INTERNATIONAL COMMUNITY HEALTH JOURNAL
Original Research
OPEN ACCESS

Overview of Knowledge of Type 2 Diabetes Mellitus Patients in Salo Village, Salo Community Health Center Work Area Salo District, Kampar Regency

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Article info:
Received: February 15 2025
Reviewed: February 24, 2025
Accepted: March 13, 2025

Abstract

The advancement of time and changes in lifestyle have led to a global increase in the prevalence of non-communicable diseases, one of which is diabetes mellitus (DM). The risk of complications in DM patients is influenced by their knowledge, attitudes, and behaviors in controlling blood sugar levels. This study aims to determine the level of knowledge about Type 2 Diabetes Mellitus (T2DM) among T2DM patients in Salo Village, Salo Public Health Center Working Area, Salo District, Kampar Regency. The research was conducted from August 23 to 25, 2024. This research employs a quantitative method with a descriptive design. Data were collected using a questionnaire. The sample consisted of 51 T2DM patients, recruited through total sampling. The results showed that 62.7% of respondents had low knowledge about T2DM, 72.5% were aged between 30-59 years, 51% had completed senior high school education, and 74.5% were female. It is recommended that health centers and relevant policymakers continue to promote health education, utilize technological advancements to enhance public knowledge about T2DM, and activate the role of families in improving patients' understanding of their disease.

Keywords

health, community, international, well-being, epidemiology, healthcare, policy, prevention, public health, global health

Introduction

The advancement of time and changes in lifestyle have led to a global increase in the prevalence of non-communicable diseases, one of which is diabetes mellitus (DM). DM is a chronic degenerative disease that can affect the quality of life and productivity of those who suffer from it (Navianti, 2018). According to the World Health Organization (WHO), there are currently approximately 422 million people worldwide with DM, the majority of whom live in low- and middle-income countries. Additionally, DM accounts for 1.5 million deaths annually (WHO, 2024). In 2021, Indonesia ranked fifth among countries with the highest number of DM cases, reaching 19.5 million people, and this number is projected to increase to 28.6 million by 2045 (IDF, 2021).

DM requires proper and serious management, as failure to control the disease can lead to complications such as heart disease, stroke, erectile dysfunction, kidney failure, and

nervous system damage (Anani, 2014). Although DM does not directly cause death, improper management can lead to fatal consequences. The management of DM requires a multidisciplinary approach, including both pharmacological and non-pharmacological therapies. Medical care and education are essential in preventing both acute and chronic complications. To prevent and slow the progression of microvascular and macrovascular complications, DM management focuses on controlling metabolic factors and cardiovascular risk factors (Korneliani, 2021).

According to the International Diabetes Federation (IDF) in 2018, a person's risk of developing DM is influenced by their knowledge, attitude, and behavior towards DM prevention. Knowledge plays a crucial role in shaping an individual's actions or behavior. Behaviors based on knowledge and positive attitudes tend to be more sustainable (Edward, 2017). A patient's knowledge about DM can serve as a valuable tool in managing the disease throughout their life. The more a patient understands their condition, the more they will comprehend the necessary behavioral changes and their significance (Trisnadewi, 2019). Research conducted by Perdana (2015) found a significant relationship between knowledge level and blood glucose control efforts in DM patients. This means that individuals with higher knowledge levels tend to have better-controlled blood glucose levels compared to those with lower knowledge levels (Khatimah, 2020).

According to the 2022 Riau Province Health Profile, the number of DM cases in Riau Province reached 59,569, with Kampar Regency recording the second-highest number of DM cases in the province. In 2023, DM was among the ten most prevalent diseases in Kampar Regency, affecting more than 6,662 people (Kampar District Health Office, 2023). Salo Public Health Center (Puskesmas Salo) had the 14th highest number of DM cases among 31 health centers in Kampar Regency, with 211 cases. Among the six villages in Salo District, Salo Village contributed the highest number of Type 2 DM (T2DM) cases, totaling 51 (Kampar District Health Office, 2023).

Given this issue, the researcher is interested in examining the level of knowledge among T2DM patients in Salo Village, within the working area of Salo Public Health Center, Kampar Regency, Riau. The findings of this study are expected to contribute to a more comprehensive effort in controlling blood glucose levels and preventing complications in T2DM patients.

Methodology

This study is a quantitative research using a descriptive design, as the researcher aims only to describe the knowledge of patients about Type 2 Diabetes Mellitus (T2DM). This study has received approval from the Research Institute of Universitas Pahlawan Tuanku Tambusai, Riau. The research was conducted from August 23 to 25, 2024, in Salo Village, within the working area of Salo Public Health Center, Kampar Regency.

The study population consisted of all T2DM patients in Salo Village, totaling 51 individuals. Since the population in this study is relatively small, the researcher used a total sampling technique, where the entire population was recruited as research subjects, resulting in 51 samples. The recruited samples included T2DM patients in Salo Village who agreed to participate in the study. Patients who were ill or unwilling to participate during data collection were excluded from the study. Data collection was carried out in four hamlets: Koto Bangun Hamlet (14 respondents), Getah Sebatang Hamlet (2 respondents), Sialang

Hamlet (9 respondents), and Terang Bulan Hamlet (26 respondents).

