

Manuscript received January 12, 2022; revised January 31, 2022; accepted January 31, 2022; date of publication June 20, 2022;

Digital Object Identifier (DOI): <https://doi.org/10.35882/ijahst.v2i3.12>

This work is an open-access article and licensed under a Creative Commons Attribution-ShareAlike 4.0 International License ([CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/))

# Knowledge of Parents about Covid with Anxiety Levels in Taking their Children to Pediatric Dentists during Covid-19 Pandemic (A Cross-Sectional Survey)

Rizma Khumayanti<sup>1</sup>, Imam Sarwo Edi<sup>1</sup>, Silvia Prasetyowati<sup>1</sup>, Isnanto<sup>1</sup>, and Wannarat Lawang<sup>2</sup>

<sup>1</sup> Department of Dental Health, Poltekkes Kemenkes Surabaya, Indonesia

<sup>2</sup> Burapha University, Chonburi, Thailand

Corresponding author: Rizma Khumayanti (e-mail : [rizmakhumayanti12@gmail.com](mailto:rizmakhumayanti12@gmail.com)).

**ABSTRACT** Knowledge is the result of human sensing, or the result of someone knowing about objects through the senses they have, namely the senses of sight, smell, hearing, taste, and touch. Covid-19 is a disease caused by SARS-CoV-2 which infects the respiratory system. The spread of Covid-19 has the potential to trigger anxiety disorders in the community. The problem in this study is that data on the visitation of pediatric patients at the FDS Prapen dental clinic showed a decrease in the number of visits during the Covid-19 pandemic. The purpose of this study was to determine the relationship between parental knowledge about Covid-19 and the level of anxiety in taking their child to a pediatric dentist during the Covid-19 pandemic. This research method was a cross-sectional analytic research study design. The samples in this study were the parents of patients who took their children to the FDS Prapen clinic during the Covid-19 pandemic, with the amount of 40 respondents and the sample calculation used accidental sampling technique. The data collection method used was a questionnaire. Data analysis technique used the Rank Kendall's Tau test. The results showed that the knowledge of respondents about Covid was in (85%) good category and (92,5%) respondents did not experience anxiety when taking their children to a pediatric dentist during the Covid-19 pandemic. Analysed data showed ( $p=0,361$ ), it means  $p$  values  $> 0,05$  it be conclude that there is no relationship between the level of knowledge about Covid with anxiety Level in Taking care the children dentist during Covid-19 pandemic. This research can be additional information for clinic dentistry especially in the management of patient care during the Covid-19 pandemic and for parents of patients who experience anxiety.

**INDEX TERMS** Anxiety, Covid-19, Knowledge of Parent.

## I. INTRODUCTION

Covid-19 (Corona Virus Disease 2019) is an infectious disease caused by a newly discovered type of corona virus. This virus began to spread in the city of Wuhan, China, in December 2019. Covid-19 became a pandemic that occurred in many countries around the world, including in Indonesia (WHO). The first confirmed Covid-19 cases in Indonesia were reported on 2 March 2020, 1,341,314 individuals had been confirmed positive with 85,9% recovery and 2,7% case fatality rates [1]. WHO survey showed that the Covid-19 pandemic has disrupted public access to health services. There needs to be an effort to adjust dental and oral health services to prevent transmission from both patients and dentists. Dental health workers have a high risk to have infected by the Covid-19 virus because they are directly

exposed to patient droplets and there are high possibility of these droplets still sticking to the workspace and work tools used.

Anxiety is a feeling fear of something happening caused by the anticipation of danger and is a signal that helps people to prepare in taking action when facing the threats. The influence of demands, competition, and disasters that occur in life can have an impact on physical and psychological health. One of the psychological effects is anxiety. Dental anxiety is a common response that a person will experience before dental treatment is done [2]

Previous research [3] explains that dental care in children increases stress for parents. Research older [4] reveals that dental anxiety is something that is often experienced by some people who will perform dental procedures.

The prevalence of laboratory-confirmed COVID-19 was 1.9% for dentists and 0.8% for dental assistants. higher prevalence was found for COVID-19-related clinical phenotypes both in dentists (15.0%) and dental assistants (11.8%) [5].

