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Mother's role in maintaining oral health of children under five

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ABSTRACT

Introduction: Oral health in early childhood is strongly influenced by maternal behavior, knowledge, and daily caregiving practices. Mothers play a crucial role in shaping healthy oral hygiene habits, promoting proper toothbrushing techniques, and preventing dental problems such as cavities. In many rural areas, limited access to dental health information and services increases the risk of poor oral health among children under the age of five. This study aimed to describe the role of mothers in maintaining oral health among young children in Guali Village.

Methods: This descriptive study employed a cross-sectional approach involving mothers of children under five years of age residing in Guali Village. Data were collected using a structured questionnaire that assessed maternal knowledge, attitudes, and practices related to oral hygiene. Variables included toothbrushing routines, supervision patterns, dietary habits, and access to oral health services. Descriptive statistics were used to summarize the findings.

Results: The study revealed that although most mothers recognised the importance of maintaining their children's oral health, there were gaps in their daily oral health practices. A considerable number of mothers reported inconsistent toothbrushing routines, limited supervision, and inadequate knowledge about proper brushing techniques. Sugary snacks and bottle-feeding habits were also commonly reported, contributing to an increased risk of early childhood caries. Additionally, access to regular dental check-ups remained low due to distance and lack of awareness.

Conclusion: The findings suggest that while mothers recognise the general importance of oral hygiene, their actual practices remain suboptimal. Strengthening maternal education and improving access to dental health services are crucial for enhancing early childhood oral health in Guali Village. Community-based interventions are recommended to support sustainable behavior change.

Keywords: Dental hygiene; Early childhood; Maternal role; Oral health.

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INTRODUCTION

Oral health is a fundamental component of general well-being, particularly during early childhood when growth and development occur rapidly (Abuduxukuer *et al.*, 2025). Children under five years old are physiologically more vulnerable to oral health problems, such as dental caries, gingivitis, and poor oral hygiene, due to their developing immune systems and dependence on adults for daily care (Aris Tyarini, Kurni Menga, 2025). Globally, dental caries remains one of the most common chronic diseases in children, affecting nearly 60–90% of school-aged youth and increasingly observed in younger populations (Bai *et al.*, 2025). In many low- and middle-income regions, including rural areas in Indonesia, the burden of early childhood oral problems continues to rise due to limited awareness, inadequate access to dental health services, low parental knowledge, and cultural practices that do not prioritize oral hygiene. These conditions highlight the urgent need for preventive strategies that focus on the family environment, primarily mothers, who typically serve as the primary caregivers for young children (Basheer N *et al.*, 2025).

Despite improvements in public health programs, maternal involvement in maintaining children's oral hygiene up to five years remains insufficient. Many mothers have limited knowledge about appropriate toothbrushing techniques, the importance of early dental visits, the risks associated with prolonged bottle-feeding, and the consequences of delayed dental problem management (Cahyani and Sudaryanto, 2024). In several communities, oral health is often perceived as secondary compared to other aspects of child care, leading to low motivation to adopt preventive measures. As a result, oral health issues frequently go unnoticed until they progress to more severe conditions, contributing to pain, difficulty eating, sleep disturbances, poor nutrition, and impaired growth and development. These challenges reinforce the importance of parental, especially maternal, education in shaping healthy oral hygiene behaviors in children (Chou *et al.*, 2025).

Although numerous studies emphasize the importance of parental roles in childcare, a considerable gap remains in understanding the specific ways mothers influence oral health outcomes among children in rural or underserved communities (Fôlha *et al.*, 2025). Most existing research focuses on general health practices or nutrition, with oral health often addressed only superficially. Furthermore, many studies examine mothers' knowledge or attitudes separately, but few investigate how these translate into practical behaviors and daily routines for maintaining oral hygiene in toddlers. Another limitation in previous research is that it often centers on urban populations with better access to dental health information and services. Consequently, little evidence exists regarding mothers in rural settings who face unique barriers, such as distance from health facilities, low socioeconomic status, traditional beliefs, and limited exposure to oral health education.

