



Health Management of Diabetes Mellitus Patients in the Work Area Health Center Meskom Subdistrict Bengkalis

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Abstract. Diabetes mellitus is disease chronic many occurs throughout the world. Prevalence disease this Keep going increased, with 8.5% of adults (equivalent to with 422 million people) suffering from Diabetes Mellitus at the global level. Research this aiming for identify management health of Diabetes Mellitus patients in the work area Health Center Meskom. Research this use method studies case with design descriptive. Research results show that 8 respondents (40%) did activity sports, while 12 respondents (60%) did not exercise. As many as 7 respondents (35%) routinely monitor blood sugar levels, while 13 respondents (65%) did not do monitoring. Respondents who regulate pattern Eat totaling 9 people (45%), while 11 respondents (55%) did not arrange pattern eating. As for 8 respondents (40%) running management health, while 12 respondents (60%) did not do it. Management health in Diabetes Mellitus patients aiming For control blood sugar levels, preventing complications term length, and increase quality life patient. Output study this designed in form article scientific. Research results show that good blood sugar control, including monitoring level glucose regularly, can lower risk complications like retinopathy, neuropathy, and disease cardiovascular. Optimal management involves combination use drugs, patterns controlled eating, as well as sport in a way regular.

Keywords: Activities Exercise, Blood Sugar Monitoring, Diet Management, Health Management.

1. BACKGROUND

Diabetes is a disease chronic which is up to moment this not yet own medicine. Disease this happen when body no can produce insulin or no capable use insulin optimally. Insulin itself is hormones that play a role in change sugar, substance flour, and other nutrients become energy required for activity everyday. Even though reason definitely diabetes still Not yet fully known, factor heredity and environment allegedly own role important in its development (Soebroto, 2020).

One of factor main contributors against diabetes is habits and patterns eat something that is not healthy, like lack of activity physical, smoking, consumption food high in protein, as well as often consume food fast serving (Baiju & Aravindhar, 2019). In addition, the history of family can also increase risk somebody affected by diabetes. Disease This can cause various impact health, including damage to blood vessels blood (Putri et al., 2021). If not controlled in term long, diabetes can develop become complications Serious like attack heart, stroke, disorders vision, amputation member body, as well as damage kidneys and various complications others (Islam et al., 2019). One of the factors that cause improvement amount diabetes sufferers are delay in diagnose disease this (Putri et al., 2021).

If diabetes mellitus does not handled with ok, can cause complications term potentially fatal length for health. Some impact serious that can happen covering damage nerve disorders (neuropathy), kidney disorders (nephropathy), eye problems (retinopathy), brain disorders (cerebrovascular), heart (cardiovascular), impotence, disorders digestion, improvement risk infection , as well as abnormality skin like itching in the genital area. In fact , in In severe cases , diabetes can cause gangrene or rotting wounds (Astuti & Hartutik , 2023).

Based on data from the World Health Organization (WHO), there are 422 million diabetes sufferers worldwide , with majority originate from income countries medium and high. In addition, diabetes is direct cause around 1.6 million death every year. The amount case as well as prevalence of diabetes continues experience improvement in a number of decade last (Yora Nopriani, 2021).

Based on data from the International Diabetes Federation (IDF) in 2022, cases of diabetes mellitus in Indonesia are classified as tall. Globally, there are 463 million adults who suffer from diabetes, with prevalence reached 9.3%. Which is more worryingly, around 50.1% of diabetes sufferers (diabetics) do not diagnosed, so that disease this Still considered as a "silent killer" that threatens the world. The number diabetes sufferers are estimated will increase by 45%, or reaching 629 million people in 2045. In addition, in 2020, around 75% of diabetes sufferers will be aged between 20 to 64 years old. While that, in 2021, the IDF noted that as many as 537 million adults aged 20 to 79 years — or about 1 in 10 people— live with diabetes worldwide. The disease this also becomes cause 6.7 million death , with an average of 1 death happen every 5 seconds.

