

DENTAL CARIES AND PARENTS' KNOWLEDGE LEVEL IN MAINTAINING CHILDREN'S DENTAL HEALTH THROUGH TELESURVEY IN CIMAH
(GAMBARAN KARIES GIGI DAN TINGKAT PENGETAHUAN ORANG TUA DALAM PEMELIHARAAN KESEHATAN GIGI ANAK MELALUI TELESURVEY DI KOTA CIMAH)

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ABSTRACT

Dental caries is the most common dental disease suffered by the Indonesian population, especially elementary school children—an oral dental condition caused by various factors, including children's lack of parental knowledge. The existence of a government program through the UKGS requires screening for every child in elementary school. The Covid-19 pandemic has hampered the screening process in elementary schools because students study online at home. This study aims to conduct a telesurvey of dental caries in children and determine parents' knowledge in maintaining the health of children's oral teeth. The cross-sectional method and the questionnaire were used in this study as a measuring tool. Furthermore, dental examinations are carried out using a gadget/mobile phone uploaded to the google form. The analysis used in this study is the univariate method. The results showed that 340 elementary school students at Padasuka Health Center had the primary

teeth' caries index in the medium category. The caries index of the permanent teeth was in the deficient class. The prevalence of caries in elementary school students at Padasuka Health Center is 80%. At the same time, parental awareness regarding the maintenance of children's oral health is considered in the high category. The telesurvey conducted on elementary school students at Padasuka Health Center was used as an illustration to determine the status of oral health, particularly dental caries. Hopefully, the telesurvey will make it easier for respondents and health workers to assess oral health.

Keywords: children; dental caries; knowledge; telesurvey

ABSTRAK

Karies gigi merupakan penyakit gigi yang paling banyak diderita oleh penduduk Indonesia khususnya anak sekolah dasar. Karies gigi merupakan penyakit gigi mulut yang disebabkan oleh berbagai faktor diantaranya kurangnya pengetahuan orang tua terhadap anak. Adanya program pemerintah melalui UKGS mengharuskan adanya penyaringan bagi setiap anak di sekolah dasar. Terjadinya pandemi Covid-19 telah menghambat proses penyaringan di sekolah dasar karena siswa belajar online di rumah. Penelitian ini bertujuan untuk melakukan telesurvei karies gigi pada anak dan mengetahui pengetahuan orang tua dalam menjaga kesehatan gigi dan mulut anak. Metode cross-sectional dan kuesioner digunakan dalam penelitian ini sebagai alat ukur. Selanjutnya pemeriksaan gigi dilakukan dengan menggunakan gadget/handphone yang diunggah ke google form. Analisis yang digunakan dalam penelitian ini adalah metode univariat. Hasil penelitian menunjukkan pada 340 siswa SD di Puskesmas Padasuka indeks karies gigi sulung berada pada kategori sedang dan indeks karies gigi tetap berada pada kategori sangat rendah. Prevalensi karies pada siswa sekolah dasar di Puskesmas Padasuka adalah 80%. Sedangkan tingkat kesadaran orang tua mengenai pemeliharaan kesehatan gigi dan mulut anak termasuk dalam kategori tinggi. Telesurvey yang dilakukan pada siswa sekolah dasar di Puskesmas Padasuka digunakan sebagai gambaran untuk mengetahui status kesehatan gigi dan mulut khususnya karies gigi. Diharapkan dengan adanya telesurvei ini dapat mempermudah responden dan tenaga kesehatan untuk menilai kesehatan gigi dan mulut.

Kata kunci: anak; karies gigi; pengetahuan; teledentistry

INTRODUCTION

Based on data from Riskesdas Indonesia in 2018, 57.6% of the population had dental and oral health problems, only 10.2% received treatment by medical personnel. Caries or cavities are the most common dental problems in Indonesia. A survey shows 45.3% of the Indonesian population has cavities. There were 55.6% of dental and oral health problems in Indonesia in the aged group of 10-14, and only 9.4% received treatment. One of the factors that cause high dental and oral health problems in children is the lack of parental knowledge about dental and oral health. Information and education provided by parents can affect the behaviour of their children.^{1,2}

