



## A Study on Dental and Oral Health Knowledge and Behavior of Fourth to Sixth Graders in Gunung Bahagia, Balikpapan.

Ahmad Fadillah<sup>1</sup>✉, Lilies Anggarwati<sup>1</sup>, Verry Asfirizal<sup>1</sup>, Sylvia Agustin<sup>1</sup>

<sup>1</sup>Dentistry Profession Study Program, Faculty of Dentistry, Mulawarman University, Samarinda, Indonesia

### Article Info

**Article History:**  
Submitted 6/12/2026  
Revised 6/16/2026  
Accepted 6/23/2026

### Kata Kunci:

Kesehatan Gigi,  
Pengetahuan, Perilaku

**Keywords:** *Dental  
Health, Knowledge,  
Behavior*

### Abstrak

Kerusakan gigi dan mulut terutama karies gigi dapat dipengaruhi oleh beberapa faktor penting yaitu, lingkungan, pelayanan kesehatan, perilaku dan pengetahuan, serta keturunan. Pengetahuan dan perilaku memegang peran utama dan mempengaruhi perawatan serta kebersihan gigi dan mulut seseorang. Berdasarkan data Riskesdas tahun 2018, sebanyak 96,5% pada anak berusia 10-14 tahun sudah dapat menyikat gigi setiap hari, tetapi hanya 2,1% saja yang mengetahui dan dapat menyikat gigi di waktu yang benar. **Tujuan:** Mengetahui tingkat pengetahuan dan perilaku perawatan kesehatan gigi dan mulut pada murid SD Kelas IV-VI. **Metode:** Penelitian ini merupakan penelitian kuantitatif dengan metode sampling yang digunakan yaitu proportionate stratified random sampling. Teknik pengumpulan data menggunakan kuesioner yang dibagikan kepada murid SD kelas IV-VI. **Hasil:** Berdasarkan 311 jumlah sampel, diperoleh sebanyak 97,4% (n=303) murid SD kelas IV-VI Kelurahan Gunung Bahagia memiliki tingkat pengetahuan baik dan sebanyak 48,9% (n=152) murid SD kelas IV-VI Kelurahan Gunung Bahagia memiliki perilaku perawatan kesehatan gigi dan mulut dengan kategori sedang. **Kesimpulan:** Tingkat pengetahuan dan perilaku pemeliharaan kesehatan gigi dan mulut pada siswa SD kelas IV-VI di Desa Gunung Bahagia Kota Balikpapan dalam kondisi baik.

### Abstract

*Dental and oral problems, especially dental caries, can be influenced by several crucial factors, e.g., environment, health care, behaviour, knowledge, and heredity. Knowledge and behaviour are imperative and have a part in determining the dental care and dental hygiene of a person. According to the data from Basic Health Research (Riset Kesehatan Dasar – Riskesdas) of 2018, 96.5% of children aged 10-14 had brushed their teeth daily, but only 2.1% knew and could brush their teeth at the right time. Objective: to investigate the knowledge level and dental and oral care behaviour, in elementary school students in grades IV-VI. Methods: This research is a quantitative research with the sampling method used is proportionate stratified random sampling. The data collection technique used a questionnaire distributed to elementary school students in grades IV-VI. Results: From 311 samples consisted of elementary students grade IV-VI in Gunung Bahagia Ward, 97.4% (n=303) of the samples had good level of knowledge and 48.9% (n=152) of the samples had moderate category in dental and oral care behaviour. Conclusion: The level of knowledge and behavior of dental and oral health care for elementary school students in grades IV-VI in Gunung Bahagia, Balikpapan City is in good condition.*

## INTRODUCTION

Health is the main thing for humans, physically and spiritually. Dental and oral health is everything that includes the ability to speak, feel, chew, swallow, and can convey various expressions without pain (Glick et al., 2016). Factors that affect oral health, one of which is health behavior, such as paying attention to diet, brushing teeth to clean food debris, filling teeth, and cleaning tartar. This health behavior is influenced by several things such as knowledge, attitudes, environmental influences, and the availability of facilities (Dianmartha et al., 2018). From these factors, knowledge and behavior play a major role and directly influence oral hygiene and health (Syah et al., 2019).

