



PERCEPTION OF PARENTS TOWARDS THE IMPORTANCE OF A CHILD-FRIENDLY DENTAL SETUP

NEHA SHARMA M¹, VIGNESH RAVINDRAN^{2*}, L. LEELAVATHI³

1: Saveetha Dental College & Hospitals, Saveetha University, Saveetha Institute of Medical and Technical Sciences, Chennai- 600077.

2: Senior Lecturer, Department of Pedodontics, Saveetha Dental College & Hospitals, Saveetha University, Saveetha Institute of Medical and Technical Sciences, Chennai- 600077.

3: Senior Lecturer, Department of Public Health Dentistry, Saveetha Dental College & Hospitals, Saveetha University, Saveetha Institute of Medical and Technical Sciences, Chennai-600077

***Corresponding Author: E Mail: Dr. Vignesh Ravindran: vigneshr.sdc@saveetha.com**

Received 19th March 2021; Revised 20th April, 2021; Accepted 19th May 2021; Available online 1st Aug. 2021

<https://doi.org/10.31032/IJBPAS/2021/10.8.1007>

ABSTRACT

Background:

Positive environmental stimulation can reduce a child's anxiety or negative feelings. If appropriate visual colors can provide positive stimulation, then children will feel more comfortable, permitting a quicker recovery. If the color of the dental environment can have a positive impact on the child's behavior, it is possible that those colors may add to the comfort of a child, thus reducing dental anxiety.

Aim:

The aim of this study is to evaluate the knowledge, preferences and perception of parents towards the importance of a colourful and child-friendly dental setup.

Materials and methods:

An online-based survey was conducted in which a questionnaire was prepared online and circulated among the parents visiting the dental college with their children. The responses were recorded and tabulated and subjected to statistical analysis for association of responses for gender and educational status by Chi-square test.

Results:

The findings of this study shows that 93% of the parents preferred a colorful waiting area, 88% of the parents preferred a play area for children, 94% preferred cartoons being played in the waiting area, 91% preferred a positive body language and appearance of the receptionist and 97% preferred the same for the dentist. Females preferred playing cartoons to distract anxious children, while males denied it, which was statistically significant ($p=0.009$). Undergraduate and postgraduate parents were confident about the appearance of the dentist in building the child's trust, which was not statistically significant ($p=0.213$).

Conclusion:

Within the limitations of the present study parents preferred play area, cartoons and positive appearance of the dental team in a child friendly dental clinic. The results of this study will further encourage pediatric dentists to imply positive and innovative ideas when opening a pediatric dental clinic.

Keywords: Anxiety; children; colour; environment; music

INTRODUCTION

Dental anxiety often begins during childhood or adolescence. It leads to poor oral health manifesting as untreated caries, missing teeth, or periodontal problems and can have other negative consequences such as a sense of embarrassment and reduced self-esteem. Among children and adolescents, the prevalence of dental fear and anxiety is approximately 9% [1]. Among children ages 5 and younger, early childhood caries (ECC) is the most common chronic disease. The retention and preservation of the primary

tooth in the dental arch in its normal function and free of pathology is of utmost importance [2]. Primary teeth play an imperative role in the self-esteem of the preschool children and also plays a pivotal role in speech development, esthetics, and function [3]. Dental caries is a global oral health problem and it continues to be the most common infectious disease in children [4]. Early childhood caries is defined as the presence of one or more decayed (non cavitated or cavitated), missing (due to caries), or filled

tooth (DMFT) surfaces in any primary tooth in a child 71 months of age or younger [5]. The consequences of Early childhood caries can be severe; for example, children may require treatment under general anesthesia in a hospital [6] or require treatments using rotary instruments [7-12]. Fluoride by far is one of the effective ways in declining the prevalence of caries and its progression [13, 14]. Thus regular visits to dental clinics is a must for children to avoid any further serious dental problems and it is the responsibility of parents to pursue health-related necessities of their children [15]. Dental anxiety denotes a state of apprehension that something dreadful is going to happen in relation to dental treatment, and it is coupled with a sense of losing control [16].

Environmental elements that produce positive feelings can reduce anxiety. In fact, the attractiveness of the physical environment in the dental operatory has been shown to be significantly associated with higher perceived quality and satisfaction, higher reported positive interaction with staff and reduction in patient anxiety [17]. In a dental clinic, Initial contact is through the receptionist, who can allay parental concerns with a confident manner [18]; the chair-side assistant can provide invaluable role in assisting the dentist in dealing with problem

behaviours; the dental hygienist can provide education through appropriate communication with the child and parent, that can help the family minimise future dental disease [19]. Thus the behaviour and attitude of all the mentioned specialists is very important in determining the cooperation of the child and the parent towards the dental treatment.

Hence the aim of this study is to evaluate the knowledge, preferences and perceptions of parents towards the importance of a colourful and child-friendly dental setup.