Several factors, such as limited data on dental and oral health status, lack of parental knowledge about dental and oral health in Indonesia, and the COVID-19 pandemic that caused limited health services, became one of the focuses and objectives of this study. Services such as dental care, counselling, and screening usually carried out for elementary school children through the UKGS program were not carried out during the pandemic in Padasuka Cimahi Public Health Center. At Padasuka, the first Covid-19 case was reported in March 2020. There were 222 people confirmed positive and five people confirmed dead by the end of 2020. JHDS 2021

Covid-19 has changed people's daily lives by using masks, washing hands properly, and keeping the distance while you are outside. Changes are also felt in the health sector, especially in dentistry. Several hospitals use online technology utilizing teledentistry and telesurveys. The methods are to conduct consultations, examinations, make appointments and provide information.³

Screening during the pandemic, given that surveying with direct examination has a significant enough risk. Telesurvey can be an alternative renewal. Telesurvey is an internet facility in the form of a google form for data collection. This method was chosen to reduce contact and prevent the transmission of COVID-19.³ In this study, we will conduct a dental examination and determine dental caries in children. Other than that, provide information to parents regarding the maintenance of children's dental and oral health at Padasuka Public Health Center, Cimahi, using Telesurvey.

METHOD

A descriptive method has been used in this study to observe the description of children's dental caries and parents' knowledge about maintaining their children's oral health. The subjects of this study were elementary school students in grades I, III, V at Padasuka Health Center, Cimahi City.

Inclusion criteria in this study were elementary school students in grades I, III, V; Respondents willing to join in the research; Completed filling out the questionnaire via google form; Have a device for intraoral photos, which are actual photos of the respondent's teeth. Exclusion criteria in this study were blurry and unclear intraoral photos; The intra-oral picture was cut off, and some teeth were not visible on the intra-oral image.

The sampling technique used in this research is purposive sampling. The measuring instruments used in this study were questionnaires and intra-oral photos from cameras uploaded on a google form. Before the respondent uploads an image, the respondent will be directed to watch YouTube as a guide for an independent dental examination at the following link: <https://www.youtube.com/watch?v=zb9vgedVVQc>.

After seeing the guide, respondents can input the data in the google form with the following link: <http://bit.ly/2KbjBOV>. The collected data is then processed in a univariable manner. Data will be presented in the form of graphs and tables. This study has received approval from the Medical Ethics Universitas Jenderal Achmad Yani Cimahi with the protocol number: M2.2011.049.

RESULT

This study is a dental and oral health telesurvey that aims to describe the caries index and the level of parental knowledge of elementary school students in grades I, III, and V at Padasuka Public Health Center. Telesurvey was considered by conducting counselling, providing online forms for collecting dental examination data, and giving questionnaires regarding oral health. Telesurvey program as an alternative to dental and oral examinations during the Covid-19 pandemic prevent the transmission of the covid-19.

This dental and oral health telesurvey was collected on elementary school students in grades I, III, and V who attend school in the working area of Padasuka Health Center. The number of respondents who collected a dental check-up and filled out a questionnaire on the google form was 491. However, only 340 students could have finished a dental examination. The respondent's intraoral photos were blurry and unclear, as well as intraoral images or teeth that were not visible on the images, so they could not be included in the inclusion criteria.

Table 1. Characteristics of students based on age in elementary school at Padasuka Health Center, Cimahi.

According to **Table 1**, most of the students at the Primary School who took part in this study were seven years old or 125 children in total.

Table 2. Description of dental caries in elementary school students at Padasuka Health Center, Cimahi

Index	Score
dmf-t	3.564705882
DMF-T	0.6411764706
Caries Prevalence	80%

The results showed that the students' caries index of primary teeth was 3.5, which was considered a moderate category. The caries index of permanent teeth was 0.6, which was considered a deficient category. The prevalence of caries in elementary school students is 80%.