A promotive approach is needed to increase public knowledge in the field of dental and oral health. The promotive approach is one of the efforts to develop public health in order to realize a higher degree of health. Knowledge about dental and oral health in Indonesia is still very lacking, especially in caring for dental and oral health (Gultom, Diah, 2017). The most common dental and oral health problems in children are caries as much as 89.47% and gingivitis as much as 21.05% (Metha, 2012).

In a study conducted by Mehta and Kaur, there was a significant difference in knowledge about dental and oral health, namely the knowledge of men as much as 72.2% and knowledge of women as much as 85.7%. As well as on the behavior of dental and oral health in males as much as 12% and behavior in females as much as 37.5% (Metha, 2012). A similar study was also conducted by Dianmartha, children

who have knowledge about dental and oral health have a high chance of 7.5 times to behave well (Dianmartha et al., 2018).

According to the 2018 Basic Health Research, 57.6% of Indonesia's population had dental and oral health problems during the past 12 months, but only 10.2% received treatment from medical personnel (Sakti, 2019). Around 48.04% of the population of East Kalimantan province have health problems teeth and mouth in the form of caries, while in the city of Balikpapan as much as 48.26%. In the province of East Kalimantan, especially in children aged 12 years having caries problems as much as 45.96% (Kemenkes RI, 2019). In the research of Astannudin Syah, the results of the Household Health Survey (SKRT) are that the population in Indonesia aged 10 years and over suffers from gingival disease as much as 46%. experienced caries as much as 71.2%, and the age group of 12 years experienced dental caries as much as 76.2% (Syah, 2019). Based on data from the Basic Health Research (Riskesdas) in 2018, as many as 96.5% of children aged 10-14 years were able to brush teeth every day, but only 2.1% of them can brush their teeth at the right time. From the data from the Health Office of Balikpapan City in 2017 it was found that the number of school students in Gunung Bahagia had been examined by the Puskesmas around 1,536 out of 4,661 students. The results of this examination were 1,230 students who needed treatment (Dinkes Balikpapan, 2017).

Based on this, the researcher is interested in conducting research to determine the level of knowledge and behavior of dental and oral care of elementary school students in grades IV-VI in Gunung Bahagia, Balikpapan City.

## METHOD

This research is a quantitative research. The population in this study were all students in 5 elementary schools in Keluhan Gunung Bahagia with a total of 1,402 students for grades IV-VI. Sampling was carried out using the proportioned stratified random sampling technique, namely by looking at the number of the same proportion of cases. The total sample obtained is 311 students.

The research data are primary data, which is based on data on the level of knowledge and behavioral data on dental and oral health care in students obtained from the questionnaire results. This study uses univariate analysis.

Univariate analysis was carried out to determine the level of knowledge of students with a number of 18 questionnaires using an assessment that is bad = 0-6, moderate = 7-12, and good = 13-18 and dental and oral health care behavior with a total of 20 questionnaires using a bad rating = 0-20, moderate = 21-40, and good 41-60.

## RESULT AND DISCUSSION

This research was carried out through filling out a questionnaire in the form of a Google form by elementary school students in grades IV-VI in Gunung Bahagia, Balikpapan City. Of the 311 samples obtained the results:

Table 1. Characteristics of Respondents

Characteristics	Quantity (n)	Percentage (%)
<b>Gender:</b>		
Male	153	49,2
Female	158	50,8
<b>School:</b>		
SDN 013	114	36,7
SDN 014	64	20,6
SDIT Nurul Fikri	30	9,6
SDIT Istiqamah	42	13,5
MI SCM	61	19,6
<b>Grade:</b>		
Grade 4	108	34,7
Grade 5	108	34,7
Grade 6	95	30,5

Table 2. Knowledge Level of Dental and Oral Health of Elementary School Students Class IV-VI

Characteristics	Quantity (n)	Percentage (%)
Bad	0	0
Moderate	8	2,6
Good	303	97,4
<b>Total</b>	<b>311</b>	<b>100</b>

From the results of the study (table 2), it was found that the knowledge of dental and oral health care for elementary school students in grades IV-VI was 8

students (2.6%) in the medium category and in the good category as many as 303 students (97.4%).

**Table 3.** Behavior of Dental and Oral Health Care for Elementary School Students Class IV-VI

Characteristics	Quantity (n)	Percentage (%)
Bad	11	3,5
Medium	152	48,9
Good	148	47,6
<b>Total</b>	<b>311</b>	<b>100</b>

From the results (table 3), it was found that the behavior of dental and oral health care for elementary school students in grades IV-VI was 11 students (3.5%) in the bad category, 152 students in the medium category (48.9%), and the good category as many as 148 students (47.6%).

