JDHT Journal of Dental Hygiene and Therapy
Volume 7, Nomor 1 Tahun 2026, pp. 49-54
ISSN (online): 2723-1607 DOI: 10.36082/jdht.v7i1.2762

THE RELATIONSHIP BETWEEN KNOWLEDGE OF DENTAL CARIES AND DENTAL CARIES EXPERIENCE AMONG CHILDREN AGED 10–12 YEARS

Yustina Sriani[1], Aljufri[2], Alzena Malika Asti[3]
[1,2,3]Jurusan Kesehatan Gigi, Poltekkes Kemenkes Padang, Indonesia

Info Article

Article History:

Received: 15 Oct 2025
Revised: 22 Apr 2026
Accepted: 24 Apr 2026
Available Online: 29 Apr 2026

Keywords:
Relationship, Knowledge, Dental Caries Experience

This is an open access article under the CC-BY-SA license.
Copyright © 2026 by Author.
Published by Kemenkes Poltekkes Padang

Abstract

Dental caries remains one of the most prevalent oral health problems among school-age children, particularly in the 10–14-year age group. Knowledge of dental caries is a key predisposing factor that can influence oral health behaviors, such as toothbrushing practices and dietary habits, which in turn affect caries experience. This study aimed to analyze the relationship between knowledge of dental caries and caries experience among children aged 10–12 years at SDN 12 Payakumbuh City. This analytical study employed a cross-sectional design involving 40 students selected through total sampling. Data were collected using a structured questionnaire to assess knowledge and clinical examination using the DMF-T index to measure caries experience. Data were analyzed using univariate and bivariate methods, with the chi-square test applied to determine the association between variables. The results showed that 37.5% of respondents had good knowledge, 55% had moderate knowledge, and 7.5% had poor knowledge. Regarding caries experience, 67.5% of respondents were categorized as having poor caries status (DMF-T > 1), while 32.5% were categorized as good (DMF-T ≤ 1). Statistical analysis revealed a significant relationship between knowledge and caries experience ($p < 0.05$). Children with better knowledge tended to demonstrate lower caries experience, likely through more favorable oral health behaviors. In conclusion, knowledge of dental caries is significantly associated with children's caries experience, mediated by oral health behaviors. Strengthening oral health education programs is essential to promote preventive behaviors and reduce the burden of dental caries among school-age children. Early treatment, such as restorative care, is also recommended to prevent further complications.

Corresponding author:
Yustina Sriani
Jl. Kesehatan Gigi, RT/RW 005/002, Kel.Puhun Pintu Kabun, Kec Mandiangin Koto Selayan Kota Bukittinggi
*Email: **yustinasriani@gmail.com***

Introduction

Oral health remains a significant public health issue in Indonesia. Data indicate that the majority of the population experiences oral health problems, with the prevalence of dental caries remaining high and showing an upward trend in recent years (Kementarian Kesehatan RI, 2019). Dental caries is a chronic disease caused by a complex interaction between host factors (teeth and saliva), cariogenic microorganisms, substrate (food), and time, resulting in the demineralization of hard dental tissues (Fejerskov & Kidd, 2016)

Globally, the World Health Organization (WHO) reports that 60–90% of elementary school-aged children have dental caries (Organization, 2022). In Indonesia, the prevalence of dental caries increased from 25.9% in 2013 to 45.3% in 2018, and although there was a slight decrease to 43.6% in 2023, this figure still indicates a high burden of dental health problems (Kemenkes, 2018, 2023). This situation underscores that dental caries remains a health issue requiring serious attention, particularly among school-aged children.

One of the key factors influencing the incidence of dental caries is knowledge about oral health. Within the framework of health behavior determinants, knowledge is a predisposing factor that plays a role in shaping individual behavior (Green & Kreuter, 2005) Good knowledge about dental caries can encourage the development of positive health behaviors, such as brushing teeth properly, reducing the consumption of cariogenic foods, and utilizing dental health services appropriately. Conversely, low knowledge can lead to poor behavior, which ultimately increases the risk of dental caries (Petersen, 2013).

