

## Description Of Sports Behavior In Diabetes Mellitus Patients At UPT Puskesmas Delitua Year 2021

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### ABSTRACT

Diabetes Mellitus (DM) is a chronic metabolic disorder that is better known as the silent killer of humans. Often humans do not realize that the person has diabetes, and often experience delays in handling it so that many complications occur. Diabetes is also known as the "Mother of Disease" because it is the mother or mother of other diseases such as hypertension, heart disease, stroke, heart failure. kidney and blindness. If left uncontrolled, this disease can cause other complications that endanger health. The recommended exercise for diabetics is low impact and rhythmic aerobic exercise such as gymnastics, jogging, swimming and riding a bicycle. The purpose of the study was to determine the description of sports behavior of people with diabetes mellitus at UPT Puskesmas Delitua 2021. The research method was a descriptive study of a sample of 50 respondents using a purposive sampling technique. The instrument or tool used was a questionnaire of 15 questions of sports behavior. The results of the study can be concluded that the female gender is more likely to be diabetic mellitus sufferers obtained as many as 29 respondents (58.0%), the majority age is in the age range of 56-65 years as many as 20 people (40.0%), the majority do not work as much as 27 people (54.0%) and 41 respondents (82.0%). Suggestion: It is hoped that people with diabetes mellitus can improve their exercise behavior.

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### 1. INTRODUCTION

Diabetes Mellitus (DM) is a chronic metabolic disorder that is better known as the silent killer of humans. Often Humans Don't Realize If The Person Has Diabetes, And Often Experiences Delays In Handling It So Many Complications Occur. Diabetes Is Also Known As "Mother Of Disease" Because It Is The Mother Of Other Diseases Such As Hypertension, Heart And Blood Vessel Disease, Stroke, Kidney Failure And Blindness. If Left Uncontrolled, This Disease Can Cause Other Complications That Are Dangerous To Health. (Aditama, (2011)).

Diabetes Mellitus (DM) is a chronic disease that occurs when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces (Who, 2011). Dm Is Metabolism That Is Included In The Blood Sugar Group That Is Exceeding The Normal Limit Or Hyperglycemia (More Than 100mg/L). Dm Is A Chronic Disease Most Commonly Experienced By The World's Population. Dm is characterized by increased blood sugar levels due to abnormalities in insulin secretion, insulin action or both (Ada, 2010). Among the wider community this disease is known as urinary disease (Mellitus et al. 2019)

According to the International Diabetes Federation (Idf) 2015 DM disease in adults aged 20-79 years is 415 million people, there are 193 million ( $\geq 50\%$ ) who do not know that they have diabetes. And it is estimated that in 2040 the number of DM sufferers is 642 million (Idf Atlas 2015). It is even estimated that there are 318 million other adults who actually have a sugar tolerance disorder, or what is called prediabetes. The number above exceeds the population in Asia, more than 50% (some even

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reach 85%) sufferers of DM. Data on DM sufferers in Asia, China has 109.6 million DM sufferers, India has 69.2 million, the United States has 29.3 million, Brazil has 14.3 million, Russia has 12.1 million, Mexico has 11.5 million, Indonesia is 10,000, Egypt is 7.8 million, Japan is 7.2 million, and Bangladesh is 7.1 million. The number of DM sufferers in Southeast Asia is Singapore around 12.8%, Thailand 8%, Malaysia 16.6% and Indonesia around 6.2% (Atlas 2015) (Mellitus et al. 2019).

In 2015 Indonesia was ranked seventh as the country with the largest number of DM patients in the world and it is estimated that by 2040 Indonesia will rank the sixth most in the world. North Sumatra Province is one of the provinces with the highest prevalence of DM sufferers in Indonesia with a prevalence of 2.3% diagnosed by doctors based on symptoms, this makes North Sumatra Province one of the top 10 provinces with the highest DM prevalence in Indonesia (Ministry of Health, 2014) . Health Office of North Sumatra 2015 the number of patients with type 1 diabetes is 18,358 people and type II is 54,843 people (Mellitus et al. 2019)

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According to the American Diabetes Association (ADA), Diabetes Mellitus is a chronic disease caused by abnormalities in the hormone insulin, insulin action, or both, so that the body experiences disturbances in the metabolism of carbohydrates, proteins and fats, which have an impact on increasing blood glucose levels (Laili 2019).

