

Children's Anxiety on Dental Treatment: *Literature Review*

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ABSTRACT

Background: Dental anxiety is a normal reaction in children. Anxiety has a worldwide prevalence up to 15% of the general population. It is stated that fear and anxiousness have the prevalence of 10% and 20%, very high at an early age. Children with the age of 6-12 years old experience the period of transition, from primary teeth to permanent teeth. At this time, children make a lot of dental visits for getting treatments, such as preventive treatments like pit and fissure sealant, scaling, as well as extraction procedure. Dental anxiety affects children's behaviour during the treatment. It can be caused by several factors such as age, gender, and the dental procedure that children experience. **Objectives:** This study was done to find out children's anxiety during dental treatment. **Method:** Literature review was applied in conducting this study, with the implementation of narrative review approach by using secondary data that was found in PubMed, Science Direct, Google Scholar, and Ebsco databases. **Results:** Based on the study on 12 articles, it showed that children's anxiety regarding dental treatment that was done toward children aged 6-12 years old was mostly experienced by children with younger age of 6-8 years old, and their anxiety would decrease as they got older. Girls also showed a higher level of anxiety than boys, while the treatment that caused this anxiety is the injection. **Conclusion:** Dental treatments cause children's anxiety.

Keywords: anxiety, dental anxiety, children, dental, dental treatment.

1. INTRODUCTION

Oftentimes, dental treatment causes children to feel anxious. It is usually experienced by young patients and is a normal response when they face something new, which can be known from the feeling of anxiousness (Jeffrey et al., 2018). This psychological condition consists of a fear about a scary thing that can possibly happen during dental treatment, where the child patients usually show that they are uncomfortable during the process, that can be manifested as the feeling of anxiety, worry, or stress (Pop-Jordanova et al., 2018).

Anxiety is estimated to have a prevalence of 15 % throughout the world in the general population (Donelli et al., 2019). It is stated that fear and anxiety have an average prevalence between 10% and 20%, very high at an early age. According to a survey done by Al Sarheed, 16% of children in the elementary school aged 6-12 years old are scared to go visit the dentist. The cause of this anxiousness can possibly come from themselves, their parents, the dentists, or the clinical environment itself.

The anxiety emerges because of the use of sharp objects such as needles or forceps during the extraction process, causing the children feeling afraid of pain that will occur if these objects are put in their mouth. This action causes the children to experience anxiety when they see burs or when they hear the sound of burs during dental treatment. Based on the data above, there are internal and external factors that trigger anxiety, which later will have an impact both on children and dentists during dental treatment (Suryani, 2019).

Assessment toward dental anxiety is necessary to resolve this problem and facilitate the diagnosis as well as the treatment while ensuring an enjoyable dental visit. This study aims to determine children's anxiety on dental treatment by using the literature review method.

2. METHOD

The study applied a review method. It used various literature obtained from databases that were in accordance with this study or usually called as a literature review. The approach that was implemented in this study was a narrative review that was carried out by analyzing the data taken from journals and articles in PubMed, Science Direct, Google Scholar, and EBSCO databases. The data was taken from articles with the keywords of "anxiety", "dental anxiety", "children", "dental", and "dental procedures" with a range of publications from 2017-2021. Then the screening stage was conducted by selecting articles in the database based on inclusion criteria and also by eliminating duplicate articles. After that, a thorough evaluation of the feasibility of the articles was done to get articles that were included in the synthesis for answering the formulated problems. Thus, 12 articles were obtained and included in the research synthesis.

3. RESULT

Based on the study on 12 articles that had been reviewed, dental anxiety is something that needed to be considered during dental treatment. Anxiety is a normal condition that occurred in individuals to defend themselves in certain circumstances when they sense a threat (Sagrang et al., 2017). In general, this disorder is included as excessive fear and anxiety, and is associated with behavioral disorders. The difference between fear and anxiety is that fear is a reaction to a known danger whereas anxiety is a reaction to an unknown stimuli (Marwah, 2019).

Fear and anxiety are reactions that usually occur in stressful conditions (Alasmari et al., 2018). Commonly, anxiety disorder is included as excessive fear and anxiety. This disorder is also associated with behavioral disorders (Donelli et al., 2019). Dental fear or fear caused by dental treatment usually refers to an unpleasant emotional reaction that is normally caused by specific stimuli in situations related to dental care (Yon et al., 2020).

Dental anxiety or anxiety in dental treatment itself is an excessive and unnatural negative emotional state that is experienced by patients during dental treatment (Pop-Jordanova et al., 2018). This psychological state consists of the fear that something terrible will happen during dental treatment (Yon et al., 2020).

