COMMUNITY DIAGNOSIS ACTIVITIES TO REDUCE THE NUMBER OF DIABETES MELLITUS CASES IN KAMPUNG MELAYU TIMUR VILLAGE, RT 03/RW 11, WORKING AREA OF TELUKNAGA COMMUNITY HEALTH CENTER, TELUKNAGA DISTRICT, TANGERANG REGENCY, BANTEN PROVINCE PERIOD: JULY 14 – AUGUST 15, 2025

Leny Sulistia Ningrum[1]*, Shania Makmur[2], Felda[3], Jonathan[4], Tom Surjadi[5]

Medical Doctor Profession Program, Tarumanagara University[1,2,3,4], Department of Public Health, Tarumanagara University[5]

*Corresponding Author : leny.406231003@stu.untar.ac.id

ABSTRAK

Di Indonesia, beban diabetes melitus terus mengalami peningkatan, khususnya di tingkat komunitas, di mana rendahnya tingkat pengetahuan, perilaku gaya hidup yang tidak sehat, serta pengelolaan penyakit yang belum optimal berkontribusi terhadap buruknya kontrol glikemik. Kegiatan diagnosis komunitas dan intervensi ini bertujuan untuk mengidentifikasi faktor-faktor mendasar yang berkontribusi terhadap meningkatnya jumlah kasus diabetes melitus di Desa Kampung Melayu Timur RT 03/RW 11, wilayah kerja Puskesmas Teluknaga, serta mengevaluasi efektivitas pendidikan kesehatan berbasis komunitas dalam meningkatkan pengetahuan terkait pencegahan dan pengelolaan diabetes melitus. Kegiatan dilaksanakan pada periode 14 Juli hingga 15 Agustus 2025 dengan menggunakan pendekatan diagnosis komunitas berdasarkan Paradigma Blum. Penentuan prioritas masalah dilakukan menggunakan metode USG dan teknik Delphi, sedangkan analisis akar masalah dilakukan dengan menggunakan diagram fishbone dan metode 5 Whys. Intervensi yang diberikan meliputi penyuluhan kesehatan mengenai diabetes melitus, konseling pola makan sehat dan aktivitas fisik, serta edukasi mengenai modifikasi gaya hidup untuk mendukung pengendalian kadar glukosa darah. Hasil kegiatan menunjukkan adanya peningkatan pengetahuan masyarakat yang bermakna setelah intervensi, yang mengindikasikan bahwa program pendidikan kesehatan yang terstruktur dapat berperan penting dalam meningkatkan kesadaran dan mendorong perilaku hidup sehat guna mendukung pencegahan dan pengendalian diabetes melitus di tingkat komunitas.

Kata kunci : diabetes melitus, diagnosis komunitas, kesehatan masyarakat, modifikasi gaya hidup, pendidikan kesehatan, penyakit tidak menular

ABSTRACT

In Indonesia, the burden of diabetes mellitus continues to rise, particularly at the community level, where limited awareness, unhealthy lifestyle behaviors, and suboptimal disease management contribute to poor glycemic control. This community diagnosis and intervention study aimed to identify the underlying factors contributing to the increasing number of diabetes mellitus cases in Kampung Melayu Timur Village, RT 03/RW 11, within the working area of Teluknaga Community Health Center, and to evaluate the effectiveness of community-based health education in improving knowledge related to diabetes prevention and management. The implemented interventions included diabetes health education sessions, counseling on healthy dietary patterns and physical activity, and guidance on lifestyle modification to support glycemic control. Evaluation was conducted through pre-test and post-test questionnaires as well as a systems-based assessment using the PDCA cycle. The results demonstrated a meaningful improvement in community knowledge following the intervention, indicating that structured health education programs can play a crucial role in enhancing awareness and promoting healthier behaviors to support diabetes mellitus prevention and control at the community level.