MATERIALS AND METHODS

This study was conducted among parents of pediatric patients attending the Department of Pediatric and Preventive Dentistry. This study was approved by the institutional ethical committee. The inclusion criteria for the study were all children attending for the dental needs in the out-patient department of a private dental institute. Those who were willing to participate for the study were included. Exclusion criteria were parents who were not willing to participate in the study and children who had dental emergencies which needed immediate treatment. An online questionnaire survey was created using Google forms. The questionnaire contained 19 questions which included the patient's proforma and questions

regarding different preferences towards the ambience of a pediatric dental clinic. The validity of the questionnaire was purely based on content validity based on logical reasoning. The responses were collected during a one week period and the data were tabulated.

Statistical analysis:

The tabulated data was imported to SPSS software by IBM for statistical analysis. Frequency of the number of questions answered was recorded. Chi square test was used to detect the significance (p value less than 0.05 was considered to be statistically significant).

RESULTS AND DISCUSSION

A total of 208 parents took up the survey. On performing the statistical analysis, it was found that among the participants, 49.5% were males and 60.5% were females (**Figure 1**). 6.25% of the parents completed school, 53.3% of the parents were postgraduates and 40.4% of the parents were undergraduates (**Figure 2**). Out of the total respondents, 93% preferred colourful waiting area (**Figure 3**), 93% preferred music in the waiting area (**Figure 4**), 88% preferred play area for children (**Figure 5**), 94% of them preferred cartoons in the waiting area (**Figure 6**), 91% of them preferred colourful and positive attire of the receptionist (**Figure 7**), 97%

preferred the same for the dentist (**Figure 8**), 91% preferred juices and food items to be distributed in the waiting area (**Figure 9**), 93% opted for a colourful toy dental chair for their children (**Figure 10**) and 96% of parents thought rewarding the child is a form of positive reinforcement (**Figure 11**). On doing correlation, it was found that female parents (49.5 %) preferred playing cartoons to distract anxious children, while the majority of male parents (5.3%) denied it. This difference was statistically significant (Chi-square test; p-value = 0.009-significant) (**Figure 12**). We also found that more number of female parents (46.7%) preferred a play area for children when compared with males (41.3%) and this was found to be statistically significant (Chi-square test; p-value = 0.049- significant). There were no significant differences with the responses to the other questions in relation to gender of the parent (**Table 1**). It was also found that a higher number of parents who were undergraduates (39.9%) and postgraduates (50.48%) were confident that the appearance of the dentist would play a role in building the child's trust. However this difference was not statistically significant (Chi-square test; p-value = 0.213-not significant) (**Figure 13**). Similarly other responses did not show any significant

difference based on the educational qualification of the parents (**Table 2**).

Among the female respondents, there was maximum preference for colourful waiting areas, music in the waiting area, playing cartoons in the waiting room, positive and colourful attire of the dentist and rewarding the child as it is a form of positive reinforcement. Among the male respondents, maximum preferred for a play area for children, positive appearance of receptionist, juices and food items to be distributed in the waiting area and a colourful toy chair. Among the respondents who were qualified and graduated, most of them preferred music in the waiting area (50%), colourful attire of the dentist (50%), rewarding the child (50%) and opted for separate treatment for uncooperative children (47%).

The child's perception of the dental environment is a significant factor causing the anxiety. The changing expectations of children encourage pediatric dentists to develop a more child-friendly atmosphere in their dental clinics [20]. The effects of the physical environment on child health and well-being should be investigated not only in terms of physical health, but also in terms of the more comprehensive conceptualization of health-related quality of life as perceived by children and their parents [21]. In this study,

we found that almost 93% of the parents preferred a colourful waiting area with colourful walls and artwork. This is supported by previous studies on ambience of the dental waiting rooms which shows that the majority of the children preferred walls with pictures or artworks compared to bare walls [22]. This might be because of the fact that bright colors are associated with positive feelings, such as being happy, cheerful, or hopeful. This is very helpful during instances when the child is highly anxious regarding the dental visit [23].

The present study also reveals that 88% of the parents preferred having a play area with fun activities and toys to keep the children engaged during longer waiting periods. Previous literature shows that recreational activities for children in an outpatient waiting room, according to the children and their companions, entailed direct positive repercussions for the children and indirectly for the companions [24]. This is because playing with toys help the children to expand its capacity of relating with the external reality, establishing a bridge between their own world and the hospital world. The activities related to playing/toys are resources that value the development process of children and their well-being. On asking about the importance of music being played

in the waiting room, about 94% of the respondents felt that music plays an essential role in calming their child before the dental treatment. Similar findings were seen in a study which reported that there was a statistically significant decrease in anxiety level on those days when music was playing [25]. Another study showed that a majority of patients (90%) stated that they enjoyed the music and would like to listen to it during their next visit [26]. This is because music promotes feelings of physical and mental relaxation by refocusing attention on pleasurable emotional states and it can be an effective nursing intervention for preoperative anxiety in children [27].