In a long time, the fear and distrust of health workers have caused avoidance in doing treatment as well as bad behavior (Sajeev et al., 2021). Child patients usually show the

feeling of being uncomfortable during dental treatment, which can be manifested as anxiousness, worriness, and stress. This level of anxiety can be very high in some patients. It is also referred to as odontophobia. Frightened patients may neglect their dental and oral hygiene and avoid any treatment procedures (Pop-Jordanova et al., 2018).

The CFSS-DS (Children Fear Survey Schedule- Dental Subscale) survey is a part of the second instrument category (verbal-cognitive self-report) and is found to be the most frequently used instrument for measuring anxiety in children in treatment care which has shown its validity and high reliability. This survey measures children's reactions to potential anxiety stimuli from dental treatment.

Based on the results of the search for articles from the database that has been collected and analysed, there are 12 articles. The results of the analysis of articles regarding child anxiety in dental treatment can be seen in the table below (Table 1).

Table 1. Results of literature analysis in research

No	Researcher, Year, Research Location	Title of Research	Child Anxiety	Research Results
1	Pratami, et al. 2018. Indonesia	Hubungan kecemasan dental anak umur 7-11 tahun dengan indeks karies di SD Negeri 27 Pemecutan Denpasar Barat	Dental anxiety was greatest in 7-year-old children as many as 12 children (30%).	There is a significant relationship between dental anxiety in children aged 7-11 years and caries.
2	Syarafi, et al. 2019. Indonesia	Hubungan Kecemasan Dental Terhadap Performance Treatment Index Pada Anak Kelas 5-6 SDN Berangas Timur 1 Kecamatan Alalak Kabupaten Barito Kuala	Children who experience anxiety are 6 (21.4%) children without anxiety 22 (78.6%).	Anxiety can be caused by several factors and there is no relationship between anxiety and the Performance Treatment Index.
3	Rath, et al. 2020. India	Childhood dental fear in children aged 7-11 years old by using the Children's Fear Survey Schedule-Dental Subscale	Fear in children aged 7-11 years is found in boys (47.15%) and girls (52,8%).	Dental anxiety is more common in girls than boys and decreases with age.
4	Alsadat, et al. 2018. Arab Saudi	Dental Fear in Primary School Children and its Relation to Dental Caries	High anxiety in children is 23.5% and low anxiety in children is 76.5%.	School age children have the highest anxiety at the age of 8 years and there is no relationship between caries in primary teeth and caries.
5	Gaber, et al. 2018. Mesir	The Impact of Gender on Child Dental Anxiety in a	Anxiety in children was 29 children (23%), children with	Girls have higher anxiety than boys and the highest cause of anxiety

No	Researcher, Year, Research Location	Title of Research	Child Anxiety	Research Results
		Ample of Egyptian Children (a Cross-Sectional Study)	potential anxiety were 39 children (31%), children who were not anxious as many as 58 children (46%).	is because of injections in both boys and girls.
6	Folayan, et al. 2018. Nigeria	General anxiety, dental anxiety, digit sucking, caries and oral hygiene status of children resident in a semi-urban population in Nigeria	Low anxiety in children aged 6-12 years is 392 children out of 450 children (87.1%).	Digit sucking was not a significant general predictor of dental anxiety in the study population and anxiety significantly increased the likelihood of caries.
7	Gelder, 2018. Romania	The Dental Sub-scale of the Children's Fear Survey Schedule in Romania. Do We Need to Rethink Dental Fear Concept?	children's greatest anxiety is with injections, drills, and dentists.	The concept of fear or anxiety is purely psychological in nature but when fear is applied to the field of dentistry there must be mutual assistance between dentist and patient.
8	Sanger, et al. 2017. Indonesia	Gambaran Kecemasan Anak Usia 6-12 Tahun terhadap Perawatan Gigi di SD Kristen Eben Haezar 2 Manado	An overview of children's anxiety about dental care in 44 students has high anxiety as many as 17 respondents and low anxiety as many as 27.	Low anxiety levels in children aged 9 -12 years while the level of anxiety is high in children aged 6-8 years.
9	Sagrang. 2017. Indonesia	Pengaruh pola asuh orangtua terhadap tingkat kecemasan anak sebelum menjalani perawatan penambalan gigi Di RSGM Unsrat	Low anxiety in boys amounted to 12 children (75%).	Anxiety before filling treatment was generally low but parents had a significant influence.
10	Guney, et al. 2018. Turki	Dental Anxiety and Oral Health-Related Quality of Life in Children Following Dental Rehabilitation under General Anesthesia or Intravenous Sedation: A Prospective Cross-Sectional Study	Injection anxiety in children aged 6-12 years decreased either by GA or IVS.	Changes in dental anxiety at 6-12 years, there was no statistically significant difference between children undergoing surgical dental treatment under GA and those undergoing surgical dental treatment under IVS.
11	Dahlander, et al. 2019. Swedia	Factors Associated with Dental Fear and	Children experience anxiety at age 7 years	This study demonstrated an increased prevalence

No	Researcher, Year, Research Location	Title of Research	Child Anxiety	Research Results
		Anxiety in Children Aged 7 to 9 Years	and 7% of children who do not experience anxiety at age 7 years experience anxiety at age 9 years.	of dental fear and anxiety between 7 and 9 years of age.
12	Bajric, et al. 2018. Bosnia dan Herzegovina	The Reliability and Validity of the Three Modified Versions of the Children's Fear Survey Schedule-Dental Subscale of 9-12 Year Old Children in a Clinical Setting in Bosnia and Herzegovina	There is anxiety in children 9-12 years old.	Anxiety in children aged 9-12 years can be measured by the CFSS- DS questionnaire.