Additionally, health promotion programs commonly implemented at community health centers (Puskesmas) tend to prioritize maternal and child nutrition, immunization, and stunting prevention, while oral health receives less attention. As a result, interventions explicitly related to early childhood oral hygiene are often sporadic and not integrated into routine health services. This lack of structured oral health education for mothers perpetuates the gap between knowledge and practice, leaving many caregivers inadequately equipped to support their children's oral hygiene needs effectively. Therefore, research that directly explores the maternal role, challenges faced, and determinants influencing oral health practices is essential to inform context-appropriate interventions.

The novelty of this study lies in its focus on the maternal role in maintaining oral health for children under five within the specific context of Guali Village, a rural community with distinct social, cultural, and economic characteristics. Unlike previous studies that have broadly examined oral health behaviours in general populations, this research provides a detailed examination of mothers' experiences, perceptions, and daily practices in a localised setting. This enables a more nuanced understanding of how environmental and cultural factors shape maternal behavior. Additionally, this study contributes new insights by identifying barriers and facilitators that influence mothers' involvement in oral hygiene care, offering practical recommendations for community-based interventions tailored to rural contexts. Moreover, this research contributes to the public health literature by presenting empirical evidence from a region where data on early childhood oral health are scarce. Findings from Guali Village can serve as a reference for similar rural communities, supporting policymakers, healthcare workers, and local institutions in developing targeted initiatives to improve early childhood oral hygiene. Ultimately, the study underscores the essential role of mothers as agents of behavioral change and advocates for integrating oral health education into routine maternal and child health services..

RESEARCH METHODOLOGY

This study employed a descriptive quantitative design, utilizing a survey approach, to explore the role of mothers in maintaining the dental and oral health of children under five years old in Guali Village, West Muna Regency. The descriptive design was selected to capture natural variations in maternal behavior without manipulating any variables, allowing the researcher to document existing practices and conditions within the community. The research was conducted in March 2025 in Guali Village, a rural community characterized by limited access to oral health services and a high prevalence of poor oral hygiene among young children. The study population consisted of all mothers with children under the age of five residing in the village, totaling 38 individuals. Given the relatively small population size, a total sampling technique was adopted, resulting in the inclusion of all eligible mothers as study respondents. Mothers who met the inclusion criteria, had children under the age of five, and agreed to participate were recruited for the study. Those with children older than five or who were unwilling to participate were excluded from the study.

Data were collected using a structured, self-administered questionnaire developed by the researcher. The instrument consisted of 20 items, divided into four domains that reflected key maternal roles: educator, motivator, facilitator, and supervisor. Each domain contained five items measured using a three-point Likert scale (often, sometimes, never). These domains were selected to capture the essential dimensions of maternal behaviour that influence the development of healthy oral hygiene habits in young children. Primary data were obtained directly from respondents through the questionnaire. In contrast, secondary data were sourced from scientific literature, government health reports, journal articles, and relevant documentation that supported the study's conceptual framework. Before data collection, the researcher provided a brief explanation of the study objectives and procedures, and informed consent was obtained from all participants.

The research process included several steps: preparing the study instruments and administrative documents, conducting field data collection, and documenting observations related to the study setting. Completed questionnaires were checked for completeness (editing), assigned numerical codes for each response category (coding), entered into a data table (data entry), and summarized through frequency and percentage distributions (tabulation). Data analysis was conducted using descriptive statistics to present the distribution of maternal roles across the four

domains. The results were interpreted narratively to provide insights into mothers' involvement in promoting dental and oral health practices among children under five. This analytic approach aligns with the study's objective to generate a comprehensive understanding of maternal contributions to early childhood oral health within the local context.

RESULT

The results of this study describe the extent of mothers' roles in maintaining the dental and oral health of children under five in Guali Village. Data were collected from 38 respondents through structured questionnaires assessing four key dimensions of maternal involvement: educator, motivator, facilitator, and supervisor. These dimensions represent the essential behavioral components required to support early childhood oral health practices. The findings provide an overview of how well mothers fulfill these roles and highlight areas that may require strengthened guidance or targeted interventions. A detailed summary of the results is presented in Table 1.