Keywords : *community diagnosis, diabetes mellitus, health education, lifestyle modification, non-communicable diseases, public health*

INTRODUCTION

Diabetes mellitus is a chronic non-communicable disease characterized by persistent hyperglycemia resulting from defects in insulin secretion, insulin action, or both. The disease is associated with a wide range of acute and chronic complications, including cardiovascular disease, nephropathy, neuropathy, retinopathy, and increased mortality. According to international and national clinical guidelines, diabetes mellitus is diagnosed based on elevated fasting plasma glucose, postprandial glucose levels, or glycated hemoglobin (HbA1c) confirmed through standardized testing. The global burden of diabetes mellitus continues to increase, particularly in low- and middle-income countries, where lifestyle transitions, population aging, and limited preventive efforts contribute to rising prevalence and suboptimal disease control (Antar et al., 2023; Sapra & Bhandari, 2023).

In Indonesia, diabetes mellitus represents a growing public health challenge, with a steady increase in prevalence observed across both urban and rural populations. Community-level factors such as unhealthy dietary patterns, physical inactivity, obesity, and low awareness of early symptoms play a substantial role in disease development and progression. Primary health care facilities, including community health centers (Puskesmas), serve as the frontline for early detection, health promotion, and long-term management of diabetes mellitus. Nevertheless, inadequate health literacy, delayed diagnosis, and poor adherence to recommended lifestyle modifications and treatment regimens remain significant barriers to effective diabetes control at the community level (Santyarini & Fajri, 2024; Wahidin et al., 2024).

Local health data from the working area of Teluknaga Community Health Center indicate a concerning number of diabetes mellitus cases, reflecting an ongoing burden of disease within the community. In Kampung Melayu Timur Village, RT 03/RW 11, these cases suggest potential gaps in community knowledge related to diabetes risk factors, prevention strategies, routine screening, and self-management practices. The persistence of diabetes cases at the community level highlights the need for systematic assessment to identify priority problems and underlying determinants contributing to disease occurrence and inadequate management. Therefore, this study aimed to conduct a comprehensive community diagnosis in Kampung Melayu Timur Village, RT 03/RW 11, to identify the main problems and root causes associated with diabetes mellitus using a structured analytical framework. Based on the findings, targeted interventions in the form of community-based health education and lifestyle modification counseling were implemented. The ultimate objective of this activity was to improve community knowledge, promote healthier behaviors, and support the prevention and control of diabetes mellitus through sustainable, community-oriented approaches.

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Therefore, this study aimed to conduct a comprehensive community diagnosis in Kampung Melayu Timur Village, RT 03/RW 11, to identify the main problems and root causes associated with diabetes mellitus using a structured analytical framework. Based on the findings, targeted interventions in the form of community-based health education and lifestyle modification counseling were implemented. The ultimate objective of this activity was to improve community knowledge, promote healthier behaviors, and support the prevention and control of diabetes mellitus through sustainable, community-oriented approaches.

METHOD

This study employed a community diagnosis design conducted in Kampung Melayu Timur Village, RT 03/RW 11, within the working area of Teluknaga Community Health Center, Teluknaga District, Tangerang Regency, Banten Province, from July 14 to August 15, 2025. The community diagnosis framework was based on the Blum Paradigm, which examines four key determinants of health status, namely environmental factors, behavioral factors, health service factors, and hereditary factors, to comprehensively assess community health problems. Problem identification and prioritization were carried out using both scoring and non-scoring approaches. The Urgency, Seriousness, and Growth (USG) scoring method was applied to rank identified health problems based on their public health impact and potential for progression. In addition, the Delphi method was utilized to achieve consensus among stakeholders, including primary health care workers, community leaders, and local residents, regarding the priority health problem to be addressed. Root cause analysis was subsequently conducted using fishbone diagrams and the 5 Whys technique to systematically explore the underlying factors contributing to the increasing number of diabetes mellitus cases in the community.

Based on the identified root causes, short-term intervention strategies were formulated and implemented. The interventions consisted of structured health education sessions focusing on diabetes mellitus definition, risk factors, signs and symptoms, screening methods, complications, prevention strategies, and disease management. Additional activities included counseling on healthy dietary patterns, physical activity, and lifestyle modification aimed at supporting glycemic control and preventing disease progression. Evaluation of the intervention outcomes was conducted using pre-test and post-test questionnaires to assess changes in participants' knowledge related to diabetes mellitus. A systems-based approach was applied to evaluate input, process, and output components of the intervention. Furthermore, monitoring and evaluation were guided by the Plan–Do–Check–Action (PDCA) cycle to ensure continuous assessment and improvement of the community-based intervention activities. This study employed a community diagnosis design conducted in Kampung Melayu Timur Village, RT 03/RW 11, within the working area of Teluknaga Community Health Center, Teluknaga District, Tangerang Regency, Banten Province, from July 14 to August 15, 2025. The community diagnosis framework was based on the Blum Paradigm, which examines four key