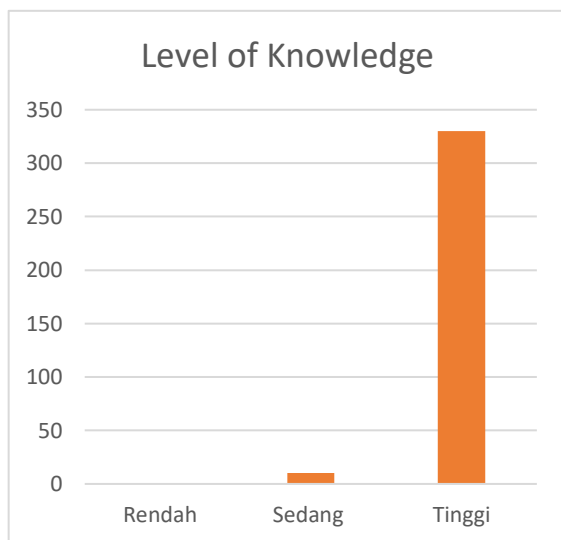
Table 3. Description of parental knowledge of students in elementary schools at Padasuka Health Center, Cimahi

Questions	Yes		No		Do Not Know	
	n	%	n	%	n	%
Infectious cavities	82	24,12	218	64,12	40	11,76
Development of a vaccine that affects cavities	27	7,94	150	44,12	163	47,94
Cavities baby teeth treatment	273	80,3	52	15,29	15	4,41

Family members who have their own toothbrush	338	99,41	2	0,59	0	0
Sharing the same cutlery with children at mealtimes	85	25	255	75	0	0
Tasting food before giving it to children	253	74,41	87	25,59	0	0
Children have the habit of drinking bottle milk / sucking fingers / sucking	104	30,59	236	69,41	0	0
The importance of maintaining the cleanliness of the tongue	339	99,71	1	0,29	0	0
Knowledge of the fissure sealant	48	14,12	292	85,88	0	0
Giving fluoride to children in the first 3 years of age	142	41,76	198	58,24	0	0

The results showed that as many as 64.12% of the parents did not know that cavities were contagious. Most parents (80.3%) already see those baby teeth with cavities must be treated or filled. As many as 99.41% of family members have their toothbrushes. Parents who know to keep their tongues clean are 99.71%. However, knowledge about fissure sealants and fluoride administration in children aged three years is still limited.

Figure 1. Parents' level of knowledge regarding the maintenance of children's dental health in elementary school students in Padasuka Health Center area, Cimahi



DISCUSSION

This research was conducted through telesurvey and teledentistry. Telesurvey is one of the survey methods in collecting data using electronic telecommunications, including e-mail, internet, telephone, video phone, fax. Currently, developing through mobile phones or cell phones. Telesurvey, in this study, aims to determine the status of oral health through dental caries data in children and the level of knowledge of parents in maintaining the oral health of their children. Currently, Telesurvey is used as an initial screening option in assessing oral dental health, namely dental caries, by using a mobile phone.

As a result of the COVID-19 pandemic, teledentistry has been utilized more frequently due to social distancing regulation. Minimizing face to face

appointments to reduce risk factors or transmission of viruses

Teledentistry is defined as the 'provision of real-time and offline dental care such as diagnosis, treatment plan, consulting and follow up via electronic transmission.

Caries is an infectious disease resulting from the interaction of bacteria. Dental caries occurs due to the demineralization process from the bacteria on the tooth surface, which is closely related to cariogenic foods' consumption. In a certain period, acidic bacteria will damage the structure of the enamel or dentin of the teeth and cause cavities.^{4,5}

Dental health problems such as caries generally often occur in children who enter school and have a high caries risk.^{6,7} In this dental and oral health telesurvey study, respondents who took part in the study ranged from 6-12 years. Suciari et al. in Hidayat and Sinta's research (2018), children aged 6-14 years have a caries risk and are a critical age group and have unique characteristics, namely the transition or change from primary teeth to permanent teeth.⁸

In Indonesia, the incidence of dental caries in children is still high. According to data from the PDGI (Indonesian Dental Association), 89% of caries sufferers are children under 12. In general, children's oral hygiene is worse because children eat more

food and drinks that cause caries than adults. If children consume too many foods or beverages that contain cariogenic and rarely clean them, they can be at risk of developing caries.^{8,9}

This research showed that 80% of children in Cimahi city have dental caries. Primary index teeth in this research showed that a moderate category.

