

Awareness of Avulsed Tooth Management Among Parents Attending A Dental College in Chennai

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ABSTRACT:

Dental avulsion is the complete displacement of a tooth from its socket due to accidental or non-accidental injury. Traumatic injuries to teeth and its supporting structures during childhood are one of the major problems faced by the dentist in day-to-day practice. Most children with dental trauma present late for treatment due to lack of awareness resulting in unfavorable long-term prognosis. The aim of the study is to evaluate the awareness of avulsed tooth management among parents attending Dental Colleges and Hospitals. The present study was questionnaire-based study. Random sampling technique was used in this study to select the sample for this study. The questionnaire containing 10 questions was distributed among 200 parents who participated in the study. The data obtained from questionnaires were tabulated and the statistical analysis was done using software SPSS version. The chi-square test was applied to investigate the association between the results. Total of 200 parents who accompanied their children for receiving dental care for the

first time in the Department of Pedodontics in Saveetha Dental College and Hospitals, Chennai, were surveyed to ascertain the knowledge, attitude, and practice of parents regarding emergency management of avulsed teeth. Male respondents of the surveyed group are 72, while female respondents were 128. The results showed that 75.5% had a previous experience about avulsed teeth in children. Nearly, 22% knew about replant re-implantation of the avulsed tooth and regarding the transportation media 46.5% had chosen cotton as a suitable media. This study shows a lack of knowledge regarding transportation media of avulsed teeth and majority of the parents are aware about how to hold the avulsed tooth. This study shows the need for effective communication between dentists and parents for better management of avulsed teeth. Therefore, educational programs are necessary to improve their level of knowledge.

keywords: Avulsion, management, trauma, childhood, emergency.

INTRODUCTION:

Dental avulsion is defined as complete removal of the tooth from its socket. It results in severe damage to pulp and periodontal ligament tissues with or without fracture of the alveolar bone. Most common causes of dental trauma in children due to fall during sports and leisure activities^{1,2}. Most commonly involved teeth are maxillary central Incisors and lateral incisors³ seen more in boys than the girls⁴. Dental avulsion brings aesthetic, functional, and psychological consequences, both on the child and the parents. Dental avulsion brings functional, aesthetics and psychological problems, both on the child and the parents⁵. The permanent anterior teeth play a very important role in psychological development of the children as well as teenagers. When the aesthetics is insulted by dental avulsion, there is more often a conscious effort of the children and teenagers to avoid smiling^{5,6}. The cost of dental treatment following trauma is very high, dental avulsion causes a burden to the society's economy⁷. Dental avulsion is managed by various treatment modalities, like a prosthetic replacement of the avulsed tooth, by minor orthodontic movements, and immediate reimplantation of the avulsed tooth which is followed by endodontic treatment. Though dental avulsion can be managed by other treatment modalities like the role of immediate reimplantation can never be overemphasized enough as it carries more psychological benefits than any other treatment modalities⁸. Replantation of avulsed teeth is the most accepted management method, which mainly entrusts on the periodontal ligament enduring on the tooth after avulsion.⁵ To avoid the drying out of root surface while carrying, it can be stored in different mediums such as milk, saline, and saliva.⁹

The prognosis of avulsed tooth is determined by proper adequate action taken immediately, involves minimizing the time when tooth remains outside its socket, using an adequate storage, transportation medium and protecting the root surface and periodontal ligament from damage¹⁰. Prolonged extra-alveolar duration leads to an uncertain or poor prognosis and teeth reimplanted within one hour after the injury shows a highest rate of functional healing^{10,11}. Reimplantation of the avulsed tooth is not possible, the tooth should be kept in specific storage media like Hank's Balanced Salt Solution¹². Dentists should know how to manage traumatic dental injuries in children¹³. Many studies have shown that there is insufficient knowledge regarding the immediate management of patients with traumatic dental injuries^{14,15}. High percentage of children with dental trauma present late for treatment, possibly because of lack of awareness and knowledge among related adults, resulting in unfavorable long-term prognosis^{16,17}. Parents play a significant role in a child's life, as they are the primary source of information to impart their knowledge¹⁰. Forty-one percent of dental injuries occur at home,¹⁸ so parents play an important role for appropriate decision making¹⁹. Majority of dental injuries occur in the home environment, so it is very important that parents should have basic knowledge regarding dental avulsion and emergency management²⁰. Several studies show that the majority of the population as well as the many professionals who may be involved in the management of dentoalveolar injuries, have little knowledge concerning this subject²¹. No previous study has been conducted in Tamil Nadu to evaluate the knowledge of parents about emergency management for tooth avulsion. Previously our team has a rich experience in working on various research projects across multiple disciplines²²⁻³⁶. Now the growing trend in this area motivated us to pursue this project. The aim of present study is to assess the level of parental knowledge and their attitude regarding dental avulsion, its emergency management and immediate steps to be taken after the occurrence of injuries.