On asking the parents about the role of a colorful waiting area, the majority of them preferred a waiting area full of colours and pictures. Studies done on colour perception by children reveals that blue is preferred significantly by males and significantly not preferred by females [28]. While green has low preference values at earlier, but higher preference values at later developmental stages [29]. Another study reported that among the pediatric patients, blue and green

were their most-preferred colors; white was the least preferred [30]. This study also revealed that 97% of the parents preferred a colourful and positive attire of the dentist in order to build a rapport with the child and to gain the child's trust. This is supported by a study which reported that almost 90% of parents did not feel physicians should wear white coats [31].

The limitation of the present study is that the observations regarding dental environment preferences among parents was seen in a limited area. A multicentric study in Chennai can help us to have an overall view regarding the parents perception. Another limitation of this study is that it does not include ethnic groups or populations from around the world. For future research consideration, a cross-cultural study with a larger sample may provide valuable information to verify the effects of ambience of a dental clinic on a child's anxiety. The effects of colors, play area and music could also be applied to design decisions for other building types, including educational settings for children [12].

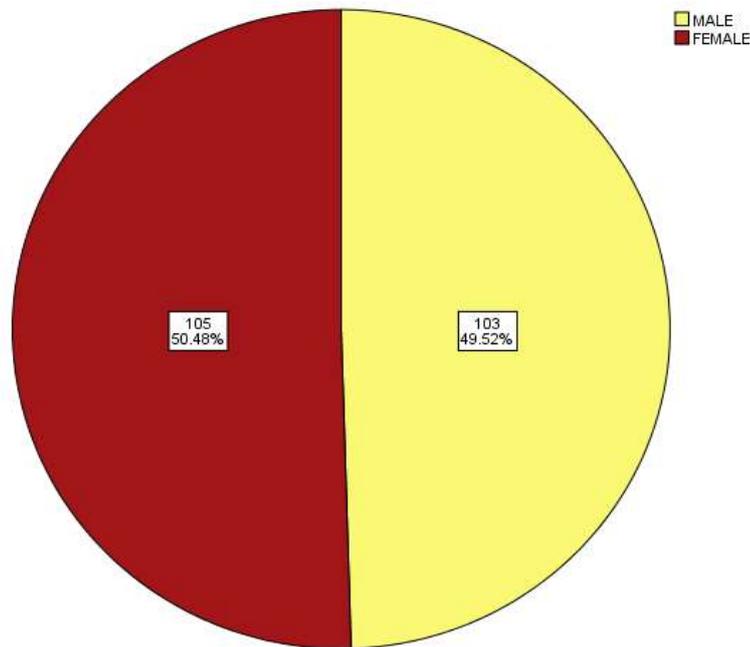


Figure 1: Pie chart representing Gender wise distribution of the sample. Red colour denotes females and yellow colour denotes males. From this graph, it is evident that maximum number of respondents (50.5%) are females, closely followed by males (49.5%)

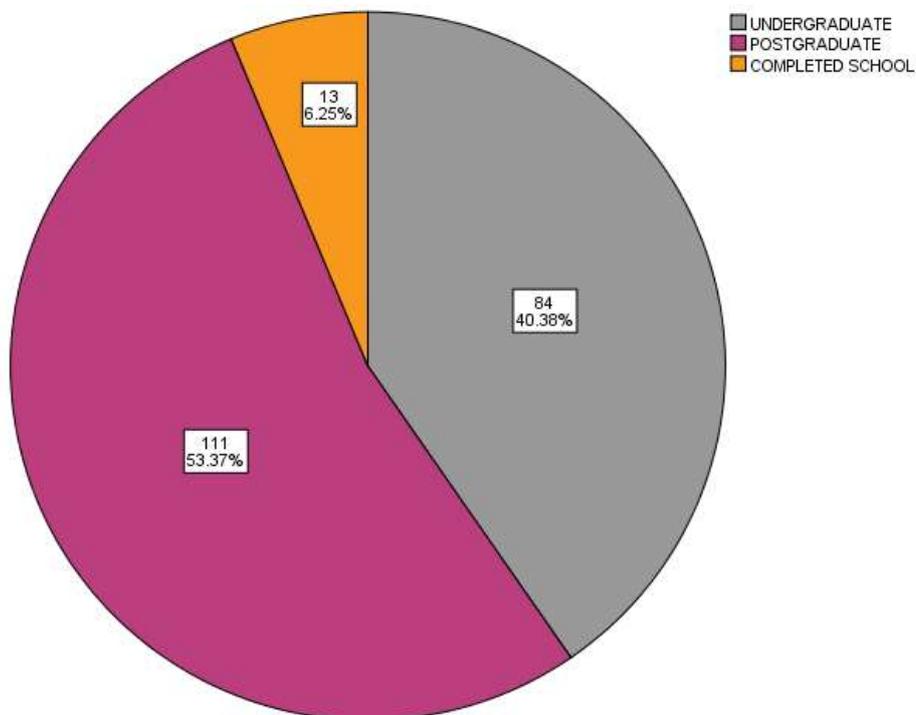


Figure 2: Pie chart representing distribution of the sample size based on Educational qualification of the parents. Grey color represents undergraduates, pink colour represents postgraduates and orange colour represents parents who completed school. Maximum number of respondents (52%) are between 36-50 years, closely followed by 44% who are between 25-35 years

