



Archives of The Medicine and Case Reports

Journal Homepage: <https://hmpublisher.com/index.php/AMCR/index>
eISSN: 2747-2051



The Effect of Online Education on the Level of Knowledge of Methodist-2 Kisaran Junior High School Children in Maintaining Oral Hygiene During the Covid-19 Pandemic

Suci Erawati^{1*}, Tommy Syahputra Pardede¹, Idamawati Nababan¹

¹ Dentistry Study Program, Faculty of Dentistry, Universitas Prima Indonesia, Medan, Indonesia

ARTICLE INFO

Keywords:

Covid-19 pandemic
Oral hygiene
Knowledge
Online education

*Corresponding author:

Suci Erawati

E-mail address:

esuci64@gmail.com

All authors have reviewed and approved the final version of the manuscript.

<https://doi.org/10.37275/AMCR.v2i4.124>

ABSTRACT

The Covid-19 pandemic has changed people's habits to always maintain cleanliness. Good knowledge of the Covid-19 pandemic and oral hygiene as an effort to prevent the transmission of Covid-19 is important to apply during this pandemic, one of which is through online education. This study aims to determine the effect of online education on the level of knowledge of Methodist-2 Kisaran junior high school children in maintaining oral hygiene during the covid-19 pandemic. This type of research is pre-experimental with one group pretest post-test design. The research sample was 50 students of Methodist-2 Private SMP students. Data was collected by dividing the questionnaire twice (pretest and post test) via smartphone. Data were analyzed using paired t test. Based on the results of the study, the average score for knowledge of Methodist-2 Private SMP children in maintaining oral hygiene during the Covid-19 pandemic before being given online education was 34.96 ± 1.795 and after increasing to 37.38 ± 1.383 . The conclusion of this study is that there is an effect of online education on the level of knowledge of Methodist-2 Kisaran junior high school children in maintaining oral hygiene during the covid-19 pandemic.

1. Introduction

Covid-19 pandemic (*Coronavirus Disease* 2019). Covid-19 is caused by the SARS Cov-2 (*Severe Acute Respiratory Syndrome Coronavirus-2*).¹ Coronavirus is one of the main pathogens that attack the respiratory system in humans.² On January 30, 2020, WHO (*World Health Organization*) has declared the COVID-19 pandemic a public health emergency of international concern.¹ This is due to the rapid spread of the covid-19 virus and the widespread death rate causing people to be 'forced to change their habits to be aware and vigilant about cleanliness at all times to avoid the coronavirus. Efforts to maintain personal hygiene do not escape from caring for and maintaining dental and

oral hygiene.^{3,4}

Poor oral and dental hygiene can cause many problems such as cavities (caries) and diseases of the supporting tissues of the teeth (periodontal tissue). In addition, teeth and gums that are not cared for, not maintained, and damaged will cause interference with the masticatory process and can cause cavities (caries) and disease of the supporting tissues of the teeth (periodontal tissue). In addition, teeth and gums that are not cared for, not maintained, and damaged will cause interference with the masticatory process and can interfere with the health of other bodies.⁵ Dental and oral diseases that are mostly suffered by the people of Indonesia are cavities (caries) and diseases of the



supporting tissues of the teeth (periodontal tissue).⁶ According to Riskesdas 2018, the prevalence of people with dental and oral problems in Indonesia has increased sharply from 23.2% in 2007 to 57.6% in 2018.⁷ According to the 2013 Household Health Survey, Indonesia is a country with a higher caries rate, compared to other developing countries which is 73%.⁶ Based on data (Ministry of Health RI, 2019), the most common diseases suffered by the elderly are hypertension 63.5%, dental health problems 53.6%, joint disease 18%, oral health problems 17%, diabetes mellitus 5.7%, heart disease 4.5%, stroke 4.4%, kidney failure 0.8% and cancer 0.4%. This puts dental health problems in second place and oral health problems in fourth.

School-age is an important age in the growth, physical and mental development of children. This school-age is also referred to as the critical period because at this time children begin to develop habits that usually tend to persist into adulthood. One of them is the habit of maintaining dental and oral health.⁸ In fact, there are still many school-age children experiencing dental and oral health problems. The results of a survey conducted by Unilever in 2019 found that the number of Indonesian children who suffered from toothache complaints during the past year was 64%, of which 41% of them stated that the intensity of the pain was moderate to severe.⁸

Knowledge less on the maintenance of dental health becomes one of the factors that cause tooth decay in children.⁹ Knowledge is the basic aspect or factor that shapes a person's behavior. Lack of knowledge will lead to bad behavior and attitudes towards the maintenance of dental and oral health.^{10,11} On the other hand, good and correct knowledge in maintaining and maintaining dental and oral health will realize *oral hygiene* good which shows the overall health status of the individual.¹²

