



## Literature Review: Factors Affecting Children's Anxiety When Visiting the Dentist Clinic in the Covid-19 Pandemic Era

Eko Prastyo<sup>1</sup>, Satiti Kuntari<sup>2</sup>, Anisa R. Kusumastiti<sup>3</sup>, Alvina Damayanti<sup>4</sup>

<sup>1,2</sup>Department of Pediatric Dentistry, Faculty of Dental Medicine, Institut Ilmu Kesehatan Bhakti Wiyata Kediri, Indonesia

<sup>3</sup>Department of Preventive and Public Health Dentistry, Faculty of Dental Medicine, Institut Ilmu Kesehatan Bhakti Wiyata Kediri, Indonesia

<sup>4</sup>Undergraduate student Faculty of Dental Medicine, Institut Ilmu Kesehatan Bhakti Wiyata Kediri, Indonesia

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**Corresponding Author:**  
Eko Prastyo

### ABSTRACT

The influence of the spread of COVID-19 in the world has caused changes in regulations in society, including in dentistry, which have a negative impact on the psychology of pediatric patients. This change can cause an increase in children's anxiety without exception when visiting a dentist's clinic. This study aims to examine what factors can affect children's anxiety when visiting a dentist clinic in COVID-19 pandemic era. Type of research used is Narrative Review by searching for data through Google Scholar database, PubMed, Wiley and ScienceDirect using the keywords of dental anxiety AND child/Pediatric AND COVID-19 and obtained 6 scientific articles relevant to the research objectives. There is an increase in anxiety in children when visiting a dentist clinic in COVID-19 pandemic era which is influenced by lockdown regulations, the presence of parents at home and the age of the child himself.

**KEYWORDS:** Child anxiety, Dentist clinic, COVID-19

### I. INTRODUCTION

Late in January 2020, the World Health Organization (WHO) determined the status of Global Emergency in cases of respiratory disorders called COVID-19 (1). COVID-19 was first reported in Indonesia on March 2, 2020 with a total of two cases and continued to expand with the addition of 4,952 cases within 24 hours (2). So that the government in the Indonesian Regulation Minister of Health Number 9 of 2020 stipulates large-scale social restrictions or lockdowns in order to accelerate the handling of COVID-19 (3).

Large-scale social restrictions or lockdowns have a negative impact on the occupational, health and psychological aspects of society, especially on parents and children (4). The results of Spinelli et al. (2020) said that the lockdown period of COVID-19 pandemic had a significant impact on parental and emotional stress in children. Children who stay at home continuously can trigger the development of psychological disorders that affect child dental care (5).

Conducting dental health care for children during COVID-19 pandemic is challenging tasks for dentists. Research that has been conducted by Peloso et al. (2020) COVID-19 pandemic causes anxiety in 25% of adult dental patients (6). However, there are still rarely studies that specifically discuss the level of dental anxiety during COVID-19 for children.

Thus, the author is interested in examining the level of child anxiety when visiting a dentist clinic in COVID-19 pandemic era in order to be a reference for handling the anxiety of pediatric patients in dental care in COVID-19 pandemic era.

### II. METHOD

This research uses narrative review method through comprehensive, critical, and objective analysis (7). Data were selected by looking at inclusion criteria: 1) Articles relevant with the aims of study; 2) Literature that has an electronic international standard serial number (e-ISSN) and has a digital object identifier (DOI); 3) Literature source year taken from 2020 to 2022; 4) Indicated of Google Scholar, Pubmed, Wiley and ScienceDirect and can be accessed in fulltext (8,9).

Data collection procedures by determining keywords, such as Dental Anxiety AND child/Pediatric AND COVID-19. Then data collection was carried out by entering keywords in search engines such as Google Scholar, PubMed, Wiley and ScienceDirect and 881 scientific articles were obtained. After that, it was selected through screening of titles, abstracts, and duplication of journals obtained from 13 journals. Then, an assessment of the feasibility of the article was carried out by reading the full-text and sorting the articles according to the focus of the objective, the research period, and literature

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review sample. Obtained 6 relevant and qualified articles. (Figure 1)