This study shows that of the 311 respondents who filled out the questionnaire, there were 8 students with a percentage of 2.6% who had moderate knowledge, 303 students with a percentage of 97.4% who had good knowledge, and there were no students who had bad knowledge. The results of this study are in accordance with research conducted by Arsyad et al. They found that knowledge about dental and oral health in fourth and fifth grade students of SD Negeri 9 Rappang was mostly in the good category, namely as much as 94% (Arsyad et al., 2018). This is because students have received information about health. teeth and mouth through the internet, television, and books. Another factor that plays a major role in increasing student knowledge is the family environment. One way to increase knowledge about dental care in the family environment is by educating children about the importance of taking care of their teeth and mouth by parents. Oral and dental health is important, especially during the growth period of children. Parental knowledge is needed so that it

can underlie the formation of children's dental and oral care behavior. Maintaining the health and hygiene of children's teeth and mouth is associated with the role of parents, especially mothers, because at school age children are still very dependent on their parents (Yusmanijar and Adulhaq, 2018)

One form of effort in preventing dental and oral diseases is to provide counseling, especially to school-age children. teeth and mouth. The success of counseling is influenced by communication and messages conveyed (Silfia et al., 2019). School-age children have been able to receive information clearly from several media. At this stage, school-age children are also able to think through a causal sequence. The development of school age is the development of students to start thinking logically and directed by teachers and parents to form a good personality for children. The hallmark of school-age children is the existence of a period when children's mental activities can focus on various events that have occurred or are exemplified by others. As research conducted by Silfia et al found that elementary school children's knowledge was included in the high category, and This is explained because students often get knowledge about teeth and mouth from the local puskesmas (Khasanah et al., 2019).

Research conducted by Khasanah

et al with samples of school-age children and research by Gayatri showed that elementary school-aged children had high knowledge about dental and oral health. With good dental and oral care knowledge, it will indirectly improve dental and oral health so as to avoid abnormalities in the oral cavity, for example dental caries. The higher the grade level of the student, the higher the age of the child so that the knowledge gained about dental and oral care is higher (Gayatri, 2017, and Suhasini et al., 2020).

This study shows that elementary school students in grades IV-VI in Gunung Bahagia have good nursing behavior as many as 148 students with a percentage of 47.6%, in the medium category as many as 152 with a percentage of 48.9%, and in the bad category as many as 11 students with a percentage of 3.5%. The results of this study are in line with research conducted by Arsyad et al that children's behavior in caring for dental and oral health is in the moderate category, namely as much as 71%.<sup>9</sup> Dental and oral care is very important to prevent children from dental disease. Dental care is an effort to prevent tooth decay and other diseases. Healthy teeth are seen from a person's dental and oral care behavior. Dental care carried out includes brushing teeth, using fluoride, food selection, and regular check-ups with the dentist.

Skinner's theory states that behavior is divided into two, namely behavior that is not visible (cover behavior) and behavior that is visible (over behavior). Knowledge is an invisible behavior. According to Bloom, the dental and oral health status of individuals or communities is influenced by four main factors, namely heredity, behavior,

community services, and the environment (physical and socio-cultural). Of these factors, behavior plays an important role in influencing the health status of teeth and mouth. Parents are needed in helping children by providing education, reminding and providing facilities so that they can improve behavior to maintain dental and oral health of their children (Khasanah et al., 2019).

The increased sense of responsibility for the tasks and behavior of a child will be more visible in school-age children. Therefore, children can be taught how to maintain dental and oral health in more detail at school and at home, so that they will create a sense of responsibility for their own hygiene. Research conducted by Sari et al as many as 50% have brushed their teeth independently without being instructed by their parents. The increase in the behavior if it is based on knowledge and application in the form of positive attitudes and actions, the behavior can last a long time. After being given knowledge about how to brush their teeth properly and correctly, over time, respondents who are still ordered to brush their teeth will be able to carry out these activities independently (Notoatmojo, 2010).

## CONCLUSION

Based on the results of the research that has been done, it can be concluded that the level of knowledge of dental and oral health care for elementary school students in grades IV-VI with a good category is 97.4% and dental and oral health care behavior in grade IV-VI elementary school students with a moderate category is 48.9%.

