

Oral and Dental Health Education at Formoza Public Health Center, Dili, Timor-Leste

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ABSTRAK

Oral and dental health constitutes an integral component of overall health and plays a crucial role in improving the quality of life within the community. Nevertheless, oral and dental health problems remain widely prevalent, primarily due to inadequate levels of knowledge and awareness regarding proper oral hygiene practices. This condition underscores the importance of systematic health education as a strategic effort to prevent oral and dental diseases. This community service program was designed to enhance public knowledge and awareness of the importance of maintaining oral and dental health through structured health education activities. The target population comprised members of the general community. Educational materials included fundamental concepts of oral and dental health, common oral and dental diseases, preventive strategies, and the importance of maintaining regular and effective oral hygiene practices. The findings indicated a significant improvement in participants' understanding of oral and dental health following the educational intervention. Participants demonstrated high levels of engagement and enthusiasm throughout the activity and actively participated in the discussion and question-and-answer sessions. This program is expected to foster positive and sustainable behavioral changes, enabling community members to independently maintain and improve their oral and dental health.

INTRODUCTION

Oral and dental health is an integral part of general health and plays a significant role in supporting overall quality of life. Poor oral and dental health conditions may lead to pain, impaired chewing function, speech difficulties, and reduced self-confidence. Furthermore, untreated oral health problems may contribute to systemic health disorders (WHO, 2022).

Globally, dental caries and periodontal disease represent the two major contributors to the burden of oral diseases. Recent global analyses indicate that oral diseases affect billions of people worldwide and impose a substantial economic burden due to high treatment costs and productivity losses (Bernabe, 2025). These findings emphasize the importance of promotive and preventive strategies within health systems.

Previous studies have shown that oral health education, including community-based service programs, can significantly improve knowledge and attitudes among target populations. Community service studies conducted in Indonesia reported increased oral health knowledge scores following educational interventions (Sandra et al., 2023) indicating the effectiveness of health education as a promotive intervention.

Higher education institutions have a responsibility to translate academic knowledge into practical solutions that address real-world community problems (Jamaluddi, Desi et al., 2022). Community service activities constitute one of the pillars of the *Tri Dharma of Higher Education*, where students actively apply scientific knowledge to address community health issues. Public health postgraduate students possess the competence to design and implement evidence-based health education programs, including those related to oral and dental health.

From an epidemiological perspective, both global and national trends indicate that oral and dental diseases remain prevalent and may increase without consistent preventive interventions. Findings from the Global Burden of Disease study highlight that oral diseases will continue to pose a major public health challenge in the coming decades (Wu et al., 2025). Therefore, early educational interventions are essential.

The systemic impacts of oral diseases also warrant attention. Research has demonstrated associations between periodontal disease and non-communicable diseases such as hypertension and diabetes. Population-based studies indicate that individuals with periodontal disease have a higher risk of developing certain systemic conditions (Aizenbud et al., 2023). This evidence reinforces the urgency of integrating oral health education into primary healthcare services.

Promotive and preventive efforts through oral health education represent a strategic approach to improving knowledge and fostering healthy behaviors within communities. Health education plays a vital role in providing accurate information, raising awareness, and encouraging behavioral changes that enable individuals to maintain oral health independently and sustainably (Pakpahan et al., 2021).

Overall, oral and dental health education implemented through community service programs constitutes a relevant and effective strategy for improving public knowledge and supporting promotive and preventive health efforts.

Supported by current scientific evidence and collaboration between higher education institutions and communities, such initiatives are expected to contribute to reducing the burden of oral diseases.

METHODS

The community service activity was conducted on December 17, 2025, from 09:00 to 11:30 OTL (Timor-Leste Time), at Formoza Public Health Center, Dili, Timor-Leste. A total of 22 participants were involved, consisting of outpatients, pregnant women, and patient companions attending the health center.

The activity was implemented in several stages:

1. Opening Session: Introduction and a brief oral pre-test to assess baseline knowledge.
2. Educational Session: Delivery of educational materials using PowerPoint presentations and posters covering:
3. Basic dental anatomy
4. The process of dental caries formation
5. Demonstration of the circular tooth-brushing technique
6. Demonstration Session: Participants practiced tooth-brushing techniques using a dental phantom model.
7. Evaluation Session: Question-and-answer discussion and distribution of dental kits (toothbrushes and toothpaste).

Participants' oral health knowledge was assessed using a structured questionnaire administered before (pre-test) and after (post-test) the educational session. Data were analyzed descriptively by comparing mean scores and percentage changes in knowledge levels.

RESULTS AND DISCUSSION

The oral and dental health education program was conducted at Formoza Public Health Center, Dili, with a total of 22 participants completing both the pre-test and post-test evaluations. The evaluation aimed to assess changes in participants' knowledge levels before and after the educational intervention.

Figure 1. Presentation of Oral Health Promotion Materials



During the educational sessions, participants were actively engaged and participated in discussions related to appropriate tooth-brushing timing, correct brushing techniques, and common oral health problems such as dental caries and toothache. Educational materials were delivered using PowerPoint presentations and visual aids. The content included basic dental anatomy, causes of dental caries, clinical symptoms of tooth decay, preventive measures, and step-by-step instructions on proper tooth-brushing techniques.