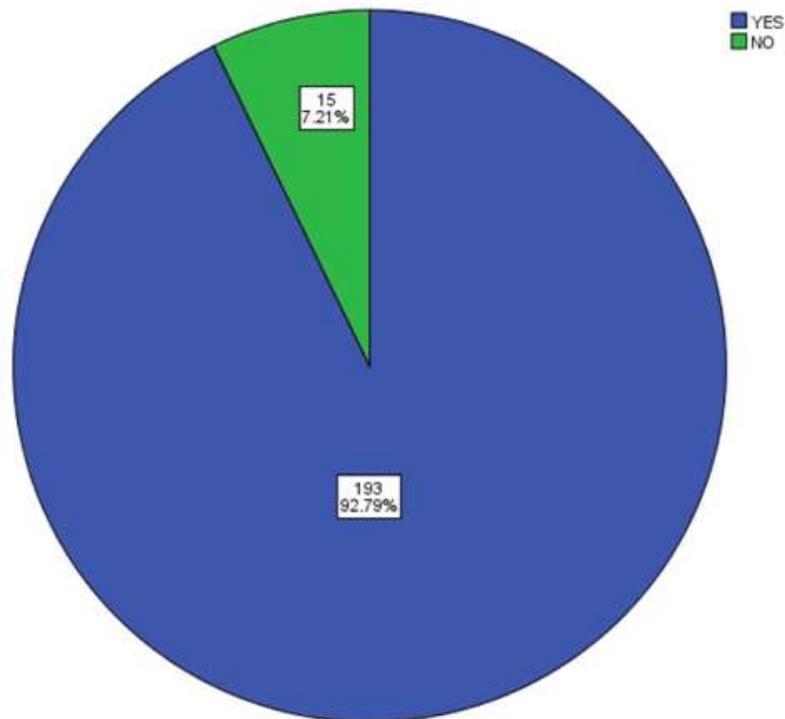


Figure 3: Pie chart representing the percentage of different responses for the question “Do you think a colorful waiting area helps with your child’s anxiety?”. Blue represents yes response and green represents no response. Higher percentage of respondents (93%) accepted that a colorful waiting area would help with their child’s anxiety.

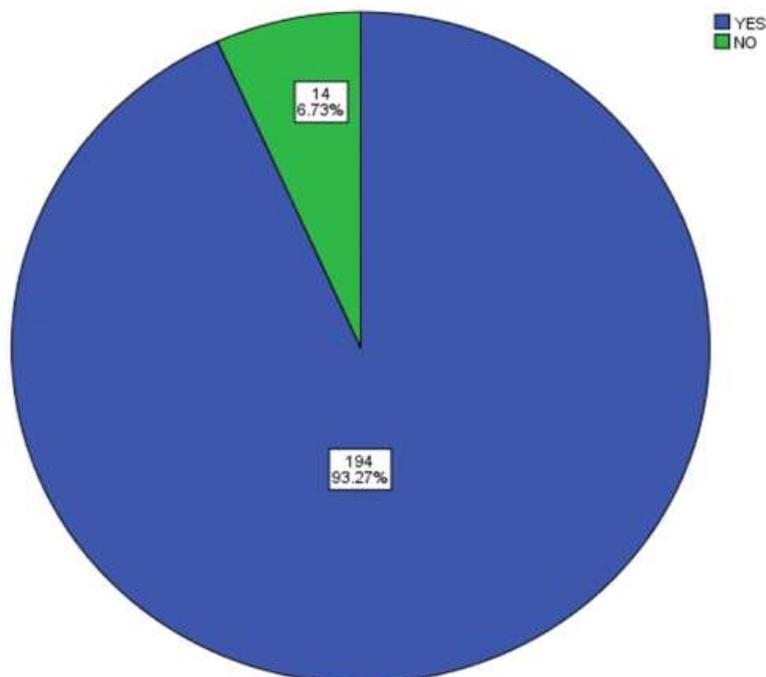


Figure 4: Pie chart representing the percentage of different responses for the question “Do you think music plays a role in calming your child’s anxiety?”. Blue represents yes response and green represents no response. Higher percentage of respondents (93.3%) preferred music in the waiting area.

