


Available online on 15.01.2023 at <http://jddtonline.info>

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

Copyright © 2023 The Author(s): This is an open-access article distributed under the terms of the CC BY-NC 4.0 which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited

Open  Access Full Text Article

Research Article

Mother's Mentoring Using GIGI.ID Application on Teeth Brushing Action of Elementary School Students

Hermien Nugraheni* , Sukini , Nanang Qosim 

Dental Health Department, Poltekkes Kemenkes Semarang, Jl. Tirto Agung, Pedalangan, Banyumanik, Semarang, Indonesia

Article Info:



Article History:

Received 10 Nov 2022
Reviewed 21 Dec 2022
Accepted 06 Jan 2023
Published 15 Jan 2023

Cite this article as:

Nugraheni H, Sukini, Qosim N, Mother's Mentoring Using GIGI.ID Application on Teeth Brushing Action of Elementary School Students, Journal of Drug Delivery and Therapeutics. 2023; 13(1):61-67

DOI: <http://dx.doi.org/10.22270/jddt.v13i1.5720>

*Address for Correspondence:

Hermien Nugraheni, Dental Health Department, Poltekkes Kemenkes Semarang, Jl. Tirto Agung, Pedalangan, Banyumanik, Semarang, Indonesia

Abstract

This research is quantitative analytic with the correlation method aiming at determining the relationship between the variable mother's mentoring using the *GIGI.ID* application and the student's teeth brushing action variable. The population of this study is elementary school students who have received educational intervention from a social enterprise startup that focuses on dental and oral health in the form of a healthcare platform with teledentistry features. Samples were taken using a purposive sampling technique for 5th-grade students, with consideration that students have been able to communicate well and can work together. The respondents of this study were students and their respective parents. The results reveal a correlation between the mother's mentoring variable and the student's teeth-brushing variable, with a p -value = 0.017 and a correlation coefficient. The correlation between the mother's mentoring variable and the student's teeth brushing variable is strong and positively significant before and after the educational intervention using the *GIGI.ID* application.

Keywords: *GIGI.ID* application, Mother's mentoring, Teeth brushing action

A. BACKGROUND

Teeth decay that occurs in childhood certainly affects the condition of the teeth as adults. Oral health problems that school-age children most often experience are dental caries¹. School-age children are highly susceptible to dental caries because the enamel lining of the teeth in school-age children erupts, so there is a high probability of dental caries. Dental caries is a disease caused by many factors^{2,3}. The main factors that cause caries are the host (teeth and saliva), microorganisms (plaque), substrate (carbohydrates) and the time factor. In addition, other predisposing factors that contribute to caries severity include caries experience, socioeconomic, age, gender, geography, and behaviour towards dental health^{4,5}.

Data shows that 91.1% of Indonesia's population aged 10 years and over have brushed their teeth every day, but only 7.3% have brushed their teeth twice at the right time, namely in the morning and at night before going to bed⁶. Research on the relationship between dental health behaviour and dental caries⁶ showed a significant relationship between the health behaviour of elementary school students and the incidence of dental caries. The ability to brush the teeth properly and correctly is a factor that is quite important for maintaining oral health⁷. The success of maintaining oral health is also influenced by factors such as the use of tools, teeth-brushing methods, and the right frequency and timing of brushing⁸.

One of the causes of oral health problems in the community is the behavioural factor or attitude of ignoring dental and oral

hygiene. In elementary school-age children, the maintenance of their dental health still depends on their parents, especially mothers, as the closest people to their children. Starting teething is an essential process of a child's growth. Parents, especially mothers, must know how to care for their children's teeth and guide them to brush their teeth properly^{9,10,11}. In elementary school-age children, it is a period of changing teeth from milk to permanent teeth, so a child must get serious attention from his parents. However, many parents do not consider dental health problems a severe health problem and are less concerned with their children's oral hygiene. Ten out of thirty parents with primary school-age children still have a wrong perception about the incidence of dental caries in their children⁸.

