

# Perception The Role Of Dalihan Na Tolu Traditional In Prevention Of Type 2 Diabetes Mellitus Among High Risk Population

Soep<sup>1</sup>, Albiner Siagian<sup>2</sup>, Fazidah A. Siregar<sup>2</sup>, Erna Mutiara<sup>2</sup>

<sup>1</sup>*Student of Doctoral Program Faculty of Public Health, Universitas Sumatera Utara, Medan, Indonesia*

<sup>2</sup>*Faculty of Public Health, Universitas Sumatera Utara, Medan, Indonesia*

**Abstract.** Prevalence of type 2 Diabetes Mellitus in Padangsidempuan regency remains high. Currently, the controlling of type 2 Diabetes Mellitus have not involved yet cultural approach. This study aimed to explore the role of Dalihan Na Tolu traditional in preventing type 2 Diabetes Mellitus among high risk groups population in Padangsidempuan City. This is a qualitative study with a phenomenological approach. Informants in this study consisted of high risk people as many as 16 people based on Findrisc Score. Data was collected using indepth interview and then analyzed by content analysis. The results of this study found two themes, namely (1) the role and function of Dalihan Na Tolu, (2) efforts and support of Dalihan Na Tolu traditional for type 2 Diabetes Mellitus prevention. It was concluded that applying Dalihan Na Tolu traditional could motivate high risk population towards healthy life style. Therefore, it could avoid the disease progress to type 2 Diabetes Mellitus. It was suggested that Dalihan Na Tolu traditional could be integrated in the prevention program of type 2 Diabetes Mellitus.

**Keyword:** Perception, Dalihan Na Tolu, Prevention, Type 2 Diabetes Mellitus

## 1. Introduction

The prevalence of prediabetes is like an iceberg phenomenon, the large number of prediabetes that go undetected because prediabetes does not cause typical symptoms such as DM. Efforts to prevent people at risk of developing into diabetes mellitus, then lifestyle modifications and pharmacological therapy are carried out as an effort to prevent the development of DM (Nwatu et al., 2016).

The largest-scale clinical research has been conducted in the United States referred to as the Diabetes Prevention Program (DPP). The program began in 1999, and was evaluated in three-year, 10-year, and 15-year follow-ups. The results

of this study showed that after three years of follow-up, lifestyle changes could reduce 58 percent of the incidence of Type 2 DM, while giving metformin drugs could reduce 31 percent of the incidence of type 2 DM. The results of this study concluded that lifestyle changes are better than the administration of the drug metformin. In the 10 years of follow-up also showed no change. The percentage decrease in the incidence of type 2 DM was 34 percent and 18 percent in the group of lifestyle changes and metformin treatment. Finally, after a 15-year evaluation, the results of the study showed that lifestyle changes were reduced by 27 percent while in metformin treatment it was stable at 18 percent. In this 15-year period evaluation, the cumulative incidence of type 2 DM was 55 percent, 56

percent, and 62 percent, respectively, in the lifestyle change group, the metformin treatment group, and the control group. The results of this study prove that the most effective prevention of type 2 DM is lifestyle changes. Lifestyle changes by carrying out a healthy diet and physical activity can last for 15 years to prevent or delay people at risk of becoming people with type 2 DM (Diabetes Prevention Program Research Group, 1999, 2002a, 2009, 2015).

Diabetes mellitus type 2 as a lifelong chronic disease and its management requires changes in the patient's lifestyle (Mahfouz & Awadalla, 2011). Around 160 million (70%) cases of type 2 diabetes in 2040, can be prevented by implementing a healthier lifestyle (Directorate of NCD Control & Directorate General of P2PL, Ministry of Health of the Republic of Indonesia, 2016). Structured physical activity combined with diet, insulin injections, or oral hypoglycemic drugs is the basis of therapy for type 2 diabetes mellitus (Cheng, 2013). Patients with type 2 DM need to be informed of the benefits of proper nutritional habits are key in the regulation of blood glucose (Hawkins et al., 2019; Viswanathan et al., 2019)

Based on Riskesdas in 2018, the prevalence of type 2 DM in Indonesia increased by up to 80.5 percent. In North Sumatra in 2019 the number of patients with type 2 DM was 249,519 people. This data was obtained from all puskesmas located in 34 city districts of North Sumatra Province, totaling 164 puskesmas with hospitalization and 407 puskesmas without hospitalization (Health Profile of North Sumatra Province, 2019).

