



# Description of Behavior of the Batak Ethnic Community About Diabetes Mellitus in Janjimanaon Village Batang Angkola Sub-District 2021

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**Abstract.** The prevalence of DM sufferers in Indonesia has increased from 2013–2018, from 1,5% to 2,0% (Rikesdas 2018). Based on data from Pintu Padang Health Center, there were 15 people with Diabetes Mellitus in the village of Janjimanaon in 2019, an increase in 2020 to 17 people. Behavior has three domains, namely knowledge, attitudes and actions. Knowledge is the main basis for perfect diabetes treatment prevention. The purpose of this study was to describe the behavior of the Batak ethnic community about Diabetes mellitus in the Janjimanaon. This type of research is quantitative with a descriptive survey design. The total population of the intire village community of Janjimanaon is 2.200 people with a sample of 96 respondents who meet the inclusion criteria. The technique of determining the sample is purposive sampling. Data collection tools in the form of a questionnaire. The results of the study the majority of respondents had sufficient knowledge (45.8%), the majory attitude was negative (59.4%) and a the community to increase knowledge about Diabetes Mellitus so that they can change attitudes and actions about Diabetes Mellitus in order to avoid DM disease.

**Keywords:** Diabetes Mellitus · Knowledge · Attitude · Action

## 1 Introduction

Diabetes Mellitus (DM) is a metabolic disorder disease characterized by increased levels of sugar in the blood (hyperglycemia) caused by functional disorders of the pancreas to produce insulin or the quality of insulin itself is not good enough to perform its function. (Rikesdas 2013). According to the World Health Organization (WHO) the incidence of people with diabetes mellitus worldwide reaches 415 million people and it is estimated that in 2040 the number of people with diabetes mellitus will be 642 million people (WHO 2016).

Statistical reports from the International Diabetes Federation (IDF) say, there are about 230 million people with diabetes. This figure continues to grow to 3% or about 7 million people every year. The number of people with diabetes is estimated to reach 350 million in 2025. After that number are in Asia, especially India, China, Pakistan and

Indonesia (IDF 2017). The International Diabetes Federation (IDF) predicts that from 425 million adults with DM in 2007 it will increase to 629 million by 2045. Indonesia is ranked 9th out of 10 countries with the most adults (20–79) with DM globally (IDF 2017).

According to the International Diabetes Federation (IDF) predicts an increase in the number of people with DM in Indonesia from 9.1 million in 2014 to 14.1 million by 2035 (ADA 2016). The latest data in 2015 shown by the Indonesian Endocrinology Association (Perkeni) states that the number of DM sufferers in Indonesia has reached 9.1 million people, with this figure Indonesia is ranked 5th in the world. According to the 2018 Basic Health Research (Riskesdas) data, the national prevalence of DM based on a doctor's diagnosis, the percentage of the Indonesian population aged > 15 years suffering from diabetes mellitus has increased from 2013–2018, from 1.5% to 2.0%. (Riskesdas 2018).

The province with the highest prevalence is DKI Jakarta at 2.6% and the province with the lowest prevalence is East Nusa Tenggara at 0.6% (Riskesdas 2018).

Knowledge or cognitive is a very important domain for the formation of one's actions (Wawan and Dewi 2016). From the research, it turns out that behavior based on knowledge will be more lasting than behavior that is not based on knowledge. Behavior has three domains, namely knowledge, attitudes and actions. Knowledge is the main basis for perfect diabetes treatment and prevention. Someone who has less knowledge about diabetes mellitus will find it difficult to prevent diabetes mellitus and if someone who suffers from diabetes mellitus with less knowledge will easily suffer complications of DM.

Indonesia is a multicultural and multi-ethnic country, based on data from the Central Statistics Agency in the 2010 Population Census, there were around 1331 ethnic categories, of which 1331 categories were codes for tribal names, other names/classifications of a tribe, names of sub-tribes, or sub-groups of people. Sub-tribe. This shows that there are so rich and diverse ethnic groups in Indonesia. According to data presented by kata-data.co.id (2018), apart from the Javanese (40.22%) and the Sundanese (15.5%), the Batak (3.58%) are the tribes with the third largest percentage of the total population in Indonesia. Indonesia, which amounts to 236.73 million people (Nur 2009).