Good knowledge of the COVID-19 pandemic and *oral hygiene* as an effort to prevent the transmission of COVID-19 is important to apply during this pandemic.¹³ Education *online* is one way to provide

knowledge to the general public in the guard, care, and maintenance of oral health as well as measures to prevent the spread of covid-19. education *Online* using technology can support the learning process to become a formal thing.¹⁴ Instead, during school-age children should be educated *online* about oral health, because in school-age children begin to understand the importance of health care as well as restrictions that must be shunned or habits that can affect the health of teeth.¹⁵

The delivery of educational messages online is not only used in information technology but can also be used in other fields such as health.¹⁶ Based on the results Latassomi et al (2021) states that there are significant differences maintain knowledge of *oral hygiene* during a pandemic covid-19 before and after the *online* education.¹² The results Sabaruddin et al (2020) also states that education is done *online*, is effective in improving public knowledg in Baubau city in the prevention of covid-19.¹⁷

2. Methods

The type of research is pre-experiment with one group pretest post-test design to determine the effect of education online on the level of knowledge of Methodist-2 Kisaran Private SMP children in maintaining oral hygiene during the covid-19 pandemic.

The research location is Methodist-2 Private SMP, Kisaran, North Sumatra. This research was carried out from July 2021 - August 2021. The population of this study was 247 students of Methodist-2 Private SMP.

Determination of the number of samples by Roscoe's formula that the appropriate research sample size is 30 to 500. In this study, the researcher used a sample of 50 people following the inclusion and exclusion criteria. Inclusion criteria: Methodist-2 Private SMP students, aged 12 - 15 years, have *smartphones*, are willing to be respondents. Exclusion criteria: Methodist-2 Private SMP students who are not 12 - 15 years old, do not have a *smartphone*, are not willing to be respondents. Tools and materials used in this study: *Smartphone*,



stationery, questionnaire. The method of data collection is primary data, namely data collection is

done by distributing questionnaires to respondents twice (*pretest* and *posttest*).

3. Results

Table 1. Characteristics of respondents

Characteristics	Amount	%
Age		
12 years	2	4,0
13 years	18	36,0
14 years	23	46,0
15 years	7	14,0
Total	50	100,0
Gender		
Male	20	40,0
Female	30	60,0
Total	50	100,0

Based on the characteristics of the respondents in table 1 above, the results showed that the majority of respondents were 14 years old as many as 23 people (46%), 13 years old 18 people (36%), 15 years 7 people (14%) and 12 years only 2 people (4%). In terms of

gender, respondents were dominated by women as many as 30 people (60%), while male respondents were only 20 people (40%).

Table 2. The effect of online education on the level of knowledge of Methodist-2 Private SMP children's level in maintaining *oral hygiene*

Treatment	Mean±SD	P value
Before	34,96 ±1,795	0,000*
After	37,38 ±1,383	

*p<0.05

Based on table 2 above, the results of the statistical test paired t-test showed that there were differences in the level of Methodist-2 Private SMP children's knowledge in maintaining oral hygiene during the covid-19 pandemic before and after being given education online (p=0.000; p<0.05).

4. Discussion

A total of 50 students of Methodist-2 Private SMP, Kisaran who met the inclusion and exclusion criteria were part of this study. Children are the young

From the results of this study, it can be stated that there is an effect of education online on the level of knowledge of Methodist-2 Kisaran Private SMP children in maintaining *oral hygiene* during the Covid-19 pandemic.

generation who are the forerunners of future leaders. Children's dental and oral health is greatly influenced by their maintenance.¹⁸ Based on the results of the study, the majority of respondents were 14 years old.



This is due to the distribution of junior high school students in the age range of 13-15 years. Desmita (2012), children aged 12 years and continuing through adolescence, the characteristics of children's thinking in general at the formal operational stage are obtained through the ability to think abstractly, reason logically, pay attention to appearance and draw conclusions from available information.¹⁹ From the results of the questionnaires answered by the sample, many students do not know the right time to brush their teeth, the content of toothpaste that is good to use when brushing their teeth, candies that can clean and reduce tartar, and tools used to clean food debris in the tooth gap

The dental and oral hygiene of children is also influenced by gender.¹⁸ Based on the results of the study, it was found that the respondents were dominated by women as many as 30 people (60%), while the male respondents were only 20 people (40%). The results of this study are in line with research conducted by Zetu et al (2014) which states that girls have much better dental and oral health than boys.²⁰

This study aims to determine the effect of education online on the level of knowledge of children Methodist-2 Kisaran Private SMP in maintaining oral hygiene during a pandemic covid-19. Covid-19 is a new type of disease caused by the SARS Cov-2 virus. This epidemic has hit 215 countries in the world, thus providing its challenges for the world of health, especially dental and oral health. This is because this virus is found in the oral cavity and oropharynx.^{21,22}

