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THE RELATIONSHIP BETWEEN *HEALTH LOCUS OF CONTROL* AND DIET COMPLIANCE IN TYPE 2 DIABETES MELLITUS PATIENTS IN THE WORK AREA OF KABILA COMMUNITY HEALTH CENTER BONE BOLANGO REGENCY

HUBUNGAN ANTARA *HEALTH LOCUS OF CONTROL* DENGAN KEPATUHAN DIET PADA PASIEN DIABETES MELITUS TIPE 2 DI WILAYAH KERJA PUSKESMAS KABILA KABUPATEN BONE BOLANGO

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Abstract

Diabetes mellitus is a disease characterized by increased glucose levels that over time cause serious damage to the heart, blood vessels, eyes and kidneys (*World Health Organization)* in 2024. Compliance is the degree to which a person carries out health-related behavior, either taking medication, following diet therapy and changing lifestyle according to recommendations given by health workers. Diet or nutritional therapy is used to regulate the patient's food intake so that it remains fulfilled and does not result in an increase in blood sugar so that it is necessary to regulate the schedule, type and amount of food as nutrition. This study aims to determine whether there is a relationship between *health locus of control* and compliance with diet in patients with diabetes mellitus in the Kabila Health Center work area. The design in this study is quantitative correlational. The sampling technique in this study used the *non-probability sampling method* with a total sample of 52 diabetes mellitus participants at the Kabila Health Center. The instrument used in the study used a questionnaire instrument with open questions about the variable *health locus of control* and compliance with the diet of patients with diabetes mellitus. Based on the results of the study, there is a relationship between *health locus of control* and compliance with diet in diabetes mellitus patients in the Kabila Health Center work area, with a significance value or *p-value* showing 0.000 (p <0.05). This is based on the alternative *Fisher exact test* because there are 3 *cells* with an *expect count value* <5.

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Keywords: *Diabetes Mellitus, Health locus of control, diet compliance*

Abstrak

Diabetes melitus merupakan penyakit yang ditandai dengan peningkatan kadar glukosa yang seiring waktu menyebabkan kerusakan serius pada jantung, pembuluh darah, mata dan ginjal (*World Health Organization)* pada tahun 2024. Kepatuhan merupakan derajat dimana seseorang melakukan perlaku yang berkaitan dengan kesehatan, baik meminum obat, mengikuti terapi diet dan mengubah gaya hidup sesuai rekomendasi yang diberikan oleh Tenaga kesehatan. Diet atau terapi nutrisi digunakan untuk mengatur asupan makanan pasien agar tetap terpenuhi dan tidak mengakibatkan peningkatan gula darah sehingga perlu adanya pengaturan jadwal, jenis dan jumlah makanan sebagai nutrisi. Penelitian ini bertujuan untuk mengetahui apakah ada hubungan *health locus of control* dengan kepatuhan menjalani diet pada penderita diabetes melitus di wilayah kerja Puskesmas Kabila. Desain dalam penelitian ini adalah kuantitatif koresional. Teknik pengambilan Sampel dalam penelitian ini menggunakan metode *non-probality sampling* dengan total sampel 52 peserta diabetes mellitus di Puskesmas Kabila. Instrument yang digunakan dalam penelitian menggunakan instrument kuisioner dengan pertanyaan terbuka tentang variable *health locus of control* dan kepatuhan diet pendertia diabetes mellitus. Berdasarkan hasil penelitian terdapat hubungan *health locus of control* dengan kepatuhan menjalani diet pada penderita diabetes melitus di wilayah kerja Puskesmas Kabila, dengan nilai signifikasi atau *p-value* menunjukan 0,000 (p<0,05) hal ini berdasarkan uji alternative *fisher exact test* karena terdapat 3 *cels* dengan nilai *expect count* <5.
Kata Kunci : *Diabetes Melitus, Health locus of control, kepatuhan diet*

1. INTRODUCTION

Diabetes mellitus is a disease characterized by increased glucose levels that over time cause serious damage to the heart, blood vessels, eyes and kidneys (*World Health Organization)* in 2024. Meanwhile, according to *the International Diabetes Mellitus Federation* (IDF) Diabetes Mellitus is a metabolic disease characterized by hyperglycemia that occurs because the pancreas is unable to secrete insulin, or both. (*International Diabetes Mellitus Federation* , 2021).