Janjimanaon Village is one of the villages located in the South Tapanuli area, where the dominant community consists of the Angkola Batak ethnicity. Based on the preliminary survey that the author conducted, it was found that the behavioral pattern of the Batak Angkola ethnic community in the village of promising Manaon is where the majority of people work as farmers, where people will go to the fields or to the garden to earn a living from morning to evening. In addition, people's habits always eat high cholesterol foods at every event in large quantities, be it horja (wedding parties), mangayun (children's rights), even siluluton (grief) and others, namely by cutting goats or buffalo. In addition, it is the community's habit to provide cigarettes as a cover after eating for men who carry out makkobar activities, be it horja (party) or silution (grief). For some the fathers also have a habit of going to coffee shops at night staying up late drinking coffee is a common thing. And lastly, the habit of snacking on food such as meatballs, fried foods and others that usually pass in front of people's homes has also become a habit for local residents.

Based on data from the Pintu Padang Health Center, there were 15 people with diabetes mellitus in the village of Janjimanaon in 2018 and 2019. However, people with diabetes mellitus in 2020 have increased to 17 people. Based on a preliminary survey conducted on 5 Angkola Batak ethnic communities in the village of Janjimanaon, it was found that 5 people said that Diabetes mellitus was only caused by consuming sweet foods.

Therefore, the authors are interested in conducting research on the Angkola Batak tribal community on their knowledge about Diabetes Mellitus, so the researchers raised the title “Description Of Behavior Of The Batak Ethnic Community About Diabetes Mellitus In Janjimanaon Village Batang Angkola Sub-District 2021”.

## 2 Method

The type of research used is quantitative with a descriptive survey design. This research was conducted in the village of Janjimanaon, Batang Angkola sub-district, with data collection time starting from January to July 2021. The research population of the entire Batak ethnic community in the Promised Village of Batang Angkola Sub-district amounted to 2,200 people.

The collection technique is purposive sampling technique. Where the respondent must meet the inclusion criteria as follows: Batak ethnic community in the village of Janjimanaon,  $\geq 20$  years old, willing to be a respondent, can read and write.

The data collection tool in the form of a questionnaire adopted from previous research, namely Pinaring (2015) entitled “Improving Knowledge, Attitudes and Actions of Elderly Mothers in Tegalrejo District, Yogyakarta City About Diabetes Mellitus With the CBIA Method”. This questionnaire consists of three parts consisting of three parts. Namely aspects of knowledge about DM, attitudes about DM, and actions about DM.

The knowledge aspect questionnaire about DM contains 15 statements by choosing yes or no. The attitude questionnaire about DM contains 15 statements with answers strongly agree, agree, disagree and strongly disagree. And for the action aspect questionnaire about DM contains 14 statements containing the answers strongly agree, agree, disagree, strongly disagree.

Data analysis used univariate analysis. Univariate analysis was conducted to explain or describe the characteristics of each research variable. The form of univariate analysis depends on the type of data. Categorical data are age, gender, last education, occupation, knowledge of DM, attitudes and actions. In general, this analysis only produces the frequency distribution and the percentage of each variable (Notoatmodjo 2010a; 2010b).

## 3 Results

### Univariate Analysis

Based on Table 1, it is found that the gender of the majority of the respondents is female as many as 72 respondents (75.0%) and the minority is male as many as 24 respondents (25.0%). Based on the age of the majority of respondents aged 41–50 years, namely 31 respondents (32.3%), and the minority aged 20–30 years, namely 15 respondents (15.6%). In terms of education level, the majority of respondents have

**Table 1.** The Distribution of Respondents characteristic

Respondents characteristic	Frequency (n)	Percentage (%)
<b>Gender</b>		
Male	24	25.0
Female	72	75.0
<b>Age</b>		
20–30	15	15.6
31–40	23	24.0
41–50	31	32.3
51–60	27	28.1
<b>Batak</b>		
Angkola	60	62.5
Mandailing	23	24.0
Toba	13	13.5
<b>Job</b>		
Farmer	49	51.0
Honorer	7	7.3
Entrepreneur	15	15.6
Housewife	20	20.8
Unemployment	5	5.2
<b>Total</b>	<b>96</b>	<b>100.0</b>

**Table 2.** Frequency Distribution of Respondents Knowledge Level of Diabetes Mellitus

No	Knowledge	Frequency (n)	(%)
1	Less	35	36.5
2	Enough	44	45.8
3	Good	17	17,7
<b>Total</b>		<b>96</b>	<b>100</b>

SMA/SMK education levels as much as 38 respondents (39.6%) and a minority with tertiary level as many as 9 respondents (9.4%). And in terms of occupation, the majority of respondents work as farmers/planters, namely 49 respondents (51.0%) and the minority have not worked as many as 5 respondents (5.2%).