The knowledge of parents regarding dental health care was obtained through the questionnaires. The first question is infectious. The tooth cavities showed that the answer is considered correct is the answer "no" the results in the table show as many as 218 (64.12%) parents answered the first question with the correct answer. Based on the previous study showed that *Enterococcus faecalis* has an essential role in human oral cavity infection. But this bacterial is one of the vital species in the treatment of endodontic. This virulence factors colonization and resistance of organism against the host immune response.¹⁰ So, based on this study, there is no direct infection of tooth cavities or decay—the bacterial infection damage the host tissues mediated by the host response to the bacteria and its products.

The answer to the second question, which is "development of a vaccine that affects cavities", that is considered correct is the answer "no", and the rest of 163 (47.94%)

parents answered do not know to this question. Tooth cavities or tooth decay is multifactorial, with many causes to be tooth decay. Vaccine cavities are only one factor in preventing dental caries.¹¹

In the third and fourth questions, the answer that is considered correct is "yes". A total of 273 (80.30%) parents answered correctly for the third question, and as many as 338 (99.41%) parents responded correctly for the fourth question. All children should have access to preventive and treatment-based dental care to eliminate existing disparities in access to oral health care and improve areas where advocacy for children's oral health is most needed. Tooth decay is one of the most common chronic childhood conditions.¹² Prevention, diagnosis, and treatment of tooth decay are highly beneficial, can be undertaken, and should be encouraged during pregnancy with no additional fetal or maternal risk compared with the risk of not providing care.¹³

For the fifth question, the answer that is considered correct is "no". A total of 255 (75%) parents answered with the right answer. In the sixth question, as many as 253 (74.41%) parents responded to questions with incorrect answers, where the correct answer to the sixth question should be "no".

The seventh question is Children have the habit of drinking bottled milk / sucking fingers / sucking answer that is considered

correct is "no". A total of 236 (69.41%) parents answered with the correct answer. Based on this research, most parents know the problem of oral health affecting children. Mostly the children do not have a bad habit to the effect of their oral health.

In the eighth question, as many as 339 (99.71%) parents answered with the correct answer. For the ninth and tenth questions, the answer that is considered correct is "yes", but the results in the table show that more parents answered the question with inaccurate answers where as many as 292 (85.88%) parents answered "no" for the ninth answer and 198 (58.24%) parents answered "no" for the tenth answer.

Figure 1 shows 330 (97.06%) parents have a high level of knowledge about dental health maintenance, and ten parents (2.94%) have a moderate level of expertise. However, none of the parents has a low level of knowledge. The average level of parental knowledge is 16.13, which is considered in the high category. This study, same with the previous study, showed that Parents of children in the test group had better oral health knowledge. Oral health-related understanding of children and their parents seems to be associated with children's oral health-related behavior. Parents' behaviors, but not attitudes, were associated with children's oral health behavior.

Children's age is one of the most

vulnerable ages to experience dental health problems such as caries and other dental health problems. Parental assistance is needed to guide children in maintaining oral hygiene and health. Knowledge regarding dental and oral health among parents becomes one of the essential factors that can affect children's dental health. Lack of knowledge and understanding of parents about dental health can lead to a lack of maintenance of children's dental and oral health, which will impact oral and dental health.¹⁴

Dewi et al. (2016) researched the relationship between parental knowledge and dental caries status of children aged 7-12 years at SD 04 Kampung Olo Padang showed a significant relationship between the level of parental involvement knowledge the incidence of dental caries. Parents who have a high level of expertise have children with a low level of caries.¹⁵

Parents have a massive influence in improving the dental and oral hygiene status of children. In addition to parental education and knowledge, the participation and attention of parents are needed to maintain the cleanliness and health of children's teeth and mouth. Parents can maintain the cleanliness and health of their children's teeth, such as teaching children how to brush their teeth properly and reminding them regarding the habits that can cause dental and oral health problems.^{16,17}

CONCLUSION

This study concludes that the caries index of the primary teeth is in the medium category, and the caries index of the permanent teeth is shallow. Parents' level of knowledge regarding the maintenance of their child's oral health is in the high category. Telesurvey is an option in the screening to find out the general status of dental and oral health. Telesurveys need to be considered to develop a database in student dental health reports, and this is to obtain dental, medical histories and increase dental health promotion immediately.

CONFLICT OF INTEREST

The authors reported no potential conflict of interest

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