

Preventive Efforts for Pregnant Women's Dental Health Through Structured Counseling and Clinical Examination in Babadan Village

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DOI : <https://doi.org/10.61796/jscs.v2i3.344>



Sections Info

Article history:

Submitted: April 30, 2025

Final Revised: May 17, 2025

Accepted: May 30, 2025

Published: June 13, 2025

Keywords:

Oral health

Pregnant women

Community education

Dental care

Rural health intervention

ABSTRACT

Objective: This community service program aimed to improve pregnant women's oral health literacy through a structured educational and clinical intervention in Babadan Village, Ngancar District, Kediri Regency. Poor oral health during pregnancy has been associated with complications such as premature birth and low birth weight, yet awareness and access to dental care remain limited, especially in rural areas. This initiative responded to the high prevalence of untreated dental conditions and the persistence of local myths discouraging pregnant women from seeking dental treatment. **Method:** The intervention adopted a quantitative pre-experimental design, utilizing pre-test and post-test evaluations to measure knowledge change among participants. Educational sessions were conducted using culturally adapted visual media, combining lectures, discussions, and demonstrations to address the participants' knowledge gaps. Clinical examinations followed, carried out by certified dentists in accordance with WHO diagnostic standards, to identify the prevalence of dental issues such as caries and gingivitis. Post-test assessments were used to evaluate the effectiveness of the educational approach. **Results:** Findings demonstrated a significant increase in average knowledge scores—from 55 before the intervention to 85 afterward—highlighting the success of the communication strategies and community-centered approach. Moreover, early indications of behavioral change were observed, such as participants expressing intent to seek routine dental care and adopt proper brushing techniques. This program not only addressed immediate health education needs but also laid a foundation for sustained improvements in maternal oral health practices. **Novelty:** This intervention model is scalable and adaptable for similar rural contexts, underscoring the critical role of health education in preventive maternal care and community empowerment.

INTRODUCTION

Oral and dental health during pregnancy has a significant impact on both maternal and fetal health. During pregnancy, hormonal changes increase the risk of oral cavity disorders such as gingivitis, caries, and periodontal disease [1]. These conditions not only cause discomfort or pain but can also seriously affect maternal nutritional status and fetal development. Studies have shown that oral health problems can contribute to the risk of premature birth and low birth weight—two important indicators of maternal and neonatal health [2][3].

In many rural areas of Indonesia, including Babadan Village in Ngancar District, Kediri Regency, public awareness of the importance of dental care during pregnancy remains low. This is due to various factors, such as limited information, minimal access to dental health services, and persistent local myths and misconceptions, such as the belief that dental treatment during pregnancy can harm the fetus. As a result, pregnant women tend to ignore dental complaints and do not seek routine dental check-ups, which can potentially lead to chronic tooth damage or systemic infections.

This situation underlines the importance of implementing community-based educational and preventive intervention programs. Dental health education that is structured and tailored to local characteristics can serve as a means to increase knowledge and change the behavior of pregnant women in maintaining their oral health [4]. This effort is not only curative but also promotive and preventive, in line with the modern public health paradigm that emphasizes prevention as the key to disease control [5].

The urgency of this program also lies in the need for baseline data on the oral health conditions of pregnant women in the area. Until now, prevalence data on dental health problems at the village level has been minimal, so health worker interventions tend to be general and unfocused [6]. Through data collection via surveys and clinical examinations, this program can provide a more accurate picture of the actual situation on the ground. This enables more targeted and sustainable policy and program planning [7].

Moreover, improving dental health knowledge and practices among pregnant women will have long-term benefits for the health of future generations. Children of mothers who maintain good oral health habits tend to grow up in environments that are more aware of the importance of dental care, thereby reducing the risk of dental problems in childhood [8]. Thus, the impact of this program is expected to extend beyond the current participants, creating positive cross-generational effects [9][10]. As part of a community service initiative, the dental counseling and examination program for pregnant women in Babadan Village is not only important but also urgent. This intervention is a concrete effort to holistically address maternal and child health challenges. By integrating educational approaches, direct examinations by professionals, and follow-up based on digital technology, this program serves as a model that can be replicated in other areas with similar needs. Therefore, documenting and evaluating this activity is essential for disseminating best practices more broadly.

