

# Parental Knowledge and Attitude towards Pit and Fissure Sealant

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## ABSTRACT

**Background:** Dental caries is one of the most common oral health problems seen in children. Pit and fissure sealants are widely used as a preventive measure to protect the occlusal surfaces of teeth from decay. The awareness and acceptance of this preventive procedure among parents play an important role in its utilization.

**Aim:** This study was carried out to assess the level of knowledge and the attitude of parents toward pit and fissure sealants used for the prevention of dental caries in children.

**Methods:** A cross-sectional survey was conducted among parents using a structured questionnaire. The questionnaire was circulated through an online Google Form. It included questions related to demographic details as well as knowledge and attitudes regarding pit and fissure sealants. The responses obtained were compiled and analyzed to understand parental awareness and perceptions about this preventive dental treatment.

**Results:** The result indicated that only a limited number of parents were aware of pit and fissure sealants and their role in preventing dental caries. However, many parents showed a positive attitude toward preventive dental procedures and were willing to consider sealant application for their children after receiving appropriate information from dental professionals.

**Conclusion:** The study suggests that there is a need to improve parental awareness about pit and fissure sealants. Providing proper education and guidance can help parents make informed decisions regarding preventive dental care for their children.

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## INTRODUCTION

Dental caries is one of the most common oral health problems affecting children worldwide. The pits and fissures present on the chewing surfaces of posterior teeth are particularly susceptible to caries because they tend to trap food particles and bacteria. These areas are often difficult to clean with regular brushing, which increases the risk of decay. Pit and fissure sealants are widely used as a preventive measure to protect these vulnerable tooth surfaces and reduce the occurrence of dental caries<sup>6</sup>.

Pit and fissure sealants are considered a simple and effective preventive treatment in pediatric dentistry. When applied at the appropriate time, especially after the eruption of permanent molars, they can significantly reduce the risk of occlusal caries. However, the utilization of such preventive measures depends not only on dental professionals but also on the awareness and acceptance of parents, as they are responsible for making healthcare decisions for their children<sup>5</sup>.

Previous studies have reported that many parents have limited knowledge about pit and fissure sealants and their role in preventing dental caries. In several cases, parents become aware of this preventive treatment only after receiving information from dental professionals<sup>1,3</sup>.

Survey-based studies conducted among parents have also shown that although parents may have a positive attitude toward preventive dental care, their level of knowledge regarding sealants remains inadequate. Increasing parental awareness

through proper education and communication can improve the acceptance and use of preventive dental treatments for children<sup>2,4,7,8</sup>.

Therefore, the present study was conducted to assess the knowledge and attitude of parents toward pit and fissure sealants as a preventive measure for dental caries in children.

## METHODS

### Ethical Approval

This study was conducted following approval from the Institutional Ethics Committee of Krishna Vishwa Vidyapeeth, located in Maharashtra. The protocol number is 160/2025-2026. Participation was entirely voluntary, and all participants were provided with an informed consent form before taking part. Their responses and all data were kept confidential and used solely for research purposes.

### Study Design

A cross-sectional survey design was adopted to gather data at a single point in time from a defined group of participants. This approach is well suited for identifying patterns in self-assessed competence within a specific academic context.

### Participants

The participants in this study were parents who voluntarily agreed to take part in the survey. The questionnaire was shared through Google Forms, and consent was obtained from the participants before they completed the survey. Only the responses that were fully completed were included in the final analysis.

### Sample Size Calculation

The required sample size was calculated using with a confidence level of 95%, a 5% margin of error, and an assumed response distribution of 50%. A minimum sample size of 150 was determined.

### Data Collection:

Survey was conducted in digital format (Google forms) to maximize accessibility to the parents. Prior to distribution, a brief overview of the aims of the study was provided.