Indonesia is in fifth place with 19.47 million people with diabetes. With a population of 3 of 179.72 million, this means that the prevalence of diabetes in Indonesia is 10.6%. IDF noted that 4 out of 5 people with diabetes (81%) live in low- and middle- income countries. This is also what makes IDF estimate that there are still 44% of adults diabetes sufferers who have not diagnosed. (IDF,2021) Based on data from the Riau Provincial Health Office Profile, the prevalence of diabetes mellitus in Riau is 71,654 cases (Riau Provincial Health Office 2024). And the prevalence of diabetes mellitus in Bengkalis Regency is 2,539 cases (Riau Provincial Health Office, 2022).

The World Health Organization (WHO) classification, DM is divided into several types, including: type I DM, type II DM, gestational diabetes and other types of diabetes. Type II diabetes mellitus is a type of DM that attacks many humans. Because around 90% are known to be Type II DM, based on all cases of DM in the population of several countries (Astuti & Hartutik, 2023).

Management of diabetes mellitus can be done with applying a healthy lifestyle, like guard pattern Eat with reduce consumption of sugar and fat as well multiply vegetables and fruits. In addition, it is important For control weight, exercise regularly at least 3 times a week for 30–60 minutes , and avoid cigarettes and alcohol. Sufferers are also advised for do inspection health and check blood sugar levels routinely use monitor development disease as well as detect complications more beginning. Use drug must in accordance recommendation, stress managed with well, and if there is wound, need quick treated with the right way. Difficult wounds healed is one of frequent complications experienced diabetes sufferers (PKRS RSUD Water Kolon, 2019).

People with diabetes mellitus need to apply behavior life healthy, like guard pattern eat, exercise regularly, and use drug in a way safe and orderly. Additionally, monitoring glucose blood independent (PGDM) is important for evaluate effectiveness treatment. Foot care periodic, readiness face condition acute, and skills overcome problem simple is also needed. Join with diabetes community and involve family in management disease can help increase quality alive. In addition, sufferers must utilise service available health for optimal care (Perkeni , 2019).

2. THEORETICAL STUDY

Effective management of diabetes mellitus (DM) is crucial for preventing complications and ensuring optimal quality of life for patients. Comprehensive health management strategies encompass medical interventions, lifestyle modifications, patient education, and continuous monitoring (ADA, 2022).

A cornerstone of DM management involves pharmacological interventions tailored to individual patient needs. These may include insulin therapy and oral hypoglycemic agents, aiming to maintain blood glucose levels within target ranges. Regular consultations with healthcare professionals are essential to adjust medications based on ongoing assessments of glycemic control and the presence of comorbidities (WHO, 2016).

Lifestyle changes are integral to DM management. Adopting a balanced diet rich in nutrients and low in simple carbohydrates helps regulate blood sugar levels. Engaging in regular physical activity enhances insulin sensitivity and aids in weight management. Moreover, adequate sleep and stress reduction techniques contribute to overall metabolic health (Centers for Disease Control and Prevention, 2024).

Empowering patients through education fosters effective self-management. Diabetes self-management education and support (DSMES) programs provide individuals with the

knowledge and skills necessary to manage their condition, including blood glucose monitoring, medication adherence, and recognizing symptoms of hypo- or hyperglycemia. Participation in DSMES has been associated with improved clinical outcomes and quality of life (ADA, 2021).

Continuous monitoring of blood glucose levels enables timely adjustments to treatment plans. Regular medical check-ups facilitate early detection and management of potential complications, such as neuropathy, retinopathy, and cardiovascular diseases. Collaborative care involving a multidisciplinary team ensures comprehensive evaluation and personalized interventions (ADA, 2021).

Addressing behavioral and psychosocial aspects is vital in DM management. Support systems, including counseling and peer support groups, assist patients in coping with the emotional challenges of living with diabetes. These resources promote adherence to management plans and encourage healthy lifestyle choices (WHO, 2016).

3. RESEARCH METHODS

This study use method studies case with design descriptive. Case study is purposeful approach for understand a phenomenon in a way deep in context specific. While that, design descriptive used for give description Details about object or the phenomenon being studied without do manipulation variables (Sugiyono , 2016). In the research This is the case analyzed involving 20 patients with diabetes mellitus. This study apply analysis descriptive For evaluate management health in patients mature with diabetes mellitus in the work area Health Center Meskom, District Bengkalis.

4. RESULTS AND DISCUSSION

Research result can seen in table 1.