Based on preliminary data from the Family Dental Solution (FDS) dental clinic, there was a 65.5% decrease in pediatric patient visitors for the 2020 period (during the pandemic) with 162 visitors compared to the percentage of pediatric patient visits in 2019 (before the pandemic) with 470 visitors. So the problem with this research is the decrease in the number of visits by pediatric dental patients during the Covid-19 pandemic.

Knowledge is the result of human sensing, or a person's result of an object through things obtained, namely in sight, smell, hearing, taste, touch, and so on [6]. Based on this description, if a child has never heard, seen, or performed dental treatment before then the child can experience it. Parents played a key role in children's anxiety and fear development. [2]

Dental anxiety is a common finding amongst patients visiting dental clinics. This fear of dental clinics is further exacerbated by the current pandemic situation, as dental clinics are an environment in which there is a high risk of contracting the virus [7].

Parents have a role in the health of their family members, especially their children. Parental knowledge must be sufficient, especially knowledge about health, including dental and oral health. Lack of knowledge in parents about dental and oral health will affect the dental health of their children. Their knowledge that is quite good about dental and oral health is likely to have an effect on the dental health of their children.

Parents must experience anxiety if their children have dental caries or if their children are infected with Covid-19. Parents' assumptions about the transmission of Covid-19 through dental care during the Covid-19 pandemic make parents anxious to take their children to the dentist. If parents have good enough knowledge about dental health and Covid-19, then parents are able to give direction to their children to keep checking their teeth during the Covid-19 pandemic.

The difference between this research and previous research is that the variable is the patient parents. The aim of this study was to determine the relationship between parental knowledge about Covid-10 and the level of anxiety taking their child to a pediatric dentist during the Covid-19 pandemic.

The aim of this study is to determine of correlation between Knowledge of parents about Covid with anxiety levels in taking care their children to pediatric dentist during Covid pandemic.

## II. METHODS

This research was conducted at the dental clinic of FDS Prapen Surabaya which was carried out from January to February 2022.

This study was an analytic study with a cross-sectional approach. The population in this study were parents who took their children for dental checked-up to a pediatric dentist at the dental clinic of FDS Prapen Surabaya in January-February 2022 with a total of 40 respondents.

The primary data collection technique in this study was through filling out a questionnaire from the g-form regarding parental knowledge about Covid-19 with the anxiety level of taking their children to a pediatric dentist during the Covid-19 pandemic. Meanwhile, secondary data was obtained from the medical records of patients who visited the dental and oral clinic of FDS Prapen Surabaya for the past year.

The level of parental knowledge about Covid was obtained through a questionnaire. Each respondent who answered correctly was given a score of 1 and the wrong answer was given a score of 0. The number of correct answers was divided by the number of questions on the questionnaire and multiplied by 100% so that the category of good assessment was 76%-100%, moderate was 56%-75%, poor < 56%. while the measurement of anxiety was obtained psychologically using the HARS (Hamilton Anxiety Rating Scale) anxiety questionnaire

The level of parental knowledge about Covid was obtained through a questionnaire. Each respondent who answered correctly was given a score of 1 and the wrong answer was given a score of 0. The number of correct answers was divided by the number of questions on the questionnaire and multiplied by 100% so that the category of good assessment was 76%-100%, moderate was 56%-75%, poor < 56%. while the measurement of anxiety was obtained psychologically using the HARS (Hamilton Anxiety Rating Scale) anxiety questionnaire [8].

**TABLE 1**

**Distribution of Respondents Characteristics by Age, Gender, Education, and Occupation at the Dental Clinic FDS Prapen Surabaya**

Characteristics	Frequency	Percentage
<b>Age</b>		
21-30	11	27,5%
31-40	26	65%
41-50	3	7,5%
<b>Gender</b>		
Male	5	17,5%
Female	33	62,5%
<b>Education Level</b>		
High School	6	15%
Diploma or Bachelor	30	75%
Master	4	10%
Doctoral	0	0
<b>Occupation</b>		
Housewife	10	25%
Self-Employee	17	42,5%
Government	2\	5%
Employee	4	10%
BUMN/BUMD	1	2,5%
Teacher or Lecturer	5	12,5%
Health Worker	1	2,5%
TNI/POLRI		
<b>TOTAL</b>	<b>40</b>	<b>100%</b>

The data collection procedure was carried out by the researcher by looking at the patient's medical record, then the researcher contacted the respondent to explain the procedure for filling out the questionnaire and gave an agreement form to be used as a respondent in this study.

