

Correlation between Education Level and Mother's Knowledge of Oral Health with the Age of a Child's First Visit to the Dentist

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ABSTRACT

Introduction: The age of the child's first visit to the dentist is an important time for the prevention of oral disease and its treatment. Children who visit the dentist at the age of more than 4 years have a caries status that is two times higher than that of children who visit the dentist as early as possible. Most mothers take their children to the dentist when they have complaints and not for routine visits. **Objective**: To determine the relationship between the mother's education level and the mother's level of knowledge about oral and dental health with the age of the child's first visit to the dentist. **Research Methods**: The study used an analytic survey cross-sectional design with 103 parents of SDIT Nur Hidayah Surakarta students whose children were 9 years old. Sampling was done by the purposive sampling method. The research uses primary data obtained by distributing questionnaires collected with the Google form. **Results:** Of children aged 7-9 years, 22.3% have never been to the dentist; 16.5% of children who first visited the dentist at the age of less than 1 year; 8.7% at the age of 1-3 years; 26, 21% at the age of 3-5 years; 21.35% at the age of 5-7 years; and 4.8% at the age of more than 7 years. Conclusion: There is a significant relationship and low correlation between the education level of the mother and the level of knowledge of the mother about oral dental health and the age of the child's first visit to the dentist (p<0.05).

Keywords: Dentist, First Visit, Education, Knowledge

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INTRODUCTION

Everyone, especially children, should practice good dental and oral hygiene. According to the WHO, oral and dental health have a big impact on general health and quality of life. A child's overall health, their competences and skills, their dental growth, and their ability to speak all depend on their oral and dental health, making it one of the variables supporting their growth and development. 1,2

Dental health problems that often occur in children are caries. Based on the results of the 2018 Riset Kesehatan Dasar in Indonesia, the prevalence of caries in early childhood is 93%. Based on these results, only 7% of children in Indonesia are free of caries. According to data from the Purwosari Health Center in Surakarta City for 2021, students at SDIT Nur Hidayah Surakarta who are less than 9 years old have dental and oral problems, including 59% caries, 21% persistent teeth, and 26% poor oral hygiene. Children who visit the dentist earlier can reduce the incidence of dental caries where the DMFS (decayed, missing, and filled teeth) score. Children who visited the dentist at the age of 4 years and over had a score two times higher than children who visited the dentist as early as possible.⁴

A child's first visit to the dentist is an important time in a child's life as well as an opportunity for the dentist to educate and motivate parents on oral disease prevention and treatment.⁵ The common reasons for making the first visit to the dentist were caries or toothache, and other reasons such as scaling, malocclusion, trauma, and others. The most common reason for not visiting the dentist as early as possible or for not making the first visit right away was that the child had no dental problems.⁶

Factors that can be reasons for not visiting the dentist immediately include the cost of treatment, the lack of knowledge of parents about the growth and development of primary teeth, fear of children, other people's opinions, and the lack of access to oral health care for underprivileged children. As many as 75% of parents do not know that their child's 6th month is the right time for their first visit to the dentist. This is due to the low public awareness of the process leading to the occurrence of an oral disease, especially caries, and the availability of preventive services to control oral disease. 5

Children spend most of their time with their parents or guardians, especially mothers, and still depend on their parents for maintaining oral hygiene. Mothers, as the main caregivers of children, have an important role in children's dental and oral health, so that parents' knowledge of good and correct dental and oral health and positive attitudes can influence the maintenance of their children's oral health, eating habits, and encourage other healthy behaviors. Research conducted by Kowash (2018) shows that, seen from the level of education, parents who have secondary and high education levels show significant differences compared to parents with low education in maintaining their children's dental health. Parents with secondary and tertiary education had significantly higher practice scores in maintaining children's dental health compared to mothers with primary education. Parents who have partial knowledge and attitudes towards the dental and oral health of their children can be seen by the poor dental and oral health practices of their children. Parents with secondary and tertiary education had significantly higher scores for their children's dental health practices compared to mothers with primary education. 8

In addition to education, parents, especially mothers, must have knowledge about children's dental health. In one study, parents who had low knowledge about the importance of maintaining good oral health and were at high risk of their children developing caries t the importance of maintaining good oral health and were at high risk of their children developing caries were at higher risk than parents who had more knowledge.² Parents who have little knowledge of the various treatment options for primary teeth think that such treatment is only available for permanent teeth. As many as 42% of parents do not know that there is a specialist to treat their children's teeth, and there are even parents who think that treating primary teeth

will cause damage to permanent teeth.⁵ The level of understanding and awareness of parents regarding the availability of care for the health of primary teeth affects the child's first visit to the dentist. Most of them seek dental care at a later date when their child's teeth have problems, not as a routine visit.⁴ The purpose of this study was to determine the relationship between the mother's education level and her level of knowledge about oral and dental health and the child's age at his or her first visit to the dentist.