The still high incidence of diabetes mellitus is also reinforced by the results of existing research, where diabetes mellitus is a disease of chronic metabolic disorders characterized by increased blood sugar levels, poor diet, including inappropriate meal times and irregular food consumption will affect blood sugar levels in the body. Cases of diabetes mellitus generally occur more often in developing countries than in developed countries. The prevalence of Diabetes Mellitus sufferers itself continues to soar in various countries including China, India, Pakistan, the United States and Indonesia are ranked in the top 5 countries. "According to IDMF data in 2021, the number of people with diabetes mellitus in the world currently reaches 537 million adults aged 20-79 years. In 2030 it is estimated to increase to 678 million and in 2045 it will jump to 700 million." (IDMF, 2021)

Meanwhile, for the results of the Indonesian Health Survey (SKI), diabetes sufferers in Indonesia in 2023 were 11.7%. Based on the diagnosis in all age groups, the highest in 2023

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was DKI Jakarta province with a disease prevalence of 0.2%. Gorontalo Province was ranked 7th for diabetes incidence in 2023 with a figure of 2.3% (Ministry of Health, 2023).

Based on data obtained from the Gorontalo Provincial Health Office in 2024, the three districts with the highest number of diabetes mellitus sufferers in Gorontalo province are in Bone Bolango Regency with 3,574 people, Boalemo Regency with 2,212 people and Gorontalo Regency with 2,114 people (Gorontalo Provincial Health Office, 2024). Based on data from the Bonebolango District Health Office in 2024, the number of diabetes mellitus sufferers in Kabila sub-district, precisely in the Kabila Health Center working area, was 422 people. Kabila Health Center is ranked first. (Bone Bolango District Health Office, 2024)

“The management of diabetes mellitus consists of four pillars of management, namely education, physical exercise, pharmacological therapy and medical nutrition therapy (diet). The determination of these four pillars aims to control blood glucose, reduce the risk of complications, improve quality of life, prevent and inhibit microangiopathy and macroangiopathy complications. Medical nutrition therapy (diet) is one of the most important pillars in the management of diabetes mellitus because it has very good benefits for health if done correctly and according to the recommendations of health workers. " (Buston, E. Efendi, P. & Heriyanto, H, 2021)

"Diet or nutritional therapy is used to regulate the patient's food intake so that it remains fulfilled and does not cause an increase in blood sugar so that it is necessary to regulate the schedule, type and amount of food as nutrition. In undergoing a diet, compliance is very necessary so that the diet that is carried out will continue to be consistent. Diet compliance aims to be able to control blood sugar levels so that people with diabetes mellitus can live a better life." (Mamesah, F., Runtuwene, M., & Katuuk, M, 2019)

Compliance of patients with diabetes mellitus is very much needed to achieve successful therapy. The cause of failure in treatment is because DM patients do not have the self-awareness to comply with the diet, resulting in a decline in health which results in complications in DM and can cause death. (Adhanty, S. Ayubi, D & Anshari, D, 2021)

Compliance is the degree to which a person performs health-related behaviors, such as taking medication, following diet therapy, and changing lifestyles according to recommendations given by health workers. Diet compliance can be influenced by various factors, namely predisposing factors such as individual and psychosocial characteristics, reinforcing factors such as family or health worker support , and enabling factors such as the provision of services and distance to health facilities.

