

***Parental Knowledge Of The Prevention Of Caries In Molar Teeth One Permanent Child
Aged 6-7 Years With Fissure Sealant***

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ABSTRACT

Background : Dental caries is a major problem in oral health that can affect primary and permanent teeth. Areas that are frequently attacked are pits and fissures, which have a deep surface so it is difficult for mechanical cleaners to reach them. The anatomical shape of permanent first molars with pits and fissures is a place that is susceptible to caries, therefore it is important to make prevention efforts before caries occur. Prevention of dental caries in teeth can be done by fissure sealants and fluoride application. At the age of 6-7 years, it shows that the percentage of the need for fissure sealant treatment reaches 8.77%. Therefore, efforts are made to prevent the spread of caries with fissure sealants. **Objective:** To explain the knowledge of parents about the prevention of caries in permanent first molars of children aged 6 - 7 years with fissure sealants. **Design:** Systematic Literature Review. Data Sources: The search for articles was conducted on the Google Scholar (2015-2020), PubMed (2015-2020), and Garuda Jurnal (2015-2020) databases. **Method:** The article search strategy uses PICOS and keywords customized to the topic of writing. Articles are selected based on the abstract or full text before being included in the review according to the inclusion and exclusion criteria that will be reviewed. **Results:** From the results of the 10 literature review articles, it was found that parents' knowledge about fissure sealants was still low, and even many parents did not know that caries could be prevented with fissure sealants. **Keywords :** Knowledge, Parents, First molar permanent, Fissure sealant.

INTRODUCTION

Dental caries is the most common disease in humans. Caries can happen to anyone, although it often appears in children or young adults. This disease is the main cause of tooth loss at a young age. Caries is one of the evidence that the condition of the teeth and mouth of the Indonesian people is not maintained (Reca, 2017). Based on the results of the Main Basic Health Research of the Ministry of Health, the prevalence of caries in children aged 5-9 years is 93%, which means that only about 7% of Indonesian children are free from dental caries (Health Research and Development Agency, 2018).

School-age children are one of the groups that are vulnerable to caries because they generally still have less knowledge and behavior on dental caries. At this time children begin to learn to pay attention to the behavior of life from the surrounding environment, begin to interact with many friends, recognize and imitate what they see, the impact can be beneficial or detrimental to dental health (Prasetyowati *et al.*, 2020).

The anatomical appearance of the first permanent molar which has many pits and fissures makes the tooth a good place for food accumulation. Lack of knowledge of parents and assume that permanent first molars still have replacement teeth after extraction so they pay less attention (Reca, 2017).

METHODS

The article search strategy uses PICOS and keywords that are tailored to the writing topic. Articles are selected based on the abstract or full text before being included in the review according to the inclusion and exclusion criteria to be reviewed.

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RESULTS

Table 1. Summary of Literature Review Results

No.	Author (s)	Year	Journal Vol (no)	Title	Methods (design, sample, instrument and intervention, analysis)	Result	Databases
1.	a. Sigalit b. Blumer c. Tal d. Ratson, Benjamin e. Peretz, f. Nurit g. Dragon	2018	The Journal of Clinical Pediatric Dentistry , 42 (1)	Parents' Attitude Towards The Use of Fluorides and Fissure Sealant & its Effect on Their Children's Oral Health	D: Quantitative S: 100 Parents with an average age of 41-49 years with details of 85 women and 15 men I: Respondents were given a questionnaire consisting of 21 questions. A: Chi square test & Fisher's exact test.	The results showed that positive attitudes towards caries prevention measures such as fissure sealants were found in parents with higher education with higher awareness of dental and oral health precautions.	Pubmed
2.	Ayub Irmadani Anwar	2016	Makassar Dental Jurnal, 5(2) : 51-57	The Level of Need for Fissure Sealant for Permanent First Molars in Elementary School Students Age 6-7 years, Mariso District, Makassar City.	D: Descriptive Observation with Cross Sectional study. S: 305 students from 16 schools in Mariso District, aged 6-7 years. I: Direct inspection.	The need for fissure sealant treatment for the first molars was 76 (24.9%) students with details of the lower-left permanent first molar, namely 46 teeth (15.1%), the lower right permanent first molar ie 40 teeth (13.1%), the upper right permanent first molar 12 teeth (3.9%), the upper left permanent first molar 9 teeth (3%).	Google Scholar