METHODS

The study used a cross-sectional study method with parents of SDIT Nur Hidayah Surakarta students whose children were aged 6 to 9 years. The research was conducted in June 2022 with the ethical clearance number 555/IV/HREC/2022. The purposive sampling method was used, and the number of samples was calculated using the formula:

$$n = \frac{N}{1 + Ne^2}$$

Where "n' for sample size, "N" for total population of SDIT Nur Hidayah students aged 6 to 9 years and "e" for error tolerance limit with a value of 10%. The research uses primary data obtained by distributing questionnaires collected with the Google form. The questionnaire has been tested for validity using the Pearson Product Moment test and reliability testing using the Cronbach's Alpha test on 54 respondents with valid and reliable questionnaire results.

RESULTS

The research results collected through the Google form were edited to check for completeness; coding was used to change the questionnaire data in the form of words or sentences into numbers, followed by data entry cleaning. Characteristics of respondents based on the age of the child are as follows:

Table 1 characteristics of the age of the respondent's children

Age	Frequency	Percent (%)
7 tahun	11	10,7
8 tahun	68	66,0
9 tahun	24	23,3
Total	103	100,0

Based on table 1, the age of the children in this study was 7 years old, with 11 children (10.7%). There were 68 children (66%) aged 8 years and 24 children (23.3%) aged 9 years. There were 103 parents of children who participated in this study. The results of the level of knowledge about maternal oral health are descriptively presented in Figure 1.

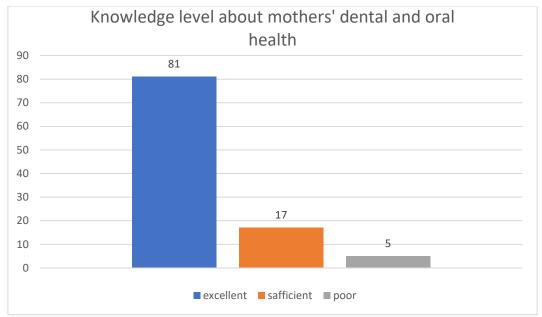


Figure 1 Diagram of the level of knowledge about mothers' oral and dental health Based on Figure 1, the majority of parents already have an excellent level of knowledge of 81 (78.6%), then parents with a sufficient level of knowledge are 13 (16.5%), and parents with a poor level of knowledge are 4 (4,9%). The results of the mother's education level are descriptively presented in Figure 2.

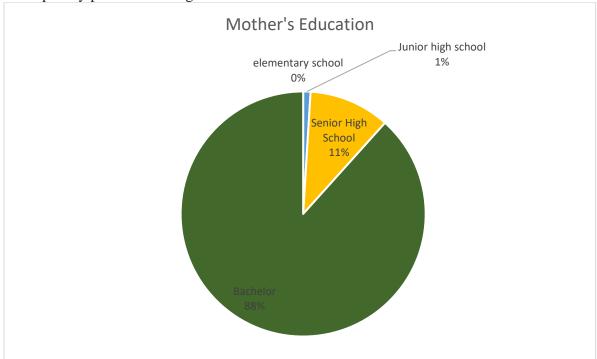


Figure 2 Mother's education level diagram

Based on Figure 2. The distribution of the mother's last education, most of which is in bachelor, namely mothers, is 88%, while the education levels of mothers are elementary school, junior high school, and senior high school, respectively, 0%, 1%, and 11%. The results of the age of the child's first visit to the dentist are descriptively presented in Figure 3.