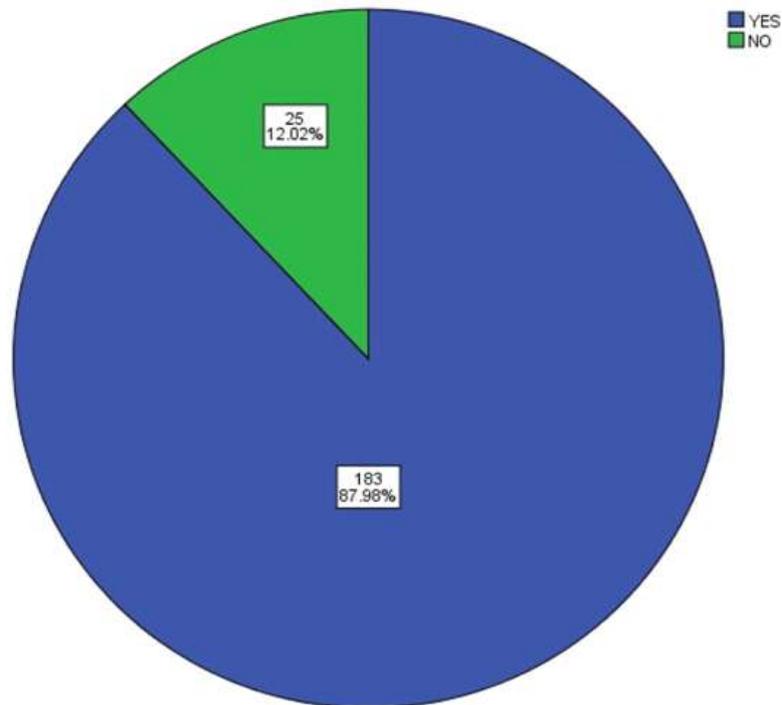


Figure 5: Pie chart representing the percentage of different responses for the question “Do you think a dental clinic should have a play area for children?”. Blue represents yes response and green represents no response. Higher percentage of respondents (88%) preferred a play area in the dental clinic to keep their children occupied.

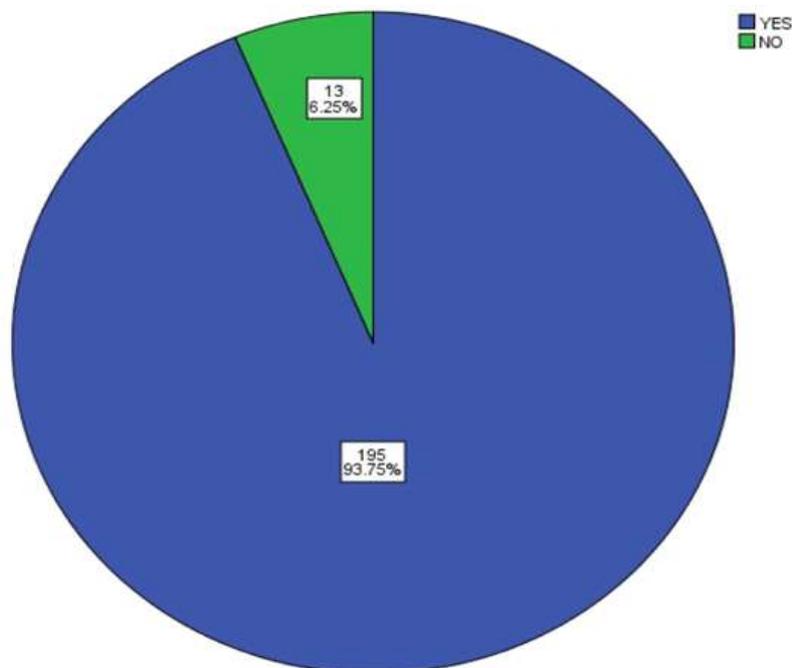


Figure 6: Pie chart representing the percentage of different responses for the question “Do you think playing cartoons in the waiting area distracts your kid from getting anxious?”. Blue represents yes response and green represents no response. Higher percentage of respondents (94%) preferred cartoons being played in the waiting area in the dental clinic to keep the children entertained.

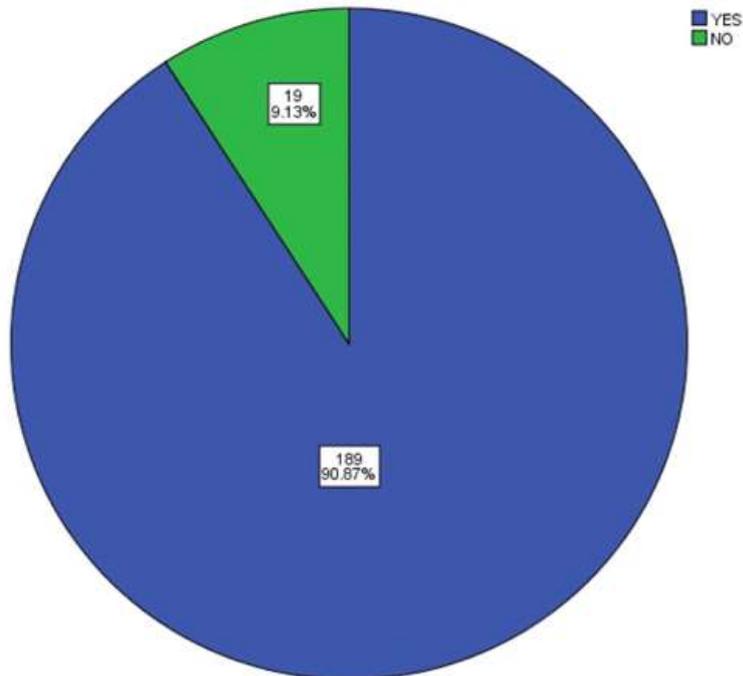


Figure 7: Pie chart representing the percentage of different responses for the question “Is the appearance and body language of the receptionist important in determining the child’s attitude towards the visit?”. Blue represents yes response and green represents no response. Higher percentage of respondents (91%) preferred a positive body language and appearance of the receptionist.