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3.	a. Sukirat Kaur b. Ravishankar Lingesha Telgi c. Vibhav Tondon d. Ramneek Kaur e. Shyamalima Bhattacharya	2019	Journal of Education and Health Promotion, 8	Parents Outlook on Preventive Dental Modalities For Their Children In Udham Singh, Nagar, India.	D: Quantitative. S: 250 parents of children aged 11-14 years, selected from 4 different schools in Udham, Singh, Nagar. I: Questionnaire A: Chi Square test.	250 parents with details of 180 mothers and 70 fathers showed results of visits to the dentist by 94.8%, but only 10% of parents knew that dental caries could be prevented with fissure sealants and topical application.	Pubmed
4.	a. Lakshimi Lakshmanan b. Deepa Gurunathan	2020	Journal of Family Medicine and Primary Care, 9 (1)	Parent's Knowledge, Attitude, and Practice Regarding The Pit and Fissure Sealant Therapy.	D: Cross Sectional Study. S: 250 parents of children attending school in Chennai, India. With details 45% father and 55% mother. I: Questionnaire on knowledge, attitude, practice, Fissure Sealant Action. A: Independent t-test, ANOVA was followed by Tukeys Post Hoc Test.	The results showed that 71% of parents agreed and knew that fissure sealants were effective in preventing dental caries but only 34% of the children participating in the study practiced fissure sealants.	Pubmed
5.	a. Arun Deep b. Abi M. Thomas c. Namita Singh d. Shaila	2019	Journal Of Health and Research , 7 (3)	Parental Knowledge and Attitude toward Pit and Fissure Sealants and Fluoride Therapy in Children: A Questionnaire Study.	D: Quantitative. S: 80 parents of children aged 7-12 years. I: The questionnaire contains the knowledge and attitudes of parents towards the action of fissure sealant and topical application. A: Chi Square test.	The results showed that most of the parents had a low level of knowledge about the action of fissure sealants and topical application (68.8%).	Google Scholar

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6.	Manal A Al Mutairi	2020	Journal of Dentistry Research , 2(1) : 1010	Parental Comprehensi on About Use Of Fissure Sealant and Fluorides in Their Children and Effect On Oral Health of The Children	D: Cross Sectional Study. S: 206 parents of outpatients attending the pediatric dentistry clinic of King Saud University, Riyadh, Arabia. I: Questionnaires created in English were then translated into Arabic and returned to English to ensure accuracy. The questionnaire consists of 23 questions. A: Chi Square test	This study shows that parents' attitudes and knowledge about fluoride and fissure sealants are still low.	Google Scholar
7.	a. Bahareh Tahani b. Ghasem Yadegarfar c. Azimeh Ahmadi	2017	Journal of Educatio n and Health Promotio n, 6 (106)	Knowledge, Attitude, and Practice of Parents of 7- 12-year-old Children Regarding Fissure Sealant Therapy and Professional Fluoride Therapy.	D: Cross Sectional Study. S: 637 parents of students in grades 1-6 of elementary school I: Questionnaire about parents' experiences, knowledge, and attitudes towards fissure sealants and topical applications. A: ANOVA test, regression, Chi- square, and correlation coefficient.	The average knowledge of parents about topical application and fissure sealant therapy is 5.9% and 2.6%, respectively. The experience of parents doing fissure sealant was 10.4% and 23.2% were doing a topical application.	Pubmed