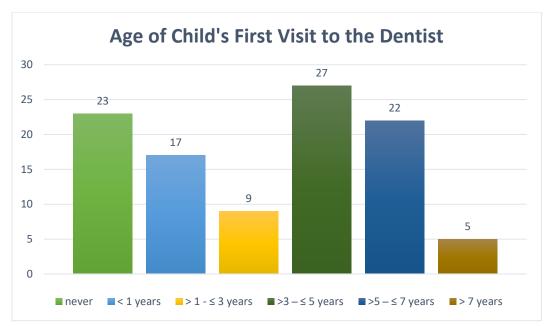


Figure 3 Chart of ages at first visit to the dentist

Based on Figure 3, 22.3% of children at the age of 7-9 years have never been to the dentist; 16.5% of children make their first visit to the dentist at the age of less than 1 year; 8.7% at the age of 1-3 years; 26.21 % at the age of 3-5 years; 21.35% at the age of 5-7 years; and 4.8% at the age of more than 7 years. The results of the study then underwent a correlation test with the Spearman rho test. The statistical test results are presented in Table 2.

Table 2 Statistical test results of the relationship between the level of knowledge about oral dental health and the education level of the mother with the age of the child's first visit to the dentist

			Age of Child's First Visit to the Dentist
Spearman's	Mother's knowledge	Correlation Coefficient	.236*
rho		N	103
		Sig. (2-tailed)	.035
	Mother's education	Correlation Coefficient	.271*
		N	103
		Sig. (2-tailed)	.044

Table 2 shows that there is a significant correlation between the education level of the mother and the age of the child's first visit to the dentist (p < 0.05). There is a significant correlation between the level of knowledge of the mother about oral dental health and the age of the child's first visit to the dentist (p < 0.05).

DISCUSSION

Education, according to the Kamus Besar Bahasa Indonesia (KBBI), is a process of changing the attitude and behavior of a person or group of people in an effort to mature humans through teaching and training efforts in educational processes, methods, and actions. The word "pedagogic," which refers to the science of guiding children, is where the word "education" first appeared in Greek. Realizing a child's potential when they are born into the world was referred to as educare by the Romans, which also included issuing and directing. Based on the results of this study, it appears that the majority of mothers (88%) have a tertiary education. In this study, there was no elementary school education for mothers, and only 1% had junior high school education and 11% had high school education.

The report from Badan Pusat Statistik (BPS) shows that the percentage of the female population aged 15 years and over who has a university diploma is higher than the male population. The percentage of women who have graduated from tertiary education will reach 10.06% in 2021, while for men it will be 9.28%. Based on the area of residence, the percentage of women who have a university degree in urban areas reached 13.51%, while that of men was 12.56%. In rural areas, 5.57% of women have a university diploma, while the percentage of men is only 4.76%. Education is related to a person's ability to receive and respond to various types of information, one of which is the promotion of health. This means that the higher the level of education, the better the ability to absorb health messages. 12

Based on this study, mothers' knowledge of oral health showed that 78.6% of respondents had good knowledge. The knowledge that the average mother has is about the type of teeth, the right time to brush teeth, how to clean plaque, the shape of a good toothbrush, the parts of the teeth that are the beginning of cavities, types of food that can damage teeth, when primary teeth erupt and date, and causes of cavities. Information about dental health is very easily accessible from print media, electronic media, and social media, all of which are highly developed in this modern era. Toothpaste advertisements, toothbrush advertisements, and public service advertisements can unconsciously provide and improve dental health information for parents.¹³

Parental knowledge is not universally high; just 16.5% of parents believe they know enough, while 4.9% believe they know too little. Due to a lack of information or advice, ignorance of this is conceivable. People can change their behavior toward preserving dental and oral health by seeking information or attending to therapy. They can also increase their knowledge of dental and oral health. Types of information that are still not understood by mothers include how to care for new teeth, when to grow teeth, when to use toothpaste in children, and when to visit the dentist.

Good knowledge about dental care acquired in an effort to understand dental health will be reflected in the behavior and attitude toward dental care that determine the good or bad results of one's dental maintenance actions, one of which is the behavior of parents bringing their children to visit the dentist. Parents who have received dental health information and are able to provide answers and respond to the information obtained should be able to apply the knowledge gained.¹⁵ One of the applications of this knowledge is bringing children to the dentist according to their recommended age and for the purpose of routine checks.

Based on the results of the study, the most frequent age of children's first visit to the dentist was > 3 years to 5 years, namely 26.21%. Children aged 3-5 years have the highest caries risk when their teeth have erupted because they find it difficult to clean the erupted teeth. At this age, the child's primary teeth have completely grown, and complaints begin to appear on the child's teeth. Factors that might cause new children to make their first visit to the dentist at the age of 3 years to 5 years are because at this age symptoms of early childhood caries (ECC) appear. The findings of this study are consistent with those of previous research. According to research in Riyadh, Saudi Arabia, more than half (52.9%) of children visiting the dentist between the ages of 3 and 5 years. The majority of children visit the dentist at the age of 3-6 years, with a percentage of 29%. The average age of a child's first visit to the dentist is 3 to 4 years old. When they are younger than one year old, just 2.9% of children go to the dentist for the first time. Research in Al Madinah, Saudi Arabia, shows less than 10% of children aged 9 to 12 make regular visits to the dentist.