### Statistical Data:

The SPSS program (version XX, IBM Corp., Armonk, NY, USA) used to analyse the data after it has been collected using Microsoft Excel. The demographics of the participants and general response patterns are described using summary statistics like frequency, percentage, mean, and standard deviation. When comparing mean scores between two groups, the independent t-test were used, and when comparing more than two groups, one-way ANOVA with Tukey's post-hoc analysis was used. The Chi-square test used to investigate correlations between categorical variables. The reliability of the questionnaire was evaluated using Cronbach's alpha, with values of 0.7 or higher indicating satisfactory internal consistency, and Pearson's correlation was used to examine relationships between continuous variables. For all statistical studies, a significance level of  $p < 0.05$

**Gender of parents:** Among the 154 participants, the majority were female (59.1%), while males accounted for 40.9%, indicating higher participation of mothers in the survey.

**Occupation:** Job holders formed the largest group (27.3%), followed by housewives (17.5%) and business owners (13%). Managers (5.2%) and students (5.8%) represented smaller proportions, while dentists, doctors, engineers, and other occupations accounted for only a small percentage of respondents.

**Educational Level:** Most parents had a graduate-level education (75.3%). About 14.3% had completed postgraduate studies, while 9.1% reported secondary school as their highest level of education.

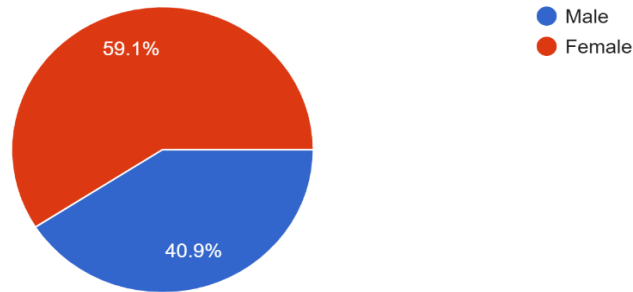
**Monthly Income:** The majority of parents belonged to the ₹25,000–50,000 income group (40.9%). About 27.3% reported an income above ₹50,000, while 22.1% earned between ₹10,000–25,000. Only 9.7% reported a monthly income below ₹10,000.

**Number of Children:** Most parents had one child (61%), followed by two children (30.5%). A small proportion had three children (1.9%), while very few responses indicated no children or other entries (0.6% each).

Statistical data displayed in form of pie diagram and chart :