Improvement and maintenance of general health should be carried out, including dental and oral hygiene. The oral cavity is the gateway for disease germs to enter, therefore everyone needs to maintain oral hygiene and health. Various efforts have been made to prevent the spread of COVID-19.²¹ One way to maintain dental and oral health in the community during a pandemic is through education online.²³

Based on the results of the study, it was found that the average knowledge score of Methodist-2 Private SMP children in maintaining oral hygiene during the

covid-19 pandemic before being given education online was 34.96 ± 1.795 and after being given education online was 37.38 ± 1.383 . From the results of this study, it can be seen that there is an increase in the level of knowledge of Methodist-2 Kisaran Private SMP children in maintaining oral hygiene during the covid-19 pandemic before and after being given online education.

The results of this study are in line with research by Azizah (2021) which states that there is a change in behavior in maintaining dental and oral hygiene before and after education online.²⁴ These results are also supported by research Ekoningtyas et al (2020) which states that no change in the target behavior relation to dental health maintenance behaviors including brushing your teeth after breakfast, brushing teeth for two minutes, and brush your teeth before bed of weeks 1,2, 3 to 4 weeks using online education.²³

Online education is learning using the Internet network accessibility, connectivity, flexibility, and the ability to generate different types of learning interactions. Previous research has found that the use of the internet and multimedia technology can significantly change the way knowledge is delivered and can also be used as an alternative to learning carried out in traditional classrooms.²² From the results of the paired t-test that there is an effect of education online on the level of knowledge of METHODIST-2 Kisaran SMP PRIVATE SMP children in maintaining oral hygiene during the covid-19 pandemic. The results of this study are supported by research by Mulyani et al (2020) that educational activities in particular use methods online regularly and periodically to increase knowledge of conditions during the pandemic.²⁵

The system of learning by using online education can bring together educators and students to carry out the learning interactions with the help of internet applications.²⁶ education Online allows for interaction between educators and students via the web, even though they are in far and different places.^{27,28} Based on the results of research, it has been proven that education online can improve student behavior in



maintaining dental and oral health during the pandemic. This can be seen from an increase in the behavior of maintaining dental and oral health after being given online education.

5. Conclusion

There is an effect of education online on the level of knowledge of Methodist-2 Kisaran Private SMP children in maintaining *oral hygiene* during the covid-19 pandemic.

6. References

1. Güner R, Hasanoğlu İ, Aktaş F. Covid-19: prevention and control measures in community. *Turkish Journal of Medical Sciences*. 2020; 50(SI-1): 571–577.
2. Bogoch A, Watts A, Thomas-Bachli C, Huber MUG, Kraemer K, Khan. Pneumonia of unknown etiology in wuhan, China: potential for international spread via commercial air travel, *J. Trav. Med*. 2020.
3. Soesanto S, Octarina, Kusnoto J. Peningkatan kesadaran warga rt 014/rw 008 jatipulo, jakarta barat mengenai kesehatan gigi pada masa pandemi covid-1. *Jurnal Abdiman dan Kearifan Lokal*. 2021; 2(1): 22-29.
4. Sufriani, Aflah R. Gambaran menggosok gigi dan kebiasaan mengkomsumsi makanan kariogenik pada anak usia sekolah di sdn 54 tahjia banda aceh. *J Syiah Kuala Dent Soc*. 2018; 3(1): 37-43.
5. Rahmadhani H. Pentingnya menjaga kesehatan gigi dan mulut. Yogyakarta: Penerbit Buku Deepublish CV.Budi Utama. 2017.
6. Soni ZZZ, Kusniati R, Rakhmawati AK. Description of dental and mouth health status of prolanis patients in kedungmundu health center. *Medica Arteriana*. 2020; 2(1): 43-52.
7. Kemenkes RI. Riset kesehatan dasar. Jakarta: Balitbang Kemenkes RI. 2018.
8. Na Y, Abdulhaq 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. *Jurnal Afiat Kesehatan dan Anak*. 2019; 5(1).
9. Lintang JC, Palandeng H, Leman MA. Hubungan tingkat pengetahuan pemeliharaan kesehatan gigi dan tingkat keparahan karies gigi siswa sdn tumaluntung minahasa utara. *Jurnal e-Gigi*. 2015; 3(2): 567-572.
10. Marimbun BE, Mintjelungan CN, Pangemanan DHC. Hubungan tingkat pengetahuan tentang kesehatan gigi dan mulut dengan status karies gigi pada penyandang tunanetra. *Jurnal e-Gigi*. 2016; 4(2):177-182.
11. Louissa M, Budiman JA, Suwandi T, Arifin SPA. Pemeliharaan kesehatan gigi dan mulut di masa pandemi covid-19 pada orang tua anak berkebutuhan khusus. *Jurnal Abdimas dan Kearifan Lokal*. 2021; 2(1): 1-10.
12. Latassomi F, Erawati S, Molek. Edukasi online terhadap tingkat pengetahuan menjaga oral hygiene selama pandemi covid-19. *Jurnal Ilmiah Pannmed*. 2021; 16(1): 161-164.
13. Yanti NPED, Nugraha IMADP, Wisnawa GA, Agustina NPD, Diantari NPA. Gambaran pengetahuan masyarakat tentang covid-19 dan perilaku masyarakat di masa pandemi covid-19. *Jurnal Keperawatan Jiwa*. 2020; 8(3): 485-490.
14. Bower M. Technology-mediated learning theory. *British Journal of Educational Technology*. 2019; 50(3): 1035–1048.
15. Pradita I, Widodorini T, Rachmawati R. Perbedaan tingkat pengetahuan kesehatan gigi dan mulut pada siswa sekolah dasar di kota (SDN Purwantoro 1 Malang) dan di desa (SDN Sukopuro 3 Kabupaten Malang). *Jurnal e-GiGi (eG)*. 2015; 3(1).
16. Perera V, Mead C, Buxner S, Lopatto D, Horodskyj L, Semken S, Anbar D. Students in fully online programs report more positive



