



DIABETES MELLITUS PREVENTION EDUCATION AND BLOOD SUGAR SCREENING AT JATIRAYA COMMUNITY HEALTH CENTER, KENDARI CITY

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Abstract: Diabetes Mellitus (DM) is one of the chronic diseases whose prevalence is increasing worldwide. Approximately 537 million adults worldwide live with diabetes, and this number is projected to rise to 643 million by 2030 if no effective preventive measures are taken. The objective of this Community Service Program (PKM) is to enhance public knowledge and attitudes toward Diabetes Mellitus (DM) and to conduct blood sugar level screenings among the community in the service area of the BLUD UPTD Jatiraya Kendari Health Center, Southeast Sulawesi. The methodology for implementing this Community Service Program (PKM) includes two main components: education and awareness-raising activities related to Diabetes Mellitus (DM) and health examinations in the form of blood sugar level measurements. The target audience for the activities is the local community in the service area of the Jatiraya Health Center, using purposive sampling to select 25 respondents. To measure the effectiveness of the educational activity, qualitative feedback was used through brief question-and-answer sessions before and after the educational activity. Health screenings were conducted using a glucometer. Based on the results of the PKM activities, which included health education and early detection of DM at the Jatiraya Health Center, it can be concluded that 25 participants successfully gained good knowledge about DM. From the blood sugar level measurements conducted, it was found that 4% of the participants were diagnosed with diabetes, and 28% were indicated as pre-diabetic.

Keywords: Education, diabetes mellitus, blood sugar screening

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Introduction

Diabetes Mellitus (DM) is a health condition characterized by a cluster of symptoms caused by elevated blood sugar levels due to insufficient insulin production or insulin resistance (Syatriani, 2023). Diabetes is a chronic disease that occurs when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood glucose. Hyperglycemia, also known as elevated blood glucose or blood sugar levels, is a common effect of uncontrolled diabetes and, over time, can cause serious damage to many body systems, particularly the nerves and blood vessels (WHO, 2024).

Diabetes Mellitus (DM) is one of the chronic diseases whose prevalence is increasing worldwide. According to the World Health Organization (WHO), in 2021, approximately 537 million adults worldwide were living with diabetes, and this number is projected to rise to 643 million by 2030 if no effective preventive measures are taken (WHO, 2024). In Indonesia alone, the Ministry of Health (Kemenkes) reported that the

prevalence of DM in 2018 reached 8.5% of the total population, with a significant increase particularly among the productive age group (Ministry of Health, 2023a).

In Southeast Sulawesi, the prevalence of DM also shows alarming figures. Data from the Southeast Sulawesi Provincial Health Office shows that the prevalence of DM in this province continues to increase from year to year, with 13,946 sufferers and 3,026 sufferers of DM in the city of Kendari. These figures indicate that the Kendari City Government needs to implement massive interventions in both prevention and case management, as well as an urgent need to promote more intensive early detection efforts (South East Sulawesi Provincial Health Office, 2017).

Community health centers (Puskesmas) as primary health facilities play a strategic role in the prevention and control of non-communicable diseases, including diabetes mellitus (DM), in their working areas. Various programs have been implemented by Puskesmas, such as monitoring risk factors, health education, and regular blood sugar level checks. However, challenges such as low levels of public knowledge and lack of awareness about early detection remain obstacles to optimal DM control. Therefore, it is crucial to conduct community service activities in the form of health education and blood sugar screenings. These activities aim not only to enhance public knowledge and attitudes toward DM but also to promote awareness of the importance of prevention and early detection of blood sugar disorders, thereby reducing the incidence of DM in the Puskesmas's service area.

Based on this background, we, as graduate students and part of the community service team, feel it is necessary to carry out a Community Service (PKM) activity in order to fulfill the requirements of the Psychology and Counseling course. This activity focuses on health education about Diabetes Mellitus (DM) and health screenings, aimed at enhancing the public's knowledge and attitudes toward understanding DM and the importance of early detection of blood sugar level disorders. The activity was carried out in the service area of the BLUD UPTD Jatiraya Health Center, Kendari City, Southeast Sulawesi, with the hope of making a tangible contribution to efforts in preventing and controlling DM in the community.