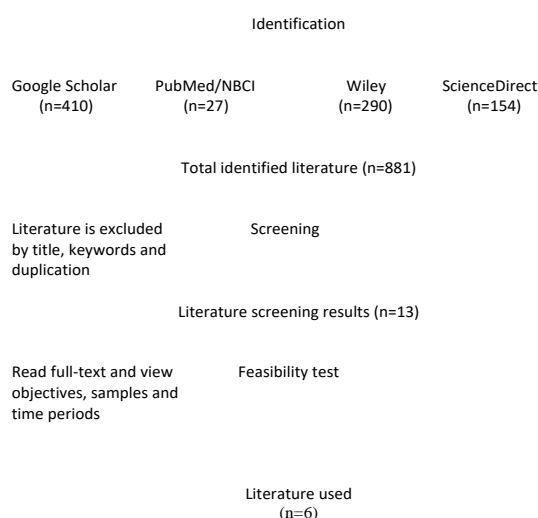


Figure 1. Data Collection Procedure

### III. RESULT

In reviewing, the authors conducted searches in digital libraries on search engines such as Google Scholar, PubMed, Wiley and ScienceDirect by including anxiety level keywords, children's teeth, COVID-19. This research was synthesized using a narrative method by grouping data from similar extractions in accordance with the measured results to answer the research objectives in accordance with inclusion and exclusion criteria then collected and made a journal summary including the name of the researcher, title of the study, year of journal publication, and a summary of the results or findings. Summary of the research journal is included in table according to the format of research table. Scientific articles that are in accordance with the inclusion and exclusion criteria are taken for subsequent analysis. This research uses published literature from 2020 to 2022 which can be accessed in fulltext in pdf Format. The results obtained from several journals are as follows: (Table 1)

### IV. DISCUSSION

COVID-19 pandemic has a negative effect on economic, health and psychological aspects of community, especially for parents and children. This caused the development of psychological disorders in children related to dentistry in the form of dental anxiety (10).

Anxiety in the field of dentistry is called dental anxiety which can have an impact on decreasing health of child's oral cavity. In previous studies in adult patients, the level of dental anxiety increased during COVID-19 pandemic (6). This creates new stereotypes that dental anxiety in children will also increase in COVID-19 pandemic era.

Stereotypes of increasing dental anxiety in children are evidenced in research conducted by Talaat Dalia M and ElKhatib in 2022. By using an anxiety measuring device, namely Facial Image Scale (FIS) carried out on 80 children aged 5-7 years who need dental care in COVID-19 pandemic era. By comparing FIS score, it was found that dental anxiety of pre-pandemic children group was lower than that of pandemic children group (11).

This justifies the stereotype that there is an increase in children's dental anxiety in COVID-19 pandemic era. However, previous studies conducted by Olszewska & Rzymiski (2020) gave different results. In a study conducted on children aged 4 to 7 years using Facial Action Coding System (FACS) measurement tool, it was stated that the level of anxiety between group of pre-pandemic children and group of pandemic children did not provide significant differences (12).

Contradiction can be caused by research methodology. Research methodology used by Olszewska & Rzymiski (2020) uses assessments from children, caregivers, and dentists, while in research conducted by Talaat Dalia M & ElKhatib (2022) focuses on assessing pediatric patients themselves.

Measurement of anxiety is explained by Von Baeyer (2009) that self-assessment tools can be inaccurate for children under 7 years of age due to a lack of understanding of methods and skills in expressing themselves. Up to Olszewska and Rzymiski (2020) include caregivers and dentists to measure children's dental anxiety. Von Baeyer (2009) also said that, on face assessment scale, if the score starts with a smile, it results in a higher score than with measurements that start with a neutral face (13). This has an effect in research conducted by Talaat Dalia M and ElKhatib (2022) where in his research he used FIS which began with a happy face.

Children's dental anxiety during COVID-19 pandemic is associated with the condition of parents. In the lockdown period children spend all day with their families at home so that children have more familiarity and conflict with their parents. It is possible to influence the psychological development of child related to the quality of parents' temperament and personality (14).

There is a study that uses Children's Fear Survey Schedule Dental Subscale or CFSS-DS on children aged 6-12 conducted in November 2020 and March 2021. The results indicate that there is a significant relationship between the state or nature of parents' anxiety and fear of children's teeth. Children tend to experience dental fear with parents who have high dental anxiety (15). Different results can be attributed to parents' educational style, economic differences, and possible emotional changes in parents during lockdown caused by poor social life and physical activity. However, there is greater parental attention, a sense of responsibility from children and parental involvement in their children's activities

in COVID-19 pandemic era poses a positive side to children's psychology (4).

Positive side of the presence of parents at home for child psychology is confirmed in studies conducted on pediatric patients with ages ranging from 3 to 16 years with an average age of 9 years using the Frank Behaviour Rate Scale (FBRSS) gauge. The results mentioned that there was an increase in collaboration of children who had low levels of anxiety with the presence of parents at home during the lockdown. This relates to the child's natural emotional satisfaction with working parents from home from elderly people who continue to work outside the home (4).