The role of parents, especially a mother, in maintaining healthy teeth is significant in underlying the formation of behaviours that support children's dental hygiene so that children's dental health can be adequately maintained. Dental caries interfere with children's development^{9,10}. Because the pain that arises from dental caries affects the child's appetite, the intake of nutritious food, and ultimately the child's nutritional status. In addition, pain due to dental caries also dramatically interferes with children's concentration in learning and ultimately affects their academic achievement. Therefore, the participation of parents is very much needed in guiding, giving attention, understanding, reminding and providing facilities to children so that later children can maintain the cleanliness of their teeth^{12,13}. Dental health education should be introduced to children as early as possible so that they know how to keep healthy teeth. It is

hoped that parents will also play a role in overseeing the cleanliness of their children's teeth by teaching them how to brush their teeth properly^{14,15}.

Public Elementary School Seberang Masjid 1 Banjarmasin became the only school in Kalimantan appointed by GIGI.ID, to provide oral health education from three regions in Indonesia. In the instruction, all students and teachers, teaching staff, as well as parents and guardians of students who were present were given knowledge on how to carry out both treatment and handling if there were health problems in the teeth and mouth. After being given the material, all students were asked to practice brushing and adequately caring for their teeth in the schoolyard. The GIGI.ID healthcare platform application with teledentistry features is a health practice that uses the presence of technology in the use of audio, visual and data communications to carry out treatment, diagnosis, consultation and treatment as well as exchange medical data and scientific discussions without physical presence,^{16, 17}. The GIGI.ID platform provides information on how to take care of dental and oral health and various other Education for the community. Based on the statement above, this study analyzed the relationship between the mother's role in mentoring using the GIGI.ID application and brushing the teeth of public elementary school students Seberang Mesjid 1 Banjarmasin City.

B. METHOD

This research type is quantitative analytic with the correlation method to determine the relationship between the mother's mentoring variable using the GIGI.ID application with the student's teeth brushing action variable. The population of this study is elementary school students who attend education units and have received educational interventions from social enterprise startups that focus on health, especially oral health. This is a healthcare platform with teledentistry features. The

total number of students who received this Education was 480 students. Samples were taken using a purposive sampling technique of 85 5th-grade students, with consideration that students have been able to communicate well and can work together. The respondents of this study were students and their respective parents (mothers). So the number of samples is 85 students and 85 mothers. The statistical test used to show the relationship between the variables studied is the Chi-Square Test. This research was conducted after obtaining an ethical certificate from the Health Research Ethics Commission of the Health Ministry of Health Semarang No. 549/EA/KEPK/2021 dated 27 October 2021.

C. RESULT

1. Overview of Research Sites

The development of primary Education in the city of Banjarmasin is an effort to educate and print the life of a nation that is devoted, loves and is proud of the country and state, is skilled, creative, has good character, and is polite and can solve problems in their environment. Healthy schools focus on efforts to make the school have a typical learning environment (not sick) both physically and spiritually. This is marked by a school situation that is clean, beautiful, orderly, and upholds family values within the framework of achieving physical and spiritual well-being for every school member. Public Elementary School Seberang Masjid 1 Banjarmasin is the object of this research. It is located on Jl. Kp. Malayu Darat No.32, Kelurahan Seberang Masjid, Kecamatan Banjarmasin Tengah, Kota Banjarmasin.

The students of elementary school Seberang Masjid 1 Banjarmasin have received educational intervention from a social enterprise startup that focuses on health, especially Oral Health, in the form of a healthcare platform with teledentistry features.