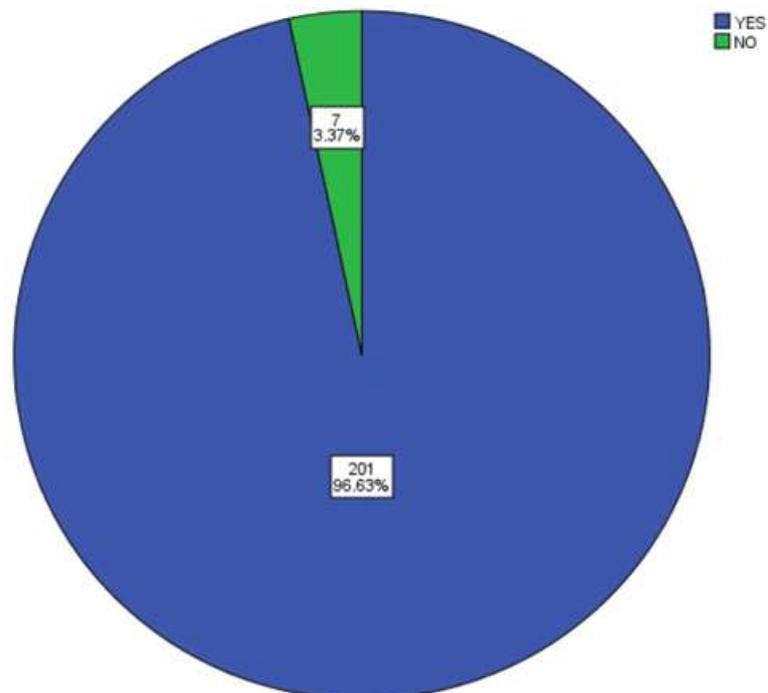


Figure 8: Pie chart representing the percentage of different responses for the question “Does the appearance of the dentist play a role in building your child’s trust towards the dentist?”. Blue represents yes response and green represents no response. Higher percentage of respondents (97%) preferred cheerful and colorful attire of the dentist to build trust between the child and the dentist.

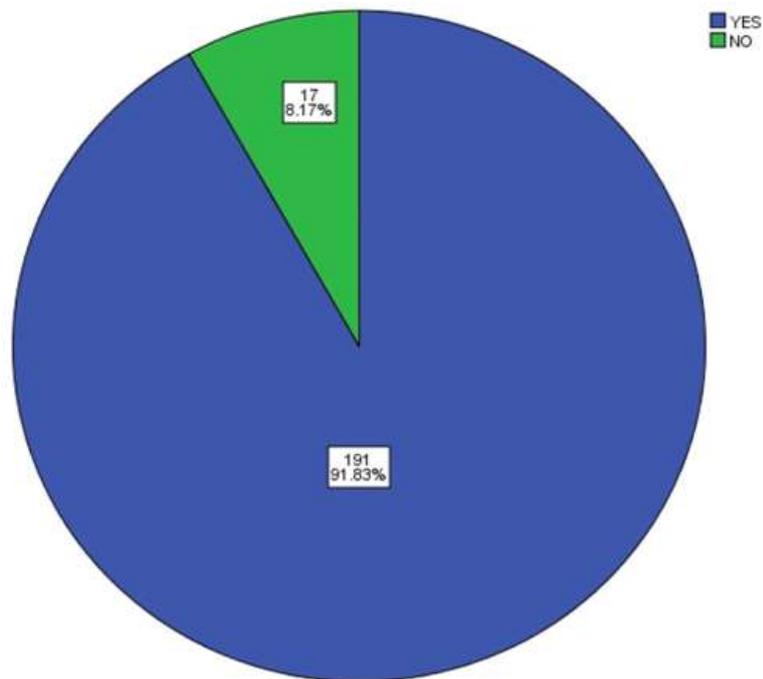


Figure 9: Pie chart representing the percentage of different responses for the question “Does giving out food or fruit juices help your child build trust towards the dentist?”. Blue represents yes response and green represents no response. Higher percentage of respondents (92%) preferred fruit juices and food items to be distributed in the waiting area.