Psychosocial factors applied in the health sector are measured by *Health locus of control* (HLOC) or locus of control for health. The formation of a person's belief is *Health locus of control* (HLOC) or about a person who has full control or influence over health. *Health Locus of Control* (HLOC) is divided into two, namely internal and external HLOC. Individuals with internal *Health locus of control* (HLOC) will tend to work hard to take action to recover, always try to find solutions to problems, always think as effectively as possible and always have the perception that hard work must be done if they want to recover, while individuals with external *Health Locus of Control* (HLOC) will be more passive, have less initiative, seek less information to solve problems and are less likely to try because individuals believe that external factors control them. Each individual has a different *Health Locus of Control* (HLOC), because individuals have different assessments and experiences so that they will affect their behavior (Rianty, 2022) .

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Based on the results of observations and interviews conducted by researchers at the Kabila Health Center, Bonebolango Regency, on 5 DMT2 patients, 4 patients said that they still had an irregular diet, often felt bored with the DM diet they were following and could not resist eating the desired food and eating large portions of food. They also said that the disease they suffered was God's destiny (genetic/hereditary factors). Meanwhile, 1 patient said that the DM disease they experienced was caused by their previous lifestyle (unhealthy lifestyle).

Based on the background description, the researcher is interested in examining the relationship between *health locus of control* and compliance with diet in Type 2 DM patients in the Kabila Health Center work area.

2. RESEARCH METHOD

The design in this study is quantitative correlational. Correlational research is an example of associational research, namely the relationship between two or more variables is studied without any attempt to determine its influence. The population in this study were all Diabetes Mellitus sufferers who live in Pauwo Village with a population of 52 people. The type of *sampling* in this study was *non-probability sampling* .

3. RESULTS AND DISCUSSION

Respondent Characteristics

1. Distribution of Respondents by Gender

Based on the research results, the distribution of respondents by gender is obtained in the following table:

Table 1 Distribution of Respondents by Gender

No	Gender	Number (n)	Percentage (%)
1	Woman	34	65.4
2	Man	18	34.6
Total		52	100

Source: Primary Data, 2024

From results research on the distribution of respondents based on gender shows that out of 52 The most gender was female with 34 respondents (65.4%) and the least male with 18 respondents (34.6%). This means that diabetes sufferers at the Kabila District Health Center from a total of 52 are mostly female.

2. Distribution of Respondents based on Age

Based on the research results, the distribution of respondents according to age is obtained in the following table:

Table 2 Distribution of Respondents by Age

No	Age	Number (n)	Percentage (%)
1	36-45 Years	16	30.7
2	46-55 Years	33	63.5
3	56-65 Years	3	5.8
Total		52	100

Source: Primary Data, 2024

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From results The study of respondent distribution based on age shows that out of 52 respondents , the age group of 46-55 years was the largest with a total of 33 with a percentage of (63.5%), for the age group of 36-45 years with a total of 16 and a percentage of (30.7%) while for the age group of 56-65 years with a percentage of (5.8%).
From the data on the distribution of respondents based on age, it can be seen that the age group of 46-55 years is the largest group suffering from Diabetes Mellitus with a total of 33 (63%), then the age group of 36-45 years with a total of 16 (30.7%) and the smallest group is 56-65 years (5.8%).

3. Distribution of Respondents based on Education

Based on the research results , the distribution of respondents according to education is obtained in the following table:

Table 3 Distribution of Respondents based on education

No	Education	Number (n)	Percentage (%)
1	Junior High School	3	5.8
2	Senior High School	46	88.5
3	Diploma	1	1.9
4	Bachelor	2	3.8
Total		52	100

Source: Primary Data, 2024

From results The study of respondent distribution based on education found that out of 52 respondents , the highest education was high school with 46 respondents (88.5%) and the lowest was a diploma with 1 respondent (1.9%).