Table 1: Characteristic of Respondent

Characteristic of Respondent	category	frequency	percentage
Student's age	<10 years old	8	9,4
	10-12 years old	75	88
	>12 years old	2	2,6
Sex	Male	37	44
	Female	48	56
Student's participation in GIGI.ID application	Yes	82	96
	No	3	4
Well-informed by other media	Yes	80	94
	No	5	6
Mother's age	< 30 years old	9	11
	30 - 45 years old	65	76
	>45 years old	11	13
Mother's Education	< Senior high school	11	13
	Senior high school graduation	44	52
	Diploma/Bachelor	27	32
	Master/Doctoral	3	3
Mother's occupation	Government employee	23	27
	Private employee	21	25
	Entrepreneur	17	20
	Housewife	24	28
	Others: ...	0	0
Mother's participation in GIGI.ID application	Yes	21	25
	No	64	75
Well-informed by other media	Yes	37	44
	No	48	56

Based on table 1 regarding the characteristics of the respondents, it can be seen that the majority (88%) of students are 10-12 years old, 56% are female, and 96% participate in dental health education activities using the GIGI.ID application and 94% of students have gotten information about proper teeth brushing from other sources, such as oral health counselling at UKGS, explanations from dentists when visiting dental clinics, and reading posters and brochures. Meanwhile, for respondents, it was seen that the majority: 76% of mothers were 30-45 years old, 52% of mothers had graduated from high school, 28% of mothers were homemakers, 75% of mothers did not take part in dental and oral health education activities using the GIGI.ID application and 56% of mothers did not/had yet to receive information about how to accompany their children to brush their teeth before.

2. Univariate Analyzed

In this study, the variable of mother's mentoring using the GIGI.ID application is an independent variable that influences the teeth-brushing action of elementary school students in Banjarmasin. Univariate analysis with a total sample of 85 students in 5th-grade elementary school students and 85 mothers of student respondents. In the variable of accompanying mothers when their children brush their teeth, it was found that 52% of mothers were in moderate criteria, 21% were in good standards, and 27% were in poor criteria. At the same time, the student teeth brushing action variable was obtained by most students (44%) with insufficient criteria, 25% in good and 31% in bad. Details can be seen in Table 2 below.

Table 2. Univariate Analyzed Mother's Mentoring and Students' Teeth Brushing Actions Variables

variable	category	frequency	percentage
Mother's Mentoring	Good	18	21
	Moderate	44	52
	Poor	23	27
Student's Teeth brushing action	Good	21	25
	Moderate	37	44
	Poor	27	31

3. Bivariate Analyzed

Based on a bivariate analysis with a spearman correlation test, it was found that the maternal assistance variable had a

positive and significant correlation with the student toothbrushing action variable with p-value = 0.017 (< 0.05).

Table 3. Bivariate Analyzed Relationship between Mother's Mentoring and Student's Teeth brushing Action Variables

variable	correlation coefficient	P Value
Mother's Mentoring	0,551	0,017

From table 3 it can be concluded that there is a correlation between the mother's mentoring variable and the student's teeth brushing variable which is significant and in the same direction because the results of the correlation coefficient are positive. Mother's mentoring variable has a strong correlation because the correlation coefficient is 0.551 (the strong correlation coefficient is 0.5 - 0.75).

ID application, and previous exposure to information about oral health are from other sources. In this study, it was

suspected that there were confounding variables, namely: mother's age, mother's Education, mother's occupation, and mother's participation in oral health education activities using the GIGI. Then a bivariate analysis was carried out with the Chi-Square test, to see the relationship between the confounding variable and the independent variable (student's teeth brushing action). The results of the bivariate analysis of the confounding variable on the act of brushing the teeth of elementary school students can be seen in Table 4.

Table 4 Bivariate Analysis of Confounding Variables on Students' Teeth Brushing Actions

Variable	Student's Teeth brushing action			Amount	P Value
	Poor	Moderate	Good		
Mother's age					
<30 years old	4	4	1	9	0,051
30-45 years old	21	25	19	65	
>45 years old	2	8	1	11	
Mother's occupation					
Government employee	9	11	3	23	0,062
Private employee	11	6	4	21	
Entrepreneur	7	6	4	17	
Housewife	10	12	2	24	
Mother's Education					
< high school	4	6	1	11	0,092
High school graduation	16	19	9	44	
Diploma/Bachelor	7	12	8	27	
Master/Doctoral	0	0	3	3	
Mother's participation in GIGI.ID application education					
Yes	0	13	8	21	0,084
No	27	24	13	64	
Well-informed by other media					
Yes	7	23	7	37	0,088
No	20	14	14	48	
Total				85	

The bivariate analysis of the confounding variables, as shown in table 5.4, shows that all p-values > 0.05 mean no significant relationship exists between the confounding variable and the correct teeth-brushing action in elementary school students. Furthermore, to increase the correct teeth brushing action for elementary school students, educational interventions were carried out in the form of education for mothers using the GIGI.ID application on ways to accompany their children to

brush their teeth properly. The above treatment was given to the respondents in the intervention group.