Method

The methodology for implementing this Community Service (PKM) activity includes two main components, namely counseling and socialization related to Diabetes Mellitus (DM) and health checks in the form of blood sugar level measurements. This activity was carried out through collaboration between students of the Master of Public Health Study Program, Faculty of Public Health, Halu Oleo University, and BLUD UPTD Puskesmas Jatiraya Kendari. The target audience for the activity is the local community in the service area of the Jatiraya Health Center, selected using purposive sampling—the deliberate selection of respondents based on specific criteria. The inclusion criteria established include:

1. Aged ≥ 20 years.
2. Residing in the working area of the Jati Raya Community Health Center.
3. Willing to participate in counseling and health examinations voluntarily.
4. Able to read and understand the contents of the questionnaire.

There were 25 respondents in this activity, consisting of men and women from diverse socioeconomic backgrounds. To measure the effectiveness of the outreach activities,

qualitative feedback was used in the form of brief question and answer sessions before and after the outreach activities. This was done to assess the knowledge and attitudes of the participants. Health checks are conducted by public health center staff using a blood glucose meter directly at the activity location. With this approach, the PKM activity is expected to make a tangible contribution to improving community health literacy, particularly in efforts to prevent and detect diabetes mellitus at an early stage.

The implementation method for this community service activity consists of several main components, namely:

1. Free blood sugar and blood pressure checks: This activity aims to detect early signs of diabetes mellitus and hypertension in the community.
2. Education on the dangers, prevention, and control of diabetes mellitus: This education program is designed to increase community awareness and knowledge about diabetes mellitus, including the risks associated with this disease and steps to prevent and control it.
3. Discussion and question-and-answer session on the dangers, prevention, and control of diabetes mellitus: This discussion and question-and-answer session provides an opportunity for the community to interact directly with the presenters, deepen their understanding of diabetes mellitus, and get answers to their questions.

Results and Discussion

This community service activity was held on Thursday, April 24, 2025, from 8:00 a.m. to 11:00 a.m. WITA. The activity aimed to provide knowledge and education to the community in the working area of the Jati Raya Community Health Center, Kendari, about diabetes mellitus. The primary objective of this activity is to enhance public awareness and understanding of the risks associated with diabetes mellitus and its prevention methods through the delivery of educational materials and health screenings.

This activity was attended by 25 participants from the community in the working area of the Jati Raya Community Health Center, with a wide range of ages. The age distribution of participants can be seen in Figure 2. The activity began with participant registration and the provision of snacks as a form of welcome. The event was officially opened by the Head of the Jati Raya Community Health Center, who in his speech expressed appreciation and gratitude to the community service team from the Master of Public Health Program at Halu Oleo University.

The main event of this activity was the presentation of educational material about diabetes mellitus. Before presenting the material, the community service team introduced themselves and conducted a brief question and answer session as a pretest to measure the participants' initial knowledge about diabetes mellitus. The results of this question and answer session showed that the participants' level of knowledge about diabetes mellitus was relatively low, indicating that this activity was very relevant and appropriate to be carried out at that location.



Figure 1. Health Education and Checkups

The material provided includes an introduction to diabetes mellitus, normal blood sugar levels, symptoms of diabetes, risk factors for diabetes mellitus, and ways or efforts to prevent or treat diabetes mellitus.