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8.	a. Liangwen Chen b. Jialan Hong c. Dian Xiong d. Luyi Zhang e. Yuhong Li f. Shengfu Hwang g. Fang Hua	2020	BMC Oral Health, 20 (203)	Are Parents Education Levels Associated With Either Their Oral Health Knowledge Or Their Childrens Oral Health Behavior? A Survey 8446 Families In Wuhan.	D: Quantitative. S: 8446 families in Wuhan with children from 43 primary schools in the Hongshan District, Wuhan I: Research participants conducted an online survey using a questionnaire to obtain comprehensive information about children's oral health behaviors, parents' knowledge of oral health, and choices related to pit & fissure sealants. A: Chi square test.	In families with children who have mixed teeth, parents with a high level of education tend to have better knowledge of oral health such as knowledge of fissure sealants. In addition, children of well- educated parents tend to practice better oral hygiene.	Pubmed
9.	a. Heba J. Sabbaghb. Doaa S. Alghamdi c. Wafa M. Almutairi d. Shahd A. Alshahrani e. Asma S. Alghamdi	2019	Journal of Contemp orary Dentistry , 9 (2)	Knowledge and Practices for Early Childhood Caries Prevention among Parents of the Children Visiting King Abdulaziz University Pediatric Dental Clinics, Kingdom of Saudi Arabia	D: Cross Sectional Study. S: 549 parents who attended the pediatric dental clinic at KAUFU, Jeddah, Saudi Arabia from 1 January 2018 to 31 December 2018. I: Telephone interview by four dental students for 10-15 minutes to complete the questionnaire. A: Chi Square test.	The results showed that the highest knowledge questions were related to topical application. However, only 96 (24.4%) participants were aware of the fissure sealant.	Google Scholar

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10	a. Ghassan Khayri Sobh b. Shahzeb Hasan Ansari c. Ahmed Abdullah Alsalamah d. Hashim Ali M Alshehry e. Faisal Mased F Al muammar f. M. Mousa H Malhan	2020	Medical Science, 24 (106)	Saudi Parents Attitude Towards The Use of Fluoride and Fissure Sealants In Their Children : A Cross Sectional Study	D: Cross sectional study. S: 956 parents filled out an online survey. I: An online questionnaire with Google Forms relating to personal and demographic information is followed by attitude related questions. A: Chi square test.	According to the results of the analysis, parents know more about the use of fluoride than they know about sealants in their children.	Google Scholar
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Table 2. Parents' Knowledge of Caries Prevention in First Molars

No.	Article	Result
1.	a. Sigalit Blumer b. Tal Ratson c. Benjamin Peretz d. Nurit Dragon	The results showed that positive attitudes towards caries prevention measures such as fissure sealants were found in parents with higher education with higher awareness of dental and oral health precautions.
2.	Ayub Irmadani Anwar	The need for fissure sealant treatment for the first molars was 76 (24.9%) students with details of the lower-left permanent first molar, namely 46 teeth (15.1%), the lower right permanent first molar ie 40 teeth (13.1%), the upper right permanent first molar 12 teeth (3.9%), the upper left permanent first molar 9 teeth (3%).
3.	a. Sukirat Kaur b. Ravishankar Lingeshia Telgi c. Vibhav Tondon d. Ramneek Kaur e. Shyamalima Bhattacharrya	250 parents with details of 180 mothers and 70 fathers showed results of visits to the dentist by 94.8%, but only 10% of parents knew that dental caries could be prevented with fissure sealants and topical application.
4.	a. Lakshimi Lakshmanan b. Deepa Gurunathan	The results showed that 71% of parents agreed and knew that fissure sealants were effective in preventing dental caries but only 34% of the children participating in the study practiced fissure sealants.
5.	a. Arun Deep b. Abi M. Thomas c. Namita Singh d. Shaila	The results showed that most of the parents had a low level of knowledge about the action of fissure sealants and topical application (68.8%).