This shows that the level of education affects *Health locus of control* (HLOC) and also compliance in undergoing a diet for diabetes mellitus sufferers. Where for high school education with a total of 46 (88.5) in this phase sufferers are lacking in the application of diet to food consumption which results in suffering from diabetes mellitus. For junior high school education level with a total of 3 (5.8%) on average at that phase the immune system is still stable and also does not know about diabetes mellitus so that diabetes mellitus is rarely indicated in junior high school sufferers. While for the Diploma education level with a total of 1 (1.9%) and Bachelor's degree with a total of 2 (3.7%) the level of alertness and also the implementation of diet or *Health locus of control* (HLOC) has been carried out to anticipate diabetes mellitus.

4. Distribution of Respondents by Occupation

Based on the research results , the distribution of respondents according to occupation is obtained in the following table:

Table 4 Distribution of Respondents by Occupation

No	Work	Number (n)	Percentage (%)
1	housewife	30	57.7
2	Self-employed	18	34.6
3	Farmer	1	1.9

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4	ASN	3	5.8
Total		52	100

Source: Primary Data, 2024

From results The study of respondent distribution based on occupation showed that out of 52 respondents , the most jobs were housewives with 30 respondents (57.7%) and the fewest were farmers with 1 respondent (1.9%).

Based on the distribution results based on the work, it can be seen that the largest number is found in housewives with a total of 30 (57.7%). Housewives' work tends to have varied physical activities but is limited to the home environment and has the potential to experience stress or irregular eating patterns. Meanwhile, the characteristics of work for farmers with a total of 1 (1.9%) are due to the high daily activities and the possibility of simpler and more natural food consumption patterns.

Univariate Analysis

1. Univariate analysis *of health locus of control*

Based on the research results from 52 respondents, a univariate analysis *of health locus of control was obtained* in the following table:

Table 5 Univariate analysis *of health locus of control*

No	***Health Locus of Control***	**Number (n)**	**Percentage (%)**
1	Currently	48	92.3
2	Tall	4	7.7
Total		52	100

Source: Primary Data, 2024

Based on the research results, it was found that of the 52 respondents, the highest *health locus of control* was moderate with a total of 48 respondents (92.3) and the lowest was high with a total of 4 respondents (7.7).

level of *Health locus of control* (HLOC) indicates that the majority of respondents have a balanced belief regarding control over their health. This is suspected that the respondents are aware of the importance of personal roles in maintaining health but are also still influenced by external factors such as doctors or the environment. Meanwhile, for a high level of *Health locus of control* (HLOC), this is suspected to be more proactive in taking preventive measures, treatment and maintenance of their health.

Univariate Analysis of Diet Compliance Levels

Based on the research results from 52 respondents, a univariate analysis of the level of dietary compliance was obtained in the following table:

Table 6 Univariate Analysis of Diet Compliance Levels

No	Diet Compliance Level	Number (n)	Percentage (%)
1	Enough	49	94.2
2	Good	3	5.8
Total		52	100

Source: Primary Data, 2024

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Based on the research results, it was found that from 52 respondents the level of dietary compliance was... the most was sufficient with a total of 49 respondents (94.2) and the least was good with a total of 3 respondents (5.8%).

The results of the level of dietary compliance with the sufficient category with a total of 49 (94.2) it is suspected that most respondents have been aware of the importance of regulating diet patterns, only follow dietary recommendations partially, and are still often tempted to violate food taboos that should be avoided especially in cases of diseases such as diabetes mellitus. While for respondents with a good category with a total of 3 (5.8%) meaning that out of a total of 52 respondents there were only 3 respondents who underwent good dietary compliance to prevent diabetes mellitus.

Bivariate Analysis

Based on the results of the research conducted, a relationship was obtained between sexual desire and sexual satisfaction of patients with PLHIV at Toto Kabila Regional Hospital, Bone Bolango Regency, which can be seen in the following table.