### Gender

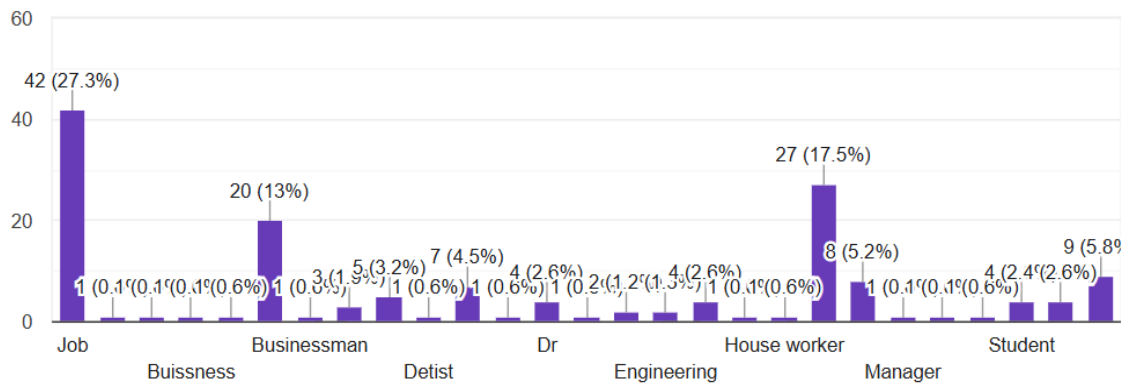
154 responses



### Occupation

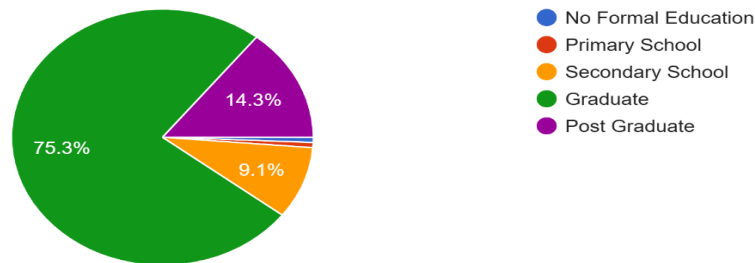
154 responses

Copy chart

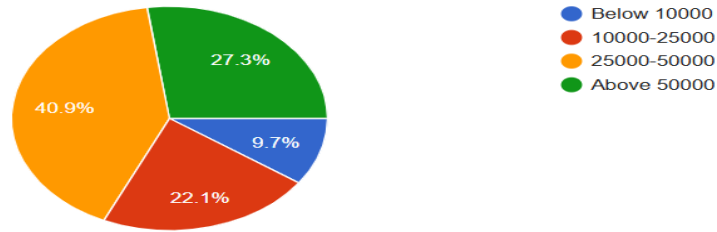


### Education level

154 responses



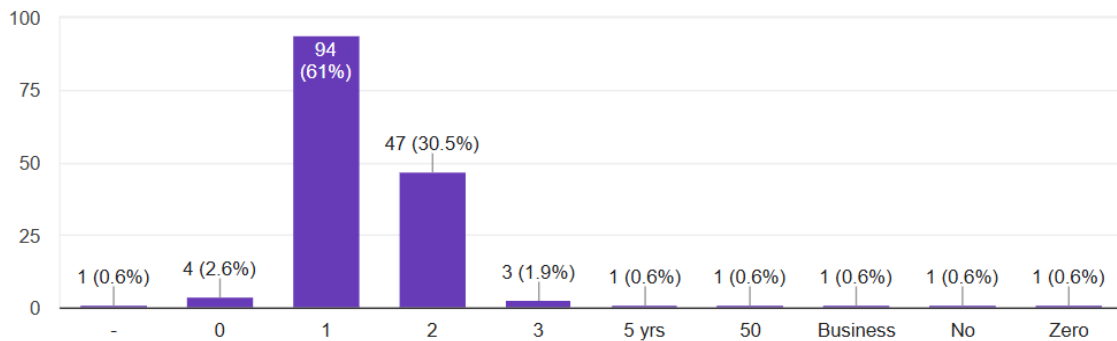
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154 responses



Number of Children's

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154 responses



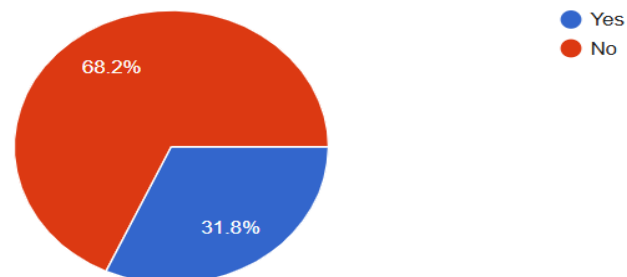
## RESULT

A total of 154 parents were participated in the study and result indicates that only a limited number of parents were aware of pit and fissure sealants and their role in preventing dental caries. However, many parents showed a positive attitude toward preventive dental procedures and were willing to consider sealant application for their children after receiving appropriate information from dental professionals.

1. Have you ever heard of pit and fissure sealants?

Have you ever heard of pit and fissure sealants?

154 responses

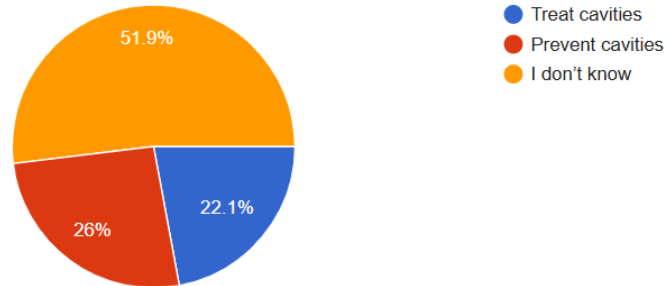


Most parents were not familiar with pit and fissure sealants (68.2%), while only 31.8% reported that they had heard about them. This suggests that awareness of pit and fissure sealants among the participants was generally low.