6.	Manal A Al Mutairi	This study shows that parents' attitudes and knowledge about fluoride and fissure sealants are still low.
7.	a. Bahareh Tahani b. Ghasem Yadegarfar c. Azimeh Ahmadi	The average knowledge of parents about topical application and fissure sealant therapy is 5.9% and 2.6%, respectively. The experience of parents doing fissure sealant was 10.4% and 23.2% were doing a topical application.
8.	a. Liangwen Chen b. Jialan Hong c. Dian Xiong d. Luyi Zhang e. Yuhong Li f. Shengfu Hwang g. Fang Hua	In families with children who have mixed teeth, parents with a high level of education tend to have better knowledge of oral health such as knowledge of fissure sealants. In addition, children of well-educated parents tend to practice better oral hygiene.
9.	a. Heba J. Sabbagh b. Doaa S. Alghamdi c. Wafa M. Almutairi d. Shahd A. Alshahrani e. Asma S. Alghamdi	The results showed that the highest knowledge questions were questions related to topical application. However, only 96 (24.4%) participants were aware of the fissure sealant.
10.	a. Ghassan Khayri Sobh b. Shahzeb Hasan Ansari c. Ahmed Abdullah Alsalamah d. Hashim Ali M Alshehry e. Faisal Mased F Almuammar f. M. Mousa H Malhan	According to the results of the analysis, parents know more about the use of fluoride than they know about sealants in their children.

DISCUSSION

Parents' Knowledge of Caries Prevention of Permanent One Molar Children aged 6-7 years with Fissure Sealant

Parental knowledge about caries prevention of permanent first molars with fissure sealants is still low, this can be seen from the high percentage need for fissure sealant care in their children's. The high need for fissure sealant treatment is explained in Anwar (2016) research that the number of fissure sealant needs to be reached more than half of the study participants from several schools observed.

Many parents do not know that dental caries can be prevented by performing fissure sealant treatment and topical application. This is explained in the results of research conducted by Mutairi (2020) in this article explaining that parental attitudes and parental knowledge about fluoride and fissure sealants are still low. This was also conveyed in the study of Deep et al. (2019) and Tahani *et al.*, (2018) which states that most parents have a low level of knowledge about the action of fissure sealants and topical applications. Compared to the research conducted by Kaur et al., (2018), it was explained that at least less than half of the parents who visited the dental clinic knew that caries could be prevented by taking fissure sealants and topical application.

In the results of the literature review of the 10 articles above, there is an article which states that the knowledge of parents about the prevention of dental caries is influenced by the level of education of the parents. As in the research conducted by Chen et al., (2020) and Blumer et al., (2018), it is explained that in families with children who have mixed teeth, parents with high levels of education tend to have better oral

health knowledge. better, such as knowledge of fissure sealants. Positive attitudes towards caries prevention such as fissure sealants are also found in parents who have a higher level of education. In addition, children of better-educated parents tend to practice better dental and oral needs.

The Importance of Caries Prevention in Permanent First Molars

The first permanent teeth to erupt in the oral cavity at the age of 6-7 years are the first permanent molars. This tooth is referred to as a key of occlusion because the permanent first molar is stable, rarely malpositions, the largest tooth, and is the first to erupt and does not replace the primary teeth. However, the loss of this first molar can cause a change in position during the growth of the neighboring teeth, affecting occlusion, the jaw joint, and the masticatory process which has an impact on the absorption of food nutrients. However, some parents think that the permanent first molars are still undergoing replacement, so they don't pay much attention to it and the impact is that the teeth are exposed to caries, over time if not treated the teeth will die and must be extracted, irregular teeth growth, and damage to the periodontal tissue (Wahyuni, 2019).

Parents' awareness about caries prevention care for their children is also very important, this is because children who have mixed early teeth with an age range of 6-7 years have not been able to maintain good oral and dental health so they need help and support from the role of parents. This statement is by research conducted by Lakshamanan & Gurunathan (2017) that there are quite a several parents who know about fissure sealants but no more than half of them have practiced fissure sealant as a preventive measure for their children.

Fissure Sealant For Dental Caries Prevention

Research conducted by Sabbagh et al., (2019) explains that parents do more topical application actions than fissure sealants, this happens because of the influence of parents' lack of knowledge about preventive fissure sealants. This is also in line with research conducted by Sobh et al., (2020) which explains that parents are more aware of topical application actions compared to fissure sealant treatment for their children.

CONCLUSION

Parental knowledge about caries prevention of permanent first molars with fissure sealants is still low, this is supported by the results of several studies in the literature review which show a high percentage of need for fissure sealants and low parental knowledge about caries prevention care, especially fissure sealants.

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