The emotional level is closely related to the age of child itself. Significant results were presented in studies conducted on children aged 3 to 9 years. This research was conducted between February and May 2021, by measuring the level of children's anxiety before consultation and after using a measuring instrument in the form of Dental Fear Schedule Subscale Short Form (DFSS-SF). This study states that children aged 3 to 6 years have significantly higher dental anxiety compared to children aged 7 to 9 years (16). These results are consistent with previous studies which also illustrate that the average value of anxiety level is significantly higher in the age group of 4 to 7 years compared to children aged 8 to 12 years.

Results of the research above are supported by other studies conducted using Frank Behaviour Rate Scale (FBRSS) measuring instrument. Research on children aged 3 to 5 years conducted from December 2019 to January 2020, stated that children aged 3 years and older children often experience fear and tooth decay from their 4- and 5-year-olds. It is possible that this can be related to the experience of children, where children aged 3 years have never had learning or dental care compared to older children. Children over 3 years of age may already have or understand dental care such as topical application fluoride treatment and know the dental experience that occurs in the family or surrounding environment (17).

## V. CONCLUSIONS

Lockdown regulations require children to stay in the house, stipulate work from home (WFH) regulations for parents and lack of children's learning about new environment in COVID-19 pandemic era can trigger an increase in children's anxiety when visiting a dentist clinic in COVID-19 pandemic era.

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**Table 1.** Article Study Results

No.	Author and Title	Year	Country	Method Research	Total Sample	Objectives	Results and Conclusions
1.	Aneta Olszewska and Piotr Rzymiski; Children's Dental Anxiety during COVID-19 Pandemic: Polish Experience	2020	Poland	Longitudinal Observational Studies	25	This research assessed the emotional state of children ≤ 7 years of age in need of dental health care during lockdown in Poland.	In general, the results of this study contradict concern that pediatric patients experience more anxiety due to making dental appointments in the COVID-19 pandemic lockdown. Emotional state of children is not different between pandemic groups with pre-pandemic groups.
2.	Bahrololoomi et al.; Evaluation of Relationship between the Children's Dental Fear with the Parental State Trait Anxiety	2021	Iran	Observational study Cross-sectional	104	To evaluate the level of fear of children's teeth, parental anxiety and its possible correlation in the COVID-19 pandemic era.	By identifying the parental STAI and CFSS-DS scores of child, there is a significant relationship between nature of parental anxiety leading to increased fear of children's dentist.
3.	Filipa Andreia Guerreiro da Costa; Anxiety in paediatric population of university clinic of Faculty of Dental Medicine of University of Lisbon	2021	Portugal	Longitudinal Observational Studies	23	To characterize dental anxiety in pediatric patients at FMDUL Clinic according to prevalence and associated factors.	Results of anxiety level study with DFSS-SF measuring instrument showed a significant difference in the rate of improvement between children aged 3 to 6 years (22.17) and children aged 7 to 9 years (16.67).
4.	Brescia et al.; Impact of lockdown on children's lifestyle and their collaboration during dental sessions	2021	Italy	Observational study Cross-sectional	212	To analyze the lifestyle of Italian families during lockdown, evaluating its possible impact on pediatric collaboration with pediatric dentists and associated predictive factors.	Statistical data showed a significant increase of 82.08% in child collaboration during dental care during the lockdown period, by comparing children with parents working at home (teleworking) with children whose parents work away from home.
5.	Yon Jun, Madeline Yu et al.; Dental fear and anxiety of kindergarten children in Hong Kong	2020	Hongkong	Observational study Cross-sectional	530	To investigate the level of dental fear of kindergarten children during lockdown in a kindergarten environment and to explore the factors associated with fear of kindergarten children's dental care.	Results of the assessment of children's dental fears and anxieties with FBRS measuring instrument showed that children aged 3 years experienced more dental fears and anxieties than children aged 4 years and 5 years.

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6.	Talaat Dalia M and EIKhatib Amira Abdelhafeez; Dental Anxiety Among Children And Their Parents Pre And During The Third Wave Of COVID-19 Pandemic In Egypt	2022	Egypt	Observational study Cross-sectional	80	To evaluate the level of anxiety of children and their parents in dental care during the third wave of COVID-19 pandemic and to compare with the age group of pediatric patients and parents in pre-pandemic of COVID-19.	Assessment of dental anxiety showed a high level of dental anxiety in the group of pandemic children (3.00) than in the children of the pre-pandemic group (2.00) with statistically significant differences.
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