## 2. METHOD

The type of research design that will be used in this thesis is a non-experimental research design. In the Thesis on "Description of Sports Behavior in Diabetes Mellitus Patients at Delitua Health Center 2021" This will use descriptive research. Descriptive research is a type of research that observes, describes and records changes in circumstances and is sometimes used as a starting point for generational hypotheses or theoretical development research (Polit & Beck, 2012). Thesis design is descriptive, namely the results of observing the description of sports behavior in people with diabetes mellitus at the Delitua Community Health Center 2021.

## 3. RESULT AND DISCUSSION

### Respondent Demographic Data

**Table 1. Distribution of Respondents Based on Demographic Data on Diabetes Mellitus Patients at the Delitua Health Center Upt in 2021**

Characteristics	F	%
Gender		
Man	21	42,0
Woman	29	58,0
Total	50	100
Age		
36-45 Year	2	4,0
46-55 Year	9	18,0
56-65 Year	20	40,0
>65 Year	19	38,0
Total	50	100
Work		

Pns	3	6,0
Self-employed	20	40,0
Doesn't Work	27	54,0
<b>Total</b>	<b>50</b>	<b>100</b>

Based on table 5.2 the data obtained that from 50 respondents, the majority of respondents were 29 women (58.0%) and 21 (42.0%). The majority age data are in the age range of 56-65 years totaling 20 people (40.0%), the minority being in the age range 36-45 years as many as 2 people (4.0%). The job data of the majority of respondents did not work as many as 27 people (54.0%) and the minority of civil servants as many as 3 people (6.0%). Sports behavior in people with diabetes mellitus at the Delitua Public Health Center in 2021.

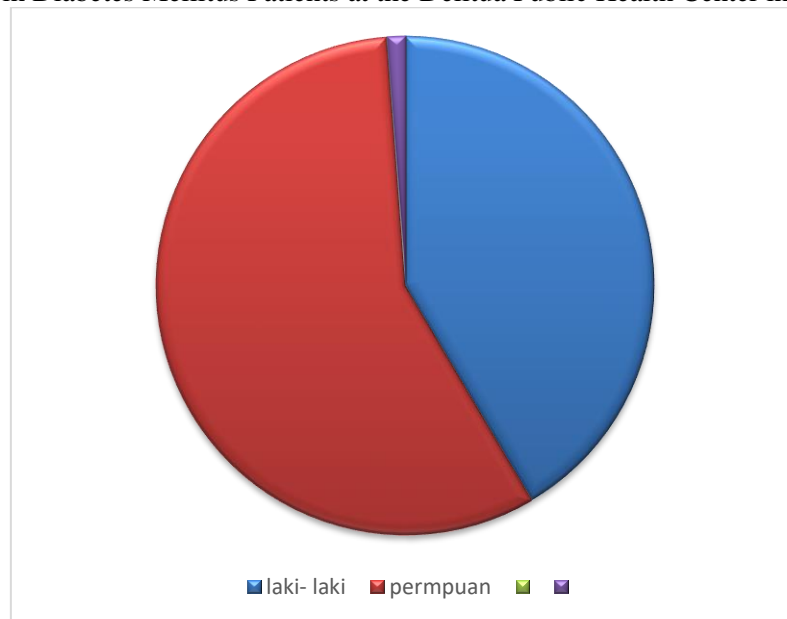
Table 2. Distribution of Respondents Based on Sports Behavior in Diabetes Mellitus Patients at Upt Health Center Delitua in 2021.

No.	Sports Behavior	F	%
1.	Not good	9	18,0
2.	Pretty good	41	82,0
Total		50	100

Based on table 5.3 it is found that in the majority category of sports behavior is quite good as many as 41 respondents (82.0%), while the minority category is not good as many as 9 respondents (18.0%).

### Discussion

Sports Behavior in Diabetes Mellitus Patients at the Delitua Public Health Center in 2021.