Data collection was conducted using a questionnaire that had been tested and declared valid and reliable. The questionnaire was filled out directly by the respondents. Before completing the questionnaire, the researcher explained the purpose and objectives of the study and assured the confidentiality of the research data. Respondents who agreed to participate signed an informed consent form provided by the researcher.

To assess respondents' knowledge about T2DM, the researcher used a questionnaire consisting of 11 objective questions. A score of 1 was assigned for a correct answer, and a score of 0 for an incorrect or "do not know" response. Respondents' knowledge was categorized as low if they answered correctly <60% of the questions and high if they answered correctly ≥60% (Novita, 2022). The collected data were analyzed using univariate analysis to examine the frequency distribution of respondent characteristics and their level of knowledge.

Results

Table 1. Respondents Characteristics

Characteristics	Frequency	percentage
	n=51	100%
Age		
30-59 Years	37	72,5
≥60 Years	14	27,5
Education		
Elementary School	15	29,4
Junior High School	10	19,6
Senior High School	26	51
Sex		
Male	13	25,5
Female	38	74,5

Based on the table above, out of 51 respondents, 37 individuals (72.5%) were aged 30–59 years. A total of 26 respondents (51.0%) had a senior high school or equivalent education, and 38 respondents (74.5%) were female.

Tabel 2. Frequency Distribution of Respondents' Knowledge

Pengetahuan	Frequency	percentage
	n=51	100%
Low	32	62,7
High	19	37,3

From Table 2, it is known that out of 51 respondents, 32 individuals (62.7%) had low knowledge about T2DM, while 19 individuals (37.3%) had high knowledge about T2DM.

Discussion

The risk of developing diabetes mellitus (DM) increases with age, particularly after 40 years. This is due to the reduction in muscle mass, which leads to decreased glucose utilization and an increase in blood sugar levels. As a result, Type 2 Diabetes Mellitus (T2DM) is more commonly experienced by individuals over the age of 40 due to the decline in organ function (Tandra, 2018). This finding is consistent with Andoko et al. (2018), who stated that age is one of the factors contributing to T2DM. As a person ages, their likelihood of developing degenerative diseases, including T2DM, increases. Individuals over the age of 40 are at a higher risk of developing T2DM due to anatomical, physiological, and biochemical changes that begin at the cellular level and progress to the tissue and organ levels, ultimately affecting homeostasis (Damayanti, 2015).

In this study, it was found that the majority (51%) of respondents had a senior high school or equivalent education but still had a low level of knowledge about T2DM. According to Hartono and Ediyono (2024), educational attainment does not always reflect an individual's willingness to learn outside of formal education. Formal education does not

necessarily correlate with access to or exposure to specific health information about DM, which may prevent individuals from gaining the necessary knowledge to understand their condition properly.

According to Riskesdas (2013), the prevalence of T2DM is higher in women than in men. This is because women generally have a higher percentage of body fat, which can reduce insulin sensitivity. Women are also more prone to obesity, particularly visceral (abdominal) obesity, which increases the risk of developing T2DM. Additionally, women may have a history of gestational diabetes or have given birth to babies weighing more than 4.5 kg, further increasing their risk (Priscilla, 2022).

A patient's knowledge of the appropriate diet for diabetes management is a crucial factor in successfully managing T2DM. Patients with good knowledge and skills, including dietary management, are better able to control their condition and maintain a longer, healthier life. The more a patient understands their disease and the dietary regulations they need to follow, the easier it will be for them to adopt the necessary behavioral changes (Sofyanti, 2022). Knowledge, as part of the cognitive domain, plays a vital role in shaping a person's actions and behaviors. A well-informed T2DM patient is more likely to adopt the appropriate lifestyle modifications needed to manage their disease effectively (Suwarto et al., 2014). Perdana (2015) found that patients' knowledge of T2DM helps them manage their condition, ultimately improving their health quality. Knowledge is essential in shaping behavior related to blood sugar control. Behavior is often influenced by prior knowledge, meaning that individuals with better knowledge are more likely to take effective measures to prevent T2DM complications, and vice versa.

Conclusion

Based on the findings of this study, 72.5% of respondents were aged 30–59 years, 51% had a senior high school education, and 74.5% were female. In terms of knowledge level, the majority (62.7%) of respondents had low knowledge about T2DM.

It is recommended that health centers and policymakers continue promoting health education, utilize technological advancements to enhance public awareness of T2DM, and strengthen the role of families in improving patients' knowledge and understanding of their condition.

Acknowledgment:
The authors would like to thank the study participants

Funding Sources
This research was conducted without funding from any party

Author's Contribution

Muhammad Fauzan contributed to data collection, and data analysis, and wrote the first draft of the manuscript;

Fitri Apriyanti contributed to the writing style and supervision of the research.

Author's Biography

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Declaration of Conflicting Interest
No conflict of interest to declare.

Ethical Consideration
The study approval was obtained from Universitas Pahlawan Tuanku Tambusai

(Approval number: 123456 on 16 December 2024).

Data Availability Statement

- The dataset produced and examined in the present study can be obtained from the corresponding author upon a reasonable request.
- The supporting data are available at https://dataset.com

Declaration of Use of AI in Academic Writing

Nothing to declare

Reference

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