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COMMUNITY EMPOWERMENT IN THE MANAGEMENT OF NON-COMMUNICABLE DISEASES (DIABETES MELLITUS) IN PLALANGAN SUBDISTRICT, GUNUNGPATI DISTRICT, SEMARANG CITY

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ABSTRACT

Diabetes mellitus (DM) is a growing global health problem, including in Indonesia where the prevalence continues to rise annually. The management of type 2 diabetes mellitus (T2DM) has largely been health officer-centered, with limited involvement of patients and families, which leads to suboptimal outcomes. This community service program (PkM) aimed to empower communities in Plalangan Subdistrict, Gunungpati District, Semarang City, through the training of health cadres in T2DM management. The program was conducted in two phases: pre-activity coordination with local stakeholders and the implementation of training activities. A total of 40 health cadres participated in training that included education on diabetes management, child diabetes, and simple blood glucose monitoring techniques using glucometers. Results showed that cadres successfully improved their knowledge and practical skills, demonstrated the ability to conduct capillary blood glucose tests, and acted as community educators in DM prevention and management. The involvement of trained cadres strengthened primary healthcare services by supporting early detection, encouraging healthy behaviors, and enhancing patient adherence. This program highlights the critical role of community empowerment and cadre training in improving diabetes management and quality of life at the community level.

Keywords: community empowerment; family-centered care; health cadres; non-communicable diseases; type 2 diabetes mellitus

Introduction

Diabetes mellitus (DM) is a global health problem. Based on epidemiological studies, the prevalence of DM patients of all ages in 2000 was 2.8% (171 million), which was estimated to increase to 4.4% (366 million) in 2030 (1), and it is projected to nearly double to 592 million cases by 2035 (2). The WHO report in 2014 stated that 422 million people worldwide were living with DM, with a prevalence of 8.5% among adults (3).

Out of 18.9 million National Health Insurance (Jaminan Kesehatan Nasional)

members who utilized secondary and tertiary healthcare services, 812,204 (4%) were diagnosed with type 2 diabetes mellitus (T2DM). Among them, 57% experienced complications, with cardiovascular disease being the most frequent (24%) (4).

The management of type 2 diabetes mellitus in Indonesia is still more focused on the central role of health professionals (health officers-centered care) rather than being patient-centered or family-centered. Patients and their families are still perceived as passive objects rather than partners in the management of type 2 diabetes mellitus. Opportunities to make important decisions, such as taking medication, are not yet based on the background aspects of patients and their families, such as values, culture, and spirituality (5). As a result, the management of type 2 diabetes mellitus becomes less optimal and incomplete.

Social support through the process of community empowerment, which significantly contributes to DSM (diabetes self-management) behavior, comes primarily from the family. Family support has a significant influence on an individual's adherence or compliance with certain behaviors, including DSM behaviors. Compliance encourages individuals to follow healthier lifestyle changes as recommended by healthcare providers and family members. The presence of family support for a sick family member impacts decision-making to behave in ways that align with expectations (5). Therefore, family empowerment becomes highly important and can be implemented through a family-centered care (FCC) approach. FCC is the process of involving all family members in the care or management of health problems experienced by one member of the family, including in decision-making or in forming the intention to perform DSM behaviors (6).

Methods

The method of this community service activity was carried out by empowering the community in the management of non-communicable diseases (NCDs), particularly type 2 diabetes mellitus.

The activity began with coordination with relevant parties involved in the Community Service Program (PkM), including Gunungpati Public Health Center, Plalangan Subdistrict Office, Gunungpati District, Semarang City, and the Coordinator of Health Cadres of Plalangan Subdistrict, to determine the schedule for training and monitoring-evaluation of the PkM activities.

Training for health cadres on the management of type 2 diabetes mellitus, including diabetes mellitus in children, was conducted at the Plalangan Subdistrict Hall. The training was attended by the facilitators (lecturers and students), the Head of Plalangan Subdistrict, the Coordinator of Health Cadres, health cadres, and families who would receive assistance in the management of type 2 diabetes mellitus.

Results and Discussion

The Community Service Program (PkM) was carried out in two phases, namely before the PkM activities and during the PkM activities.

Phase Before the PkM Activities

The pre-PkM phase was conducted on July 5, 2024, and August 1, 2024, through coordination activities with the Plalangan Subdistrict Office, on July 4, 2024, through coordination with the Gunungpati Public Health Center, and on August 1, 2024, through coordination with the Coordinator of Health Cadres of Plalangan Subdistrict regarding cadre training.

