

A COMMUNITY BASED APPROACH TO DIABETES MELLITUS AWARENESS AND PREVENTION IN TIMOR LESTE THROUGH ACADEMIC COMMUNITY PARTNERSHIP

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ABSTRACT

Diabetes Mellitus (DM) has emerged as a critical public health concern both globally and in Timor-Leste. The rising number of diabetes cases is linked to limited public awareness, lifestyle changes, cultural factors, and the absence of structured national programs. This study describes the implementation of a community-based diabetes education and counseling program conducted in partnership with Instituto Superior Cristal (ISC). The objective was to enhance knowledge, promote preventive behaviors, and establish a sustainable model for diabetes awareness. The method adopted included participatory health education, community engagement, and ongoing evaluation. Results show significant improvements in community understanding, behavior change intentions, and institutional collaboration. The partnership with ISC provided academic expertise, student involvement, and long-term integration into educational programs. This initiative demonstrates that academic-community partnerships can effectively reduce knowledge gaps, promote behavioral transformation, and contribute to national efforts in Diabetes Mellitus prevention in Timor-Leste.

Keywords: Diabetes Mellitus, health education, community service, awareness, Timor-Leste, academic partnership

INTRODUCTION

Diabetes Mellitus (DM) has become one of the fastest-growing chronic diseases globally, posing severe health, social, and economic challenges. According to the International Diabetes Federation (IDF), around 197 million people worldwide are affected, resulting in approximately 3.2 million deaths annually. The World Health Organization (WHO) ranks Indonesia sixth among countries with the highest DM prevalence, while Timor-Leste has also recorded an alarming increase. Between 2016 and 2017, 2,690 DM cases were reported in Dili alone (Health Department Register Book, 2017), and 100 cases were documented at Centru Saude Comoro in 2018.

In Timor-Leste, Diabetes Mellitus ranks among the top five chronic illnesses. The main contributing factors include limited public knowledge, absence of structured prevention programs, poor dietary habits, sedentary lifestyles, and cultural beliefs that view health outcomes as externally controlled or predetermined. These factors collectively hinder timely diagnosis and effective management. The rapid transition toward Westernized food patterns—high in sugar, fat, and sodium—combined with reduced physical activity has exacerbated the situation.

Given this background, addressing the knowledge deficit becomes a key intervention point. The present program seeks to improve community awareness and preventive practices regarding Diabetes Mellitus through structured health counseling and outreach. Partnering with *Instituto Superior Cristal*

(ISC) strengthens academic credibility, ensures evidence-based practice, and promotes sustainability through integration into higher education and community service frameworks.

METHOD

The implementation of the community service program on Diabetes Mellitus (DM) health education in Timor-Leste was designed using a participatory and community-based approach. This activity placed the community as an active partner throughout the process, ensuring that health education was not merely a one-way information delivery but rather a collaborative effort to raise collective awareness about the importance of diabetes prevention and control. The community service team from *Instituto Superior Cristal (ISC)* acted as facilitators and educators, guiding participants to understand the basic concepts of Diabetes Mellitus, its risk factors, early signs, and simple preventive measures that could be applied in daily life through healthier lifestyle choices.

The program began with coordination between the academic team, health workers, and community leaders to determine appropriate locations, target groups, and schedules for implementation. Following this preparation stage, the facilitators developed educational materials using simple and culturally relevant language to ensure accessibility and understanding among all participants. The materials covered key topics such as the causes, symptoms, and health impacts of Diabetes Mellitus, along with

preventive strategies that can be implemented individually, within families, and at the community level. Supporting media such as posters, brochures, and short educational videos were also prepared to make the learning process more engaging and relatable.

During the health education sessions, interactive learning methods were employed, including short lectures, open discussions, and small group conversations. These methods encouraged participants not only to listen but also to share their personal experiences, beliefs, and habits related to diet, exercise, and health-seeking behavior. This participatory process allowed facilitators to identify local perceptions and barriers that influence lifestyle choices and disease prevention practices. Simple demonstrations were also conducted, such as how to check blood sugar levels and how to plan balanced meals using locally available food.

The program also involved key local figures such as community leaders, religious representatives, and village health workers as agents of change. They were provided with special training to ensure the continuity of health promotion after the formal sessions concluded. This strategy aimed to strengthen the sustainability of the program by empowering trusted local actors who could continue to deliver diabetes education in the long term. University students from ISC played an essential role in this process as well, assisting with the facilitation, data collection, and evaluation activities. Their direct involvement provided valuable experiential learning, bridging academic theory with real-world public health practice.

Evaluation was carried out systematically to assess the success and effectiveness of the activities. In the initial stage, process evaluation focused on logistical readiness, audience engagement, and the appropriateness of the educational media used. Outcome evaluation followed by comparing participants' knowledge and attitudes before and after the sessions through simple questionnaires and observation. The results indicated a significant improvement in the participants' understanding of Diabetes Mellitus, its causes, and the importance of early prevention. Many participants expressed a greater willingness to undergo regular health check-ups and adopt healthier eating habits after the sessions.

