesity but also worsens insulin resistance, which is a major pathway towards the development of diabetes mellitus.

On the other hand, health awareness factors also influence these findings. Women tend to be more proactive in getting their health checked and following health programs such as diabetes screening compared to men. Studies show that women utilize health services more frequently, which may improve early detection of diabetes in this group. However, despite women's more frequent health check-ups, diabetes complication rates remain high, suggesting the need for a more integrated approach in the prevention and management of diabetes in women (Budiman, 2020).

This study is also in line with the *global* trend that women, especially those above 45 years old, are more susceptible to diabetes mellitus. This is related to various factors such as diet, physical activity, and access to better health services. A focused approach to health education and healthy lifestyle promotion is essential to reducing the risk of diabetes mellitus in women (Hartono, 2019).

3. **Analyzing the characteristics of respondents based on the last education**

In identifying the character of respondents based on the latest education conducted on the elderly at the Tikala Baru Health Center, it can be concluded that most respondents have a high school education level (SMA) (97.1%). This research is in line with the findings of Nursalam. in line with the findings of Nursalam (2017), which states that education level significantly influences a person's ability to absorb and understand health information. The higher a person's education, the easier for them to receive complex information, including knowledge about diabetes mellitus and how to control it.

Higher levels of education, such as high school or college, are usually associated with better health literacy skills. This health literacy includes understanding the causes, symptoms and management of chronic diseases such as diabetes. People with higher education tend to have better access to health resources, can understand educational materials provided by medical personnel, and are more likely to apply the information in their daily lives (Astuti, 2019).

In contrast, respondents with lower education levels may face challenges in understanding complicated medical information. This may negatively impact their ability to recognize early symptoms of diabetes, follow dietary or medication recommendations, and attend regular health check-ups. Other studies have also shown that low health literacy can lead to misconceptions about diabetes management, leading to poor glycemic control and increased risk of complications. In addition, higher education is often associated with healthier lifestyles, such as better diets, higher levels of physical activity, and less smoking, all of which are protective factors against the development of diabetes mellitus. However, it is important to remember that access to and quality of health information also play an important role. In areas with limited access to health information or services, even individuals

with high education may not be fully aware of the risks of diabetes or how to prevent it (Setiawan, 2020).

Other studies have also confirmed that education plays a role in influencing attitudes towards health. Individuals with higher education tend to be more proactive in seeking health information, undergoing regular health check-ups, and following medical advice than those with lower education. his underscores the importance of targeted health education interventions, particularly for groups with low education, to improve diabetes awareness and management (Kusuma, 2021). Targeted health education interventions, particularly for low-education groups, are important in improving diabetes awareness and management (Kusuma, 2021).

4. **Analyzing knowledge with action respondents in diabetes mellitus control**

The results showed knowledge and prolanis in controlling diabetes mellitus at Puskesmas Tikala Baru (p = 0.793> 0.05). This shows no relationship between knowledge and prolanis action in controlling diabetes mellitus.

The results of this study are not in line with the results of research conducted by Farida (2019) and Limsah Silalahi (2019) on the relationship between knowledge, attitudes, and actions of prolanis patients in controlling diabetes mellitus and preventing hypoglycemia complications at Labuang Baji Hospital, Makassar.

These results suggest that health education that focuses solely on improving knowledge may not be sufficient to promote the behavioral changes required for diabetes mellitus control. It is important to consider t h e approach

highlighted that although patients have adequate knowledge about diabetes mellitus, it is not always followed by their actual management practices. This may include social support, improved access to health resources, and programs that assist patients in implementing their knowledge. highlights that although patients have adequate knowledge about diabetes mellitus, it is not always followed by good self-management practices. This suggests that knowledge alone is not enough; social support, personal motivation, and access to adequate health resources are also needed to ensure that appropriate management actions are taken by patients (Shawahna, 2021).

According to health behavior theory, several factors can hinder the application of knowledge into action, including self-efficacy or confidence in one's ability to perform the necessary actions. For example, patients may know the importance of managing their diet and exercising regularly, but if they do not believe they can do so consistently, they are less likely to do so. Apply that knowledge. Furthermore, psychological aspects such as stress and anxiety can also affect one's ability to apply knowledge. A person to implement knowledge about diabetes management. Research shows that patients with high levels of stress tend to have poorer blood sugar control, even though they have sufficient knowledge about diabetes. Therefore, a more holistic approach that includes psychological and emotional support is essential in health education programs (Pratiwi, 2019).

5. **Analyzing attitudes with respondents' actions in diabetes mellitus control**

The results showed the attitude and action of prolanis in controlling diabetes mellitus at Puskesmas Tikala Baru (p = 0.042 <0.05). This shows a relationship between attitude and prolanis action in controlling diabetes mellitus.

The results of this study are in line with the results of research conducted by Alfeus (2020) and Gilang Sukma et al (2023) on the Relationship between Attitudes and Actions with Diet as a Risk Factor for Diabetes Mellitus using descriptive research methods with approach *cross sectional*, used to determine the significant relationship between two variables. The sample in this study was 62 respondents.

In this context, patients' attitudes towards diabetes mellitus management may include beliefs about the importance of following a healthy diet, adherence to medical recommendations, and perceptions about the consequences of not following disease management guidelines. When these attitudes are positive, actions taken by patients, such as healthy food selection and regularity in dietary management, are more likely to conform to recommended standards. This study aligns with a study in Palestine, where positive attitudes towards diabetes treatment and management were associated with better management practices, such as more regular blood sugar control and medication adherence. This study confirms that attitude change is important in effective diabetes management strategies and should be a primary focus in health education and intervention programs (Tanzania, 2021).

CONCLUSION

Based on the results of the discussion, the following conclusions can be drawn:

1. Most of the respondents with gender are mostly female in range age 51-60 (73,5%) with the last education being generally high school.
2. Most respondents have less knowledge, with a percentage of 53% (N = 18).
3. Most respondents were not supportive, with a percentage of 53% (n=18).
4. Most respondents did the most, with a percentage of 62% (n=21).
5. Relationship between Knowledge and Action: There is no significant relationship between prolanis knowledge and diabetes mellitus control actions at Puskesmas Tikala Baru, with a significance value of p = 0.793 (> 0.05).
6. Relationship between Attitude and Action: There is a significant relationship between prolanis attitudes and diabetes mellitus control actions at Puskesmas Tikala Baru, with a significance value of p = 0.042 (<0.05).

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