## REFERENCES

- Glick M, Williams DM, Kleinman D V., Vujicic M, Watt RG, Weyant RJ. A New Definition for Oral Health Developed by the FDI World Dental Federation Opens the Door to a Universal Definition of Oral Health. *J Am Dent Assoc.* 2016;147(12):915–7.
- Dianmartha C, Kusumadewi S, Putu D, Kurniawati Y. Pengetahuan Terhadap Perilaku Perawatan Kesehatan Gigi dan Mulut pada Anak Usia 9-12 Tahun di SDN 27 Pemecutan Denpasar. *ODONTO Dent J.* 2018;5:110–5.
- Syah A, Ruwanda RA, Basid A. Faktor-Faktor Yang Berhubungan Dengan Status Karies Gigi Pada Anak Sekolah Min 1 Kota Banjarmasin. *J Kesehat Indones.* 2019;9(3):149.
- Gultom E, Diah R. Konsep Dasar Pelayanan Asuhan Kesehatan Gigi dan Mulut. Kementerian Kesehatan Republik Indonesia; 2017.
- Mehta, Kaur. Oral Health Related Knowledge, Attitude, and Practices among 12 Year Old Schoolchildren Studying in Rural Areas of Panchkula, India. *Indian J Dent Res.* 2012;23(2).
- Sakti eka satriana. Faktor Risiko Kesehatan Gigi dan Mulut. *Pus Data dan Inf Kementeri Kesehat RI.* 2019;1–10.
- Kementerian kesehatan RI. Info DATIN kesehatan gigi nasional september 2019. *Pusdatin kemenkes RI.* 2019;1–6.
- Balikipapan DK. Profil Kesehatan Kota Balikpapan. 2017.
- Arsyad, Bambang R, Suci H. Tingkat Pengetahuan Dan Perilaku Anak Tentang Kesehatan Gigi Dan Mulut. *JIKI J Ilm Kesehat IQRA [Internet].* 2018;6(1):2089–9408. Available from: <https://stikesmu-sidrap.e-journal.id/JIKI/article/view/58>
- Prasuda R, Wiyono J, Warsono. Peningkatan Pendidikan Orang Tua Sebagai Penanganan Karies Gigi Anak Usia 7-9 Tahun. *Nurs News (Meriden).* 2017;2(3):811–22.
- Yusmanijar, Adulhaq M. Hubungan Tingkat Pengetahuan Tentang Kesehatan Gigi dan Mulut dengan Perilaku Perawatan Gigi dan Mulut pada Anak Usia Sekolah 7-9 Tahun di SD Islam Al Amal Jaticempaka. *J Keperawatan.* 2018;2(3):100190.
- Arsyad. Pengaruh Penyuluhan terhadap Pengetahuan pada Murid Kelas IV dan V SD. *Media Kesehat Gigi.* 2018;17(1):61–72.
- Silfia A, Riyadi S, Razi P. Hubungan Tingkat Pengetahuan dengan Perilaku Pemeliharaan Kesehatan Gigi dan Mulut Murid Sekolah Dasar. *J Kesehat Gigi.* 2019;6:45–50.
- Khasanah NN, Susanto H, Rahayu WF. Gambaran Kesehatan Gigi dan Mulut Serta Perilaku Menggosok Gigi Anak Usia Sekolah. *J Ilm Farm.* 2019;9(4):327–34.
- Gayatri RW. Hubungan Tingkat Pengetahuan Dengan Perilaku Pemeliharaan Kesehatan Gigi Anak Sdn Kauman 2 Malang. *J Heal Educ.* 2017;2(2):201–10.
- Suhasini J, Valiathan M. Brushing techniques. *Eur J Mol Clin Med.* 2020;7(2):6601–11.
- Gunjan K, Jalaluddi, Dharendra K. Tooth Brush and Brushing Technique. *J Adv Med.* 2013;2(1):5.
- Sari EK, Ulfiana E, Dian P. Pengaruh Pendidikan Kesehatan Gosok Gigi dengan Metode Permainan Simulasi Ular Tangga terhadap Perubahan Pengetahuan, Sikap, dan Aplikasi tindakan Gosok Gigi Anak Usia Sekolah di SD Wilayah Paron Ngawi. *J Keperawatan.* 2017;1–11.

Notoatmodjo S. Konsep Perilaku Kesehatan. Promosi kesehatan, teori dan aplikasi. Jakarta: Rineka Cipta; 2010.