MATERIALS AND METHODS:

The present study was questionnaire-based study. Random sampling technique was used in this study to select the sample for this study. Pediatric Parents attending outpatient department numbers were selected during this study. During this period, 250 parents who accompanied their children aged between 6 to 13 years in the Department of Pedodontics in saveetha dental college and hospitals were included in the study. A10 questionnaire was prepared for this study. The questionnaire consisted of two parts namely; In first part demographics includes gender, education level, geographic status was asked and whereas second part consisted of questions about their knowledge and attitude regarding emergency care of dental trauma. The data obtained from 250 questionnaires were tabulated and the statistical analysis was done using software SPSS version.the chi-square test was applied to investigate the association between the results.

RESULTS AND DISCUSSION:

Total of 200 parents who accompanied their children for receiving dental care for the first time in the Department of Pedodontics in Saveetha Dental College and Hospitals, Chennai, were surveyed to ascertain the knowledge, attitude, and practice of parents regarding emergency management of avulsed teeth. Male respondents of the surveyed group are 72, while female respondents were 128[Figure 1]. Around two-third of the respondents were reported to be coming from rural backgrounds. Most of the parents were business workers (50.5%) [Figure 2]. of all patients (31.5%) know about avulsed teeth and (68.5%) do not know about avulsed teeth [Figure 3]. (75.5%) of the parents agree that their child experienced dental trauma [Figure 4]. Among 200 respondents who participated, 22% agree with the statement that you will replant a tooth that is avulsed [Figure 5]. The majority of the parents (85%) agree that they have an idea to do what, when the tooth is knocked out and falls on the ground [Figure 6]. (51.0%) of the parents said within 30 minutes tooth replantation should be done after the tooth comes out of the bone socket [Figure 7]. The majority of the parents said that cotton [46.5%] is a transportation medium for the avulsed tooth [Figure 8]. (49.5%) of the parents said that the crown is part of the tooth used to hold to clean [Figure 9]. (54%) of the parents said that they don't clean the tooth before replanting [Figure 10]. Comparison of responses based on gender showed statistically significant differences with a higher number of female parents agreeing to the statements on awareness on avulsed tooth management. (Chi-square test; p-value<0.05)(Figure 11,12,13)

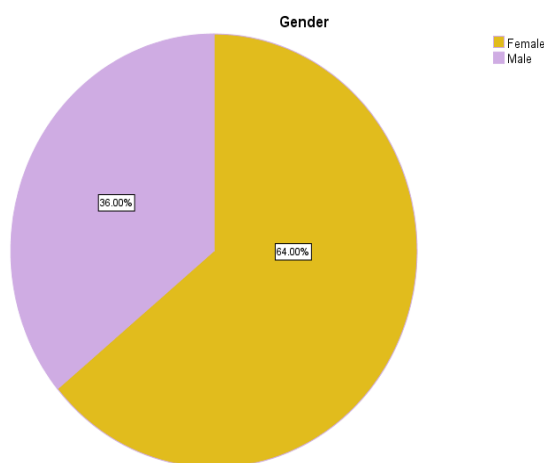


Figure 1; Pie chart shows gender wise distribution of respondents. A Higher number of responses was obtained from parents who were females.