ID application as a mentoring media. Meanwhile, the control group respondents only provided counselling about the importance of proper teeth brushing for elementary school students, not accompanied using the GIGI. Differences in students' teeth-brushing actions before and after the intervention are shown in Table 5.

Table 5: Bivariate Analysis of Intervention Variable Mother's Mentoring Education Using GIGI.ID Application

Variable	Intervention				P Value
	before		after		
	Intervention group	Control group	Intervention group	Control group	
Mother's mentoring					
poor	9	10	3	8	0,000
moderate	21	23	11	25	
good	13	10	29	10	

Bivariate analysis on the mother's mentoring variable in the student's teeth brushing action before and after the educational intervention using the GIGI.ID application is shown in table 5, which displays the p-value = 0.000 (<0.05),

which means that there is a significant difference in the mother's mentoring variable in the student's teeth brushing action before and after the intervention.

D. DISCUSSION

1. Factors Influencing Students' Teeth Brushing Actions

The practice of oral hygiene by individuals is the most crucial preventive action recommended; it also means that the individual has taken actual preventive measures, this oral hygiene practice can be carried out by individuals by brushing their teeth. Brushing teeth removes and disrupt the formation of plaque and debris, cleans food residue that sticks to the teeth, stimulates the dental tissues, and eliminates unwanted bad breath^{14, 15}. The behaviour of brushing their teeth in children must be done in everyday life without feeling forced. The ability to brush your teeth correctly and adequately is a factor that is quite important for dental and oral health care. The success of brushing your teeth is also influenced by factors such as the use of tools, the method of brushing your teeth, and the frequency and time of brushing your teeth properly¹².

From an early age, elementary school students need to be educated to maintain oral health. 5th and 6th grade students are between 10 – 12 years old. At the age of 10-12 years old, children enter the beginning of the permanent dentition phase. Although there is still a change from primary to permanent teeth, many permanent teeth have grown. At that age, they can grasp an understanding and can explain something realistically. In addition, at the age of 10-12, they can be given responsibility for brushing their teeth. At the age of 10-12, they can brush their teeth systematically compared to the younger age group. For this reason, dental health needs to be maintained from the beginning so that children have good permanent teeth.

Students spend most of their daily time at home, not school, so parents play an essential role in growing their children¹⁶. In this case, parents play a nurturing role and provide an understanding of the importance of getting used to brushing their teeth, giving examples of brushing their teeth properly, telling them the right time to brush them. Parents must prepare means of brushing their teeth^{9,10}. This follows Green's theory of behaviour change that one of the factors that influence a person's behaviour is a reinforcing factor including social support, peer influence, and advice and feedback from health workers will strengthen behaviour¹⁸. Social support is one of the parents when parents, because of their ignorance or ability and some parents have less time to supervise and communicate with their children, so children will choose sources of information from peers who cannot be guaranteed the truth.

2. Parental Mentoring on Student's Teeth brushing action

Parents and family are the first social environment in which a human interacting. Individuals learn not only by how they interact with their parents or other family members, but also by seeing how their parents or family members interact with themselves or how they interact with one another. Parents and other family members provide a model of life skills that the individual learns in the early years of life¹⁵. Parents can play their role in improving good brushing habits to prevent the high prevalence of dental caries in school-age children. Parents play a role in supervising, teaching good habits, and providing positive reinforcement or feedback when children carry out good habits in caring for teeth¹⁶. Good habits in brushing teeth in children can be improved through teaching and strengthening behaviour from parents.