Table 1. Research Results

	Frequency	Percentage
Gender		
Man	8	40
Woman	12	60
Total	20	100
Age		
<40 Years	2	10
41-50 Years	12	60
51-57 Years	6	30
Total	20	100
3. Long time suffering from DM		
5 years	5	25
6 Years	5	25
7 Years	4	20
8 Years	4	20
9 Years	4	10
Total	20	100
Activity Sport		
Good	8	40
No	12	60
Total	20	100
Blood Sugar Monitoring		
Good		
No	7	35
	13	65
Total	20	100
Setting a Diet Pattern		
Good		
No	9	45
	11	55
Total	20	100
Health Management		
Good		
No	8	40
	12	60
Total	20	100

Based on the research results, the prevalence of diabetes mellitus (DM) in the Work Area of the Meskom Health Center, Bengkalis Subdistrict, shows that more women suffer from DM compared to men. Out of a total of 20 respondents, 12 people (60%) were women, while 8 people (40%) were men. This result is in line with previous studies, which have shown that the prevalence of DM is higher in women than in men. This may be caused by hormonal factors, lifestyle, and the tendency of women to experience obesity, which is one of the main risk factors for DM (Wild et al., 2014).

The respondents' ages in this study varied, with the age group of <40 years consisting of 2 people (10%), those aged 41-50 years comprising 12 people (60%), and those aged 51-57 years accounting for 6 people (30%). This data shows that the majority of DM sufferers belong to the 41-50 age group, indicating that the risk of diabetes increases with age. A study conducted by Shaw et al. (2010) also demonstrated that the prevalence of DM increases significantly in individuals over 40 years old, mainly due to declining insulin sensitivity and metabolic changes associated with aging.

The duration of DM among respondents ranged from 5 to 9 years. This indicates that most respondents have been living with diabetes for quite a long time, which increases their risk of complications if not managed properly (ADA, 2022). The research results also show that only 8 people (40%) exercise regularly, while 12 people (60%) do not engage in regular physical activity. In fact, exercise plays a crucial role in improving insulin sensitivity and controlling blood sugar levels (Colberg et al., 2016). A lack of physical activity has the potential to worsen DM conditions, especially considering that one of the main recommendations for DM management is regular exercise for at least 150 minutes per week (ADA, 2022).

In addition, only 7 respondents (35%) routinely monitored their blood sugar levels, while 13 people (65%) did not perform regular monitoring. Independent blood sugar monitoring (Self-Monitoring of Blood Glucose/SMBG) is an essential step in diabetes management to prevent complications and assess the effectiveness of ongoing therapy (Powers et al., 2017). A lack of monitoring can lead to delays in identifying uncontrolled blood sugar levels, increasing the risk of serious complications such as neuropathy, nephropathy, and retinopathy (Zoungas et al., 2014).

Regarding dietary patterns, only 9 respondents (45%) managed their diet properly, while 11 respondents (55%) did not regulate their eating habits. A healthy diet is a key factor in managing DM, as the intake of simple sugars and saturated fats must be controlled to prevent spikes in blood sugar levels (Evert et al., 2019). Studies show that a balanced diet-rich in fiber, low in processed carbohydrates, and avoiding foods high in saturated fats-can help regulate blood sugar levels more effectively (Ley et al., 2014).

Furthermore, only 8 respondents (40%) practiced comprehensive health management, while 12 respondents (60%) did not manage their health effectively. This indicates that many DM patients have not yet implemented optimal management strategies, including proper dietary habits, regular exercise, blood sugar monitoring, and adherence to treatment. Low awareness of DM management can increase the risk of long-term complications, such as

cardiovascular disease, kidney disorders, and diabetic wounds that are difficult to heal (Chatterjee et al., 2017).

These research findings confirm that significant challenges remain in DM management within the Work Area of the Meskom Health Center, Bengkalis Subdistrict. Low levels of physical activity, inadequate blood sugar monitoring, and uncontrolled dietary habits are the main factors that can worsen the condition of diabetes patients. Therefore, continuous education and intervention are necessary to increase awareness and adherence to proper DM management. Community-based education programs and family support can be effective strategies for promoting healthy behaviors among individuals with diabetes mellitus.