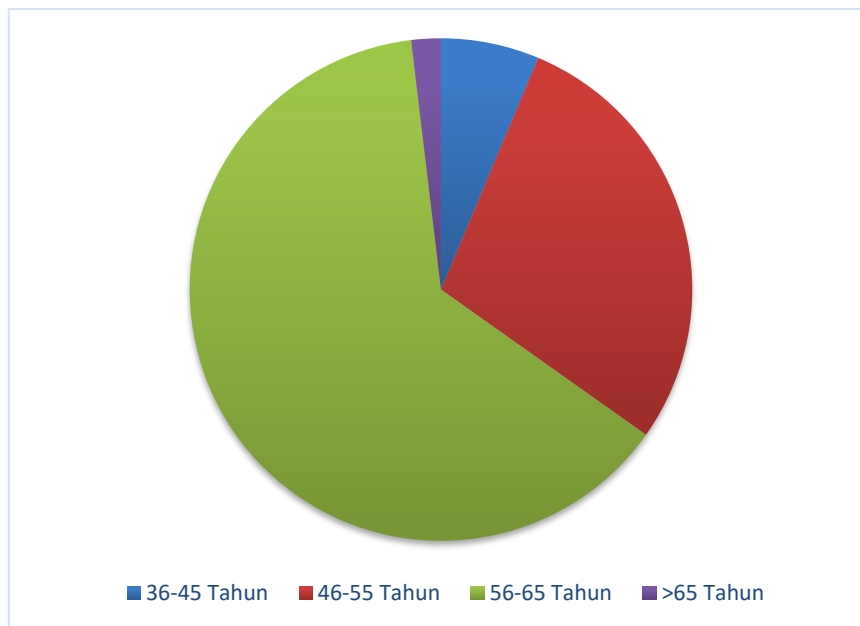
**Figure 1.** Distribution of Respondents Based on Demographic Data on the Gender of Diabetes Mellitus Patients at Upt Health Center Delitua in 2021

Based on figure 1. it was found that the gender of women with diabetes mellitus was 29 respondents (58.0%), and male sex was 21 respondents (42.0%). Researchers assume that the female sex tends to be more at risk of developing diabetes mellitus associated with a large body mass index and menstrual cycle syndrome and during menopause which results in easy accumulation of fat which results in inhibition of glucose transport into cells, in a combined analysis of two prospective population-based cohort studies, Women in Germany who got a 1cm increase in waist circumference had a 31% increased risk of type 2 diabetes per year and a 28% increased risk per year if the woman had a 1 kg increase in body weight (Willer et al, 2016). Meanwhile, for men an increase of 1 cm in waist circumference has

an increased risk of developing type 2 diabetes by 29% per year and an increased risk of 34% per year if the man has an increase of 1 kg of body weight.

Supported by Lemone (2011), that the female sex tends to be more at risk of developing diabetes mellitus associated with a large body mass index and menstrual cycle syndrome and during menopause which results in easy accumulation of fat which results in inhibition of glucose transport into cells, in a combined analysis of two studies. In a prospective population-based cohort, women in Germany who had a 1cm increase in waist circumference had a 31% increased risk of developing type 2 diabetes.

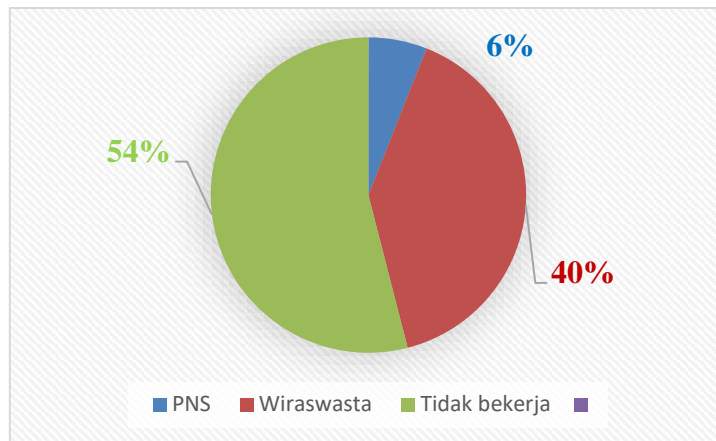
per year and an increased risk of 28% per year if the woman has an increase of 1 kg in body weight (Willer et al, 2016). As for men, an increase of 1 cm in waist circumference has an increased risk of developing type 2 diabetes by 29% per year and an increased risk of 34% per year if the man has an increase of 1 kg of body weight.



**Figure 2.** Distribution of Respondents Based on Demographic Data on the Age of Patients with Diabetes Mellitus at the Delitua Health Center Upt in 2021.

Based on Diagram 2, data obtained that the age of Minority Diabetes Mellitus Patients is in the Age Range of 36-45 Years A total of 2 people (4.0%), the majority are in the 56-65 Years Age Range A total of 20 respondents (40.0%). Researchers assume that the incidence of DM in the older age group occurs more due to environmental factors not only from physiological factors. Attacks from DM in adults are more because the individual is obese, has a history of hereditary diabetes, an unhealthy lifestyle, and black race.