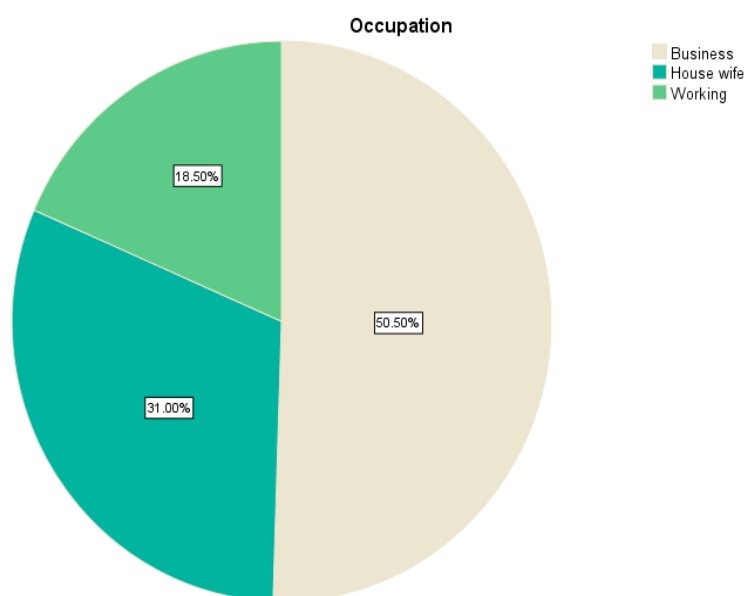


Figure 2: Pie chart shows occupation of respondents. The majority of the parents were business workers.

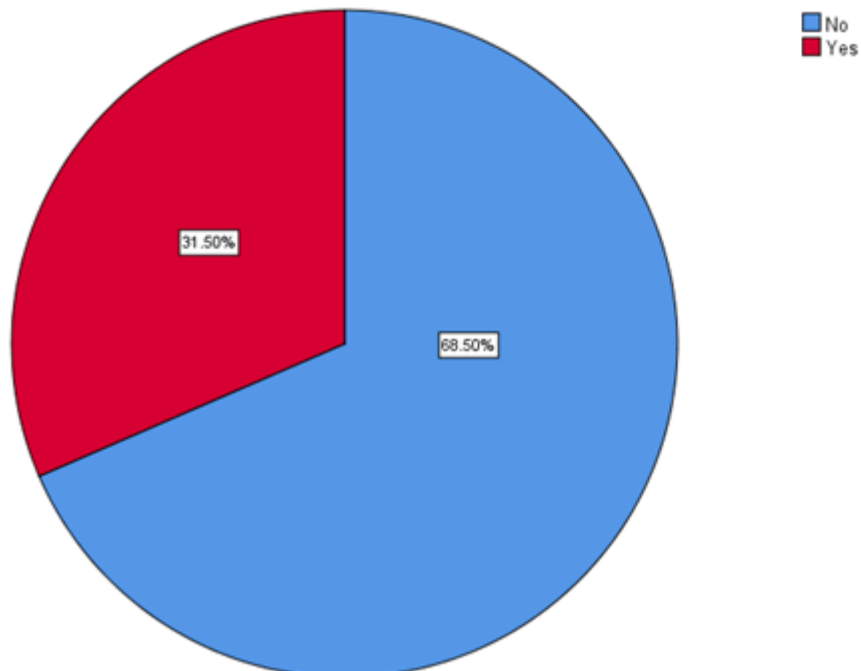


Figure 3: Pie chart shows percentage distribution for the statement "do you know what is avulsed tooth?". (31.5%) of parents responded that they have knowledge about avulsed teeth.