Parents must know how to take care of their children's teeth and must take care of their children's teeth and guide their children on how to brush their teeth properly. The success of children's dental care requires the participation of parents. The role of parents as figures and as role models will set an

excellent example for children in performing dental care¹⁴. The involvement of parents is needed in guiding, reminding and providing facilities so that children can maintain dental and oral hygiene¹². In addition, parents also play a role in preventing the occurrence of plaque and caries in children. In this case, parents play an essential role in paying attention to the discipline of children towards their responsibility in maintaining their dental health^{15,16}.

The cause of dental caries in children is the lack of supervision from parents when their children brush their teeth. Parents should teach personal hygiene by brushing their teeth before bed at night or brushing their teeth after waking up. Health education carried out by parents by teaching and supervising children when they brush their teeth shows that parents are considered responsive to their children's oral health. The role of parents can motivate children so that it becomes a supporting factor for the success of children's health. Thus the health of the oral health of the child is maintained⁹. The important role of parents in maintaining the health of their children's oral health is so that the child respondents are able and able to maintain good oral health. Another factor that can affect the success of oral health in children is using a toothbrush^{10,11,12}. So far, children should pay more attention to the toothbrush used and how to brush their teeth properly. Parents' role is essential to provide toothbrushes that are appropriate for the child's age and demonstrate how to brush their teeth properly. Brushing techniques should be simple, understandable to children, precise and efficient in a practical time. Brushing teeth in the wrong direction with too much pressure can cause tooth wear and receding gums (gum recession). Selection of a good toothbrush is a toothbrush that is not hard and not too soft because the ends of the toothbrush bristles that are too hard will injure the gums so that they are prone to bleeding and abrasion to the lining of the teeth⁹.

3. Using Media for Parental Mentoring in the Student's Teeth brushing action

There are several things that parents should convey to their children to instil healthy hygiene behaviours in children, including maintaining the cleanliness and health of their teeth. A good level of knowledge and understanding of parents in preserving and maintaining oral health will determine the results of implementing actions to care for children's oral health at home. It is parents who have complete responsibility for the Education of their children. All values of life can be instilled by parents wherever they are, starting from home and at any time when children are with their parents¹⁰. Parents must plant character from an early age. However, the conditions and capacities of one parent and another certainly differ. Hence, there needs to be an intervention in the form of Education about caring for children's dental health so that each parent can accompany their children at home to take steps to maintain healthy teeth, especially correct teeth brushing. Includes knowledge of how many times to brush your teeth in a day, the right time, adequate equipment for brushing your teeth, the duration of brushing your teeth, the method of brushing your teeth, etc. This educational program requires media so that the results are more effective. In an age where information technology and media are advanced, telemedicine is an alternative solution⁸.

Telemedicine uses information and communication technology to provide health services remotely by health professionals, including the exchange of information, diagnosis, treatment, prevention of disease and injury, research and evaluation, and continuing education aimed at improving the health of individuals and communities¹⁸. Meanwhile, virtual health services in dentistry are known as

teledentistry¹⁹. One of the virtual teledentistry products is the GIGI.ID application.

GIGI.ID, with the mission of a caries-free Indonesia in 2030, is the first teledentistry application in Indonesia. GIGI.ID is a digital social enterprise startup focusing on equitable access to promotive and preventive health, especially the dental and oral health of the Indonesian people¹⁷. The teledentistry application or application for remote dental and oral health service consultation is expected to be a solution to improve dental and oral health services in the community. In addition to the Check Your Teeth and Dentist features, the GIGI.ID application also provides information related to oral health. Various information available includes how to take care of oral health, how to brush teeth correctly, and the causes of dental and oral disorders. This information and education is a preventive and promotive effort for the community to maintain oral health. The more massive use of teledentistry can help increase public awareness of oral health care and examination. Technology can solve the obstacles that have been faced in the effort to provide dental health services in the community²⁰.