2. Pit and fissure sealants are used in.

Pit and fissure sealants are used

154 responses



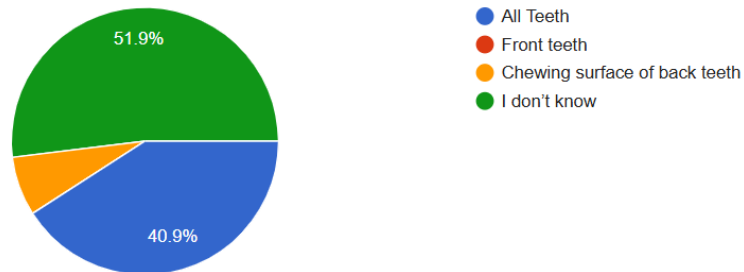
More than half of the participants (51.9%) were unaware of the purpose of pit and fissure sealants. About 26% correctly believed that sealants help prevent cavities, while 22.1% thought they are used to treat cavities. These findings suggest that many parents have limited understanding of the preventive role of pit and fissure sealants.

3. Sealants are usually applied to.

Sealants are usually applied to:



154 responses

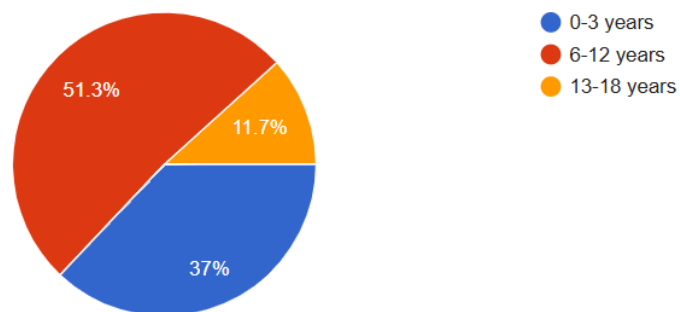


More than half of the participants (51.9%) were not aware of where sealants are applied. About 40.9% believed that sealants are applied to all teeth, while only a small number correctly identified the chewing surfaces of back teeth as the proper site. This suggests that many parents have limited knowledge about the correct application of pit and fissure sealants.

4. At what age are sealants usually applied?

At what age are sealants usually applied?

154 responses

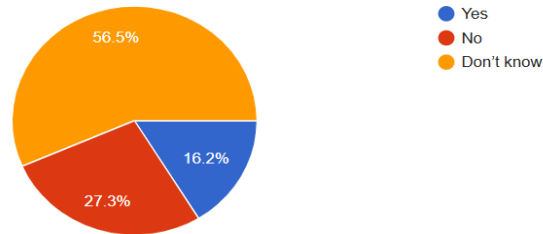


About 51.3% of parents reported that sealants are usually applied between 6–12 years of age. Meanwhile, 37% believed they are applied between 0–3 years, and 11.7% selected 13–18 years. These findings show that many parents associate sealant application with the age when permanent molars typically erupt.

**5. Do sealants require drilling or removing tooth structure?**

Do sealants require drilling or removing tooth structure?

154 responses

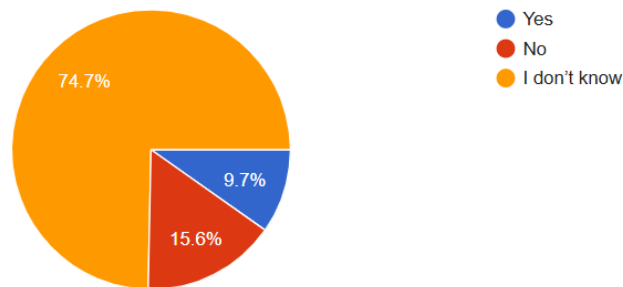


Most participants (56.5%) reported that they did not know whether sealant placement requires drilling or removal of tooth structure. About 27.3% believed that drilling is not required, while 16.2% thought that drilling or removal of tooth structure is necessary. These findings indicate that many parents are uncertain about the sealant procedure, highlighting the need for greater awareness and education about preventive dental treatments.

**6. Are sealants a permanent solution?**

Are sealants a permanent solution?