Coordination plays a crucial role in ensuring the success, sustainability, and relevance of Community Service Program (PkM) activities with the programs implemented at the activity site. Coordination allows the identification of relevant health needs within the target community. Policymakers and health cadres possess local knowledge that is essential to guide activities according to the local context. Community needs–based planning is the key to ensuring that interventions or activities are carried out effectively (7).

In addition, coordination and collaboration with stakeholders help create more integrated programs, avoid duplication of activities, and optimize resources. Policymakers, such as the village head, can help facilitate

logistics and support program implementation, thereby enhancing the impact of public health interventions (8).

The involvement of health cadres in activities also brings a positive impact. Health cadres are agents of change who have social influence and can motivate the community to actively participate. Engaging them in the planning stage increases the community's sense of ownership of the designed program. Health cadres play a central role in community empowerment and serve as a bridge between healthcare providers and the community (9).

Phase During the PkM Activities

The PkM activities were carried out in the form of training for health cadres in assisting families with type 2 diabetes mellitus, which took place on August 23, 2024.

The training materials covered the management of diabetes mellitus, including diabetes mellitus in children, as well as simple methods of monitoring blood glucose levels by taking capillary blood using a glucometer. The training was attended by 40 health cadres with guidance from facilitators (lecturers) and students.

All participating health cadres were able to understand the methods of managing diabetes mellitus, including diabetes in children, covering the definition, signs and symptoms, causes, and management strategies. They also demonstrated the ability to perform capillary blood collection using a glucometer and to identify the results of the examination.

Figure 1. Training Material Delivery for Health Cadres

Figure 2. Blood Glucose Check by Health Cadres

Training plays an important role for health cadres in the process of managing diabetes mellitus in the community. Several research findings have shown that training significantly improves the knowledge and skills of health cadres in diabetes mellitus management (10). This highlights the understanding that training plays a crucial role for health cadres as the frontline of primary healthcare services, particularly in managing chronic diseases such as diabetes mellitus (DM) at the community level. Health cadres serve as a bridge between the formal healthcare system and the community, making capacity building through training a strategic step to support the success of community health programs (10).

The improved skills of health cadres will have an impact on their ability to conduct early detection and monitor blood glucose levels in the community, which is essential in preventing DM complications (11). This implies that the enhancement of health cadres' skills through training has a direct effect on the effectiveness of healthcare services at the community level. One significant impact is their ability to perform early detection and monitor blood glucose levels, which plays a key role in preventing complications of diabetes mellitus (DM) (11).

Training will have an impact on the compliance of health cadres in managing diabetes mellitus within their communities, and this will

positively influence patient adherence (12). This suggests that training health cadres on the management of diabetes mellitus (DM) not only enhances their competence but also affects their compliance in carrying out their tasks in the community. This impact, in turn, indirectly contributes to improving patient adherence in managing diabetes mellitus (12).

Health cadres who receive training will demonstrate their ability to serve as educators in the community, providing accurate information on the prevention and management of DM, as well as encouraging healthy behavior changes. The involvement of trained health cadres in DM management strengthens primary healthcare services, ensuring more effective DM management at the community level (13).

It can be concluded that trained health cadres play a central role in the prevention and management of diabetes mellitus (DM) at the community level. The training provided equips them with better skills to deliver education, promote healthy behavior changes, and strengthen the primary healthcare system (13).

Community health cadres face challenges in encouraging people to visit health facilities, as some delay or ignore recommendations despite being informed of health risks. Even when communities attend counseling or basic examinations at primary health centers, last-minute cancellations by health workers—such as nurses—can cause disappointment and reduce trust. These issues highlight difficulties experienced by both cadres and the community (14).

Conclusion

Community empowerment is an important strategy in the management of type 2 diabetes mellitus. Through empowerment, individuals and communities will gain accurate information about diabetes management, so that they are expected to have the knowledge, skills, and support to take an active role in managing their health, preventing complications, and improving quality of life, especially for those living with type 2 diabetes mellitus. The participation of trained health cadres plays a vital role in community-based diabetes management. They are not only information providers but also agents of change who encourage healthy behaviors, support early detection, and assist in the management of diabetes mellitus to improve the overall quality of life of the community.

Suggestion

It is suggested that continuous training and refresher programs for health cadres be sustained to strengthen their knowledge and skills in diabetes prevention, early detection, and management. Strong collaboration between local government, health centers, and cadres is needed to ensure program sustainability, while active participation of the community, especially families of patients, should be encouraged to foster shared responsibility in managing health. Regular monitoring and evaluation are essential to assess the effectiveness of activities, and consistent promotion of healthy lifestyles—including balanced nutrition, physical activity, and routine blood glucose monitoring—should be prioritized to prevent complications and improve the overall quality of life for people with type 2 diabetes mellitus.

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