The educational intervention using the GIGI.ID application in this study showed a significant difference in the mother's mentoring variable in the student's teeth brushing action before and after the intervention. Public Elementary School Seberang Mesjid 1 Banjarmasin, is the only school in Kalimantan appointed by GIGI.ID, to provide oral health education, from three regions in Indonesia. In this education, all students and teachers and teaching staff as well as parents and guardians of students who were present, were given knowledge of procedures for carrying out both treatment and handling, if there were health problems in the teeth and mouth.

CONCLUSION

1. Most mothers (52%) have mentoring students' teeth brushing action in moderate criteria.
2. Of the students' teeth brushing actions, the majority (44%) are in the excellent category.
3. There is a correlation between the mother's mentoring and the student's toothbrushing action variable, which is significant and in the same direction. It also has a strong correlation, because the correlation coefficient is 0.551.
4. Bivariate analysis on the variable of mother's mentoring in the student's teeth brushing action before and after the educational intervention using the GIGI.ID application, obtained the result that the p-value = 0.000 (<0.05) means that there is a significant difference in the mother's mentoring in the student's teeth brushing action before and after the intervention.

Conflict of interest

The authors have no conflicts of interest associated with the material presented in this paper.

Acknowledgement

The highest gratitude and appreciation are conveyed to: the Head of the Banjarmasin City Education Office, the Principal, the Teachers, 5th grade students and parents of Public Elementary School Seberang Mesjid 1 in Banjarmasin City, South Kalimantan Province for their willingness, participation and support so that the research can be carried out properly and smoothly.

Author contributions

All authors contributed equally to conceiving the study, analyzing the data, and writing this paper.

REFERENCES

1. Cahyati FD, Purwaningsih E. Hubungan pengetahuan orang tua tentang menggosok gigi dengan karies gigi anak TK Islam Al-kautsar Surabaya. *Indonesian Journal of Health and Medical*. 2021 Apr 2; 1(2):170-8.
2. Jatmika SE, Maulana M. Dental and Oral Health Education for Elementary School Students through Patient Hygiene Performance Index Indicator. *International Journal of Evaluation and Research in Education*. 2018 Dec; 7(4):259-63. <https://doi.org/10.11591/ijere.v7i4.14856>
3. Maliga I, Kesuma EG, Hasifah H. Hubungan tingkat pengetahuan kesehatan gigi dan mulut dalam mencegah karies gigi anak usia sekolah. *Journals of Ners Community*. 2021 Dec 8; 12(2):157-67. Fatimatuzzahro,
4. Fatimatuzzahro N, Prasetya RC, Amilia W. Gambaran perilaku kesehatan gigi anak sekolah dasar di Desa Bangsalsari Kabupaten Jember. *Jurnal Ilmu Kesehatan Masyarakat*. 2017 Jun 19; 12(2).
5. Siswanto SH, Abraham JF, Qurrota'Aini N, Damayanti M, Wulansari AA, Aprilia V, Guna ID, Sary HP, Nabella TI, Jatiatmaja NA, Setijanto RD. The Effect of Identification and Management of Dental Health Problems on Kindergarten and Elementary School Teachers Knowledge Levels in Keputih Public Health Center (Puskesmas). *Indonesian Journal of Dental Medicine*. 2019; 2(1):16-8. <https://doi.org/10.20473/ijdm.v2i1.2019.16-18>
6. Fitriana LB. Pengaruh pendidikan kesehatan tentang cara menggosok gigi dengan video pembelajaran pada anak usia sekolah. *Jurnal Keperawatan Respati Yogyakarta*. 2018 May 30; 5(2):378-82.
7. Bramantoro T, Santoso CM, Hariyani N, Setyowati D, Zulfiana AA, Nor NA, Nagy A, Pratamawari DN, Irmalia WR. Effectiveness of the school-based oral health promotion programmes from preschool to high school: A systematic review. *PloS one*. 2021 Aug 11; 16(8):e0256007. <https://doi.org/10.1371/journal.pone.0256007>
8. Chrismilasari LA, Gabrilinda Y, Martini M. Penyuluhan menggosok gigi pada anak sekolah dasar teluk dalam ii banjarasin. *Jurnal Suaka Insan Mengabdi*. 2020; 1(2):91-7.
9. Ratna D, Masrifan D, Tri W, Supriyana S, Lanny S. A Mobile App (Smart Dental Alarm) on Improving Tooth Brushing Skills among Early Childhood. *International Journal of Nursing and Health Services (IJNHS)*. 2021 Feb 20; 4(1):37-41.
10. Sofiyah Y, Oktavianie E, Lusiani E. Hubungan Peran Orangtua dalam Membimbing Anak Merawat Gigi dengan Kejadian Karies Pada Anak Usia Sekolah 10-12 Tahun di SDN Dayeuh Kolot 12 Kabupaten Bandung. *Jurnal Asuhan Ibu dan Anak*. 2020 Apr 21; 5(1):25-30. <https://doi.org/10.33867/jaia.v5i1.146>
11. Nugraheni H, Subekti A, Ekoningtyas EA, Prasko P. Dental Health Education Using gigi. id Application to Elementary School Students in Banjarmasin City. *Jurnal Kesehatan Gigi*. 2022 Jun 27; 9(1):30-5. <https://doi.org/10.31983/jkg.v9i1.8497>
12. Garbin CA, Soares GB, Dócusse FR, Garbin AJ, Arcieri RM. Oral health education in school: parents' attitudes and prevalence of caries in children. *Revista de Odontologia da UNESP*. 2015 Sep; 44:285-91. <https://doi.org/10.1590/1807-2577.0097>
13. Habibi AA, Gholami M, Shamshiri AR. Evaluation of tooth brushing behavior change by social marketing approach among primary students in Qom, Iran: A quasi-experimental controlled study. *PloS one*. 2018 Oct 22; 13(10):e0206042. <https://doi.org/10.1371/journal.pone.0206042>
14. Hamilton K, Cornish S, Kirkpatrick A, Kroon J, Schwarzer R. Parental supervision for their children's toothbrushing: Mediating effects of planning, self-efficacy, and action control. *British journal of health psychology*. 2018 May; 23(2):387-406. <https://doi.org/10.1111/bjhp.12294>
15. Hoefft KS, Barker JC, Shiboski S, Pantoja-Guzman E, Hiatt RA. Effectiveness evaluation of Contra Caries Oral Health Education Program for improving Spanish-speaking parents' preventive oral