RESEARCH METHOD

This community service activity was conducted using a quantitative approach with a pre-test and post-test design to objectively measure changes in the knowledge and oral health behavior of pregnant women. All activities were concentrated on one intensive implementation day, March 14, 2025, in Babadan Village, Ngancar District, Kediri Regency, which had been thoroughly prepared during the program planning phase since January 2025.

Before the core activity began, all participants – pregnant women registered at the Babadan Village Community Health Center – underwent an initial test (pre-test) using a structured and validated questionnaire. This questionnaire aimed to assess their basic understanding of the importance of oral health during pregnancy, as well as their daily dental hygiene practices.

After the pre-test process was completed, the activity continued with an educational counseling session presented interactively. The counseling was delivered by a team of dentists and health professionals with academic backgrounds and field experience. The materials presented included basic dental anatomy, the risks of periodontal disease

during pregnancy, the relationship between dental infections and pregnancy complications, and correct tooth brushing techniques. The delivery method combined lectures with two-way discussions, interspersed with Q&A sessions to foster active participation from the participants. To enhance participants' understanding and memory retention, visual learning media were used, such as educational posters and demonstration videos, which were adapted to the local cultural context and literacy level of the pregnant women in the area.



Figure 1. Dental health counseling for pregnant women.

After the counseling session ended, the medical team conducted clinical dental examinations for all participants. The examinations were performed by certified dentists using diagnostic instruments in accordance with World Health Organization (WHO) standard protocols. This examination aimed to identify the actual dental health conditions of the participants, such as the presence of caries, gingivitis, or other periodontal issues. The examination results were not only recorded as research data but also provided as direct feedback to the participants, accompanied by follow-up treatment recommendations when necessary.



Figure 2. Dental examination for pregnant women.

As a final stage, the participants completed the same questionnaire as used in the pre-test, as part of the final evaluation (post-test). The results of the post-test were then compared with the pre-test data to determine the extent of changes in the participants' knowledge and behavior after attending the counseling session. The analysis of the results was used to measure the effectiveness of the approach and served as the basis for recommendations in designing future sustainable programs.

RESULTS AND DISCUSSION

Results

Quantitative evaluation of the dental health education program for pregnant women in Babadan Village showed a significant increase in participants' knowledge. Through a pre-test and post-test approach, an objective picture was obtained regarding the effectiveness of the educational activity. The average knowledge score before the counseling (pre-test) was recorded at 55, reflecting the participants' limited understanding of the importance of dental care during pregnancy. This indicates that most pregnant women did not have adequate information regarding the impact of oral health on pregnancy, including the risks of complications such as premature birth and low birth weight.

After the counseling session, which was designed to be interactive and contextual, the post-test average score increased significantly to 85. This leap reflects a positive response to the learning methods used, which involved a combination of lectures, open discussions, and visual media such as educational posters and demonstrative videos. The increase in knowledge not only shows success in delivering information but also indicates that the participants were able to internalize essential messages regarding maternal oral health in a relatively short time.

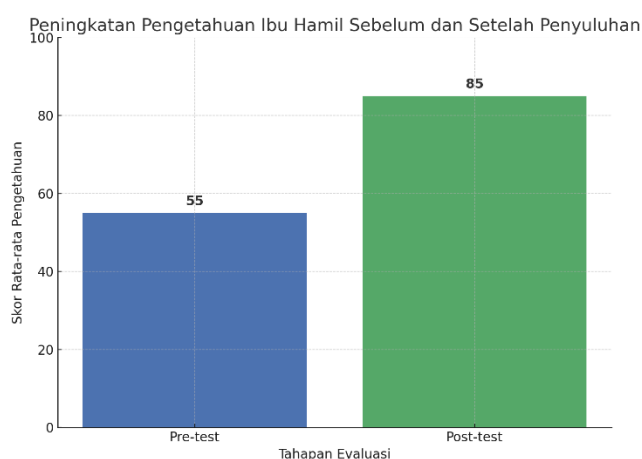


Figure 3. Pre-test and post-test scores of pregnant women's knowledge.

The knowledge improvement reflected in the comparison of pre-test and post-test scores indicates that the community-based approach applied was highly effective. Participants not only understood the theoretical concepts delivered, but were also able to relate them to their daily conditions. For example, during the discussion session, several participants began to question myths they had long believed, such as the belief that dental care during pregnancy could harm the fetus. This change in attitude serves as an initial indicator of the transformation of knowledge into healthier behavior.