In addition to knowledge, other factors such as behavior, socioeconomic status, and access to health care also contribute to the incidence of dental caries. However, knowledge remains a crucial foundation for shaping children's health behaviors (Rathee & Sapra, 2023). School-aged children are a strategic target group for health education interventions, as this is the stage when they begin to

comprehend information and form habits that will carry over into adulthood (Fejerskov & Kidd, 2016)

Several studies indicate that children's lack of knowledge about oral health—including the appropriate timing for brushing, proper brushing techniques, and healthy food choices—contributes to high rates of dental caries (Damanik, 2020), (Nuriyah & Edi, 2020). Therefore, improving their knowledge is expected to enhance oral health behaviors and ultimately reduce the incidence of dental caries.

Based on this, this study was conducted at SDN 12 Payakumbuh City, located in North Payakumbuh District, approximately 3 km from the Tarok Community Health Center. Limited access to information and the scope of preventive services at the school are believed to be risk factors that exacerbate students' caries status. Therefore, this study aims to analyze the relationship between the level of oral health knowledge and caries experience among students, in order to formulate more effective educational intervention strategies within the school environment.

Method

This study employed an analytical research design with a cross-sectional approach to examine the relationship between knowledge of dental caries and dental caries experience among children aged 10–12 years at SDN 12 Payakumbuh City. The study was conducted in June 2025, involving 40 students selected using a total sampling technique.

Primary data were collected using a structured questionnaire to assess knowledge of dental caries and clinical examination using the Decayed, Missing, and Filled Teeth (DMF-T) index to measure caries experience. Secondary data, including student demographics, were obtained from school records. The questionnaire was developed based on relevant literature and previously validated instruments. Content validity was assessed by experts in dental public health, and reliability testing was conducted using Cronbach's alpha, yielding a coefficient of ≥0.70, indicating acceptable internal consistency.

The categorization of knowledge levels was based on Bloom's cut-off points, where scores of 80–100% were classified as good, 60–79% as moderate, and <60% as poor. Caries experience was categorized using DMF-T scores, where DMF-T ≤1 was considered good and DMF-T >1 was considered poor, based on epidemiological thresholds commonly used in community dental health studies.

Data collection procedures were conducted in three stages: preparation, implementation, and completion. The preparation stage included obtaining ethical clearance and permission from the school, training enumerators, and securing informed consent from participants and their guardians.

The implementation stage involved administering the questionnaire and performing intraoral examinations using sterilized instruments following standard infection control procedures. The completion stage included instrument sterilization and reporting findings to the school.

Data processing involved editing, coding, data entry, and data cleaning prior to analysis. Univariate analysis was conducted to describe the distribution of knowledge levels and caries experience. Bivariate analysis using the chi-square test was performed to determine the association between knowledge and dental caries experience, with a significance level set at $p < 0.05$.

Potential confounding variables, such as age, gender, oral hygiene practices (toothbrushing frequency), dietary habits (consumption of cariogenic foods), and access to dental care, were considered in the interpretation of results. Although these variables were not controlled through multivariate analysis due to the limited sample size, their potential influence was acknowledged in the discussion.

Result

The findings of this study are presented as follows:

A. Knowledge about Dental Caries

Table 1. Frequency Distribution of Knowledge about Dental Caries among Children Aged 10–12 Years at SDN 12 Payakumbuh City, 2025

Knowledge Level	f	%
Good	15	37,5
Moderate	22	55
Poor	3	7,5
Total	40	100

Based on Table 1, the majority of respondents had a moderate level of knowledge (55%), while the smallest proportion was in the poor category (7.5%).

B. Dental Caries Experience

Table 2. Frequency Distribution of Dental Caries Experience among Children Aged 10–12 Years at SDN 12 Payakumbuh City, 2025

Caries Experience (DMF-T)	f	%	DMF-T Components		
			D	M	F
Good	13	32,5			
Bad	27	67,5			
Total	40	100	84	0	0
Mean			2,1	0	0

Table 2 shows that most respondents (67.5%) were categorized as having poor caries experience, while only 32.5% were in the good category. Among the DMF-T components, the "Decay" component was the most common, with an average of 2.1.

C. Relationship between Knowledge of Dental Caries and Dental Caries Experience

Table 3. Relationship between Knowledge of Dental Caries and Dental Caries Experience among Children Aged 10–12 Years at SDN 12 Payakumbuh City, 2025.