4. DISCUSSION

Dental anxiety is one of the reasons why children avoid visiting the dentist or show a change in behaviour when they go for a dental visit. It is also considered as a cause of a serious health problem in teenagers (Pratami et al., 2018). Anxiety in children is a result of excessive emotion. Emotional ups and downs are a natural part of the psychological process where some individuals are depressed because of their emotional pressure which results in anxiety. Dental practice causes the children who are about to undergo dental treatment feel anxious as it gives a strange situation or environment, such as its smell, the sound of the drill that is heard, the sound of the patient's scream which causes pain in children (Syaraf et al., 2021).

According to Stuart (2001), anxiety is divided into four levels, which are mild anxiety, moderate anxiety, severe anxiety, and panic. Mild anxiety is a feeling related to the tension that exists in everyday life and causes a person to become alert and increase the field of perception. Moderate anxiety is an anxiety that allows a person to focus on their attention on important things and put other things aside. Severe anxiety is an anxiety that reduces someone's area of perception. This anxiety has a tendency to focus on both details as well as specific things, and it makes them unable to think of anything else. Anxiety at panic level is an anxiety that is related to fear, a sense of terror and unable to do anything even if direction is given (Yusuf et al., 2015).

Dental anxiety is more common in children at a younger age and it will decrease as the children get older because their ability to grasp information will be faster and it makes them capable of thinking logically. The average age of children who have dental anxiety are in the age range of 6-8 years.

At this age, children tend to show uncooperative attitudes during dental treatment and oral care. Their expressions show that they have high anxiety and fear of dental and oral treatment. According to the result of a journal that discusses children's anxiety based

on their age, it reveals that the same thing also happens where children with younger ages have a higher level of anxiety than the children who are even younger. This is in accordance with the statement by SAGRANG et al. (2017) that the older the children are, the faster their comprehension ability to understand information and the ability to think logically.

Dental anxiety can also be caused by gender differences. Girls tend to have higher anxiety than boys. This statement is also mentioned in the article by SANGER et al. (2017) where boys are more reluctant to show their anxiety than girls where girls tend to seek emotional support as a strategy to defend themselves in comparison to boys. The pain limit that women can feel is lower than boys so that it results in a higher anxiety for girls as they fear pain that occurs during dental procedures (PRATAMI et al., 2018).

At age 6-12, children experience a period when there is a transition between primary teeth and permanent teeth which makes the possibility for them to visit the dentist increase. There are several types of dental treatment that need to be done, namely scaling, pit & fissure sealant, and extraction. Based on some of the dental treatment actions done, it can be concluded that the action that causes anxiety the most is injection. Injection will cause pain and is the action the child is worried about the most. Other actions that also trigger anxiety are the sound of a drill, fear of choking, and the presence of a strange feeling because someone else is touching the mouth. Anxiety that resulted from feeling scared of choking occurs due to fear of instruments used during dental treatment that are going in and out of the mouth. DAHLANDER et al. (2019) stated that in Sweden, based on a survey with the CFSS-DS questionnaire, it was found that fear of injections, drilling by dentists, and choking were the points with the highest scores. Fear of seeing the dental drill, fear of choking, going to the hospital, and having the dentist clean the teeth increased significantly between the ages of seven and nine.

There are various ways to deal with dental anxiety in children such as tell-show-do by telling, showing, and doing the dental procedures to form good behavior. Modeling can be done with the help of someone close to the children as a model, or it can also be from video clips of other children undergoing dental treatment that are played on a TV monitor which can also help. The other method that can be done is distraction, by distracting children's attention. Playing suitable films and playing video games can also be useful. However talking to the children during the treatment process is the most effective method in order to succeed in the treatment (CAMERON, 2013).

5. CONCLUSION

Based on this literature review study, it can be concluded that dental anxiety is a normal thing that can be found within children. At ages 6-12 years old, children tend to experience dental anxiety at age 6-8 years old and it will decrease as they get older because there will be a change in emotion, especially in controlling pain. Girls also tend to have a higher dental anxiety than boys because they tend to use their emotions in getting away from problems. Dental action that triggers anxiety the most is injection.

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