Profile Data of the Padangsidempuan City Health Office in 2020 shows that the number of dm type 2 sufferers is 2,076 people with a prevalence

rate of 0.94 percent spread across 10 health centers in the Padangsidempuan City area. Of the 10 puskesmas, the highest percentage of dm type 2 sufferers is in the Padangmatinggi Puskesmas working area, which is 428 people and the percentage of the number of dm type 2 sufferers is at least in the Pintu Langit Health Center Working Area of 38 people. At the Padangmatinggi Health Center, type 2 DM disease is ranked second out of the top ten diseases in Padangsidempuan City.

The degree of health of more than 80 percent is strongly influenced by behavior. Almost 90 percent of non-communicable diseases including type 2 DM can be prevented by conducting PHBS (Ministry of Health RI, 2017). The government has made various prevention efforts but has not shown significant results. Paying attention to this matter requires joint efforts to change behavior to be health-sensitive that includes the community, regardless of age, gender, occupation, socioeconomic status and location of residence (Ministry of Health RI, 2017).

Related to the national policy of health promotion is an effort to improve the ability of the community through self-learning, from by and for and with the community, with the aim of being able to help themselves, and increase human resources, according to social culture and encouraged by public policies with health discourse (Ministry of Health RI, 2019). Health promotion can be carried out at puskesmas as an empowerment effort to prevent disease and improve the health of every resident, family and environment which is carried out independently. Puskesmas is a forum for agents of change, examples and pioneers in the community and creates community empowerment.

The people in Padangsidempuan City have a culture of local wisdom of the

Batak people, namely Dalihan Na Tolu (DNT). This culture has actually long been the local wisdom of the Batak people, even very thick in the application of part of the customs of the Batak Tribe. Actually through this culture, people are able to develop health behaviors (Albougami, 2016). In line with these interactions, DNT also has a significant role in influencing the behavior of residents, especially on customary practices. But that doesn't mean that groups that disagree with customs immediately refuse and set out to avoid. Many of them take the behavior of just being silent. This matter is intertwined due to the role of DNT.

The role that DNT plays in the process of interaction between indigenous values in citizens. Like a furnace that must stand firmly and balanced, the culture of sharing the roles of kahanggi, anak boru and mora help each other when one of the parties experiences problems, especially health so that the furnace does not become lame. Conveying positive and negative habits that affect the condition of the disease, the use of medicinal plants, the culture of caring for relatives, the culture of respecting relatives, the culture of advising relatives, the culture of visiting relatives, the culture of carrying food, the culture of helping meteredly, the culture of responsibility in efforts to prevent DM type 2 can be developed into a model that needs to be applied, it is hoped that in the future the type 2 DM Prevention program will be adopted more quickly, implemented by at-risk individuals and health programs in preventing Type 2 DM determined by the Government can run optimally.

So far Dalihan Na Tolu culture has never been involved in the health fields. So Dalihan Na Tolu is only seen as a traditional device in the midst of society. The great potential of local wisdom in the

health sector has never been used as an added value in carrying out health promotion or other health programs. In fact, if this potential is used as a tool in carrying out health programs, then the effectiveness of a program will increase and reduce the risk of developing type 2 diabetes mellitus. This happens because the life of the people of Padangsidempuan city cannot be separated from the prevailing customs, the people of Padangsidempuan City still uphold the customs that apply for generations to this day.

This study aims to design a health promotion model with a DNT approach in preventing Type 2 DM disease in the Mandailing Tribe in Padangsidempuan City.

## 2. Methods

This research was carried out in the work area of the Padangsidempuan City Health Office in 2021. This research uses a qualitative approach with the Participatory Action Research (PAR) technique. Data collection used Focus Group Discussions and interviews. The sampling technique uses purposive sampling. The sample in this study was 16 people who were at risk of developing diabetes mellitus. The inclusion criteria for the sample were at risk of developing type 2 diabetes mellitus, based on the results of the FINDRISC assessment, being able to speak and write, and being willing to follow this study to completion. The researcher outlines the subject matter that will be presented to the informant in the form of an interview guide. The interview questions asked to informants are open-ended and do not lead to research questions. The process of collecting data through interviews is carried out using a voice recording device. Interviews are conducted on the basis of the consent of the informant. The results of the wawancara recording were converted into a

form of writing called a transcript. The transcripts that have been made are analyzed using qualitative content analysis. Qualitative content analysis is carried out by means of classification or filtering of texts or words into a number of categories representing a certain group of contents. The result of content analysis is a method to accurately analyze the content of the text. The qualitative results of the analysis can

be used to evaluate the findings produced by the analysis by self.