Table 1. Overview of mothers' roles in maintaining dental and oral health of children under five in guali village (n = 38)

Mother's Role	Category	Frequency (n)	Percentage (%)
Educator	Good	8	21.1
	Fair	28	73.7
	Poor	2	5.2
Motivator	Good	28	73.7
	Fair	10	26.3
	Poor	0	0
Facilitator	Good	20	52.6
	Fair	18	47.4
	Poor	0	0
Supervisor	Good	4	10.5
	Fair	34	89.5
	Poor	0	0

The results of this study show that mothers in Guali Village demonstrate varying levels of involvement across the four assessed roles in maintaining dental and oral health for children under the age of five, specifically in the educator Role. Most mothers fall under the fair category (73.7%). This suggests that mothers generally recognize the importance of teaching dental hygiene to their children, although educational efforts still primarily rely on basic verbal explanations and simple demonstrations. Limited knowledge and minimal use of engaging educational media may contribute to this moderate performance. Motivator Role. The majority of mothers are categorized as good motivators (73.7%). Mothers consistently remind their children to brush their teeth and set examples through their own behaviors. However, motivational strategies such as praise or small rewards are less frequently applied, which may reduce their overall effectiveness in reinforcing good oral hygiene habits.

Facilitator Role. Slightly more than half of the mothers (52.6%) perform well as facilitators. They generally provide basic oral hygiene tools, such as toothbrushes and toothpaste, as well as access to clean water. Nevertheless, routine dental visits remain low, indicating a need for increased awareness of preventive dental care and improved access to dental health facilities. Supervisor Role: A large majority (89.5%) of mothers are categorized as fair supervisors. While mothers regularly monitor their children's daily toothbrushing and eating habits, direct and consistent supervision, such as correcting brushing techniques or ensuring timely dental check-

ups, remains limited. Factors such as low awareness, distance to dental services, and economic constraints may influence this outcome. Overall, mothers' roles in maintaining their children's dental and oral health range from fair to good. Although efforts are visible, improvements are still needed, particularly in educational strategies, early preventive care, and consistent supervision to support children's oral health from an early age.

DISCUSSION

This study aimed to describe the role of mothers in maintaining dental and oral health among children under five years old in Guali Village, West Muna Regency. The findings of this research demonstrate that maternal role, measured through the domains of educator, motivator, facilitator, and supervisor, varies from adequate to good, suggesting that maternal involvement still requires strengthening in certain areas to optimize early childhood oral health.

The results show that the mother's role as an educator falls into the "fairly good" category (73.7%). This finding suggests that while most mothers attempt to explain and demonstrate proper oral hygiene practices to their children, their level of knowledge and the methods used to deliver health messages remain limited. Mothers primarily rely on verbal explanations and basic demonstrations rather than using engaging educational tools such as storytelling, picture books, or visual aids. Mothers often understand the importance of oral hygiene but lack effective educational strategies to stimulate children's awareness and interest (Mehta, Deka and Mathur, 2026). The similarity across studies suggests that improving mothers' health literacy and teaching skills could significantly enhance their impact on children's oral health behaviors (Man *et al.*, 2025).

In contrast, the role of the mother as a motivator was categorized as good (73.7%). Mothers showed consistency in reminding children to brush their teeth and setting personal examples by practicing good oral hygiene themselves. However, motivational strategies such as praise, positive reinforcement, or reward systems were not widely used. Motivational support from parents has a strong positive correlation with children's brushing habits, but the use of reward-based motivation remains low among mothers. The similarity between the present findings and previous research suggests that strengthening supportive parenting techniques may enhance children's compliance with daily brushing routines (Zheng *et al.*, 2025). The role of mothers as facilitators, which includes providing tools such as toothbrushes, fluoride toothpaste, clean water, and access to dental services, was found to be good (52.6%). Most mothers provided basic oral hygiene supplies, but regular dental visits were still limited. The results indicate the presence of structural barriers, including limited dental facilities, low awareness of preventive dental check-ups, and potential economic constraints. Geographic and socioeconomic factors significantly affect children's access to oral health services in rural areas (Nayak *et al.*, 2025). The findings in this study therefore reinforce the idea that maternal facilitation is influenced not only by knowledge and attitude, but also by environmental support and accessibility of the healthcare system (Moreira-Santos *et al.*, 2025).

