INFLUENCE OF THE ROLE OF DALIHAN NA TOLU IN PREVENTING TYPE 2 DIABETES MELLITUS IN PADANGSIDIMPUAN CITY 2024

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ABSTRACT

Diabetes Mellitus (DM) is a non-communicable disease condition that occurs due to damage to insulin production in the body (PERKENI, 2021). DM sufferers usually experience symptoms such as frequent urination, excessive thirst, blurred vision, rapid fatigue, and significant weight loss. An increase in blood sugar levels that exceeds normal limits, or hyperglycemia, can trigger various health complications. Dalihan Na Tolu (DNT) is a symbol of three indigenous community groups working together to resolve various existing affairs, problems and burdens. Principles such as togetherness, mutual cooperation, rights and obligations, and love to maintain family relationships are highly respected in this culture Apart from that, DNT also plays an important role in regulating and guiding individual behavior in the social life of society. This research uses a qualitative approach with the Participatory Action Research (PAR) method. This method was chosen because it was considered appropriate for designing a health promotion model based on Dalihan Na Tolu (DNT) in an effort to prevent Type 2 Diabetes Mellitus in the at-risk Mandailing ethnic group in Padangsidimpuan City. Before this study was conducted, there were 34 people or 85% categorised as high risk of type 2 diabetes mellitus, and 6 people or 15% categorised as low risk. After this study was conducted. There is 38 people or 95% categorized as low risk of type 2 diabetes mellitus and 2 people or 5 % categorised low risk. Health promotion with the Dalihan Na Tolu approach as a measure to prevent type 2 diabetes mellitus includes promotive and preventive efforts, without neglecting curative and rehabilitative aspects. The main objective of this approach is to reduce morbidity, disability and mortality from type 2 diabetes mellitus.

Keywords*: Dalihan Na Tolu, DM tipe 2,Health Promotion*

INTRODUCTION

Diabetes Mellitus (DM) is a non-communicable disease condition that occurs due to damage to insulin production in the body (PERKENI, 2021). DM sufferers usually experience symptoms such as frequent urination, excessive thirst, blurred vision, rapid fatigue, and significant weight loss. An increase in blood sugar levels that exceeds normal limits, or hyperglycemia, can trigger various health complications (WHO, 2019). Some complications that commonly occur in DM sufferers include disorders of the cardiovascular and nervous systems (Gale *et al.*, 2017).

Diabetes Mellitus Type 2 is a chronic disease that requires long-term lifestyle changes in sufferers. This condition can reduce life expectancy by up to six years at productive age. From

an economic perspective, health costs for treating DM patients are estimated at 88.4 billion US dollars, with a projected increase to 98.4 billion US dollars in 2035 (Huang *et al.*, 2014). More than 160 million cases of type 2 diabetes in 2040, which is equivalent to 70% of total cases, can be avoided by adopting a healthy lifestyle (Kementerian Kesehatan Republik Indonesia, 2019)

The consequences of type 2 diabetes mellitus are very serious for sufferers. This disease can trigger various complications in small blood vessels, such as retinopathy and neuropathy, as well as in large blood vessels, such as myocardial infarction, angina pectoris and stroke. In addition, complications associated with DM, such as hypoglycemia, fear of hypoglycemia, and concerns about long-term impacts, can reduce the patient's quality of life (Hansen *et al.*, 2020).

The health costs incurred by type 2 DM are quite large and continue to increase every year, regardless of whether these costs are borne by the patient himself or by private health insurance or by the government. Respectively the costs incurred worldwide since 2007, 2017 and 2019 were 232 billion, 727 billion and 760 billion United States dollars. The estimated increase in costs from 2017 to 2019 reached 4.5 percent. This economic impact is expected to continue to increase by 8.6 percent in 2030 and increase by 11.2 percent in 2045 (IDF, 2021). Type 2 DM not only directly requires significant medical costs, but also indirectly results in loss of productivity which results in a decrease in sufferers' income due to disability and premature mortality (Png *et al.*, 2016). The increasing financial costs and social burdens required for DM treatment, especially in developing countries, because resources to treat this disease are very limited, make it an important need to prevent the incidence of type 2 DM and its complications (Rawal *et al.*, 2021). Prevention of type 2 DM has become one of the United Nations (UN) resolutions which declares type 2 DM as a serious global condition that requires immediate prevention. Advocacy starting from regional, national and international levels makes preventing Type 2 DM a health priority and carries out health promotion to prevent type 2 diabetes mellitus to policy holders in each region (Kementerian Kesehatan Republik Indonesia, 2019).

