ORIGINAL RESEARCH PAPER

Endodontics

AWARENESS ABOUT DENTAL SEALANTS AMONG RESIDENTS OF MELMARUVATHUR FOR CARIES PREVENTION: A QUESTIONNAIRE STUDY .

KEY WORDS:

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ABSTRACT

Background: Dental caries remains a major public health concern, especially among children, causing various oral and systemic health issues. Disparities in caries prevalence are linked to socioeconomic factors, with minority and disadvantaged populations facing the highest rates. Dental sealants have been shown to prevent significant portions of caries, particularly in the posterior teeth, which are more vulnerable to decay. **Objective:** This study aimed to evaluate the understanding, awareness, and attitudes towards dental sealants among the residents of Melmaruvathur,Tamil Nadu, India, and to assess the need for advancing oral health education in the community. **Methods:** A cross-sectional survey was conducted among 120 participants in December 2024, selected through non-probability and convenience sampling. Participants aged 21-60 years, who were literate, were included in the study. A validated questionnaire was used to collect demographic information, knowledge about dental sealants, sources of information, attitudes towards sealant usage, and suggestions for improving awareness. Data were processed and analyzed using descriptive statistics and thematic analysis. **Result:** Most participants (77.23%) were aware of dental sealants, with 89% understanding their role in preventing caries. Sources of information included dentists (50.91%) and friends (24.55%). 60% discussed sealants with their dentist, and 47% had family members who received them. 68.2% were open to using sealants, and 75.8% highlighted the need for school education. Participants recommended awareness campaigns through community outreach, social media, and educational programs. **Conclusions:** The study shows general awareness of dental sealants but highlights gaps in knowledge, particularly about their use. Increasing public awareness through dental professionals, schools, and targeted education for parents and caregivers is essential to improve sealant uptake, reduce disparities, and address untreated dental caries in underserved populations.

INTRODUCTION :

Dental caries is the most common oral illness in children and a significant public health concern. In addition to harming teeth, this illness is the cause of a number of pathological disorders affecting the oral cavity and other bodily systems.(1).Caries prevalence varies by race, ethnicity, and family income, with minority and socioeconomically disadvantaged populations experiencing the highest prevalence (2) . If left untreated, cavities in the teeth can result in discomfort, trouble speaking, and lost school days.(3) .The areas of teeth that are most susceptible to caries are pits and fissures; the proportion of total caries that affect occlusal surfaces as opposed to smooth surfaces has gone up (4). The general consensus was that almost every molar occlusal surface will eventually develop cariousness (5-7).

Buonocore's work culminated to the launch of Nuva-Seal (L.D. Caulk), the first pit and fissure sealant, in February 1971(8) .Pit and fissure sealant is an material that forms a barrier of protection in the occlusal surface of caries-prone tooth, combating bacteria from leveraging access to nutrients.(9).

Approximately 90% of caries in the permanent set of tooth happen in the posterior set of teeth(10) . Professional health organizations frequently recommend dental sealants. (11,12) ,since they can prevent around 90% of posterior decay within one year and 50% within five years of application(13).

We evaluated participants' understanding of the function of sealants, and the data from this study establishes a template for subsequent research on sealant knowledge and can be used to determine the compulsion for advancing oral health education and literacy.

Methodology:

Study Design:

The study utilised a cross sectional survey design to evaluate the knowledge of the dental sealants among the resistants of melmaruvathur in the month of December 2024. Study was carried out among the people of melmaruvathur ,Tamilnadu , India.

Sampling, Size And Source Of Study:

The formula for a single population proportion was used to get the sample size , with a precision error of 5%, a confidence level of 95%, and an anticipated proportion of 50% . It was established that the minimal sample size necessary was 160,taking into account a 20 % non response rate 120 were chosen as the ultimate sample size . Non occurence third party recuitand convenience sampling were utilitin the participants selection process.

Inclusion And Exclusion Criteria:

Common people residing in the melmaruvathur, of age 21 - 60 years , literate are included in the study .The illiterate and the people who are not willing to participate were excluded from the study. Prior to answering the surveys, the participants were made aware that their involvement in this study was completely optional.

Sample Collection:

A questionnaire was developed and cross checked by the guide of the study. Then it was validated by the experts. By calculating the item-objective congruence (IOC) index, the validity of the questionnaire was assessed; the average I-IOC was 0.81 (an IOC score > 0.7 is seen to be indicative of good content validity). All of the questionnaire's items had IOC values greater than 0.7.There was only one component on the

questionnaire, which contained the framed question and demographic data.