After data collection was completed, then the data was recapitulated and processed using the SPSS version 21 application. The analytical technique used in this study used the Rank Kendall Tau statistical test to determine the relationship between parental knowledge about Covid-19 and the level of parental anxiety when taking their children to the pediatric dentist during the Covid-19 pandemic.

### III. RESULT

The results of the study include the characteristics of the respondents consisting of age, gender, last education and occupation, while the specific data consists of the level of parental knowledge about Covid-19 and the level of anxiety in parents. Characteristics of respondents showed that the respondents were 26 people aged 31-40 years (65%) (TABLE 1). Based on the research, most of the respondents were female with a total of 33 people (62.5%). From the characteristics of education, it showed that 30 respondents (75%). From the results of the characteristics of the most self-employee with a total of 17 people (42.5%).

TABLE 2

Frequency Distribution of Parents Knowledge Level Category about Covid 19

Education Level	Frequency	Presentage (%)
Good	34	85%
Moderate	6	15%
Poor	0	0
<b>Total</b>	<b>40</b>	<b>100%</b>

The frequency distribution of parental knowledge level categories about Covid 5 was known that 85% of respondents who have answered the research questionnaire were included in the good knowledge category with a total of 34 people and 15% of respondents have sufficient knowledge of 6 people (TABLE 2).

TABLE 3

Frequency Distribution of Parents Anxiety Levels of Caring for their Children

Anxiety Level	Frequecy	Percentage(%)
There was no anxiety	37	92,5%
Low	3	7,5%
Moderate	0	0
High	0	0
<b>Total</b>	<b>40</b>	<b>100%</b>

The frequency distribution of parental anxiety level categories when taking their children to a pediatric dentist during the Covid-19 pandemic it was known that 92.5% of respondents in this study did not experience anxiety with 37

people, and 7.5% of respondents experienced mild anxiety with the total of 3 people (TABLE 3).

TABLE 4

Correlation Results of Parents' Knowledge Level about Covid with Parents' Anxiety Levels for Caring their Children to Pediatric Dentists during the Covid-Pandemic

Parents Knowledge Level about Covid	Anxiety Level				N	P.Value
	There was no anxiety	Low	Moderate	High		
Good	37	2	0	0	40	0,361
Enough	0	1	0	0		
Less	0	0	0	0		
Sever	0	0	0	0		

Rank Kendall Tau correlation results obtained asymp.sig value (p) 0.361. Because the value of asymp.sig (p) > 0.05, it can be concluded that there was no relationship between the level of parents' knowledge about Covid and the level of parents' anxiety in taking their children to a pediatric dentist during the Covid-19 pandemic (TABLE 4).

### IV. DISCUSSION

Based on TABLE 2 it is found that the knowledge of parents was in a good category, this was due to several factors, one of which was internal factors such as age, experience, education, and occupation. According to Notoatmodjo [9] there are several factors that influence people knowledge. Several factors that can affect people knowledge are internal factors that come from within the individual itself and external factors that come from outside the individual that can affect knowledge

The first factor that affected the knowledge of respondents in the good category in this study was education, this was because most of the respondents are highly educated. Education is something that can increase one's knowledge. With higher education, a person will be able to get more information from both formal and non-formal so that it can produce increased knowledge.

The higher education level, the easier it will be for someone to receive and understand the information obtained. In the previous study, higher education was associated with significantly higher knowledge in preventive behavior and action in illness, and knowledge of COVID-19 transmission routes [10]. In addition, the increase in information obtained will also increase a lot of new knowledge. The higher education of parents, will resulting in the easier it is to receive information about a problem [11].

The second factor that affects parents knowledge because most of the respondents were adults. The higher age of people, the more information obtained, besides that the level of maturity of a person in thinking and making decisions is also increasing. This affects people mindset and grasping power so that the knowledge they get will getting better. Parental knowledge is very important in underpinning supportive and unsupportive behavior. Behavior that is based

on knowledge will last longer than behavior that is not based on knowledge.