Table 4.7 Relationship between *health locus of control* and level of dietary compliance

health locus of control	**Diet compliance level**				**Total**	**P Value**
	Enough	**%**	**Good**	**%**		
Currently	48	92.4	0	0	48	0,000
Tall	1	1.9	3	5.7	4	
Total	49	94.3	3	5.7	52	

Source: Primary Data, 2024

Table 7 shows that respondents who have a moderate *health locus of control* tend to have a sufficient level of diet compliance, which is 48 respondents (92.4%). The same thing also happens to respondents who have a high *health locus of control* with a good level of diet compliance, which is 3 respondents (5.7%) . And there is 1 respondent with a high *health locus of control but the level of diet compliance is sufficient. The significance value or p-value* shows 0.000 (p <0.05) which means that there is a relationship between *health locus of control* and the level of diet compliance, this is based on the alternative *fisher exact test* because there are 3 *cells* with an *expect count value* <5.

Discussion

Health locus of control in diabetes mellitus patients in the Kabila Health Center work area

Based on the results of the distribution of diabetes mellitus sufferers, the total number of diabetes sufferers in the Kabila Health Center work area from a total of 52 respondents, the distribution of respondents with low *Health locus of control* was 48 respondents (92.3%) and high was 4 respondents (7.7%) with the high category.

Based on the results above, it can be seen that the level of *health locus of control* of a total of 52 respondents, only a small number of respondents have a high level of confidence or trust in the control of the health they experience and a level of confidence in healing the disease they suffer from.

Health Locus of Control is an individual's belief that their health is the result of their own actions, individuals also believe that they can control and change the environment, or data to control their own destiny. An individual who has a low health locus of control believes that their health is determined by others, such as health workers, friends, family, and God Almighty. The existence of models that provide examples of healthy lifestyles or ways, strengthening

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healthy behavior and encouragement and the influence of significant people are factors that can influence individual health (Adhanty et al., 2021).

This is in line with the findings of Dogonchi et al., (2022) "which show that individuals who believe in internal Health control tend to engage in Health behaviors. This may occur because individuals who believe that the locus of Health is within themselves have full awareness and responsibility for their own Health, so they will pay more attention to their own health which is manifested through behavior".

Respondents who have moderate *health locus of control are also caused by external factors that are more dominant than internal factors. The external factors in question are the powerful others health locus of control dimension* and *the chance health locus of control dimension* .

This is because from a total of 52 respondents suffering from Diabetes Mellitus after distributing the questionnaire, it was found that *the Health locus of control level* was in the moderate category because 16 respondents had regular contact with doctors to avoid illness, 26 respondents answered that their health condition improved because they often consulted with professional media personnel, 10 respondents answered that the family had many roles related to the respondent's health. This researcher assumes that *the Health locus of control level* is moderate due to the lack of self-confidence or self-control over the health experienced by the respondents.

A person who has *an external health locus of control* will be more passive, have less initiative, seek less information to solve problems and are less likely to try because the individual believes that external factors control their health (Adnyani et al., 2015). This is in line with the theory of Restuaji and Purwaningsih (2020), stating that individuals who have *an external health locus of control* believe more that events that occur in them depend on the power of other parties, especially health service providers. This belief causes them to be very obedient to people who they consider to have an influence on their health.

Kurniali (2018), stated that diabetes mellitus patients have different *health locus of control because each person has their own motivation and ability to achieve good health. The results of a study conducted by Candra et al. (2016), in diabetes mellitus patients at Puskesmas II West Denpasar found that most respondents had an external health locus of control* of 18 respondents (60%). Patients who have *an external health locus of control* are not necessarily fully able to control themselves without the help of others in the long term.

Research conducted by Arania et al. (2021), that increasing age causes changes in insulin release which affects the performance of carbohydrate metabolism and the release of glucose that enters cells. In addition, physical strength and body defense mechanisms tend to decrease with age and the body is no longer able to cope with unhealthy lifestyle choices which ultimately result in manifestations of diseases such as diabetes mellitus.