To ensure the sustainability of the initiative, program results were documented and shared with local health authorities and community organizations so that diabetes awareness activities could be integrated into routine local health programs. *Instituto Superior Cristal* also committed to incorporating this initiative into its annual community service agenda, enabling continuous education and outreach. Through collaboration among academic institutions, local health professionals, and community stakeholders, this program demonstrated that culturally adapted health education could effectively foster behavioral change and strengthen public understanding about

Diabetes Mellitus prevention. It also laid the foundation for long-term community empowerment and the development of sustainable health promotion practices in Timor-Leste.

DISCUSSION

Strengthening Community Knowledge and Awareness

The community-based diabetes education program significantly enhanced participants' knowledge and awareness regarding Diabetes Mellitus. Before the intervention, most participants demonstrated limited understanding of the disease's causes, early symptoms, and long-term complications. Through the participatory learning sessions, the community began to recognize that unhealthy lifestyles—particularly high sugar consumption, lack of exercise, and stress—play a critical role in increasing diabetes risk. Participants also gained a clearer understanding of the importance of early detection and regular health check-ups. The discussion sessions revealed that many community members initially perceived diabetes as an unavoidable hereditary condition. However, after counseling, they came to realize that preventive actions and lifestyle modifications could effectively reduce their risk. This shift in mindset marks a crucial foundation for long-term behavioral change.

Promoting Behavioral Change through Participatory Learning.

The interactive and culturally adapted learning process proved to be highly effective in encouraging positive behavioral changes. Rather than relying solely on lectures, the program emphasized dialogue, community sharing, and peer learning. Participants were encouraged to reflect on their eating habits and physical activity levels, then identify small yet practical adjustments suitable to their daily routines. For example, replacing sugary drinks with water, reducing fried food consumption, and incorporating walking into daily activities were among the commitments expressed by participants. By involving local community leaders and religious figures, health messages gained stronger legitimacy and were better received. These participatory elements not only improved understanding but also built a sense of shared responsibility within the community to maintain healthy lifestyles.

The Role of Instituto Superior Cristal (ISC) as an Academic Partner.

The involvement of *Instituto Superior Cristal* (ISC) played a central role in ensuring the scientific rigor, organization, and sustainability of the program. ISC's lecturers contributed by designing evidence-based modules and overseeing the educational content to ensure accuracy and cultural appropriateness. Meanwhile, ISC students were actively engaged as facilitators and field researchers, allowing them to apply theoretical knowledge in real-life settings. Their

participation strengthened the link between academia and the community, transforming health education into an experiential learning process. ISC's institutional support also helped standardize the program's structure so that it could be replicated and integrated into future community service activities. This collaboration illustrates how universities can serve as catalysts for community transformation, combining academic resources with local wisdom to address pressing public health challenges.

Evaluation Results and Impact on Community Engagement

Evaluation outcomes indicated notable improvements across several indicators. Quantitative assessments showed a marked increase in participants' knowledge scores, while qualitative feedback reflected heightened motivation to adopt preventive behaviors. Many respondents reported greater awareness of the importance of monitoring blood sugar levels and seeking early medical consultation. The program also stimulated collective engagement, as participants began initiating small group discussions and peer education within their neighborhoods. Additionally, community health workers and local leaders expressed commitment to continuing diabetes awareness activities, suggesting a strong sense of ownership. These outcomes confirm that integrating evaluation into program design ensures accountability and guides continuous improvement.

Sustainability and Institutional Integration.

One of the key strengths of this initiative lies in its sustainability plan. From the outset, the program was designed to be more than a one-time intervention. ISC committed to embedding diabetes awareness and counseling activities into its annual community service curriculum, ensuring consistent engagement with target populations. Collaboration with municipal health offices and local organizations also created pathways for long-term implementation. The capacity-building component—particularly the training of community leaders and health volunteers—ensures that the knowledge and practices introduced during the program will persist even after the academic team's withdrawal. In the long term, this integrated approach is expected to contribute to the reduction of undiagnosed diabetes cases and support the broader goal of strengthening primary prevention in Timor-Leste's public health system.

Lessons Learned and Broader Implications

The program demonstrated that effective health promotion in low-resource settings requires more than delivering information—it demands cultural adaptation, trust-building, and community participation. The use of local language, the involvement of trusted leaders, and the hands-on participation of community members ensured relevance and ownership. The partnership model

adopted between ISC and the local community also underscores the value of academic institutions as agents of change in public health. By merging academic research, teaching, and service, such collaborations not only enhance public health literacy but also empower communities to sustain behavior change. This approach can serve as a replicable model for addressing other non-communicable diseases through community-centered and education-driven strategies.

CONCLUSION

The Diabetes Mellitus awareness and counseling program in Timor-Leste demonstrates that academic-community collaboration can serve as an effective model for addressing chronic disease challenges in low-resource settings. The findings confirm that targeted education and culturally adapted outreach can significantly enhance knowledge, shift behaviors, and promote proactive health-seeking actions.

Instituto Superior Cristal played a central role in ensuring that the program was scientifically grounded, participatory, and sustainable. Through curriculum integration, continuous training, and institutional commitment, ISC transformed the initiative into a long-term strategy aligned with national health goals.

In conclusion, empowering communities through structured education, supported by academic expertise and local partnerships, represents a vital pathway toward reducing the burden of Diabetes Mellitus in Timor-Leste. The success of this initiative suggests potential scalability for other non-communicable diseases across the country.

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