Knowledge Level	Caries Experience (DMF-T)		P *Value*
	Good	Bad	
Good	10 (66.7%)	5 (33.3%)	
Moderate	2 (9,1%)	20 (90,9%)	0,002
Poor	1 (33.3%)	2 (66.7%)	

As shown in Table 3, respondents with good knowledge were more likely to have better caries status (66.7%), whereas the majority of those with moderate (90.9%) and poor knowledge (66.7%) experienced poorer caries outcomes. The chi-square test demonstrated a statistically significant association between knowledge of dental caries and caries experience ($p = 0.002$).

This finding indicates that lower levels of knowledge are associated with a higher likelihood of unfavorable caries experience. Clinically, this suggests that inadequate knowledge may contribute to poor oral health behaviors, leading to increased risk of dental caries. Therefore, improving children's knowledge of dental caries is essential as part of preventive strategies to reduce caries incidence and promote better oral health outcomes.

Discussion

A. Knowledge of Dental Caries in Children Aged 10–12 Years at SDN 12 Payakumbuh

The findings of this study on knowledge of dental caries among children aged 10–12 years at SDN 12 Kota Payakumbuh revealed that 55% of the participants demonstrated a moderate level of knowledge, 37.5% demonstrated good knowledge, and 7.5% demonstrated poor knowledge. These results indicate that the majority of children in this age group possessed a moderate level of knowledge regarding dental caries.

The predominance of respondents in the moderate category may be attributed to the limited availability of information sources within the school environment. However, most children reported gaining knowledge about oral health, particularly dental caries, from electronic media such as television, the internet, and social media, which were more accessible at home. Furthermore, the family environment contributed indirectly by shaping habits related to oral health maintenance. Information obtained from diverse sources and surroundings plays a significant role in shaping children's understanding of the causes, prevention, and consequences of dental caries.

Delivering oral health education in schools has proven effective in enhancing children's knowledge. Schools serve as strategic venues for health education since children spend a substantial portion of their time there and are at a developmental stage characterized by learning and imitation of behaviors (Santrock, 2011). Health education is intended to improve knowledge, which serves as the foundation for the development of healthy behaviors (Notoadmojo, 2017).

Schools can play a role as Health Promoting Schools, which are institutions that not only deliver academic material but also create an environment that supports healthy living practices, including oral and dental hygiene (WHO, 2013). Elementary school-aged children are in the concrete operational stage, making it easier for them to understand material through hands-on practice, demonstrations, and concrete examples (Santrock, 2011).

Individuals with greater access to information have the potential to significantly expand their knowledge. However, their reactions to new information are often influenced by the context in which it is obtained and the source from which it originates. Various information sources can shape one's understanding, ranging from direct interpersonal interactions to print and electronic media. The way information is presented and the credibility of the messenger also affect the level of trust and interpretation of the information. Therefore, it is crucial for individuals to remain critical of the information they consume and to consider the context in which it is delivered in order to gain a more holistic understanding (Nababan et al., 2023).

Good knowledge of oral health among elementary school children can be obtained not only through formal health education but also through daily experiences, observations, social interactions, and mass media. At this stage, children have a stronger interest in learning, begin to understand social rules, and develop a high level of curiosity, making them more receptive to health-related information (Notoadmojo, 2017).

Based on the results of the questionnaire responses, 92.5% of respondents were aware of the definition of dental caries, 95% understood its causes, 85% knew the process of caries development, 72.5% recognized its consequences, 97% identified foods that promote dental health, 92.5% recognized foods that can cause caries, 42% knew about caries treatment, and 37.5% understood how to prevent dental caries.

Children's knowledge of dental caries is obtained from health counseling conducted once a year, meaning the frequency of information delivery

is still relatively low. Despite the limited frequency of oral health counseling, children are still able to recall the information provided. At the elementary school age range of 10–12 years, children generally begin to understand cause-and-effect relationships and practical concepts.

Knowledge is the result of knowing, which occurs after an individual perceives a particular object. Perception is achieved through the human senses, namely sight, hearing, smell, taste, and touch. The level of knowledge varies among individuals according to their perception of various objects or phenomena. Active learning aims to optimize the use of all the potential possessed by students. This approach enables students to achieve satisfactory learning outcomes in accordance with their individual characteristics. Active learning is not merely about delivering information but also about encouraging students to actively engage in the learning process. By focusing students' attention on learning, active learning creates an environment that allows them to develop deeper understanding and relevant skills (Notoadmojo, 2017).