Based on TABLE 2 it was known that most of the respondents already know about Covid-19, this was indicated by the majority of respondents answering correctly to the question about what was meant by Covid, the signs and symptoms of people infected with Covid-19. This was in accordance with the results of research conducted by Marzieh (2020) [10] and Yanti dkk (2020) [12] that the majority of respondents answered correctly on the question items given related to the Covid-19 pandemic.

Another study at Medical University in China [13] also stated that the respondents had good knowledge. The description of parental knowledge in this study was mostly in the good category, but some moderate knowledges were found in a small amount among other respondents.

Good parental knowledge about Covid-19 can show the readiness of parents to take their children to a pediatric dentist even in the middle of the Covid-19 pandemic. In addition, parents can also take early prevention so that the risk of contracting Covid is reduced [14].

Based on the data analysis that has been carried out on the respondents for the variable level of anxiety, it was known that the most respondents were in the category of not anxious. This was because the results of respondents' answers on the questionnaire sheet are mostly not anxious. These results were in line with research conducted at the RSGM University of Jember, which found that almost all of these patients did not experience anxiety. While the level of anxiety of patients at the Jazan, Saudi Arabia was low and moderate anxiety [15].

Anxiety is a form of feeling afraid that something will happen caused by anticipating danger and signals. This happens to help someone in preparing to take action to face a threat in the form of demands, competition and disasters that occur in life that can have an impact on physical and psychological health [16]. Anxiety is a general feeling that can be felt by everyone when faced with a threatening situation. Moreover, the current situation, many respondents experience mild anxiety, this can be influenced by several things, including information about Covid-19 and health workers who always remind about health protocols that must be obeyed when visiting health services [17]. The classification of anxiety is divided into 4 according [15] namely mild anxiety, moderate anxiety, severe anxiety and panic. Anxiety factors can be influenced by several aspects including traumatic experience, dental equipment, age, and the operator, number of sibling [18]. Study in Nigeria also stated that as a person's age increases, the anxiety level also decreases. This is because young people are easier to experience stress than old people where they often experience various complex problems. The Decrease anxiety with age can be due to the aging process itself characterized by general decline in anxiety [19].

According to research conducted by Isyana and Puspitasari [20] a person's anxiety can be better overcome if someone is categorized as having good knowledge, while someone's

anxiety tends to be more severe if the person is categorized as having less knowledge. Anxiety is not only emotional pain but also because of knowledge errors, the more knowledge one knows, the easier it will be to overcome anxiety

One of the factors that influence anxiety in highly educated parents is that they can easily access correct information so that they can calm themselves and are not easily influenced by fake news (hoax). In addition, people with higher education can also be more careful in making decisions by considering various perspectives. Other research showed a significant difference between the level of state and trait anxiety of the respondent [21]. Someone who is highly educated has the provision to understand the procedures for visiting public places and health services in the midst of the Covid-19 pandemic, namely complying with health protocols set by the government. Children learn from their parents about the word around them, if parents appear calm and relaxed, a child will not be anxious [22]. [23] Therefore, parents who do not experience anxiety show their readiness to take their child to a pediatric dentist during the Covid-19 pandemic so that they do not hesitate to do dental treatment in the middle of the covid pandemic.

Based on the results of data analysis, it showed that there was no relationship between the level of knowledge of parents about Covid and the level of anxiety of parents taking their children to a pediatric dentist during the Covid-19 pandemic. This happened because parents' knowledge about Covid was included in the good category so that parents did not experience anxiety or doubt in themselves to take their children to a pediatric dentist during the Covid-19. So that dental health problems in children could be handled despite the Covid-19 pandemic

In addition, this was in accordance with the other study [24] [25] which showed that the respondents in her research had good knowledge. The research showed that the respondents' good level of knowledge about Covid-19 and the level of anxiety they felt included in the mild category. This showed that good knowledge could reduce a person's level of anxiety about Covid-19 so that early prevention could be done so that the risk of infected was small

The decrease in the number of pediatric patients during the Covid-19 pandemic was not caused by the level of anxiety experienced by parents. But because the new regulation regarding technical guidelines for dental services during the Covid-19 pandemic which affected in the changes of services pattern to be provided, operating hours, and restrictions on the types of treatments that may be performed [17] In addition to service restrictions, demographic location, patient's motivation, and the patient's socioeconomic status could also affect the decrease in the number of patient visits, considering that during the Covid-19 pandemic, the most disadvantaged factor was the economy.