Based on Table 2 above, it is found that the level of knowledge of the Batak ethnic community about Diabetes Mellitus has a sufficient level of knowledge, namely 44

**Table 3.** Frequency Distribution of Respondents’ Attitudes Of Diabetes Mellitus

No	Action	Frequency (n)	(%)
1	Attitude Negative	57	59.4
2	Attitude Positive	39	40.6
<b>Total</b>		<b>96</b>	<b>100.0</b>

**Table 4.** Frequency Distribution Respondents’ Actions Of Diabetes Mellitus

No	Action	Frequency (n)	(%)
1	Do not	59	61.5
2	Do	37	38.5
<b>Total</b>		<b>96</b>	<b>100.0</b>

respondents (45.8%), then the level of knowledge is less as many as 35 respondents (36.5%) and the minority has a good level of knowledge as many as 17 respondents (17.7%).

Based on Table 3 above, it was found that the attitude of the Batak ethnic community in the village of Janji Manaon about Diabetes Mellitus was that the majority of respondents had a negative attitude, namely 57 respondents (59.4%) and a minority of respondents had a positive attitude, namely 39 respondents (40.6%).

Based on Table 4 above, it was found that the actions of the Batak ethnic community in the village of Promising Diabetes Mellitus were the majority of respondents did not take action, namely 59 respondents (61.5%) and a minority of respondents took action, namely 37 respondents (38.5%).

## 4 Discussion

### 4.1 Characteristics of Respondents

#### Respondent’s Gender

Based on the results of research conducted on 96 respondents of the Batak ethnic community in the village of Janjimanaon, it was found that the majority of respondents were female, as many as 72 respondents (75.0%). One of the factors causing diabetes mellitus is gender. Women have a greater chance of suffering from diabetes mellitus than men because many women’s lifestyles are unhealthy compared to men. More women do not work than men, in women it has also occurred after menopause which causes body fat to easily accumulate due to hormonal processes (Rita 2018).

#### Respondent’s Age

From the results of research conducted on 96 respondents, it was found that the majority

of respondents' ages were in the 41–50 year age interval, namely 31 respondents (32.3%). Generally, humans experience physiological changes that drastically decrease rapidly after the age of 40 years. Diabetes often appears after a person enters a vulnerable age, especially after the age of 45 in those who are overweight, so that their body is no longer sensitive to insulin. The existing theory says that a person 45 years old has an increased risk of developing diabetes and glucose intolerance caused by degenerative factors, namely decreased body functions, especially the ability of cells to produce insulin. For glucose metabolism (Pangemanan 2014).

### **Batak Ethnic**

Based on research conducted on 90 respondents of the Batak ethnic community in the village of Promise, Batang Angkola sub-district, the results showed that the majority of respondents had Angkola Batak ethnicity, namely 60 people (62.5%) and the minority had Toba Batak ethnicity as many as 13 people (13.5%).

### **Respondent's Education Level**

Based on the research conducted, it was found that the majority of respondents had SMA/SMK education, as many as 38 respondents (39.9%). A person's level of education will affect one's knowledge, the more information that can influence or increase one's knowledge, the person will behave according to the knowledge he has (Notoatmodjo 2010a; 2010b). Because indirectly the level of education can affect a person's lifestyle be it smoking habits, physical activity, nutritional intake and others.

### **Respondent's Job**

According to the research that the researchers conducted on 96 respondents, the majority of the respondents' jobs were: farmers/planters as many as 49 respondents (51.0%). Everyone experiences stress related to their job. This can be influenced because their work in the fields works from morning to evening. Farmers work hard every day. A job that takes a long time. While farmers sometimes have a low economic status. Stress will also increase the work of metabolism and increase the need for energy sources which result in an increase in the work of the pancreas. The high load makes the pancreas easily damaged, resulting in a decrease in insulin. (Riyadi 2011).

## **4.2 Knowledge of DM**

Based on research conducted on 96 respondents, it was found that the level of knowledge of the Batak ethnic community about Diabetes Mellitus was sufficient, namely 44 respondents (45.8%). Knowledge is the result of "knowing" and this occurs after people sense a certain object. (Notoadmojo 2010a; 2010b).

Factors that influence knowledge are education, mass media or information, occupation and age (Notoadmojo 2010a; 2010b). This is in accordance with the results of the study where the majority of respondents' education level was SMA/SMK as many as 38 respondents (39.9%).

Education affects the learning process, the higher a person's education, the easier it is for that person to receive information. With higher education, a person will tend to get information, both from other people and from the mass media. (Budiman and

Riyanto 2014). The education level of the respondents greatly affects the knowledge of the respondents so that the majority of respondents have a high level of sufficient knowledge about Diabetes Mellitus.