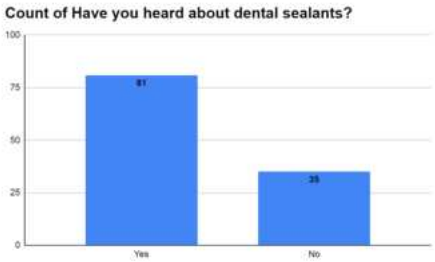
1. The initial question prompted participants to provide demographic information such as their name, age, and gender for the questionnaire study.
2. This is followed by question which were framed to assess the knowledge of dental sealants and the source through which they have gained the knowledge.
3. Then further set of questions were framed in order to know the attitude of the people towards using the dental sealants for themselves and their kins.
4. The last set of questions were framed in order to assess the awareness among the participants about the dental sealants and the utilisation of the dental sealants.
5. And the final question were framed to ask the suggestions to improve the awareness of dental sealants among population. As a total of 10 questions were framed.

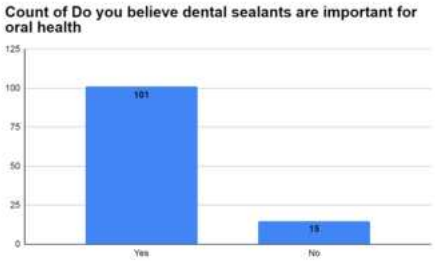
Google Form was used to create an online version of the questionnaire because it makes it easy for participants to complete it. Participants who are not familiar with the internet were given a printout of the questions, which are bilingual in English and Tamil. The Google form is then used to collect data automatically and instantly without introducing bias. They were provided with a QR code link to participate, allowing them to access and fill out the survey.

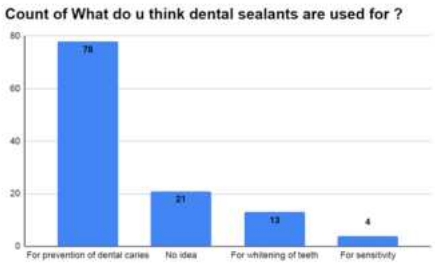
Data Processing And Analyses:

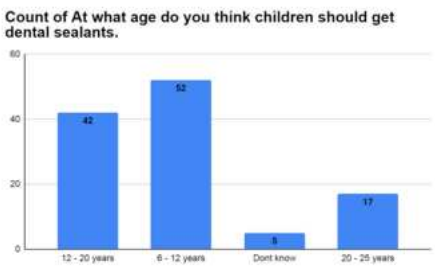
The acquired data was inserted into a Microsoft Excel spreadsheet and subjected to analyses. Basis descriptive statistics were used to summarise the data and draw conclusion. For categorical data, simple count were calculated for each responded type. For qualitative data , thematic analysis was performed by identifying common suggestion or pattern in the responses. These pattern were then grouped and quantified to identify the most common recommendation or idea for improvement.

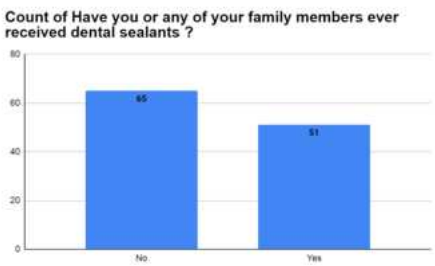
RESULTS: The majority of respondents (77.23%) have heard of dental sealants, while 22.77% have not. Most respondents correctly associate dental sealants with the prevention of dental caries (89 responses). A smaller proportion either had no idea (18 responses) or mistakenly thought they were used for other purposes (whitening or sensitivity, 9 responses combined). A large majority (89 responses) believe dental sealants are important for oral health, while only a small group (16 responses) do not.The majority of respondents first learned about dental sealants from their dentist (50.91%), followed by friends (24.55%). A smaller percentage learned from other health care professionals (9.09%).60% of respondents have discussed dental sealants with their dentist, while 40% have not.47% of respondents or their family members have received dental sealants, while 53% have not.The majority (54.46%) believe children should receive dental sealants between the ages of 12-20 years, while 33.93% suggest ages 6-12. A small proportion (2.68%) are unsure. 68.2% would consider getting dental sealants for themselves and their children, while 21.2% are unsure (maybe), and 10.6% would not consider it. 75.8% of respondents believe it is very important for schools to educate children about dental sealants. A small percentage (6.6%) think it is not very important, and 1.1% are unsure. A significant proportion (37.2%) suggested creating awareness through various channels like community camps and schools. Other recommendations include using social media and video campaigns (17.4%) and educational programs in schools and health centers (15.1%).As a Overall Summary: A large majority of respondents (77.23%) have heard of dental sealants, and most correctly understand their purpose, which is to prevent dental caries.Respondents learned about dental sealants mostly through dentists (50.91%) and friends (24.55%). Most (60%) have discussed dental sealants with their dentist.A vast majority (89 responses) believe dental sealants are important for oral health, with a focus on educating children in schools (75.8%).68.2% would consider getting dental sealants for themselves and their children.Respondents emphasized the need for greater awareness through community outreach, social media campaigns, and educational programs.