Meanwhile, for *the Health locus of control* category, it is high with a total of 4 respondents (7.7), this is proven by the results of the questionnaire where respondents stated that control over the respondent's health does not depend on other people but rather on their own level of self-confidence and self-control over health.

According to Ekayani et al. (2021), individuals with good *internal health locus of control* believe that their health condition can be controlled by themselves so that individuals will tend to learn from previous experiences. Individuals with *internal health locus of control* will find out, analyze and look for alternatives that can support their health status. In a study conducted

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by Irawan (2019), in patients with diabetes mellitus in the Sedayu II Bantul Yogyakarta Health Center work area, the results showed that most respondents had *an internal health locus of control* of 76.7%. Another study conducted by Fardaza et al. (2017), stated that the health locus is very important because it can create a sense of responsibility in controlling disease and self-care. According to Ramadhani et al. (2022), men are more dominant in having *an internal health locus of control* than women. Women tend to have *an external health locus of control* because women have a worse perception of their health and feel more stressed, especially in social situations, compared to men.

Based on the research results, supporting theories and previous research, the researcher concluded that *the health locus of control* in diabetes mellitus patients in the Kabila Health Center work area is included in the moderate *health locus of control* .

Compliance with diet in diabetes mellitus patients in the Kabila Health Center work area

Based on the research results, it was found that from 52 respondents the level of dietary compliance was... the most is sufficient with a total of 49 respondents (94.2%) and the least is good with a total of 3 respondents (5.8%), where respondents stated that they already understand enough about the diabetes mellitus diet because respondents said they maintain a diet and choose the type of food to be consumed. They rarely consume sweet foods, foods containing fat, often consume foods containing protein and often consume vegetables and fruits. They also said that they rarely eat on time according to the schedule recommended by health workers and also check their blood sugar levels regularly at the health center or health service. Based on the results of the respondent questionnaire obtained, the author argues that respondent compliance in dieting is influenced by the information received by the respondents, respondents already know the consequences if they do not diet according to the provisions, respondent compliance in dieting. This is also supported by the demographic data of respondents whose education level is junior high school 3 people, high school with 46 people, diploma 1 person, bachelor 2 people.

According to the theory put forward by Rudini et al. (2018) "meal schedule management is very important for people with diabetes mellitus because by dividing meal times into small but frequent portions, carbohydrates are digested more slowly and stably. In addition, insulin requirements are lower and insulin sensitivity increases so that the body's metabolism can run well".

Ernawati's research (2020) states that the level of knowledge regarding a person's education, the higher the education, the faster the person absorbs information and applies it to their daily lives. Respondents as a whole believe in nurses/health services carried out when respondents are undergoing treatment. However, in the implementation of respondents, it has not been carried out according to recommendations.

This is in line with research conducted by Priharsiwi and Kurniawati (2021), it was found that most respondents had a final education level of Elementary School as many as 27 respondents (54%). Education can influence a person in making decisions. The lower the education, the lower the ability a person will have in solving problems including in undergoing dietary compliance.

Diet compliance good category with 3 respondents (5.6), this is proven by the results of the questionnaire where respondents stated that they often consume foods that contain a lot of protein such as meat, eggs, tofu and tempeh as well as vegetables and fruits according to doctor's recommendations. In addition, respondents who are included in this good category

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also regulate their diet and follow the recommendations of doctors or other health workers related to the DM Diet.

Good control of diabetes mellitus is through diet, exercise and antidiabetic drug therapy. The main thing to do in managing DM is regulating diet and physical activity (Perkeni, 2019). One of the management of diabetes mellitus sufferers is by implementing diabetes mellitus diet therapy. DM sufferers must understand their condition better by choosing the right food and of course eating on time according to the predetermined schedule (Listiyanawati, M, et al., 2022).