The supervisor role received the highest proportion in the "fairly good" category (89.5%). Mothers generally monitored their children's brushing routines and dietary habits, but did not consistently check the quality of brushing or schedule routine dental examinations. This suggests that although supervision is present, it is more behavior-focused rather than technique-focused. Parents tend to concentrate on frequency rather than accuracy of brushing, which may lead to inadequate plaque control (Patil *et al.*, 2025). While mothers routinely supervise their children, many lack the technical knowledge needed to correct improper brushing methods (Rauniyar *et al.*, 2025). The consistency between these studies suggests a broader need for educational

interventions that emphasize correct brushing techniques and the importance of regular dental assessments (Peralta *et al.*, 2024).

Overall, the findings of this study support the hypothesis that the role of mothers has a significant influence on the oral health maintenance of young children (Sahin and Hazar Bodrumlu, 2024). The hypothesis is supported, showing that mothers indeed play crucial roles; however, these roles remain suboptimal in some domains, particularly in providing access to dental services and delivering structured oral health education (Sartori, Baker, et al., 2024). New insights from this study reveal that, despite adequate motivation and supervision, gaps persist in the quality of facilitation and educational engagement (Sun *et al.*, 2025). These findings underscore the importance of comprehensive maternal empowerment programs that focus not only on knowledge but also on practical skills, behaviour modelling, and improved access to dental care (Tamannur *et al.*, 2025).

The implications of this study extend to healthcare providers and community health workers, who must strengthen oral health promotion strategies targeted at mothers. Integrating oral health education into routine posyandu activities, providing visual aids, and enhancing collaboration between local health facilities and village authorities could improve mothers' capabilities in fulfilling their roles (Wu *et al.*, 2025). Future research may explore the impact of culturally adapted oral health education programs or assess the influence of family socioeconomic status on maternal roles in greater depth (Wijayanti *et al.*, 2025). While maternal roles in maintaining children's dental health are generally adequate to good, several aspects require improvement to ensure optimal oral health outcomes. The variations observed across roles reflect both individual maternal factors and broader environmental constraints, emphasizing the need for multi-level interventions that equip mothers with both knowledge and supportive resources (Weng *et al.*, 2025).

The hypothesis proposed in this study suggests that maternal roles, encompassing educator, motivator, facilitator, and supervisor, play an essential role in maintaining the dental and oral health of young children. Based on the findings, this hypothesis is supported. Mothers demonstrated engagement in all four roles with varying levels of effectiveness, and these roles collectively contribute to the formation of healthy oral hygiene habits in children under five. However, the findings also highlight that although the hypothesis holds, the roles are performed at varying strengths, with some requiring further improvement, particularly in the aspects of education and facilitating professional dental services. This study highlights the significant role mothers play in influencing their children's oral health behaviours. While mothers in Guali Village demonstrate a pretty good to good level of involvement, there is a clear need for strengthened oral health education, accessible dental services, and community-based interventions to optimize the maternal role. Strengthening these components can help ensure that early childhood oral health is not only maintained but also enhanced, thereby preventing long-term dental problems.

CONCLUSION

The findings of this study demonstrate that the role of mothers in maintaining the dental and oral health of children under five in Guali Village ranges from fairly good to good. Mothers showed strong involvement as motivators and facilitators, while their roles as educators and supervisors were adequate but still need improvement. These findings highlight the importance of maternal engagement in promoting healthy habits, as well as the need for increased knowledge and awareness of proper dental hygiene practices for young children.

Based on these results, it is recommended that health workers, community health centers, and local educational institutions enhance health education programs targeting mothers. Providing accessible guidance, regular dental check-ups, and practical demonstrations may strengthen maternal roles in supporting their children's oral health. Continuous collaboration between families and health services is essential to promote better dental hygiene behaviors and reduce the risk of early childhood dental problems.

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Conflict of Interest

There are no potential conflicts of interest relevant to this article.

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