Padangsidimpuan City Health Service Profile Data in 2020 shows that the number of people suffering from type 2 DM is 2,076 people with a prevalence rate of 0.94 percent spread across 10 community health centers in the Padangsidimpuan City area. Of the 10 health centers, the highest percentage of type 2 DM sufferers were in the working area of the Padangmatinggi Health Center, namely 428 people and the lowest percentage of type 2 DM sufferers were in the working area of the Pijorkoling Health Center, 38 people. At the Padangmatinggi Community Health Center, type 2 DM is ranked second in the top ten diseases in Padangsidimpuan City.

The people in Padangsidimpuan City have local wisdom that is typical of Batak culture, namely Dalihan Na Tolu (DNT). This culture has become a very close part of the Batak tribe's customs and has existed for a long time. Through these cultural principles, society is able to develop behavior that supports health (Abdulrahman, 2016). Dalihan Na Tolu (DNT) can be likened to a furnace that has three legs, where all three must be balanced and function well. If one part is damaged or unbalanced, the furnace cannot function optimally. In this context, the relationship between kahanggi, anak boru, and mora reflects the importance of strong unity, mutual love, attention, and an active role in preventing health problems so that balance in the DNT system is maintained.

Dalihan Na Tolu (DNT) is a symbol of three indigenous community groups working together to resolve various existing affairs, problems and burdens. Principles such as togetherness, mutual cooperation, rights and obligations, and love to maintain family relationships are highly respected in this culture (Harahap, 2017). Apart from that, DNT also plays an important role in regulating and guiding individual behavior in the social life of society (Tan *et al.*, 2019).

Based on this, researchers are interested in conducting research with the title DNT health promotion model in preventing Type 2 DM disease in the at-risk group of the Mandailing Tribe in Padangsidimpuan City.

METHOD

This research uses a qualitative approach with the Participatory Action Research (PAR) method. This method was chosen because it was considered appropriate for designing a health promotion model based on Dalihan Na Tolu (DNT) in an effort to prevent Type 2 Diabetes Mellitus in the at-risk Mandailing ethnic group in Padangsidimpuan City. In this research, researchers work collaboratively with groups to analyze and understand existing situations, using systematic, analytical, and reflective techniques to collect data and information that will support the development of solutions to identified problems (Streubert & Carpenter, 2011).

Data collection was carried out using the screening method using FINDRISC before and after the activities were carried out. The number of respondents was 40 people. This research will take place from January 2024 to September 2024.

RESULTS AND DISCUSSION

The results of this study found that 39 people or 97.5% were involved as dalihan na tolu groups who participated in preventing type 2 diabetes mellitus, and there were only 1 person or 2.5% who were not involved in Dalihan Na Tolu.

Table 1. involvement of dalihan na tolu

Variable	Frequency (n)	Persentage (%)
engaged	39	97,5
No engaged	1	2,5

The 40 people who became respondents were divided into 28 people 70% male, and 12 people or 30% female. Before this study was conducted, there were 34 people or 85% categorised as high risk of type 2 diabetes mellitus, and 6 people or 15% categorised as low risk. After this study was conducted. There is 38 people or 95% categorized as low risk of type 2 diabetes mellitus and 2 people or 5 % categorised low risk.

Table 2. Respondent characteristic

Variable	Frequency (n)	Persentage (%)
Male	28	70
Female	12	30
Risk Before Study		
Low	6	15
High	34	85
Risk After Study		
Low	38	95
High	2	5

Health promotion in an effort to prevent type 2 diabetes mellitus through the Dalihan Na Tolu approach, is a promotive and preventive effort without ruling out curative and rehabilitative actions that aim to reduce morbidity, disability or death caused by type 2 diabetes mellitus. This health promotion is carried out in a comprehensive manner involving all aspects of society, health workers and Dalihan Na Tolu traditional leaders.

Health promotion involving Dalihan Na Tolu is also able to improve health education in at-risk groups for the prevention of type 2 DM, this is in line with the opinion of Mubarak et al, 2007, Health promotion as a form of revitalising education that bridges behaviour change. The desired environmental changes are physical and non-physical, socio-cultural, socio-economic, and political environments.

The role of Dalihan Na Tolu traditional leaders in health promotion with the Dalihan Na Tolu approach to preventing type 2 diabetes mellitus in at-risk groups illustrates a structured and interrelated pattern between the agents involved. The structure formed serves to provide assistance to groups at risk of type 2 diabetes mellitus so that they comply with the prevention programme until it becomes a habit.