According to Wahyuni (2020) "The main goal of DM diet therapy is to keep insulin activity and blood glucose levels normal, thereby reducing the occurrence of vascular and neuropathic complications. Determining the success of blood sugar control without complications or complications resolved is determined by DM diet therapy. In patients with type 1 DM, insulin injections are mandatory without considering eating a lot or a little. Meanwhile, in patients with type 2 DM, insulin does not work properly, resulting in patients becoming obese, so that DM diet therapy is carried out not only to lower blood sugar levels but also to lose weight. "

Meanwhile, according to IDF (2021), it explains that "A healthy diet includes eating 3 times a day, choosing mineral water instead of sweet drinks (tea, coffee, milk, etc.), avoiding alcoholic drinks, choosing healthy fruits or snacks, choosing lean meat instead of seafood and poultry, choosing to eat brown rice instead of white rice, reducing chocolate consumption (can be replaced with peanut butter) and choosing low-fat oils."

Research conducted by Harianti, et al (2017) showed, "that Carbohydrate Intake of Type-2 Diabetes Mellitus Patients who have uncontrolled blood sugar levels have more good carbohydrate intake (≤100% of recommended carbohydrate intake) compared to patients who have well-controlled blood sugar levels. In patients who have uncontrolled blood sugar levels, the carbohydrate intake is classified as good by 50.0% greater than those who have well-controlled blood sugar levels 30.0%."

Based on the research results, supporting theories and previous research, the researcher concluded that compliance with diet in diabetes mellitus patients in the Kabila Health Center work area is included in adequate compliance with diet.

The relationship between *health locus of control* and diet compliance in diabetes mellitus patients in the Kabila Health Center work area

Table 4.7 shows that respondents who have moderate *health locus of control* tend to have a sufficient level of diet compliance, which is 48 respondents (92.4%). The same thing also happens to respondents who have high *health locus of control with a good level of diet compliance, which is 3 respondents (5.7%). And there is 1 respondent with high health locus of control* but the level of diet compliance is sufficient. The significance value or *p-value* shows 0.000 (p <0.05) which means there is a relationship between *health locus of control* and the level of diet compliance, this is based on the alternative *fisher exact test* because there are 3 *cells* with an *expect count value* <5.

In this study, it was found that *health locus of control* was related to diet compliance, because *health locus of control* is one of the factors that influences diet compliance in people with diabetes mellitus. This study also explains that the relationship between the two variables is positive. This means that the higher *the health locus of control* of people with diabetes mellitus, the better the diet compliance of the people with diabetes mellitus.

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Based on the study, the majority of sufferers have sufficient *Health locus of control* and sufficient compliance with the diabetes mellitus diet. These results explain that the level of *Health locus of control* and diet compliance in sufferers of type 2 diabetes mellitus is very influential, resulting in sufferers having less sense of responsibility for their health so that they do not comply with the diet given so that their blood sugar remains stable because they believe that their health is determined by other influential people such as health workers, friends, family, and God Almighty. This is emphasized that based on research by Arsad, SFM., Dungga, EF., Kidamu (2023) states that "the higher *the Health locus of control* , the better the compliance with the diet in sufferers of diabetes mellitus.

According to Fitriana and Salviana (2021), lack of family or health worker support will disrupt the health of diabetes mellitus sufferers. However, if the family or health workers provide support to diabetes mellitus sufferers, sufferers will be motivated to comply with the diabetes mellitus diet. Dwi and Rahayu (2020) stated that diabetes mellitus sufferers will get a positive experience that life can run stably if they get support from their surroundings. Research conducted by Jamaludin and Choirunisa (2019) found that most of the respondents, as many as 95 respondents, had family support in the sufficient category. The participation of family members in supporting the recommended diet program is very important for diabetes mellitus sufferers.

The results of this study also found that respondents who had a high *health locus of control* with good diet compliance were 3 respondents (5.8%). This condition is triggered by the control of individual healthy behavior within themselves (internal *health locus of control*) so that individuals are aware of the actions taken to improve their health status such as being obedient in undergoing a diabetes mellitus diet so that blood sugar levels can be controlled. Based on the results of the questionnaire, respondents stated that they avoid consuming foods or drinks that are not recommended for a diabetes diet program and always check their health regularly at the Health Center or at health services.