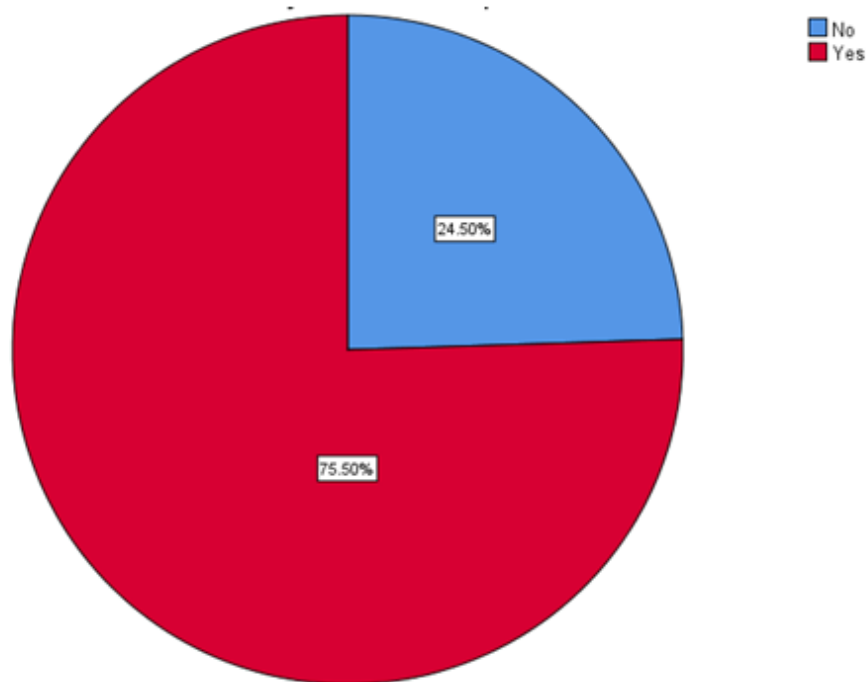


Figure 4: Pie chart shows the percentage distribution for the statements “did your child ever experience dental trauma”?. Results found to be nearly (75.5%) of children experienced dental trauma.

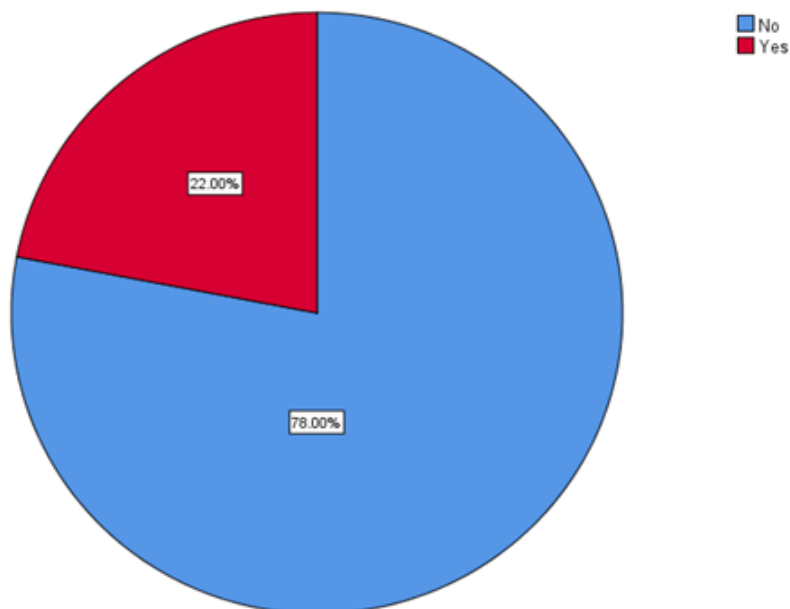


Figure 5: pie chart shows percentage distribution for the statement “will you replant tooth that is avulsed”?. (22%) of the parents responded that they will replant a tooth that is avulsed.