According to the results of this study, 16.5% of children visited the dentist for the first time at the age of less than 1 year (Figure 1). In previous studies, only 8% of children visited the dentist for the first time at less than 1 year of age. Children should start seeing a dentist six months after their first primary tooth has erupted and no later than 12 months, according to the American Academy of Pediatric Dentistry (AAPD) and the American Dental Association (ADA). ^{19,20} The child's first visit is based on establishing basic preventive education and more

optimal care of primary teeth that continues into adulthood.⁴ The child's first visit to the dentist can also be used to assess the child's dental development and the management of oral disease prevention in children.²¹

At the child's first dental appointment, the dentist will ask about the child's entire medical and family history, perform a history check, and provide information about the child's oral development, fluoride status, oral habits, injury prevention, oral hygiene instructions, and age-appropriate dietary counseling.^{7,22} During this initial appointment, a favorable outlook and willingness to receive additional care can be established. Early dental visits can also assist to ease dental anxiety in children and develop their trust in the dentists who will be caring for them. ^{21,23}

The majority of children's first visits to the dentist are oriented towards dental complaints suffered by children rather than examinations for prevention. Factors that encourage parents to take their children to the dentist are pain in the child's teeth and the will of the parents themselves; only a small number of visits to the dentist are due to advice or recommendations from the dentist. Research in Turkey 36.4% of children visit the dentist because of illness, but only 23.1% visit for routine checks. 4

In this study, there were still 22.3% of children aged 7 to 9 years who had never visited a dentist. The inhibiting factors for parents to immediately bring their children to visit the dentist are the lack of awareness of parents about the importance of growth and development of primary teeth, reasons for visits, costs of care, care services, social environment, and the child's psychological condition.⁷ Parents' attitudes and perceptions of dental and oral health have contributed to the delay in the first visit to the dentist.²⁵

The results of the Spearman rho correlation test (Table 2) show a significant correlation (p<0.05) between the mother's education level and the age of the child's first dental visit, as well as between the mother's level of dental and oral health knowledge and the age of the child's first dental visit. The mother is a crucial member of the family. In addition to providing food for their family members, mothers who look after their children occasionally work to bolster the family's revenue. A mother's responsibilities include educating, caring, providing for, and showing affection to her children.²⁶ Low maternal education is associated with delays in the first visit to the dentist. In a cohort study, less than 5% of children visited the dentist for the first time under the age of 2 years, and 35% of children up to 7 years of age had not visited the dentist for the first time.²⁷

The results of the study stated that the level of parental knowledge about dental and oral health was good, which meant that parents already knew and understood what good and correct dental health was. These results have not been applied by mothers in the form of behavior, only as a result of knowledge. ^{14,29} This low correlation means that the level of dental and oral health knowledge possessed by the mother and the education level of the mother are not the main factors influencing the child's first visit to the dentist. Factors that may influence the age of a child's first visit to the dentist are the reasons or needs for which the child visits the dentist. This can occur due to the lack of awareness among parents to visit the dentist as soon as possible for routine check-ups to prevent dental caries and other dental diseases. ^{17,30}

Most children's first visits to the dentist are for medical needs, not for prevention. Parents showed early interest in dental and oral disease prevention approaches and education for their children, but in reality, the parents only brought their children for curative treatment.^{23,31} Utilization of dental and oral health services is influenced by perceptions of the condition of a person's teeth and mouth. Parents' perceptions and attitudes towards children's dental and oral health influence the purpose of the visit. Having complaints about children's teeth encourages parents to take their children to the dentist without delay. Another factor that might influence a child's first visit to the dentist is the parents' socioeconomic status. This is usually associated with low family income, which can cause delays in children's dental visits. Dental care is still

often not prioritized and is often considered an additional or optional treatment so that other, more urgent conditions are prioritized.²⁵ Socioeconomic conditions may affect delays in children visiting the dentist due to parents not being able to make time or finding it difficult to take time off from work, constraints on transportation costs, and long waiting times at dental services.¹⁸

High treatment costs, remote locations for dentist services, and the psychological condition of children where children feel afraid to go to the dentist are also associated with delays in visiting the dentist. Social and environmental factors can also influence parents' decisions about bringing their children to the dentist. Parents can get various opinions from different people on solving dental and oral health problems rather than consulting and asking dentists. ⁷

CONCLUSION

Based on the results of this study, it can be concluded that there is a significant and low correlation between the education level of the mother and her level of knowledge about oral and dental health and the age of the child's first visit to the dentist.