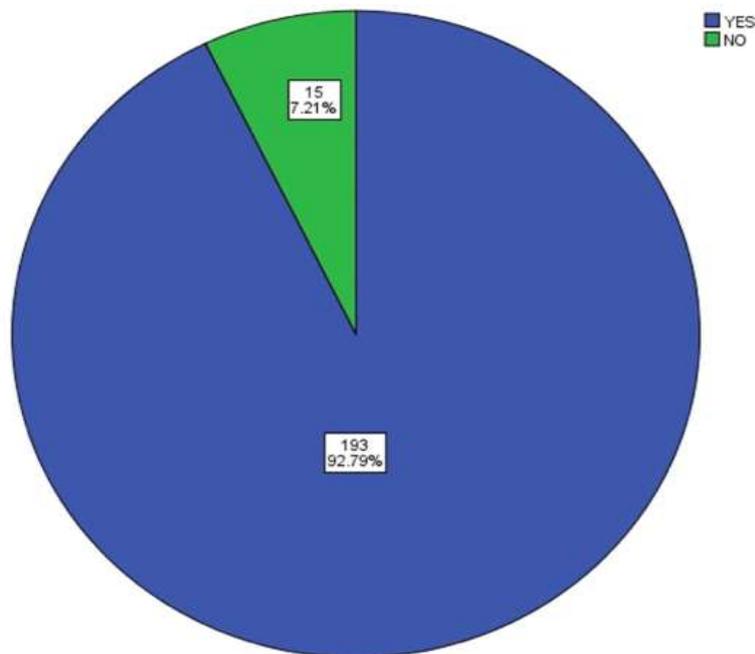


Figure 10: Pie chart representing the percentage of different responses for the question “Does a colorful toy chair help in calming your child when entering the clinic?”. Blue represents yes response and green represents no response. Higher percentage of respondents (93%) preferred colorful toy chairs for children in order to calm their anxiety.

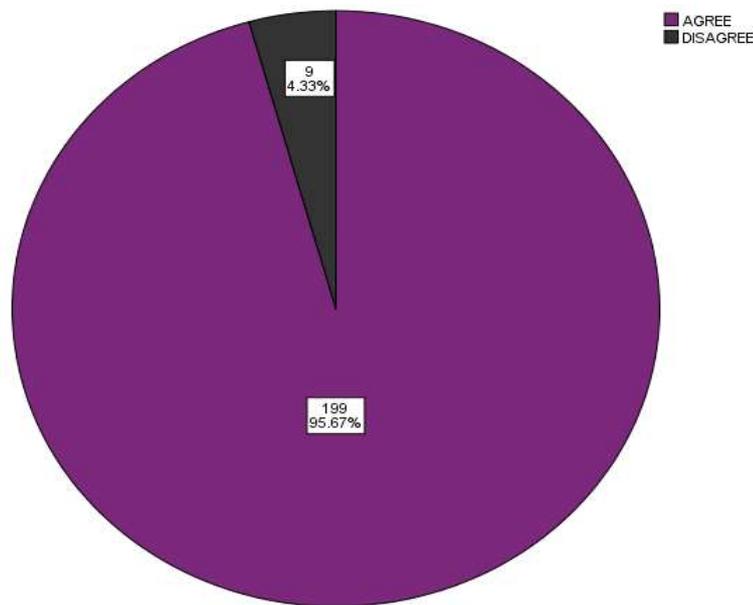


Figure 11: Pie chart representing the percentage of different responses for the question “Is rewarding the child after the treatment necessary to gain trust and for further motivation?”. Purple represents agreed response and black represents disagreed response. Higher percentage of respondents (96%) agree that rewarding the child for cooperation is a form of positive reinforcement

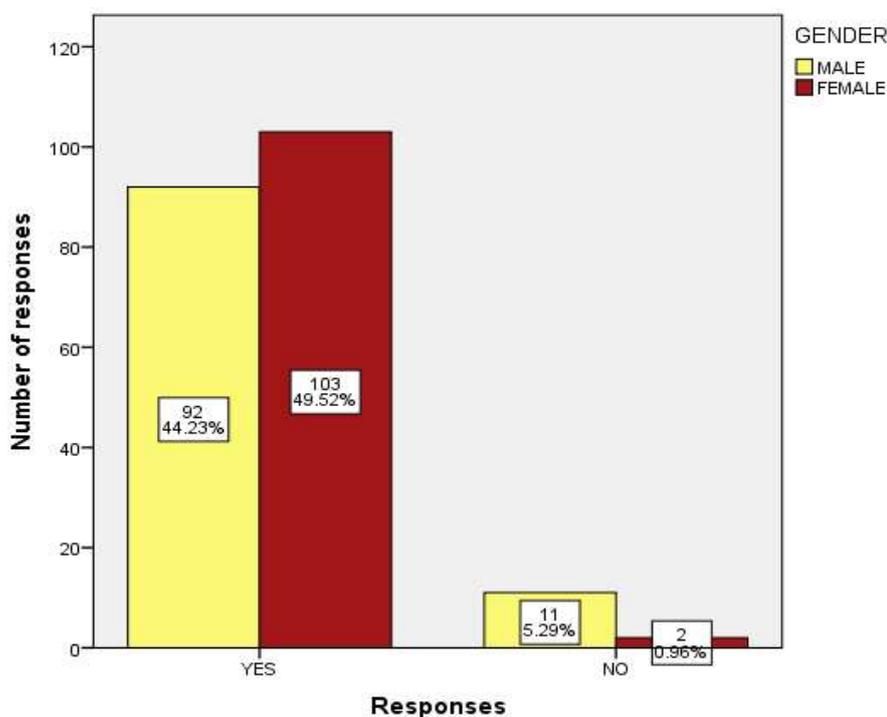


Figure 12: Bar graph representing the association based on gender of parents with the responses for the question “Do you think playing cartoons in the waiting area distracts your kid from getting anxious?”. (X-axis represents the responses to the question and Y-axis represents the number of responses; yellow color represents males, red color represents females). Parents who were females (49.5 %) preferred playing cartoons to distract anxious children, while the majority of males (5.3%) denied it. This difference was statistically significant (Chi-square test; p-value = 0.009- significant)