154 responses

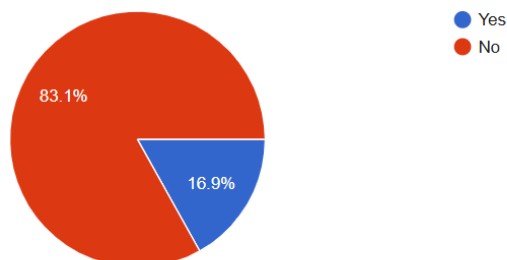


The majority of participants (74.7%) reported that they did not know whether sealants are a permanent solution. About 15.6% believed that sealants are not permanent, while only 9.7% thought that they are permanent. This suggests that many parents are unsure about how long dental sealants last, highlighting the need for better awareness and information about their effectiveness and durability.

**7. Have your children ever received dental sealants?**

Have your children ever received dental sealants?

154 responses



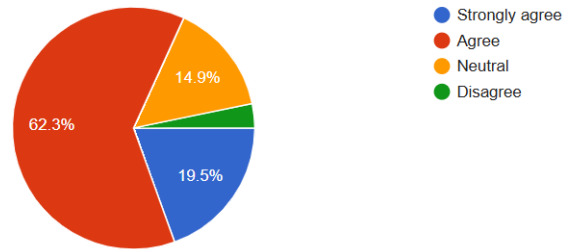
Most respondents (83.1%) reported that their children had not received dental sealants, while only 16.9% stated that their children had undergone the procedure. This suggests that the use of dental sealants among the children of the participants is relatively low, which may reflect limited awareness or access to this preventive dental treatment.

8. I believe sealants are effective in preventing cavities.

I believe sealants are effective in preventing cavities.



154 responses

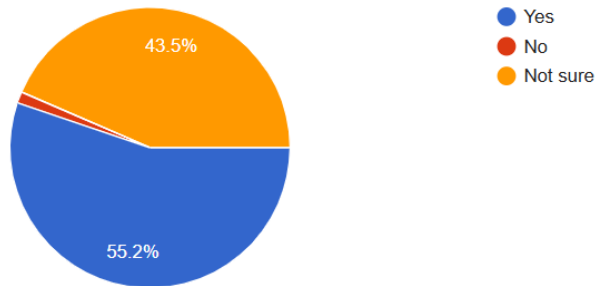


A majority of participants believed that dental sealants are effective in preventing cavities. About 62.3% agreed with the statement, while 19.5% strongly agreed. Meanwhile, 14.9% of respondents remained neutral, indicating some uncertainty about their effectiveness. Only a small percentage disagreed. Overall, these findings show that most parents have a positive perception of dental sealants and recognize their role in preventing tooth decay.

9. I would allow my child to get sealants if recommended by a dentist.

I would allow my child to get sealants if recommended by a dentist.

154 responses

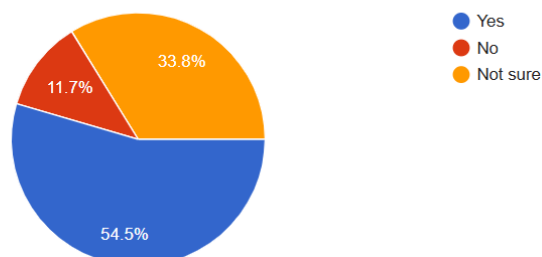


More than half of the respondents (55.2%) said they would allow their child to receive dental sealants if recommended by a dentist. However, 43.5% reported that they were not sure, indicating that many parents may need more information about this preventive treatment. Only a very small number of participants responded “No.” Overall, these findings suggest that although many parents are open to the idea of dental sealants, greater awareness and education about their benefits are still needed.

10. I am concerned about the safety of dental sealants.

I am concerned about the safety of dental sealants.

154 responses

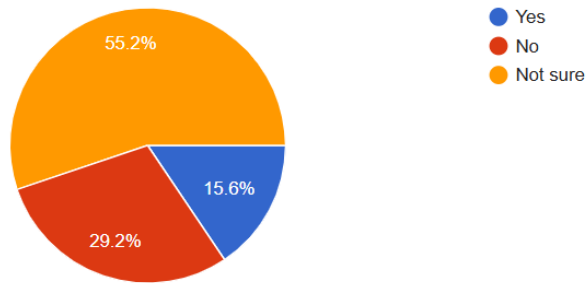


Among the participants, 54.5% reported that they were concerned about the safety of dental sealants. In contrast, 11.7% stated that they were not concerned, while 33.8% were unsure. These findings indicate that although many parents have concerns about the safety of sealants, a considerable number are uncertain, highlighting the need for better information and awareness about this preventive dental treatment.