The results of this analysis are supported by the results of research conducted by Safitri (2013), namely that there is a significant relationship *between health locus of control* and compliance with DM diet management. Research conducted by Adnyani et al., (2015) found a significant relationship between *health locus of control* and compliance with DM diet management. The behavior of undergoing a DM diet is determined by several internal factors such as a strong desire to recover within oneself, as well as external factors such as family support factors or support from health workers or from the environment, culture and information and knowledge that a person has regarding health are considered as capital for a person to behave healthily.

In this study, researchers argue about the relationship between *health locus of control* and compliance. The results of the study showed that *health locus of control* is more compliant. On average, respondents said that they did not experience problems in regulating their eating and patients did not feel tortured in relation to the types and amounts of food recommended, but at certain times patients felt unable to follow the diet rules when there were big events or family events. This shows that patient control over themselves is still lacking and if this continues to be maintained, then patient non-compliance in undergoing the DM diet tends to decrease.

Bistara and Ainiyah (2018), stated that in addition to internal *health locus of control factors* , external *health locus of control factors* also affect dietary compliance in diabetes mellitus sufferers because in addition to motivation within oneself, external encouragement or external

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factors are also needed in undergoing the diet. The existence of models that provide examples of healthy lifestyles or ways, strengthening healthy behavior and encouragement and the influence of significant people are factors from the external environment that can affect health.

This is in line with research conducted by Khasanah (2021), stating that most respondents were not compliant in following a diet (57.9%) and were compliant (17.1%). Dietary non-compliance in people with diabetes mellitus is indicated by not using special sugar for diabetes mellitus. People with diabetes mellitus are advised not to consume excessive sugar because it triggers a sudden increase in blood sugar levels.

Based on the research results, supporting theories and previous studies, the researcher assumes that there is a significant positive relationship between *health locus of control* and compliance with diet in patients with diabetes mellitus in the Kabila Health Center work area. The higher *the health locus of control* , the better the compliance with diet. Conversely, the lower *the health locus of control* , the worse the compliance with diet.

Research Limitations

In this study, there are limitations of the study in the form of respondents initially feeling afraid when the researcher conducted interviews or documentation of activities. Then the researcher conducted BHSP again to the respondents so that the respondents felt confident and more comfortable during the research process.

4. CONCLUSION

Conclusion

1. *Health locus of control* in diabetes mellitus patients in the Kabila Health Center work area, it is known that out of 52 respondents, the highest *health locus of control* was moderate with a total of 48 respondents (92.3) and the lowest was high with a total of 4 respondents (7.7).
2. Compliance with diet in diabetes mellitus patients in the Kabila Health Center work area, it is known from 52 respondents the level of diet compliance the most was sufficient with a total of 49 respondents (94.2) and the least was good with a total of 3 respondents (5.8%).
3. There is a relationship between *health locus of control* and compliance with diet in diabetes mellitus patients in the Kabila Health Center work area, with a significance value or *p-value* showing 0.000 ($p < 0.05$). This is based on the alternative *Fisher exact test* because there are 3 *cells* with an *expect count value* <5.

Suggestion

1. For Educational Institutions
   The results of this study are suggested to provide benefits and also become one of the reading literature for other students and can increase the insight of S1 Nursing students in knowing the relationship between *health locus of control* and compliance with the diet of diabetes mellitus sufferers in the Kabila Health Center work area.
2. For Health Centers
   It is recommended that it can be used as information for consideration and evaluation related to the diet program for diabetes mellitus sufferers.
3. For the Nursing Profession
   It is recommended that it can be used as information and to increase knowledge for nurses regarding diet programs for diabetes mellitus patients.

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