5. CONCLUSION

Based on the results of a study on the health management of diabetes mellitus patients in the Work Area of the Meskom Health Center, Bengkalis Subdistrict, in 2024, it was found that the majority of respondents had not yet adopted a healthy lifestyle optimally. Only 40% of respondents exercised regularly, while the remaining 60% did not engage in physical activity. Blood sugar monitoring was also still low, with only 35% of respondents performing regular monitoring. Regarding dietary patterns, 45% of respondents managed their food intake properly, while 55% had not yet adopted a healthy eating pattern. Overall, only 40% of respondents were actively managing their health, while the majority (60%) still lacked sufficient efforts in preventing and controlling diabetes.

REFERENCE LIST

- American Diabetes Association. (2021). Facilitating behavior change and well-being to improve health outcomes: Standards of medical care in diabetes—2021. *Diabetes Care*, 44(Supplement 1), S53–S72.
- American Diabetes Association. (2022). *Your diabetes care and management plan*.
- Andriani, R. (2019). *Community-based prevention of maternal death during pregnancy and childbirth* (1st ed.). Yogyakarta: CV. Budi Utama.
- Aprilia Rahmadhanti, V., & Siyam, N. (2022). *Maternal mortality incident in Grobogan Regency in 2022*.
- Calvert, C., Thomas, S. L., et al. (2012). Identifying regional variation in the prevalence of postpartum haemorrhage: A systematic review and meta-analysis. *PLOS ONE*, 7(7), e41114. <https://doi.org/10.1371/journal.pone.0041114>
- Centers for Disease Control and Prevention. (2024). *About diabetes self-management education and support*.

- Central Bureau of Statistics. (2022). *Report on maternal mortality rate in Indonesia 2022*. Jakarta: BPS.
- Cunningham, F. G., Leveno, K. J., et al. (2018). *Williams obstetrics* (25th ed.). New York: McGraw-Hill Education.
- GKIA. (2016). *1001 steps to save mother & child*.
- Maraschini, A., Mandolini, D., Lega, I., et al. (2024). Maternal mortality in Italy estimated by the Italian obstetric surveillance system. *Scientific Reports*, 14(1), 1–9. <https://doi.org/10.1038/s41598-024-80431-0>
- McCarthy, J., & Maine, D. (1992). A framework for analyzing the determinants of maternal mortality. *Studies in Family Planning*, 23(1), 23. <https://doi.org/10.2307/1966825>
- Midhet, F., Khalid, S. N., Baqai, S., & Khan, S. A. (2025). Trends in the levels, causes, and risk factors of maternal mortality in Pakistan: A comparative analysis of national surveys of 2007 and 2019. *PLOS ONE*, 20(1), 1–14. <https://doi.org/10.1371/journal.pone.0311730>
- Ministry of Health of the Republic of Indonesia. (2021). *Indonesian health profile 2020*. Jakarta: Ministry of Health of the Republic of Indonesia.
- Ministry of Health of the Republic of Indonesia. (2023). *Indonesian health profile*.
- Riches, J., Jafali, J., Twabi, H. H., et al. (2025). Avoidable factors associated with maternal death from postpartum haemorrhage: A national Malawian surveillance study. *BMJ Global Health*, 10(1), 1–10. <https://doi.org/10.1136/bmjgh-2024-015781>
- Rohati. (2023). *Analysis of factors causing maternal mortality in Indonesia*. Yogyakarta: Gadjah Mada University.
- Say, L., Chou, D., et al. (2014). Global causes of maternal death: A WHO systematic analysis. *The Lancet Global Health*, 2(6), e323–e333.
- Sibai, B. M. (2012). Management of hypertensive disorders of pregnancy: State of the art. *American Journal of Obstetrics and Gynecology*, 206(5), 439–450.
- Sintang District Health Office. (2023). *Profile of the Sintang District Health Office*.
- UNICEF Indonesia. (2022). *Improving maternal and newborn health in Indonesia*. Jakarta: UNICEF.
- West Kalimantan Provincial Health Office. (2023). *West Kalimantan provincial health profile*.
- World Health Organization (WHO). (2018). *International classification of diseases 11th revision (ICD-11)*. Geneva: WHO.
- World Health Organization. (2006). *Management of diabetes mellitus: Standards of care and clinical practice guidelines*.