CONFLICT OF INTEREST

Author declared did not have any conflict of interest

ETHICAL CLEARANCE

Ethical clearance number 555/IV/HREC/2022 from Health Research Ethics Comitte Dr. Moewardi General Hospital

REFERENCES

- 1. Bramantoro T, Prabandari YS, Ismail D, Tedjosasongko U. The development of early childhood caries impact on quality of life-Indonesia instrument as assessment instrument of dental caries impact on quality of life of children aged 3-5 years based on Indonesian community characteristics. *Dent J (Majalah Kedokt Gigi)*. 2015;48(4):197. doi:10.20473/j.dimkg.v48.i4.p197-203
- 2. Putri Abadi NYW, Suparno S. Perspektif Orang Tua pada Kesehatan Gigi Anak Usia Dini. *J Obs J Pendidik Anak Usia Dini*. 2019;3(1):161. doi:10.31004/obsesi.v3i1.161
- 3. Kemenkes RI. Laporan Riskesdas 2018 Kementrian Kesehatan Republik Indonesia. *Lap Nas Riskesdas 2018*. 2018;53(9):154-165. http://www.yankes.kemkes.go.id/assets/downloads/PMK No. 57 Tahun 2013 tentang PTRM.pdf
- 4. Keerthana R, Jessy P, Chaudhary M. The age of first dental visit -A retrospective study. *J Contemp Issues Bus Gov.* 2021;27(02). doi:10.47750/cibg.2021.27.02.282
- 5. Sanguida A, Vinothini V, Prathima GS, Santhadevy A, Premlal K, Kavitha M. Age and Reasons for First Dental Visit and Knowledge and Attitude of Parents Toward Dental Procedures for Puducherry Children Aged 0–9 years Adimoulame. *J Pharm Bioall Sci.* 2019;11:S413-9. doi:10.4103/jpbs.JPBS
- 6. Murshid EZ. Children's ages and reasons for receiving their first dental visit in a Saudi community. *Saudi Dent J.* 2016;28(3):142-147. doi:10.1016/j.sdentj.2015.12.003
- 7. Viswanath S, Asokan S, Pollachi-Ramakrishnan G. First dental visit of children A mixed-method approach. Published online 2020. doi:10.1111/ipd.12665
- 8. Mahmoud N, Kowash M, Hussein I, Hassan A, Halabi M Al. Oral Health Knowledge, Attitude, and Practices of Sharjah Mothers of Preschool Children, United Arab Emirates. *J Int Soc Prev Communit Dent*. 2017;7:308-314. doi:10.4103/jispcd.JISPCD 310 17
- 9. Moeljadi D. *Kamus Besar Bahasa Indonesia*. Badan Bahasa; 2016. http://wn-msa.sourceforge.net/