Discussion

The increase in knowledge among pregnant women after participating in the counseling activity indicates that education conducted in a structured and locally contextualized manner can have a real impact on health understanding. The difference in the average pre-test and post-test scores, reaching 30 points, reflects that the information delivered was well internalized by the participants. This is very important considering that health literacy levels in rural areas are generally still low, and the intervention conducted is one effective way to overcome that knowledge gap.

The success of this increase cannot be separated from the delivery method of the material, which was adaptive to the characteristics of the participants. The material was delivered orally in language that was easy to understand, accompanied by visualizations through posters and contextual educational videos [11]. Open discussions facilitated by health workers provided space for participants to express their experiences and beliefs, which were then responded to with an empathetic and scientific approach. This strategy was effective in debunking myths that had long prevented pregnant women from undergoing routine dental care [12].

Cultural factors and local beliefs have a significant influence on pregnant women's attitudes toward dental care. Prior to counseling, most participants still believed that dental procedures such as extraction or cleaning could endanger the fetus [13]. Such beliefs have been passed down from generation to generation and have become part of community culture. With counseling involving local figures and a culturally sensitive

approach, most participants began to open up to new knowledge more aligned with modern health principles [14].

These findings highlight the importance of a community-based approach in health interventions, especially in areas where access to healthcare services and medical information is still limited. Counseling activities not only serve as a medium of information transmission, but also as a space for dialogue between the community and healthcare workers [15]. Within this space, a process of value negotiation occurs, where scientific knowledge interacts with local values, creating a new understanding more acceptable to the target community [16].

In addition to cognitive change, there are initial indications of attitude changes and intentions to modify behavior. Several participants explicitly stated their commitment to start brushing their teeth using proper techniques and scheduling routine dental check-ups at the public health center [17]. Although this behavioral impact cannot yet be measured in the long term within this activity, the findings provide a positive signal that the counseling successfully fostered initial awareness and strong motivation among the participants [18].

However, this success still faces major challenges, particularly in maintaining long-term behavioral changes. The absence of adequate dental care facilities, the limited availability of affordable oral hygiene products, and the strong influence of the environment on daily behavior are real obstacles that must be overcome through a multi-sectoral approach [19]. Therefore, the sustainability of the program in the form of periodic counseling, training of local health workers, and the development of digital educational materials becomes crucial to maintain the achievements that have been made [20].

Thus, this intervention proves that counseling conducted systematically, based on evidence, and oriented to local needs has great potential to improve community health literacy. The success of this program is not only beneficial to direct participants, but can also serve as a model for the development of maternal oral health programs in other regions with similar demographic characteristics. Long-term evaluation and program replication with cross-sectoral support are the next steps to ensure broader and more sustainable impacts.

CONCLUSION

Fundamental Finding : The counseling and dental check-up program for pregnant women in Babadan Village proved effective in increasing participants' knowledge about the importance of oral health during pregnancy. The significant increase in post-test scores highlights the success of the educational methods used, indicating that culturally tailored health education can lead to measurable knowledge gains among expectant mothers. **Implication :** This outcome underlines the importance of community-based interventions that are responsive to cultural contexts and local needs in supporting maternal health. It suggests that similar strategies could be applied more broadly to improve health literacy in other underserved populations, particularly in rural settings where misconceptions and limited access to care are prevalent. **Limitation :** However,

while the findings are promising, the study was conducted within a single village, which may limit the generalizability of the results. The intervention's success might be influenced by specific local factors, such as community engagement levels or existing health infrastructure, which could differ significantly in other regions. **Future Research :** Further research is needed to explore how similar culturally contextualized educational programs perform across diverse communities, and to examine their long-term impact on health behaviors and outcomes. Expanding the scope of the study to include a comparative analysis across multiple villages or regions would strengthen the evidence base and support policy-level adoption.

ACKNOWLEDGMENTS

We express our gratitude to Universitas Muhammadiyah Sidoarjo for the funding support that enabled the implementation of this community service activity. Special thanks also go to all parties who contributed, especially the participating pregnant women, the medical team, and the Babadan Village officials.

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