### 3. Result

This study had 16 informants who met the inclusion criteria, a demographic picture of all informants, pictured in the following table:

**TABLE 1.** Informant Characteristics

Characteristics	description	Total
Sex	Man	5 people
	Women	11 people
Age	Min	19 th
	Max	70 th
Education	High School	15 people
	Bachelor	1 people
Marital Status	Merried	14 people
	Single	2 people
Job	Unemployed	1 people
	housewife	8 people
	college students	2 people
	Pensioner	1 people
	Self Employed	4 people

The results of the analysis of verbatim found 3 themes and 17 categories, which are presented in table 2 below:

**TABLE 2.** Themes and categories:

Theme	Category
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The role and function of Dalian Na Tolu	<ol style="list-style-type: none"> <li>1. Hereditary culture</li> <li>2. Customary devices</li> <li>3. Unifying communities</li> <li>4. Mobilizing society</li> <li>5. Leader Meeting in the society</li> <li>6. .Provide support by visiting</li> <li>7. Providing advice for healing</li> </ol>
Efforts and support of Dalihan Na Tolu traditional for Diabetes Mellitus type 2 prevention.	<ol style="list-style-type: none"> <li>1. Exercise</li> <li>2. Sun terrace</li> <li>3. Less sugar consumption</li> </ol>

### 3.1. The Role And Function Of Dalihan Na Tolu

Dalihan Na Tolu is a local wisdom that exists in the city of Padangsidempuan. Its involvement in the health sector has not been seen, so dalihan na tolu is only limited to cultural objects involved in traditional activities. This is because Dalihan Na Tolu is still considered a society only a hereditary culture, which appears when there are traditional activities. This can be seen based on the following narrative:

"If what I understand is the matter of Dalihan Na Tolu... is a container that has been attached to the soul of the dalihan Na Tolu earth community for generations,... from the beginning it existed... now the habit still remains, but that's it, It's just the parties that look like what is said to be mora, kahanggi, with anakboru. if there are no events, it is visible. (Informant 10)"

The same was revealed by another informant, who is depicted in the following narrative:

"Mora, kahanggi, and anakboru as Dalihan Na Tolu only appear if there are traditional activities, like this father is a migrant, don't

know for sure the father, which is said to be mora, which is said to be kahanggi, and anakboru. (Informant 7)"

The role of Dalihan Na Tolu so far has not been seen in the fields of Health, this is because people still use Dalihan Na Tolu for things that are ethnocentrism so that the role of Dalihan Na Tolu seems Static in its use. This is evidenced from the narrative described as follows :

"Dalihan Na tolu is only visible when there are traditional events such as weddings, or deliberations related to the cultures of the community. (Informant 12)"

The above arguments are corroborated by 2 opinions of traditional figures, which are described in the narrative as follows:

".....for example, if you want to make a party like this, the one who holds the consensus is Dalihan Na Tolu, and then we can agree on the one in the village or parhutaon next which is outside the village or the name is Tahi Luat his name.... (TA1)"

Other traditional figures also express the same thing, which is depicted in the following narrative:

"Indeed, this is the weakness, there is no introduction to the prevention of maintaining health in Dalihan Na Tolu....(TA2)"

This is also corroborated by the narrative of health workers which is narrated as follows:

"...indeed, sir, so far Dalihan Na Tolu has never been involved in health promotion matters. (PK1)"

### **3.2. Efforts And Support Of Dalihan Na Tolu Traditional For Diabetes Mellitus Type 2 Prevention.**

Diabetes Mellitus is a disease that often occurs today, an understanding of the disease and a poor lifestyle, makes the number of sufferers increasing. Researchers found data when conducting the initial survey, the highest cases of diabetes mellitus occurred in the Padangmatinggi Puskesmas Work Area, which was 428 patients, and the fewest patients were in the Pijorkoling Puskesmas Work Area, which was 42 people. The number of cases of diabetes mellitus certainly has something to do with people's views on the disease. Many people do not know what is meant by diabetes mellitus. This is proven through the following narrative:

"(ow.. most of all factors of thought, blockage of blood vessels, lack of sleep, lack of eating, uh,yes.. right?) (Informant 2)"

The same thing was said by other informants, with the following narrative:

"Oooo, sugar disease, sir... if what I know is that sugar disease is if the wound is just a disease, long time it heals... lazy to move, often sleepy also he said, sir... (informant 5)"

In the same way that understanding is not good, the at-risk group also has obstacles to conducting early examinations, obstacles that are felt like fear become a burden on the mind when knowing the results, this is expressed in the following narrative:

"Yes, sir..., I don't want the results to be a burden on my mind, it's usually the thoughts that make us healthy or sick, sir. So afraid to be a burden on the mind, sir (informant 4)"

In addition to being afraid of being a burden on the mind, many people do not have the time to check blood sugar levels, this can be seen from the arguments below:

"It's not that I don't want to actually, sir, I'm working, it's just a week off... so there's no free time to check it out, sir... Anyway... I don't have any complaints, sir....(Informant 2)"

Having no complaints, making people have no curiosity, to check blood sugar levels.