- 10. Hermawan AH. *Filsafat Pendidikan Islam*. Kementerian Agama RI; 2012. doi:10.24252/ip.v6i2.5231
- 11. Badan Pusat Statistik. Perempuan dan Perempuan dan Laki-laki. Published online 2021:1-49.
- 12. Dewi NAA. Pengaruh Pendidikan Kesehatan tentang Perilaku Hidup Bersih dan Sehat (PHBS) dengan Metode Ceramah terhadap Pengetahuan dan Sikap pada Anak Panti Asuhan Keluarga Yatim Muhammadiyah Surakarta. Fak Ilmu Kesehat Univ Muhammadiyah Surakarta. Published online 2015. http://eprints.ums.ac.id/40979/4/Naskah PublikasiI.pdf
- 13. Abdat M. Pengetahuan Dan Sikap Ibu Mengenai Gigi Sulung Anaknya Serta Kemauan Melakukan Perawatan. *Cakradonya Dent J.* 2018;10(1):18-26. doi:10.24815/cdj.v10i1.10611
- 14. Oktarina, Tumaji, Roosihermiatie B. Correlation of mother factors and their kindergarten's oral health status in Kemayoran Village, Krembangan Subdistrict, Surabaya City. *Bul Penelit Sist Kesehat*. 2016;19(4):226-235.
- 15. Rakhmawati NS, Budiono I, Rustiana ER. Determinan Perilaku Pemeliharaan Kesehatan Gigi dan Mulut pada Remaja. *Pros Semin Nas Pascasarj*. 2020;3(1):414-419.
- 16. Anil S, Anand PS. Early childhood caries: Prevalence, risk factors, and prevention. *Front Pediatr*. 2017;5(July):1-7. doi:10.3389/fped.2017.00157
- 17. Alshahrani NF, Alshahrani ANA, Alahmari MA, Almanie AM, Alosbi AM, Togoo RA. First dental visit: Age, reason, and experiences of Saudi children. *Eur J Dent*. 2018;12:579-584. doi:10.4103/ejd.ejd_426_17
- 18. Aqeeli A, Alsharif AT, Kruger E, Tennant M. Factors Influencing Children's Regular Attendance at Dental Clinics in Al Madinah, Saudi Arabia. *Saudi J Heal Syst Res*. 2021;1(4):140-146. doi:10.1159/000518640
- 19. Baker SD, Lee JY, Wright R. The Importance of the Age One Dental Visit. *Am Acad Pediatr Dent*. Published online 2019:1-16. https://www.aapd.org/globalassets/media/policy-center/year1visit.pdf
- 20. American Academy of Pediatric Dentistry Foundation. The Dental Home It's Never Too Early to Start. Published online 2007:0-1.
- 21. Olatosi OO, Onyejaka NK, Oyapero A, Ashaolu JF, Abe A. Age and Reasons for First Dental Visit Among Children in Lagos, Nigeria Olubukola. *Niger Postgr Med J*. 2019;26:158-163. doi:10.4103/npmj.npmj
- 22. Subramaniam P, Reghuvaran J. Age and reasons for first dental visit: A cross-sectional study of children in Bengaluru, India. *J Indian Assoc Public Heal Dent*. 2019;17(4):293. doi:10.4103/jiaphd.jiaphd_36_19
- 23. Mika A, Mitus-Kenig M, Zeglen A, Drapella-Gasior D, Rutkowska K, Josko-Ochojska J. The child's first dental visit. Age, reasons, oral health status and dental treatment needs among children in Southern Poland. *Eur J Paediatr Dent*. 2018;19(4):265-370. doi:10.23804/ejpd.2018.19.04.3
- 24. Bulut G, Bulut H. Zero to five years: First dental visit. *Eur J Paediatr Dent*. 2020;21(4):326-330. doi:10.23804/ejpd.2020.21.04.13
- 25. Mukhari-Baloyi N, Ramphoma K, Phalwane M, Motloba P. Association of parental factors and delayed dental care for children. *South African Dent J.* 2022;76(10):607-612. doi:10.17159/2519-0105/2021/v76no10a4
- 26. Werdiningsih ATA, Astarani K. Peran Ibu Dalam Pemenuhan Kebutuhan Dasar Anak Terhadap Perkembangan anak Usia Prasekolah. *J STIKES*. 2012;5(1):82-98. astaranikili@ymail.com
- 27. Soares ALFH, Ribeiro CCC, Thomaz EBAF, et al. Socio-environmental determinants of the delay in the first dental visit: Results of two population-based cohort studies in Brazil.

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- *Brazilian J Med Biol Res.* 2021;54(1):1-11. doi:10.1590/1414-431X202010161
- 28. Dahlan MS. Statistik Untuk Kedokteran Dan Kesehatan. Salemba Medika; 2019.
- 29. Putri RM, Susmini, Hadi HS. Gambaran pengetahuan sayur anak usia 5-12 tahun di Yayasan Eleos Indonesia, Malang. *J Ilmu Keperawatan*. 2017;5(1):74-80.
- 30. Sobiech P, Turska-Szybka A, Kobylińska A, Olczak-Kowalczyk D. The first dental visit of a 3-year-old child. Reasons and socioeconomic determinants. *New Med.* 2020;24(1):26-31. doi:10.25121/NEWMED.2020.24.1.26
- 31. Samuel SS, Rebekah G. Age and Reasons for First Dental Visit in a Tertiary Care Hospital in South India. *Dent Med Res.* 2021;9:126-130. doi:10.4103/dmr.dmr