- attitudes toward science than students in traditional, in-person programs. *CBE—Life Sciences Education*. 2017; 16(4): ar60.
17. Sabaruddin, Mahmudah R, Ruslin, Aba L, Nggawu LO, Syahbuddin, dkk. The effectivity of providing online education through video and leaflet media on the knowledge level of covid-19 prevention at baubau city. *Jurnal Farmasi Galenika (Galenika Journal of Pharmacy) (e-Journal)*. 2020; 6(2):309–318.
 18. Ningsih DS. Huubngan jenis kelamin terhadap kebersihan rongga mulut anak panti asuhan. *Odonto Dental Jurnal*. 2(1): 14-19.
 19. Pay MN, Widiati S, Sriyono NW. Identifikasi faktor yang mempengaruhi perilaku anak dalam pemeliharaan kebersihan gigi dan mulut: Studi pada Pusat Pengembangan Anak Agape Sikumana Kota Kupang, Nusa Tenggara Timur, Indonesia. *Majalah Kedokteran Gigi Indonesia*. 2016; 2(1): 27-34.
 20. Zetu I, Zetu L, Dogaru CB, Duta C, Dumitrescu Al. Gender variations in psychological factor as defined by the theory of planned of oral hygiene behaviors. *J Procedia –Soc and Behav Sci*. 2014; 127: 353-357.
 21. Koesoemawati R. Peran ibu dan remaja dalam pemeliharaan kesehatan gigi di masa pandemi covid-19. *Prosiding Webinar Nasional Peranan Perempuan/Ibu dalam Pemberdayaan Remaja di Masa Pandemi COVID-19*, Universitas Mahasarakswati Denpasar. 2020.
 22. Sadikan A, Hamidah A. Online learning in the middle of the covid-19 pandemic. *BIODIK: Jurnal Ilmiah Pendidikan Biologi*. 2020; 6(2): 214–24.
 23. Ekoningtyas EA, Nugraheni H, Benyamin. The effect of community facilitation and empowerment on the implementation of health protocols and night tooth brushing during the pandemic (online monitoring system). *Jurnal Kesehatan Gigi*. 2020; 7(2): 141-146.
 24. Azizah AY. Pengaruh edukasi online terhadap perubahan perilaku menjaga kebersihan gigi dan mulut selama masa pandemi. *Jurnal Ilmiah Pannmed*. 2021; 16(1).
 25. Mulyani EY, Pamungkas RA, Ummanah, Arrozi MF, Saputra S. Peningkatan pengetahuan masyarakat kampus melalui edukasi online tentang mekanisme covid-19. *Jurnal Abdimas* 2020; 5(4): 209-15
 26. Kuntarto, E. Keefektifan model pembelajaran daring dalam perkuliahan bahasa indonesia di perguruan tinggi. *Indonesian Language Education and Literature*. 2017; 3(1): 99-110
 27. Bell S, Douce C, Caeiro S, Teixeira A, Martin-Aranda R, Otto D. Sustainability and distance learning: a diverse European experience? *Open Learning*. 2017; 32(2): 95-102
 28. Arzayeva M, Rakhimzhanov K, Abdrahmanova A, Umitkaliev U. Special aspects of distance learning in educational system. *Anthropologist* 2015; 22(3): 449-54.