So far, the community has carried out disease prevention activities in the form of sufficient physical activity, sunbathing, and reducing sugar consumption, it is still considered to be able to prevent the body from various diseases that will attack the body. These things are efforts made by the community in preventing Diabetes Mellitus type 2. This kind of habit is still going on, and we can see based on arguments like the following:

".....exercising can be that sir prevent it I feel sir, because I also like mincing, so I finish mincing..usually swim me sir... (Informant3)"

"The most you hear from people, sir, he said don't eat a lot of sugar, so now I reduce sugary meals, sir, and then he said don't be lazy to move, so now if you can move, just move, sir, for example, take a morning

walk near here, sometimes if there is gymnastics from the health center, follow me, sir (Informant 1)"

In addition to these things, the health efforts made by the community for sick families are to provide support in the form of visiting and providing advice to achieve recovery. We can see this from the following narrative:

"...if for example, I am sick, usually come it is mora, kahanggi, my son visits to bring souvenirs, sometimes even if it is complicated times the disease usually this person gives advice, for example, right...like yesterday mamak was treated for a long time, it was suggested that the person would eat bitter like men he said, don't eat rice he said... that's it, sir (Informant 1)"

"... but indeed... so far, the habit is that if someone is sick, usually given it is support so that the spirit of the sick is right, this support is like a support too, sir, anyway... the point is that people who are sick become enthusiastic, sir (Informant 2)"

#### 4. Discussion

Dalihan Na Tolu's involvement in efforts to prevent type 2 diabetes mellitus can be done by guiding the following three themes: 1) Dalihan Na Tolu in the midst of society, 2) Groups at risk of developing type 2 diabetes mellitus disease, 3) Efforts to prevent type 2 diabetes mellitus. These three themes become a value that can be measured in efforts to prevent type 2 diabetes mellitus, these themes are also a synergy of internal factors, namely risk groups, and external factors, namely the Dalihan Na Tolu traditional device.

Dalihan Na Tolu culture is part of the family's support. As for the social

support of the family is the attitude, actions and acceptance of the family towards those who are at risk of disease. The family serves as a support system for its members and family members perceive that people of a supportive nature, are always ready to provide help with assistance if needed (Hao & Friedman, 2014). Family support is very necessary in helping groups of people who are at risk for Diabetes Mellitus type 2 so that they can make efforts to prevent the occurrence of the disease.

Dalihan Na Tolu is a reciprocal relationship that is bound in the family life of the *batak* people, this is in line with the argument that ; Social systems are activities of reciprocal relationships, working together to solve problems in order to achieve goals that take place in a sustainable manner (Rogers et al., 1983), influencing human behavior related to values and norms in an existing system. Members of the social system consist of recipients of innovation, according to the level of innovation.

The government has made various prevention efforts but has not shown significant results. Paying attention to this matter requires joint efforts to change behavior to be health-sensitive that includes the community, regardless of age, gender, occupation, socioeconomic status and location of residence (Ministry of Health RI, 2017). Therefore, synergy between the government and the community is needed in preventing type 2 diabetes mellitus by utilizing the potential of human resources by paying attention to the existing values of local wisdom.

The role of Dalihan Na Tolu traditional leaders in health promotion with Dalihan Na Tolu's approach to the prevention of type 2 diabetes mellitus risk groups describes a pattern of structured and interrelated relationships between the

agents involved. This formed structure serves to assist groups at risk of developing type 2 diabetes mellitus so that they are obedient to undergo a prevention program until it becomes a habit.

## 5. Conclusion

The involvement of traditional leaders of dalihan na tolu in prevention efforts has great potential in reducing the risk of type 2 diabetes mellitus in the city of Padangsidempuan. The cooperation of all parties needs to be improved in order to prevent type 2 diabetes mellitus for at-risk groups, especially between the Padangsidempuan city health office and na tolu pretext figures, in providing health promotion regarding type 2 diabetes mellitus. The program that has been carried out should become a habit that becomes a routine activity of the community.

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