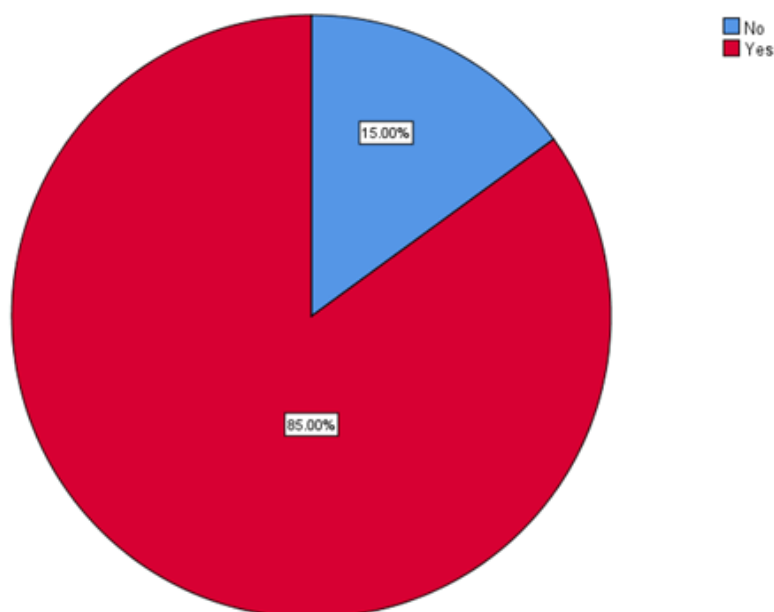


Figure 6: pie chart shows the percentage distribution for the statement “when the tooth is knocked out and falls on the ground, do you know what should be done?”. (85%) of the parents responded that they have knowledge about what should be done when the tooth is knocked out and falls on the ground.

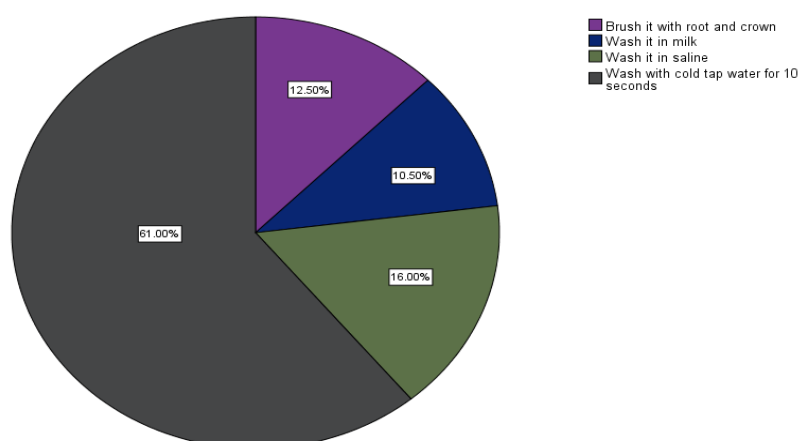


Figure 7: Pie chart shows the percentage distribution for the statement “when the tooth falls on the ground and gets dirty, what should you do?”. The majority of the parents (61%) responded that they wash tooth in cold tap water for 10 seconds.

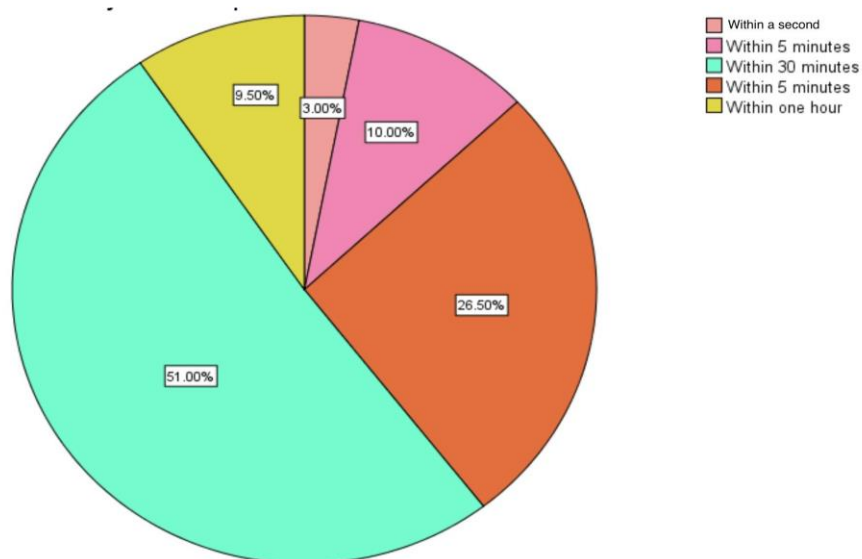


Figure 8: pie chart shows the percentage distribution for the statement “how immediately the tooth replantation should be done after the tooth comes out of the tooth socket”. (51%) of the parents responded that within 30 minutes tooth replantation can be done after the tooth comes out of the socket.