## V. CONCLUSION

The purpose of this study was to determine the relationship between parental knowledge about Covid-19 and the level of



anxiety in taking their children to pediatric dentist during the Covid-19 pandemic.

The results of data analysis showed that the level of parental knowledge about Covid (85%) good category. and (92,5%) parents did not experience anxiety when taking their children to a pediatric dentist during the Covid-19 pandemic. The results of Rank Kendall Tau showed ( $p$  value = 0,361) which means there was no relationship between parental knowledge about Covid and the level of anxiety about taking their child to a pediatric dentist during the Covid-19 pandemic. Therefore, the majority of the participant have sufficient knowledge about the disease were answered with a great correct answer. That is why no significant correlation was found between the parental knowledge about Covid and level anxiety.

For further research, it is hoped that further researchers can expand the scope of research and add several variables and conduct additional interviews in order to obtain results more accurate.

## REFERENCES

- [1] N. L. A. Megasari *et al.*, "Seroepidemiological study of SARS-CoV-2 infection in East Java, Indonesia," *PLoS One*, vol. 16, no. 5 May, pp. 1–9, 2021, doi: 10.1371/journal.pone.0251234.
- [2] L. Wu and X. Gao, "Children's dental fear and anxiety: Exploring family related factors," *BMC Oral Health*, vol. 18, no. 1, pp. 1–10, 2018, doi: 10.1186/s12903-018-0553-z.
- [3] F. A. Alqhtani and S. C. Pani, "Parental anxiety associated with children undergoing dental treatment," *Eur. J. Dent.*, pp. 285–289, 2019, doi: 10.23804/ejdp.2019.20.04.05.
- [4] R. M. Peloso *et al.*, "How does the quarantine resulting from COVID-19 impact dental appointments and patient anxiety levels?," *Braz. Oral Res.*, vol. 34, pp. 1–11, 2020, doi: 10.1590/1807-3107BOR-2020.VOL34.0084.
- [5] S. Jungo *et al.*, "Prevalence and risk indicators of first-wave COVID-19 among oral health-care workers: A French epidemiological survey," *PLoS One*, vol. 16, no. 2 February, pp. 1–19, 2021, doi: 10.1371/journal.pone.0246586.
- [6] G. P. Sezgin and B. Şirinoğlu Çapan, "Assessment of dentists' awareness and knowledge levels on the Novel Coronavirus (COVID-19)," *Braz. Oral Res.*, vol. 34, pp. 1–12, 2020, doi: 10.1590/1807-3107BOR-2020.VOL34.0112.
- [7] A. Lal *et al.*, "Comparison of Dental Anxiety While Visiting Dental Clinics before and after Getting Vaccinated in Midst of COVID-19 Pandemic," *Vaccines*, vol. 10, no. 1, pp. 1–10, 2022, doi: 10.3390/vaccines10010115.
- [8] I. M. Ramdan, "Reliability and Validity Test of the Indonesian Version of the Hamilton Anxiety Rating Scale (HAM-A) to Measure Work-related Stress in Nursing," *J. Ners*, vol. 14, no. 1, p. 33, 2019, doi: 10.20473/jn.v13i2.10673.
- [9] Z. He *et al.*, "Factors influencing health knowledge and behaviors among the elderly in rural China," *Int. J. Environ. Res. Public Health*, vol. 13, no. 10, pp. 1–16, 2016, doi: 10.3390/ijerph13100975.
- [10] M. Nemat, B. Ebrahimi, and F. Nemat, "Assessment of Iranian nurses' knowledge and anxiety toward covid-19 during the current outbreak in Iran," *Arch. Clin. Infect. Dis.*, vol. 15, no. COVID-19, 2020, doi: 10.5812/archcid.102848.