Dalihan Na Tolu is a reciprocal relationship that is bound in the family life of the Batak community, this is in line with the argument that; Social systems are activities of reciprocal relationships, working together to solve problems for the achievement of goals that take place on an ongoing basis (Rogers et al. 1983), influencing human behaviour related to values and norms in an existing system. Members of the social system consist of innovation recipients, according to the level of innovation.

Dalihan Na Tolu as a cultural bond and application, so that people are able to use and develop it for the formation of health behaviour, through an advisory relationship (Albougami, 2016). The role of the nuclear family and extended family is very important in providing reinforcement through health promotion.

Dalihan Na Tolu culture is part of family support. Family social support is the attitude, acceptance and actions of the family towards those at risk of disease. The family functions as a support and help system (Hao and Friedman 2014). Family support is needed by groups of people who are at risk of type 2 diabetes so that they can make efforts to prevent the disease.

Activities carried out for 90 days become a community routine in an effort to prevent type 2 diabetes, so that people can make efforts to prevent type 2 diabetes independently, and are able to reduce the morbidity caused by type 2 diabetes.

CONCLUSION

From the table above it is found that there is a significant influence of the role of dalihan na tolu The involvement of Dalihan Na Tolu in the prevention of type 2 diabetes mellitus can be done by referring to three main themes, namely: 1) The role of Dalihan Na Tolu in community life, 2) Risk groups for type 2 diabetes mellitus, and 3) Efforts to prevent type 2 diabetes mellitus. These three themes are important elements that can be measured in efforts to prevent type 2 diabetes mellitus. These themes reflect the synergy between internal factors, namely groups at risk, and external factors, namely the role of Dalihan Na Tolu customs and culture.

Health promotion with the Dalihan Na Tolu approach as a measure to prevent type 2 diabetes mellitus includes promotive and preventive efforts, without neglecting curative and rehabilitative aspects. The main objective of this approach is to reduce morbidity, disability and mortality from type 2 diabetes mellitus. Health promotion efforts are carried out thoroughly by involving all elements of the community, health workers, and Dalihan Na Tolu traditional leaders.

REFERENCES

Abdulrahman, A. (2016) 'Comparison of Four Cultural Competence Models in Transcultural Nursing: A Discussion Paper', *International Archives of Nursing and Health Care*, 4(2).

Gale, R. *et al.* (2017) 'Action on diabetic macular oedema: Achieving optimal patient management in treating visual impairment due to diabetic eye disease', *Eye (Basingstoke)*, 31(S1), pp. S1–S20. Available at: https://doi.org/10.1038/eye.2017.53.

Hansen, E. *et al.* (2020) 'Resistance Training in People at Risk of Developing Type 2 Diabetes and Their Experience of Health-Related Quality of Life', *Health*, 08(13), pp. 1323–1334. Available at: https://doi.org/10.4236/health.2016.813133.

Harahap (2017) *Faktor Yang Memengaruhi Kejadian Diabetes Melitus Tipe 2 Pada Wanita Usia Subur di Wilayah Kerja Puskesmas Pargarutan Kabupaten Tapanuli Selatan Tahun 2017*, *Repository USU*.

Huang, C.C. *et al.* (2014) 'Diabetes mellitus and the risk of Alzheimer's disease: A nationwide population-based study', *PLoS ONE*, 9(1). Available at: https://doi.org/10.1371/journal.pone.0087095.

IDF (2021) *Global diabetes data report 2000 — 2045, https://diabetesatlas.org/data/en/world/*. Available at: https://diabetesatlas.org/data/en/world/ (Accessed: 3 February 2023).

Kementerian Kesehatan Republik Indonesia (2019) 'Profil Kesehatan Indonesia'.

PERKENI (2021) *PEDOMAN PENGELOLAAN DAN PENCEGAHAN DIABETES MELITUS TIPE 2 DEWASA DI INDONESIA*. Edited by S.A. Soebagijo. Jakarta: PB PERKENI.

Png, M.E. *et al.* (2016) 'Current and future economic burden of diabetes among working-age adults in Asia: conservative estimates for Singapore from 2010-2050', *BMC Public Health*, 16(153), pp. 1–9.

Rawal, L. *et al.* (2021) 'Lifestyle interventions for type 2 diabetes management among migrants and ethnic minorities living in industrialized countries: A systematic review and meta-analyses', *BMJ Open Diabetes Research and Care*, 9(1), pp. 1–10. Available at: https://doi.org/10.1136/bmjdrc-2020-001924.

Tan, S.T. *et al.* (2019) 'The Benefits Of Occlusive Dressings In Wound Healing', *The Open Dermatology Journal*, 13(1), pp. 27–33. Available at: https://doi.org/10.2174/1874372201913010027.