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RESULT

In Intervention I, the pre-test results showed that all 32 participants (100%) obtained scores below 90, with the lowest score of 7 and the highest score of 73, resulting in a mean pre-test score of 48.5. Following the educational intervention, the post-test results indicated that only 2 participants (6.25%) scored below 90, while 30 participants (93.75%) achieved scores above 90. The post-test scores ranged from 73 to 100, with a mean score of 94.78. These findings demonstrate a substantial improvement in participants' knowledge after the intervention. Therefore, the educational intervention was considered successful, as evidenced by an increase in the mean pre-test and post-test scores and the achievement of post-test scores above 90 in at least 90% of participants. (Table 1)

Table 1.   Result and Monitoring Intervention 1

Characteristics	Number (%) n=32
Age	
<60 years old	6 (18.75)
> 60 years old	26 (81.25)
Gender	
Women	28 (87.50)
Men	4 (12.50)
Highest Level of Education	
No formal education	3 (9.37)
Elementary School	18 (56.25)
Junior High School	10 (31.25)
High School	1 (1.12)
Pre-test result	
<90 points	32 (100.0)
>90 points	0 (0.0)

Post-rest result	
<90 points	2 (6.25)
>90 points	30 (93.75)
Number of respondents who met criteria 1 and 2	
Respondent met the criteria	10 (29.41)
Respondent didn't met the criteria	24 (70.59)

DISCUSSION

The findings of this study indicate that community-based health education interventions can effectively improve participants' knowledge related to diabetes mellitus. The substantial increase in post-test scores compared to pre-test scores demonstrates that structured educational activities are capable of enhancing community understanding of diabetes prevention and management. Improved knowledge is a fundamental prerequisite for behavioral change, particularly in adopting healthier dietary patterns, increasing physical activity, and improving adherence to diabetes management recommendations. These results are in line with previous studies reporting that health education interventions at the community level significantly contribute to improved awareness and self-management of chronic non-communicable diseases (Ferreira et al., 2024; Kifle et al., 2022; Sękowski et al., 2022).

The identification of inadequate health education as a key underlying factor highlights the importance of implementing regular and structured diabetes education programs within the community. Community-based approaches that involve local health workers and community health cadres are essential to ensure wider coverage, cultural appropriateness, and sustainability of health promotion activities. Educational interventions focusing on lifestyle modification, including diet and physical activity, are particularly relevant for diabetes mellitus control and align with national strategies for non-communicable disease prevention and management (de Carvalho et al., 2025; Levic et al., 2023; Velázquez López et al., 2023).

Despite the overall positive outcomes, a small proportion of participants did not achieve optimal post-test scores, indicating that single-session educational interventions may not be sufficient for all individuals. This finding suggests the need for repeated educational sessions, longer follow-up periods, and the integration of complementary strategies such as individualized counseling, family involvement, or home-based interventions. Additionally, future programs should consider addressing broader determinants that may influence diabetes management, including socioeconomic factors, health literacy levels, and access to health services, to further enhance the effectiveness of community-based diabetes control initiatives

CONCLUSION

This community-based intervention demonstrated that structured health education activities effectively improved community knowledge regarding diabetes mellitus prevention and management. The significant increase in post-intervention knowledge scores indicates that targeted educational interventions can enhance public understanding of diabetes mellitus and support the adoption of healthier lifestyle behaviors, including appropriate dietary practices and regular physical activity. The involvement of community health cadres played an important role in facilitating the implementation of the intervention and encouraging active community participation. Although not all participants achieved optimal post-intervention outcomes, the overall findings suggest that regular, community-based health education and lifestyle modification programs are valuable strategies for strengthening diabetes mellitus prevention and control at the primary health care level. Sustained implementation, periodic reinforcement, and integration with existing primary care services are recommended to further improve community awareness, self-management capacity, and long-term disease control.

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