- [11] L. Weiguo *et al.*, "Public health education for parents during the outbreak of COVID-19: a rapid review," *Ann. Transl. Med.*, vol. 8, no. 10, pp. 628–628, 2020, doi: 10.21037/atm-20-3312.
- [12] N. P. E. D. Yanti, I. M. A. D. P. Nugraha, G. A. Wisnawa, N. P. D. Agustina, and N. P. A. Diantari, "Public Knowledge about Covid-19 and Public Behavior During the Covid-19 Pandemic," *J. Keperawatan Jiwa*, vol. 8, no. 4, p. 491, 2020, doi: 10.26714/jkj.8.4.2020.491-504.
- [13] H. Guo, Y. Zhou, X. Liu, and J. Tan, *The impact of the COVID-19 epidemic on the utilization of emergency dental services*. 2020. doi: 10.1016/j.jds.2020.02.002.
- [14] J. Sun, Y. Xu, Q. Qu, and W. Luo, "Knowledge of and attitudes toward COVID-19 among parents of child dental patients during the outbreak," *Braz. Oral Res.*, vol. 34, pp. 1–8, 2020, doi: 10.1590/1807-3107BOR-2020.VOL34.0066.
- [15] A. K. Jumaymi *et al.*, "Level of dental anxiety and its relation to khat chewing in jazan population: A cross-sectional study," *J. Contemp. Dent. Pract.*, vol. 21, no. 3, pp. 253–260, 2020, doi: 10.5005/jp-journals-10024-2767.
- [16] N. Salari *et al.*, "Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: A systematic review and meta-analysis," *Global Health*, vol. 16, no. 1, pp. 1–11, 2020, doi: 10.1186/s12992-020-00589-w.
- [17] K. E. Priyanto and S. R. Mardjan, "Analysis of Mother's Anxiety Level with Compliance to Visit to Integrated Service Post in the Covid-19 Pandemic at the Tangkiang Public Health Center," *J. Qual. Public Heal.*, vol. 5, no. 1, pp. 367–373, 2021, doi: 10.30994/jqph.v5i1.282.
- [18] M. A. Muhannad H Murad, Navin Ingle, "Evaluating factor associated with fear and anxiety to dental treatment - a systematic review," *J. Fam. Med. Prim. Care*, vol. 6, no. 2, pp. 169–170, 2020, doi: 10.4103/jfmpe.jfmpe.
- [19] B. O. Bashiru and O. E. Omotola, "Prevalence and determinants of dental anxiety among adult population in Benin City, Nigeria," *Eur. J. Gen. Dent.*, vol. 5, no. 3, pp. 99–103, 2016, doi: 10.4103/2278-9626.189252.
- [20] B. Saddik *et al.*, "The psychological impact of the COVID-19 pandemic on adults and children in the United Arab Emirates : a nationwide cross-sectional study," pp. 1–18, 2021.
- [21] R. E. Basco and M. T. Olea, "Correlation between Anxiety Level and Academic Performance of BS Biology Freshmen Students," *Int. J. Educ.*, vol. 4, no. 1, pp. 97–103, 2013,
- [22] CT Kids Dentist, "Parents Dental Anxiety Can Affect Children." 2017. <http://www.ctkidsdentist.com/blog/parents-dental-anxiety-can-affect-children/>
- [23] N. Diharja, S. Syamsiah, and R. Choirunnisa, "Pengaruh Pandemi Covid 19 Terhadap Kunjungan Imunisasi Di Posyandu Desa Tanjungwangi Kecamatan Cijambe Tahun 2020," *Asian Res. Midwifery Basic Sci. J.*, vol. 1, no. 1, pp. 60–72, 2020.
- [24] B. D. Pasiga, "Relationship knowledge transmission of covid-19 and fear of dental care during pandemic in South Sulawesi, Indonesia," *Pesqui. Bras. Odontopediatria Clin. Integr.*, vol. 21, pp. 1–12, 2020, doi: 10.1590/pboci.2021.017.
- [25] S. Koçak, B. C. Sağlam, O. Özdemir, E. Hazar, and M. M. Koçak, "Knowledge and Anxiety Level of Dentists about COVID-19 Pandemic," *J. Oral Heal. Community Dent.*, vol. 14, no. 3, pp. 104–109, 2021, doi: 10.5005/jp-journals-10062-0084.