11. Cost is a barrier for me to consider sealants for my child.

Cost is a barrier for me to consider sealants for my child.

154 responses

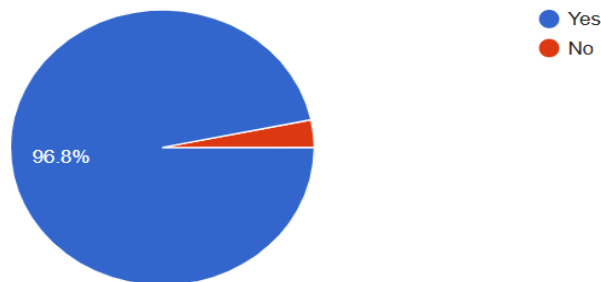


The majority of respondents (55.2%) were unsure whether cost is a barrier to considering dental sealants for their child. About 29.2% reported that cost is not a barrier, while 15.6% felt that cost does affect their decision. These findings suggest that many parents may not have clear information about the cost of dental sealants, highlighting the need for better awareness regarding their affordability and benefits.

12. I would like to receive more information about sealants.

I would like to receive more information about sealants.

154 responses



Out of the 154 responses, the vast majority of parents (96.8%) expressed that they would like to receive more information about dental sealants, while only a small percentage (3.2%) reported that they did not need additional information. This indicates a strong interest among parents in learning more about dental sealants and highlights the importance of providing proper education and awareness about this preventive dental treatment.

## DISCUSSION

The present study assessed the knowledge and attitudes of parents regarding pit and fissure sealants as a preventive measure for dental caries in children. The findings showed that overall awareness about sealants among parents was limited, although many participants showed a positive attitude toward preventive dental care. In this study, a majority of parents had not heard about pit and fissure sealants, indicating low awareness among the participants. Similar findings have been reported in previous studies, where parental knowledge about sealants was found to be inadequate<sup>1,3</sup>. In addition, many parents were unaware of the purpose and correct application of sealants, which is consistent with earlier research reporting limited understanding of preventive dental treatments among parents<sup>2,4</sup>.

Despite the limited knowledge observed, many parents believed that sealants are effective in preventing cavities and were willing to allow their children to receive sealants if recommended by a dentist. Similar positive attitudes toward preventive dental care have been reported in previous studies<sup>5,7</sup>.

However, the results also showed that most children had not received dental sealants, and some parents expressed concerns regarding their safety and cost. These findings are similar to those reported in earlier studies<sup>2,8</sup>

Overall, the results highlight the need to improve parental awareness and education about pit and fissure sealants. Increasing knowledge through proper guidance from dental professionals may help promote the use of this effective preventive treatment.

### CONCLUSION

The findings of the present study indicate that parental awareness and knowledge regarding pit and fissure sealants are generally limited. A large proportion of parents had not heard about sealants and were unaware of their purpose, application, and procedure. Despite this lack of knowledge, most parents showed a positive attitude toward preventive dental care and were willing to allow sealant application for their children if recommended by a dentist. However, concerns regarding safety, cost, and lack of information were also observed among many participants. The results highlight the need for increased awareness and educational initiatives by dental professionals to improve parental understanding and encourage the use of pit and fissure sealants as an effective preventive measure for dental caries in children.

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**Conflicts of interest:** Nil

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#### Author contribution:

The study's general idea and design were overseen by Miss. Harshada Vijay Sawant. They conducted the literature analysis, developed the questionnaire, and gathered information. They also oversaw the composition of the manuscript, including the discussion and conclusion sections, and carried out the data analysis and interpretation.

**Dr. Pali Nikose**, who offered scholarly direction during the investigation. She supported ethical approvals, helped to improve the study design, and offered insightful criticism on the analysis and paper's final draft.

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