- health knowledge and behaviors for their young children. *Community dentistry and oral epidemiology*. 2016 Dec; 44(6):564-76. <https://doi.org/10.1111/cdoe.12250>
16. Indrawati, A., Badira, M. and Muhammad, I. 'Factors Affecting the Maintenance of Dental and Oral Health in Children of Elementary School of Harapan 1 Class 3 in Sumber Mulyo Rejo District Madya Binjai City', *Journal La Medihealthico*, 2020; 1(5):1-5. <https://doi.org/10.37899/journallamedihealthico.v1i5.147>
17. Lintang JC, Palandeng H, Leman MA. Hubungan tingkat pengetahuan pemeliharaan kesehatan gigi dan tingkat keparahan karies gigi siswa sdn tumaluntung minahasa utara. *e-GiGi*. 2015; 3(2). <https://doi.org/10.35790/eg.3.2.2015.10370>
18. Gustinar M. Deskripsi Cara Menyikat Gigi Pada Anak Kelas 1 Sekolah Dasar Muhammadiyah 2 Pekanbaru. *Photon: Jurnal Sain dan Kesehatan*. 2021 Nov 30; 12(1):20-5. <https://doi.org/10.37859/jp.v12i1.2556>
19. Nah JS. A study on the importance of self-directed learning on career-preparation behavior of department of dental technology students. *Journal of Technologic Dentistry*. 2019; 41(3):233-44. <https://doi.org/10.14347/kadt.2019.41.3.233>
20. Pramudita H, Riyantomo A, EkoBudiyanto N. Sosialisasi Perawatan Gigi dan Mulut pada Anak Berbasis Android. *Jurnal Informatika dan Rekayasa Perangkat Lunak*. 2020 Sep 30; 2(2):113-9. <https://doi.org/10.36499/jinrpl.v2i2.3567>