Elementary school children (approximately 10–12 years old) are at the concrete operational stage, characterized by the ability to think logically about tangible objects, understand concepts of conservation, classification, and cause-and-effect relationships. These cognitive abilities enable them to absorb, understand, and retain information delivered in oral health counseling, even when the frequency is low (Santrock, 2011).

Another factor influencing why most respondents were categorized as having moderate knowledge of dental caries is the absence of educational media accessible within the school environment. Educational media or other visual aids play a crucial role as reminders and reinforcements of previously delivered information. Their presence in the school setting can facilitate informal learning processes that continuously support students' understanding.

Educational media are essential in enhancing students' knowledge because they deliver information visually, concisely, and attractively. Such media help students grasp concepts through a combination of images and text that clarify the material, especially for elementary school children who are still at the concrete thinking stage. Educational media such as posters are designed to accelerate understanding through brief messages that are both informative and persuasive (Santrock, 2011).

A previous study on the knowledge of permanent first molar caries among fifth-grade elementary school students in Surabaya revealed that students' knowledge of first permanent molar caries prevention was at a moderate level (Hidayati et al., 2021). Another study on students' knowledge of dental caries at SDN Mojoroto 2 in Kediri reported that the majority of students were in the moderate knowledge category (Wati, 2020)

Furthermore, a study conducted at SDN Wilangan I, Nganjuk in 2023 showed that the knowledge of fourth- and fifth-grade students regarding dental caries was also at a moderate level. This suggests that while children have begun to understand the definition and causes of caries, their knowledge of its consequences, prevention, and treatment remains limited. Such conditions indicate that having only "moderate" knowledge is insufficient to serve as a foundation for optimal caries prevention behavior change (Nabila et al., 2023).

B. Dental Caries Experience of Children Aged 10–12 Years at SDN 12 Kota Payakumbuh

The results of the study on dental caries experience among children aged 10–12 years at SDN 12 Kota Payakumbuh showed that 67.5% of the children had poor dental caries experience, while 32.5% had good dental caries experience. This indicates that the majority of children in this age group fell into the poor experience category.

The high prevalence of poor dental caries experience among children aged 10–12 years at SDN 12 Kota Payakumbuh is mainly due to their daily habit of consuming sweet and sticky foods sold at school canteens. These types of foods tend to adhere easily to the tooth surface and are difficult to clean, thereby serving as an energy source for the growth of cariogenic bacteria.

Dental caries is the result of interactions between bacteria on the tooth surface, dental plaque or biofilm, and diet, particularly carbohydrate components that can be fermented by plaque bacteria into acids, mainly lactic acid and acetic acid. This process leads to the demineralization of hard dental tissues, which requires sufficient time to occur (M. H. Putri et al., 2018).

Dental caries is caused by four main factors. First, the host factor, referring to oral conditions that facilitate caries formation, particularly in the pits and fissures of molars and premolars. Second, microorganisms, such as Streptococcus mutans, S. sanguinis, S. mitis, and S. salivarius, which are most frequently associated with caries development. Third, dietary factors, especially carbohydrate-containing foods, which serve as acid sources and support bacterial plaque formation. Sweet foods and beverages can rapidly reduce plaque pH to levels that cause enamel demineralization, with this acidic condition persisting for a certain duration (Effendy et al., 2016).

Examination of dental caries experience based on the DMF-T index among children aged 10–12 years at SDN 12 Kota Payakumbuh showed that the "Decay" component was the most prevalent, with a total of 84 decayed teeth and an average of 2.1. This means that each respondent experienced caries in two

to three permanent teeth, with no "Missing" or "Filling" components observed.

The high number of decayed teeth and the absence of filled teeth can be attributed to the respondents' limited knowledge about the importance of dental fillings and the perception that their cavities were still small, painless, and did not require treatment. At the age of 10–12 years, children generally lack the awareness or initiative to seek dental care independently. Therefore, parental involvement is crucial in guiding and deciding to bring children for dental check-ups and treatment, including restorative procedures for decayed teeth.

Dental fillings should be performed as early as possible before the lesion progresses to a more severe condition. If performed promptly, fillings can be completed quickly as direct restorations. However, when the lesion has worsened, the affected tooth may require prior treatment, necessitating multiple visits. Fillings are one of the most effective methods to restore damaged teeth to their original form and function properly again (M. H. Putri et al., 2018).