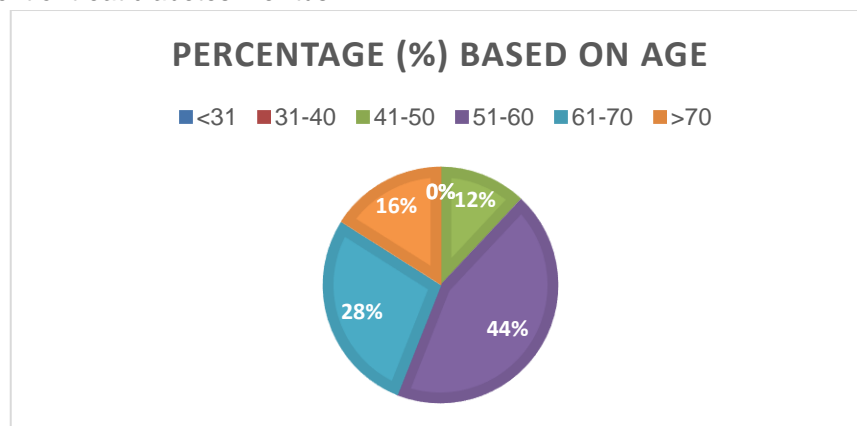


Figure 2. Percentage of service participants based on age

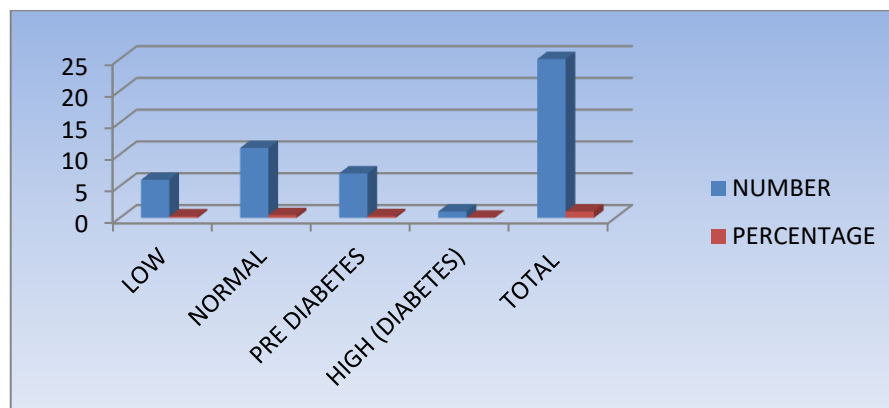


Figure 3. Percentage of blood sugar test results

After the presentation of the material was completed, a random evaluation was conducted through a question-and-answer session to assess participants' understanding. Based on the responses provided by the participants, it can be concluded that the majority of participants were able to grasp the material effectively. Additionally, an evaluation was conducted through a quiz administered during the course of the activity. The participants' enthusiasm in answering questions and the answers they provided indicated that they had mastered most of the material presented. This serves as an important indicator that the objectives of the diabetes mellitus awareness campaign have been achieved.

The activity continued with blood sugar testing using a glucometer to obtain empirical data on the participants' health conditions. The blood sugar test results shown in Figure 3 indicate that the majority of participants (68%) had fasting blood sugar levels within the normal range (<140 mg/dL). However, 28% of participants exhibited symptoms of pre-diabetes (140-200 mg/dL), and 4% were indicated to have diabetes mellitus (>200 mg/dL).

Based on the results of the blood sugar test, guidance was provided through discussions tailored to the health condition of each participant. For participants with normal blood sugar test results, emphasis was placed on the importance of maintaining a healthy lifestyle. Meanwhile, for participants diagnosed with diabetes mellitus, guidance was provided based on the 4 pillars of diabetes mellitus management, which include:

1. Education and understanding of diabetes mellitus to increase participants' awareness and knowledge about their health condition.
2. A balanced diet tailored to individual health needs.
3. Regular exercise to help control blood sugar levels and improve overall health.
4. Treatment and monitoring of therapy results through laboratory tests to ensure the effectiveness of treatment and make adjustments if necessary.

With this approach, community service activities not only provide knowledge about diabetes mellitus but also offer comprehensive assistance to participants in managing their health conditions. This is in line with recommendations for diabetes mellitus management that emphasize the importance of a holistic and integrated approach in treating this disease (Soelistijo, 2021).

Conclusion

Based on the results of community service activities, which included education and early detection of diabetes mellitus at the Jati Raya Community Health Center, it can be concluded that 25 participants successfully gained a good understanding of diabetes mellitus. From the blood sugar tests conducted, it was found that 4% of participants were diagnosed with diabetes and 28% were indicated as pre-diabetic.

Thank you

We would like to express our gratitude to the Head of BLUD UPTD Puskesmas Jati Raya and the entire community of Anaiwoi Village, Kadia District, Kendari City for providing the time and venue for the 2025 community service activities, as well as for the enthusiasm shown by the community throughout the activities.

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