In terms of occupation, the majority of respondents work as farmers as many as 49 respondents (51.0%). Work is a factor that affects knowledge. Judging from the type of work that often interacts with other people, they have more knowledge when compared to people without any interaction with other people. The learning experience at work that is developed provides professional knowledge and skills as well as learning experience at work will be able to develop the ability to make decisions which are the integration of scientific and ethical reasoning. (Wawan and Dewi 2010). Where this is in accordance with farmers who work from morning to evening in the fields or fields interact mostly only with other farmers so that it affects their knowledge about Diabetes Mellitus.

### 4.3 Attitudes about DM

Based on research conducted on 96 respondents of the Batak ethnic community in the village of Promise Manaon, it was found that the majority of attitudes about Diabetes Mellitus in the community were negative attitudes as many as 57 respondents (59.4%). Attitude is also a person's closed response to a particular stimulus or object, which already involves the factors of opinion and emotion concerned (Notoatmodjo 2010a; 2010b).

The factors that influence attitudes are personal experience, the influence of others who are considered important, the influence of culture, mass media, educational institutions and emotional factors (Wawan and Dewi 2010). Respondents' attitudes about type diabetes mellitus are in line with knowledge, education, and age. Most of the respondents in this study were under 50 years old. Someone whose age has reached 40 years old began to have risk factors for diabetes mellitus (Sutanto 2010).

Hurrock (2008), revealed that the development of a person's health attitudes and behavior is in line with age. Age is also related to the maturity of the mind in accepting, living and responding to something. As a person's age increases, the maturity of reason also grows stronger, thus fostering a better attitude in a person (Muliadi 2008).

Then in terms of knowledge the majority of respondents have a sufficient level of knowledge as many as 44 respondents (45.8%) so that it can affect the attitude of respondents about Diabetes Mellitus.

### 4.4 Action about DM

Based on the research conducted, it was found that the actions of the Batak ethnic community in the village of Promising Diabetes Mellitus were that the majority of respondents did not take action, namely 59 respondents (61.5%). Action is the attitude of the tendency to act (practice). Attitudes are not necessarily manifested in actions, because for the realization of actions other factors are needed, including the existence of facilities and infrastructure (Notoatmodjo 2010a; 2010b).

Personal experience must give a strong impression to be the basis for forming attitudes. Attitudes and knowledge can influence people's actions. (Noorkasiani 2009).

Knowledge or cognitive is an important domain for the formation of one's actions (Wawan and Dewi 2010). This is in accordance with the results of the study where the majority of the level of knowledge enough respondents as many as 44 respondents (45.8%)

Through attitude, one can understand the process of consciousness that determines the actual actions and actions that individuals may take in life (Wawan and Dewi, 2016). The attitude of the majority of respondents was negative as many as 57 respondents (59.4%) so that it influenced the actions of the Batak ethnic community respondents about Diabetes Mellitus. Where there are still many people who do not carry out regular blood sugar checks, eye examinations, urine and blood tests, maintain foot hygiene, exercise regularly and do not maintain nutritional intake.

According to Lawrence Green in Jihani (2014) that human action is determined by 3 factors, namely: predisposing factors which include knowledge and attitudes, enabling factors which include facilities or facilities with personnel with their characteristics and driving factors which include leadership support. Therefore, good knowledge and attitudes have not automatically manifested in an action. (Hartini 2017)

This is in accordance with Siti Harti's previous study entitled "Level of Knowledge, Attitudes, and Actions of the Community of Tanjung Tiram District About Diabetes Mellitus" the majority of respondents have a sufficient level of knowledge of 46%, the attitude of the majority is sufficient 70% and the majority action is less than 55%.

## 5 Conclusion

- a. The characteristics of the majority of respondents are female (75.0%), the age of the majority at intervals of 41–50 years (32.3%), the majority ethnic Batak is Angkola Batak (60.5%), the education level of the majority is SMA/SMK (39.9%) and the majority of respondents work as farmers/planters (51.0%).
- b. The level of knowledge of respondents about Diabetes Mellitus majority level of knowledge is sufficient (45.8%).
- c. The majority of respondents' attitudes about Diabetes Mellitus are negative attitudes (59.4%)
- d. Respondents' actions regarding Diabetes Mellitus were the majority did not take action (61.5%)
- e. The behavior of the Batak ethnic community regarding diabetes mellitus in the village of Promising angkola is bad behavior

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