Regular dental visits are an important step in preventing and detecting oral diseases at an early stage. Visiting the dentist every six months aims to achieve optimal oral and dental health. Regular dental check-ups also allow dentists to detect small cavities at an early stage so they can be treated immediately before the cavities progress and become more severe (Effendy et al., 2016).

The results of the caries experience examination based on the DMF-T index among children aged 10–12 years at SDN 12 Kota Payakumbuh showed that the teeth most affected by caries were the first permanent molars. First permanent molars are at high risk for developing dental caries immediately after eruption. The pits and fissures on their occlusal surfaces are highly susceptible to bacterial colonization, as they can trap microorganisms.

Dental caries is a chronic disease that develops over a long period. Initially, it can only be observed microscopically, but over time, it manifests as white spot lesions on the enamel. First permanent molars are frequently affected by caries because their pits and fissures allow food debris to accumulate, thereby increasing the risk of decay. Dental caries is a disease of the hard dental tissues that begins with localized tissue destruction, initially affecting the tooth surface (pits, fissures, and interproximal areas), and gradually progressing to the pulp (Kidd & Bechal, 1991).

A previous study conducted in Indramayu on the relationship between knowledge, attitudes, and oral hygiene practices with dental caries among students of SDN 2 Mundu found that the majority of students experienced caries compared to those who did not (Nisa, 2021).

Another study on the relationship between cariogenic food consumption and caries experience among fourth-grade students at SDN Angkasa 1 in Tasikmalaya revealed that students had the highest prevalence of caries experience in the high category (Manurung et al., 2024).

C. The Relationship Between Knowledge of Dental Caries and Caries Experience Among Children Aged 10–12 Years at SDN 12 Kota Payakumbuh

The results of the chi-square test showed a p-value of 0.002 ($p < 0.05$), indicating a statistically significant relationship between knowledge of dental caries and caries experience among children aged 10–12 years at SDN 12 Kota Payakumbuh. This finding suggests that knowledge is an important factor associated with children's oral health status.

In this study, most children with moderate and poor levels of knowledge exhibited unfavorable caries experience, while those with good knowledge were more likely to have better caries status. This pattern indicates that higher knowledge may be linked to more favorable oral health outcomes. However, the presence of poor caries experience among some children with moderate knowledge suggests that knowledge alone may not be sufficient to prevent caries without consistent behavioral implementation. From a behavioral perspective, knowledge is considered a predisposing factor that can influence health-related practices. Adequate knowledge enables individuals to understand the causes, prevention, and consequences of dental caries, which may support the adoption of positive behaviors such as proper toothbrushing, reduced sugar intake, and regular dental visits (Notoadmodjo, 2017); (Setyaningsih, 2019). Conversely, limited knowledge may contribute to inappropriate practices that increase the risk of caries.

The findings of this study are consistent with previous research. A study in Surabaya reported that children with poor knowledge had a high caries prevalence, and a significant relationship was found between knowledge and DMF-T scores (Parmasari et.al, 2022). Similarly, (Nelli, 2021) found that better knowledge was associated with lower caries prevalence, with a highly significant statistical relationship. Research conducted by (Nisa, 2021) also showed that students with lower knowledge levels had higher caries prevalence compared to those with better knowledge. These findings collectively support the role of knowledge as an important determinant of caries experience.

However, several studies highlight that knowledge alone does not always translate into improved oral health outcomes. Research by (Saquicela-Pulla, 2025) demonstrated that despite adequate knowledge and attitudes, caries prevalence remained high, indicating the importance of consistent preventive practices. Similarly, (Jiang, 2023) found a gap between knowledge and actual behavior, where good knowledge was not always accompanied by optimal oral health practices. Studies by Agustina (2020) and Safitri (2024) further confirmed that even

among children with good knowledge, caries prevalence can remain high if preventive behaviors are not consistently applied (Agustina, 2020); (Safitri, 2024)

These findings suggest that while knowledge is significantly associated with caries experience, it should be considered alongside other influencing factors, particularly behavior. The relationship observed in this study may reflect the indirect role of knowledge in shaping oral health practices, which ultimately affect caries outcomes. Therefore, interventions aimed at improving oral health among school-aged children should not only focus on increasing knowledge but also emphasize behavior change strategies and habit formation.

Overall, this study reinforces the importance of integrating oral health education with practical behavioral interventions in school settings. Strengthening both knowledge and its application in daily practices is essential to achieve meaningful reductions in dental caries among children.