Figure 2. Pretest and Posttest Questionnaire Assessment Process



In addition to observing participant engagement, the effectiveness of the intervention was evaluated using a structured pre-test and post-test questionnaire measuring oral and dental health knowledge. Participants' knowledge levels were classified into three categories: good (scores of 7-10), moderate (scores of 5-6), and poor (scores ≤ 5). The distribution of participants' knowledge levels before and after the intervention is presented in Table 1 and illustrated in Figure 3

Table 1. Distribution of Participants' Knowledge Levels Before (Pretest) and After Health Education (Posttest)

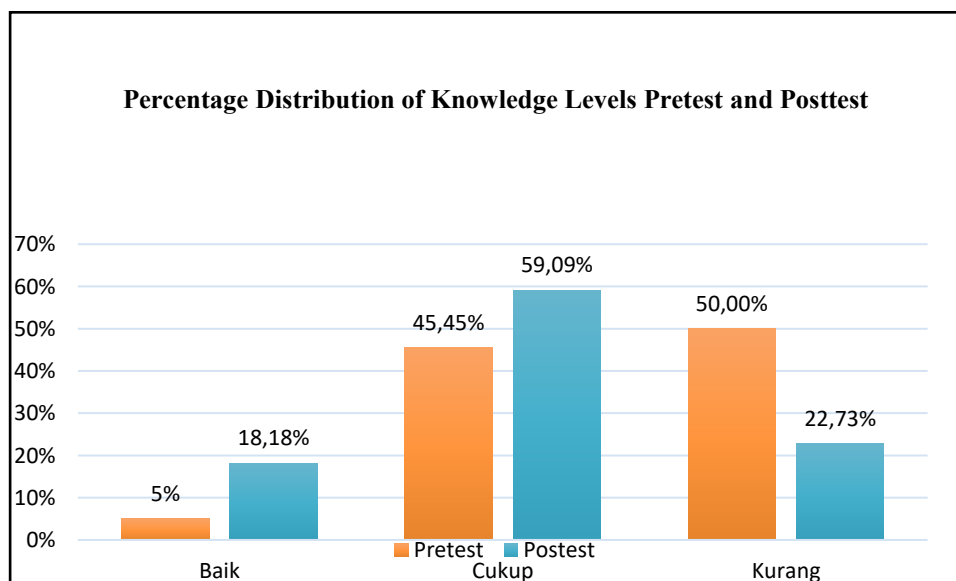


Figure 3. Knowledge Levels Before (Pretest) and After Health Education (Posttest)

| Knowledge Levels | Good | | Adequate | | Inadequate | | Total | |
|------------------|------|--------|----------|--------|------------|--------|-------|------|
| | F | % | F | % | F | % | F | % |
| Pretest | 1 | 5% | 10 | 45,45% | 11 | 50,00% | 22 | 100% |
| Posttest | 4 | 18,18% | 13 | 59,09% | 5 | 22,73% | 22 | 100% |

As shown in Table 1 and Figure 3, there was a notable shift in the distribution of knowledge levels following the educational intervention. Prior to the intervention, the majority of participants were classified as having poor knowledge (50.00%). After the intervention, this proportion decreased substantially to 22.73%, indicating an improvement in participants' basic understanding of oral and dental health.

At the same time, the proportion of participants with moderate knowledge increased from 45.45% in the pre-test to 59.09% in the post-test, while the proportion of participants with good knowledge increased from 5.00% to 18.18%. This pattern, as visualized in the graph, demonstrates a positive shift in knowledge levels from lower to higher categories following the educational intervention.

The observed improvement suggests that the educational approach—combining visual presentations with practical demonstrations of proper tooth-brushing techniques—was effective in enhancing participants' comprehension. Systematic and easily understandable materials enabled participants to better recognize the causes of oral health problems and adopt preventive practices that can be implemented independently.

Furthermore, the shift in knowledge categories indicates that the intervention not only improved knowledge among participants who initially had low levels of understanding, but also reinforced knowledge among those with baseline awareness. This finding is important, as increased knowledge represents an essential initial stage in the process of health behavior change, particularly in promoting consistent oral hygiene practices.

Nevertheless, a proportion of participants remained in the poor knowledge category after the intervention (22.73%). This suggests that a single educational session may not be sufficient to achieve optimal knowledge improvement for all participants. Factors such as educational background, prior habits, and the limited duration of the intervention may have influenced information retention. Therefore, repeated and sustained educational activities are necessary to strengthen understanding and support long-term behavioral change.

Overall, the findings presented in the table and figure confirm that oral and dental health education has a positive impact on improving participants' knowledge. These results support the role of health education as an effective promotive and preventive strategy within primary healthcare settings, particularly in the context of community service programs.

CONCLUSION

The community service program involving oral and dental health education at Formoza Public Health Center, Dili, demonstrated a positive impact on participants' knowledge levels. This was evidenced by a reduction in the proportion of participants with low knowledge and an increase in those with moderate and good knowledge following the educational intervention.

Oral and dental health education represents an effective promotive and preventive strategy for improving community awareness, particularly within primary healthcare facilities.

RECOMMENDATIONS

It is recommended that oral and dental health education activities be conducted continuously and reach a broader population. Future evaluations should include assessments of attitude and behavioral changes, as well as long-term impacts on oral health status. Strengthened collaboration between healthcare providers, higher education institutions, and health service facilities is essential to enhance the effectiveness of promotive and preventive programs.

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