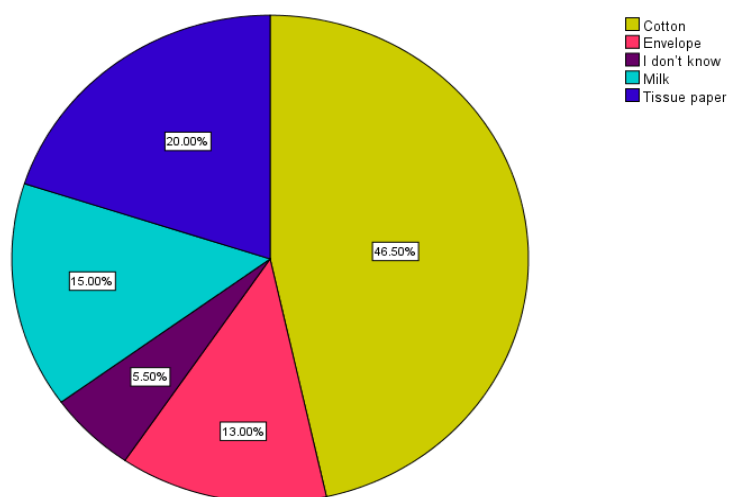


Figure 9: Pie chart shows the percentage distribution for the statement “what is a transportation media for avulsed tooth” ? Majority of the parents responded that cotton(46.5%) is used as a transportation media for avulsed tooth.

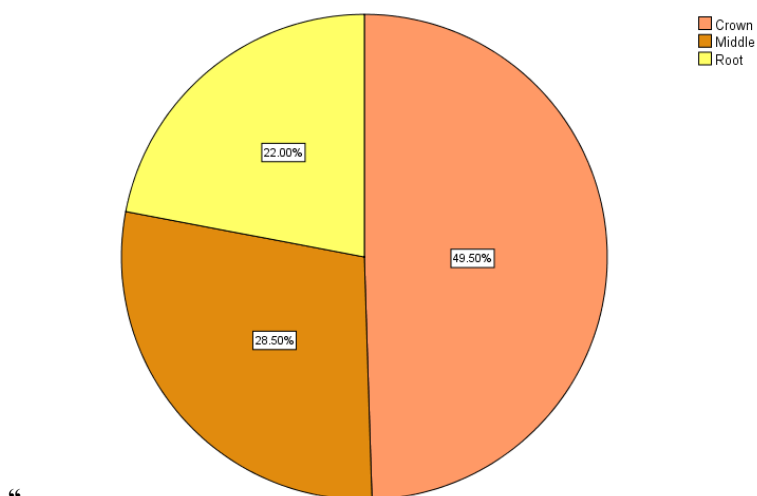


Figure 10: Pie chart shows the percentage distribution for the statement “if you want to clean a tooth which part will you hold”? (49.5) of the parents responded that the crown is part where they hold while cleaning the knocked out or avulsed tooth.