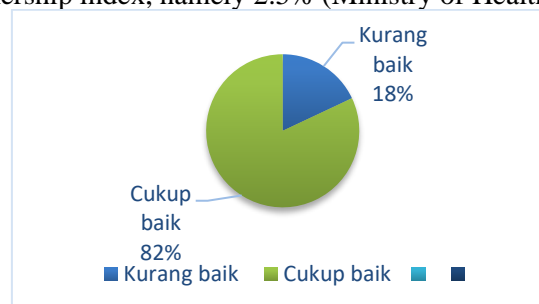
Supported by Leroith (2012), that the incidence of DM in the old age group occurs more due to environmental factors not only from physiological factors. Attacks from DM in adults are more likely because the individual is obese, has a history of hereditary diabetes, an unhealthy lifestyle, and black race.



**Figure 3.** Distribution of Respondents Based on Demographic Data on Occupations of People with Diabetes Mellitus at the Delitua Health Center Upt in 2021.

Based on Diagram 5.3. The data obtained that the majority of people with diabetes mellitus do not work are 27 people (54.0%) and a minority of civil servants are 3 people (6.0%). The author assumes that the relationship between the level of education and the incidence of diabetes is not statistically significant and that all levels of education are protective factors for the occurrence of diabetes, except that the level of education completed with D1-D3/S1 increases/enlarges the risk of developing diabetes. Although the results of the comparison between high education levels (> graduated D1-D3/S1) and low levels of education (< high school graduation) who both suffer from DM are 6 (9.4%) : 58 (90.6%) , Respondents who have a high level of education (> Graduated D1-D3/S1) have a low level of C-peptide, have a higher level of anti-Gad, and take insulin medication more often. This is also supported by data from Riskesdas (2013). ) That the prevalence of DM tends to be higher in people who have a higher education level and with a high quintile of ownership index, which is 2.5% (Ministry of Health RI, 2014).

Supported by Olsson (2011), the relationship between the level of education with the incidence of diabetes is not statistically significant and all levels of education are protective factors for the occurrence of diabetes, except for the level of education completed with D1-D3/S1. Increasing/enlarging the risk of developing diabetes. Although the results of the comparison between high education levels (> graduated D1-D3/S1) and low levels of education (< high school graduation) who both suffer from type 2 diabetes are 6 (9.4%) : 58 (90.6%) , Respondents Who Have Higher Education Levels (> Graduated D1-D3/S1) Have Low C-Peptide Levels, Have Higher Anti-Gad Levels, And More Often Take Insulin Treatment. This Is Also Supported By Data From Riskesdas ( 2013) That the prevalence of type 2 diabetes tends to be higher in people who have a high level of education and with a high quintile of ownership index, namely 2.5% (Ministry of Health RI, 2014).



**Figure 4.** Distribution of Respondents Based on Sports Behavior in Diabetes Mellitus Patients at Upt Health Center Delitua in 2021.

Based on Diagram 5.4. The data obtained that the majority have fairly good sports behavior as many as 41 respondents (82.0 %), while the minority is less good as many as 9 respondents (18.0%).The author assumes that a person's sports behavior contributes 30-50% to reduce the development of.

Physical activity can increase blood glucose tolerance and reduce risk factors for diabetes. In this study, the majority of respondents who suffered from diabetes were 51 people in the 55-64 year age group, so physical activity that is appropriate for this age group should meet the Fitt criteria ( Frequency, Intensity, Time, Type. Frequency Is How Often Physical Activity Is Done (How Many Days In A Week). Intensity is how hard physical activity is done (high, moderate, and low physical activity). Time Relating To How Long Physical Activity Is Done (Hours Or Minutes). Types Are The Types Of Physical Activities Performed.

Supported by Barisic et al, (2011), a person's sports behavior contributes 30-50% to reduce the development of DM. Physical activity can increase blood glucose tolerance and reduce risk factors for diabetes. In this study, the majority of respondents who suffered from diabetes were 51 people in the 55-64 year age group, so physical activity that is appropriate for this age group should meet the Fitt criteria ( Frequency, Intensity, Time, Type). Frequency Is How Often Physical Activity Is Done (How Many Days In A Week). Intensity is how hard physical activity is done (high, moderate, and low physical activity). Time Relating To How Long Physical Activity Is Done (Hours Or Minutes). Types Are The Types Of Physical Activities Performed.

#### 4. CONCLUSION

Based on the results of the study with a sample of 50 respondents regarding the description of sports behavior in people with diabetes mellitus at the Delitua Public Health Center in 2021, it can be concluded It was concluded that people with diabetes mellitus at the Delitua Public Health Center were 56-65 years old as many as 20 respondents (40.0%) from 50 respondents, 29 respondents (58.0%) from 50 respondents, and 27 unemployed. Respondents (54.0%) From 50 Respondents It was concluded that people with diabetes mellitus at the Delitua Public Health Center had fairly good sports behavior as many as 41 respondents (82.0%) from 50 respondents.

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