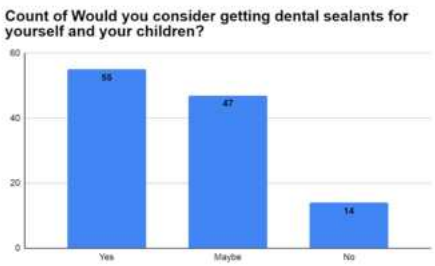


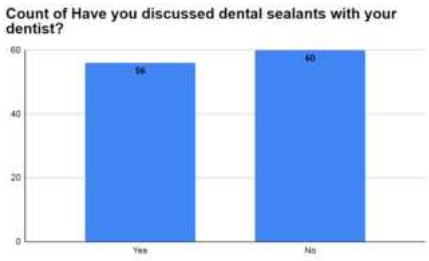


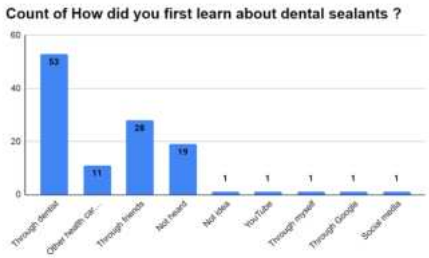


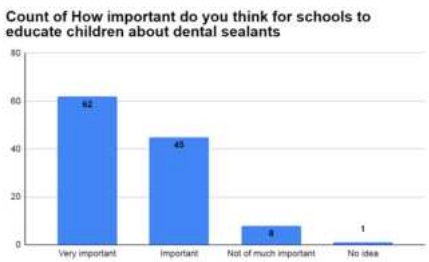












DISCUSSION:

The survey results reveal that a majority of respondents are familiar with dental sealants, and most correctly understand their primary function—to prevent dental caries. While a strong understanding exists, there remains a small portion of individuals who are either unaware of sealants or mistakenly associate them with other dental treatments like whitening or sensitivity relief.

Respondents also suggested expanding awareness efforts through community outreach programs, social media campaigns, and educational initiatives in schools and health centers. This reflects a clear demand for more widespread education on the benefits of dental sealants to improve oral health prevention.

A poll of Australian parents revealed that dental professional were their preferred source of dental information. Sealant awareness has been connected to the frequency of dental visits, the type of dental facility, and caries prevention conversations with a dentist (14).According to research, children whose parents are knowledgeable about dental sealants are more likely to receive treatment.(15 16).

One fundamental tenet of health literacy is that in order to benefit from services, people need to be aware of them.When deciding whether to allow their child to participate in a school program or receive sealants in a clinical setting, parents need to be informed about dental sealants. In order to increase parents' and caregivers' knowledge of sealants and to educate them about these programs, dental professionals play a critical role.Research shows that when a dentist is more knowledgeable about an essential surgery than the patient, they can successfully convince the patient to consent to it.This may help to explain why more sealants are applied when states offer Medicaid-eligible children incentives for sealant placement, which incentivizes dentists to learn more about sealants (17).

The American Academy of Pediatric Dentistry (AAPD) offers recommendations for children's anticipatory care and preventive dental treatments (18). The AAPD advises dental professionals to apply sealants to caries-prone primary and permanent posteriors and anterior teeth in children ages 2 to 6. During recall visits, children should also be examined to see whether maintenance of current sealants is required or whether new sealants are required.Furthermore, the American Dental Association advocates for the application of sealants and urges dental professional to discuss them with their patients or their caregivers (19).

Low consent rates, maybe due to parental lack of sealant knowledge, pose an important roadblock to successful program implementation. A recent study in Maryland observed that parents of children under 6 have less knowledge about sealants, which is similar with our findings. The survey pointed out that only a few parents had heard of dental sealants (20).

Despite rising incidence, dental sealants are still undervalued among children vulnerable for decay that is untreated (21).We discovered inequalities in awareness of sealants' preventative purpose.The dental community is still a great source of information on sealants' preventive advantages. Dental professional associations and public health organizations should create oral health promotion and education initiatives for people with limited resources and minority parents, as well as parents of young children, in order to lessen gaps in sealant knowledge and untreated dental caries.

CONCLUSION:

The survey results indicate that a majority of respondents are aware of dental sealants and understand their primary purpose in preventing dental caries. Despite this awareness, there remains a small but notable portion of individuals who are either unaware or misinformed about the purpose of dental sealants. The study highlights the importance of increasing public knowledge, particularly through dental professionals, community outreach, and educational campaigns in schools and health centers.

The results also underscore the need for targeted education efforts, especially for parents and caregivers, as knowledge of dental sealants is crucial in encouraging their use, particularly in children. The survey responses indicate that the majority of participants recognize the importance of dental sealants for oral health, with many expressing a willingness to consider them for themselves and their children. However, greater efforts are necessary to bridge the gap in awareness, especially among those with lower health literacy, to reduce disparities in dental care and improve prevention against untreated dental caries. Public health initiatives, particularly in underserved communities, should prioritize the dissemination of information regarding dental sealants to foster informed decision-making and ultimately improve oral health outcomes.

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