Conclusions and Suggestions

This study found that most children aged 10–12 years at SDN 12 Kota Payakumbuh had moderate levels of knowledge regarding dental caries and unfavorable caries experience. Statistical analysis showed a significant association between knowledge of dental caries and caries experience ($p = 0.002$). These findings indicate that knowledge is related to children's caries status; however, due to the cross-sectional design, this relationship cannot be interpreted as causal.

Based on the findings, efforts to improve oral health among school-aged children should focus on strengthening both knowledge and its translation into consistent preventive behaviors. School-based interventions are recommended, including structured oral health education combined with practical activities such as supervised toothbrushing programs, demonstrations of proper brushing techniques, and reinforcement of healthy dietary habits. The use of engaging and interactive educational media (e.g., videos and visual aids) may enhance understanding and retention.

In addition, collaboration between schools and local health services is encouraged to facilitate regular dental check-ups and early management of caries. Future research is recommended to include a larger sample size and consider additional influencing factors such as oral hygiene practices, dietary patterns, socioeconomic status, and access to dental care. The use of longitudinal or analytical designs is also suggested to better understand the direction and strength of relationships between variables.

References

Agustina, D. (2020). Gambaran Pengetahuan tentang Karies dan Angka Karies pada Siswa SDN Jatinom, Klaten. https://eprints.poltekkesjogja.ac.id/2911/.

Damanik, V. (2020). *Factors Associated with the Incidence of Dental Caries.* Majalah Kedokterra Gigi Indonesia, 9(2), 22–29.

Fejerskov, O., & Kidd, E. (2016). *Dental caries: The disease and its clinical management.* (3rd ed.) Wiley Blackwell.

Green, L., & Kreuter, M. (2005). *Health program planning: An educational and ecological approach.* New York.: 4th Edition, McGraw Hill.

Jiang, R. Y. (2023). Dental Caries Prevention Knowledge, Attitudes, and Practice among Patients at a University Hospital in Guangzhou, China. . *Medicina*, 59(9).

Kemenkes, R. (2018, 2023). *Survei Kesehatan Indonesia (SKI) 2023.* Jakarta: Kementerian Kesehatan RI.

Nelli, S. &. (2021). Hubungan Pengetahuan dengan Kejadian Karies Gigi pada Anak Usia Sekolah. *Nan Tongga Health and Nursing*, 16(1). https://doi.org/https://doi.org/10.59963/nthn.v16i1.66.

Nisa, R. &. (2021). . Hubungan Pengetahuan, Sikap dan Tindakan Tentang Kebersihan Gigi Terhadap Karies Gigi pad Anak di SD Negeri 2 Mundu Kabupaten Indramayu. *Jurnal Medika Hutama*, 02(02), 456–468.

Notoadmodjo. (2017). *Pendidikan dan Perilaku Kesehatan.* Rineka Cipta.

Nuriyah, N., & Edi, I. (2020). Perilaku menyikat gigi dan konsumsi makanan kariogenik pada anak usia sekolah. *Jurnal Kesehatan Masyarakat*, 12(1), 88–94.

Organization, W. H. (2022). *Global oral health status report: Towards universal health coverage for oral health by 2030 WHO Press.* WHO Press.

Parmasari et.al. (2022). Hubungan Tingkat Pengetahuan Tentang Kesehatan Gigi dengan Kejadian Karies pada Siswa Sekolah Dasar Surabaya. *Sinnum Maxillofacial, 04(02)*, 61–66. http://e-jurnal.fkg.umi.ac.id/index.php/Sin.

Petersen, P. (2013). Continuous improvement of oral health in the 21st century. *Community Dentistry and Oral Epidemiology,*, 31(Suppl. 1), 3–24.

Rathee, M., & Sapra, A. (2023). *Dental Caries.* NCBI Bookshelf.

Safitri, L. (2024). Pengetahuan Menjaga Kesehatan Gigi dan Jumlah Karies pada Anak SD Negeri Kentung.

Saquicela-Pulla, M. D.-A.-L.-V. (2025). Parental Knowledge, Attitudes, and Practices and Their Association with Dental Caries in Children Aged 5–9 Years: A Cross-Sectional Study in Rural Ecuador. *International Journal of Environmental Research and Public Health (IJERPH).* .

Setyaningsih, D. (2019). *Menjaga Kesehatan Gigi dan Mulut.* CV. Loka Aksara.