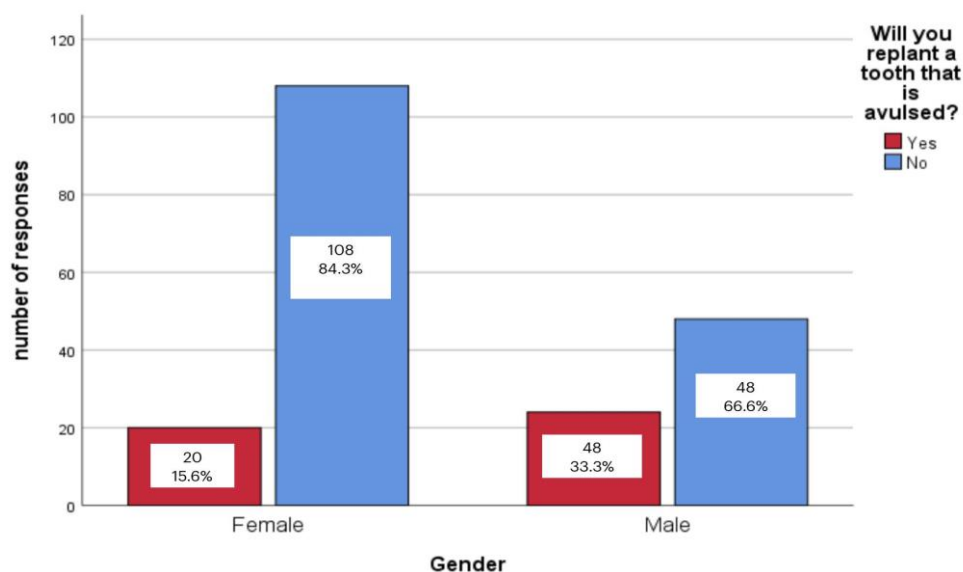


Figure 11: Bar chart describing the comparison responses for the statements “will you replant tooth that is avulsed” based on gender. This statement was disagreed by a higher percentage of respondents who were females (84.3%) when compared to the males (66.6%). This difference was statistically significant (Chi- Square Test; p=0.004- statistically significant).

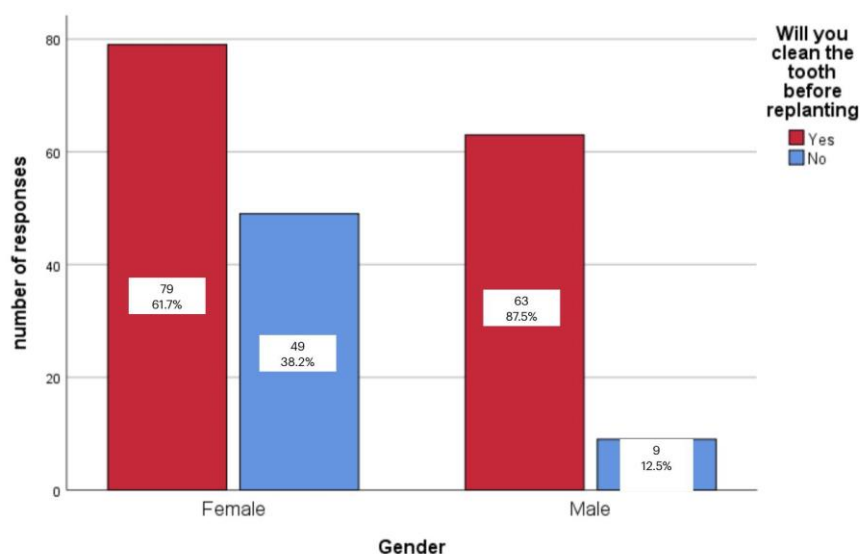


Figure 12: Bar chart describing the comparison of gender based on responses for the statements “will you clean the tooth before replanting”. (87.5%) of females responded they will clean the tooth before replanting where only (61.7%) of males responded that they clean the tooth. Hence females responded higher than males. This difference was statistically significant (Chi-Square Test; $p=0.000$ - statistically significant).

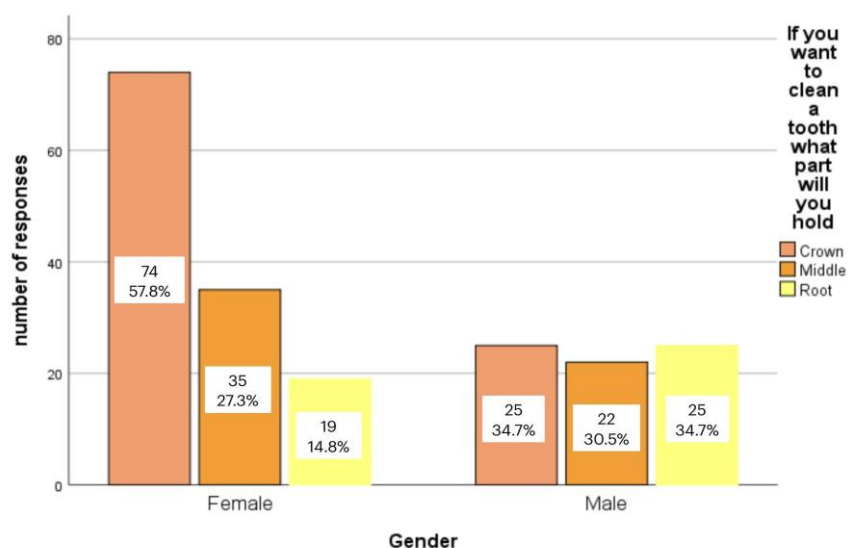


Figure 13: Bar chart describing the comparison of gender based on responses for the statements “if you want to clean a tooth what part will you hold”. (57.8%) of the parents responded that the tooth will be held in the crown only where (34.7%) of the males responded that the tooth holds on the crown. This suggests females are aware of the position of holding the tooth. This difference was statistically significant (Chi- Square Test; $p=0.001$ - statistically significant).

The questionnaire used in the present survey was direct and well-defined questions. Similar studies were done regarding the knowledge of parents and teachers concerning the management of avulsed teeth^{19,37}. The prognosis of the avulsed tooth depends on the immediate management of the tooth after it comes out of the socket³⁸. But various reports indicate that parents present at the site lack knowledge about the immediate management of this tooth. One of the best management is reimplantation of the tooth into its socket after it is cleaned with saline solution to preserve the cells of the periodontal ligament viable for healing and revascularization.

In the present study, 75.5% of the parents said that their child experienced dental trauma at childhood. Furthermore, 22% of them said that they can place the avulsed tooth back into the child's mouth, similar to previous studies. 95% of the parent's visited the dentist which was similar to a study conducted by Oliveira et al. (93%)³⁹. whereas, the reports by Oliveira et al.,(39%), Raphael⁴⁰ and Gregory(66.6%), and Hegde et al.,⁴¹ (66.5%) showed that some of the parents would reimplant the avulsed tooth, which clearly indicates the insufficiency in the knowledge about the immediate management of avulsed teeth. Hence, the parents/caretakers need to be educated more on this aspect. It is well-documented that the best storage media for avulsed teeth is the patient's own socket. But as the tooth is usually contaminated by dirt or dust, it is important to clean the tooth and then place it back into its own socket.

Before reimplantation of the knockout or avulsed tooth, certain suitable media are required to preserve this tooth. The most important one is milk, saline solution, and saliva. These media promote pulpal and periodontal healing. Among these, milk and saliva are easy to obtain and sterile saline is easily available in drug stores. In the present study, only 16% of the parents preserved the tooth in media like saline or milk. Most of them usually wrapped the tooth in cotton. None of them used milk to preserve the avulsed tooth. This indicated poor knowledge among the parents with regards to preserving the tooth which led to the failure of reimplantation of the avulsed tooth. To summarize, lack of knowledge among the parents concerning the avulsed tooth demands the need of more effective communication between the dental professionals and parents. Preventive programs and educational campaigns should be conducted to provide good knowledge about the preservation and management of the avulsed teeth. Our institution is passionate about high quality evidence based research and has excelled in various fields ^{42–47}. We hope this study adds to this rich legacy.

CONCLUSION:

This study shows there is a lack of knowledge about transportation media of avulsed teeth and majority parents are aware of where to hold the avulsed tooth for cleaning. Most parents agreed that their child had a history of dental trauma. So we need to provide the general population(parents/caretaker) with information regarding the management of avulsed teeth and study shows the need for effective communication between dentists and parents for better management of avulsed teeth. Preventive programs and educational campaigns should be conducted to provide good knowledge about the preservation and management of the avulsed teeth.

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CONFLICT OF INTEREST:

None declared.

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