Table 1: Table representing Gender preference of responses for the questionnaire

Questions	Males	Females	p- value
Do you think a colorful waiting area helps with your child’s anxiety?	44.8%	48%	0.168**
Do you think music plays a role in calming your child’s anxiety?	44.8%	48.5%	0.090**
Do you think a dental clinic should have a play area for children?	41.3%	46.7%	0.049*
Is the appearance and body language of the receptionist important in determining the child’s attitude towards the visit?	44.2%	46.7%	0.444**
Does giving out food or fruit juices help your child build trust towards the dentist?	45.7%	46.1%	0.832**
Does a colorful toy chair help in calming your child when entering the clinic?	44.8%	48%	0.168**
Does the appearance of the dentist play a role in building your child’s trust towards the dentist?	47.6%	49%	0.682**
Is rewarding the child after the treatment necessary to gain trust and for further motivation?	47.1%	48.5%	0.711**

* p-value < 0.05, Statistically significant; **p-value > 0.05, Statistically not significant

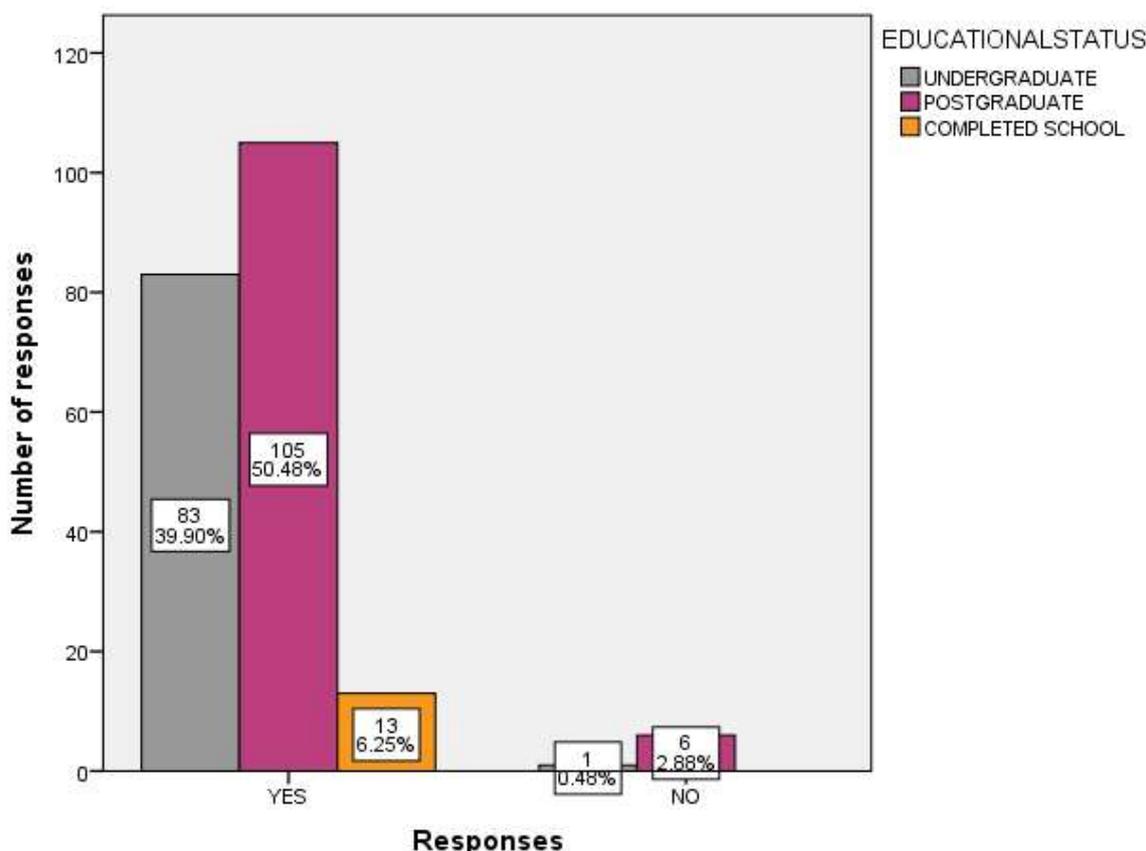


Figure 13: Bar graph representing the association based on educational qualification of parents with the responses for the question “Does the appearance of the dentist play a role in building your child’s trust towards the dentist?”. (X-axis represents the responses to the question and Y-axis represents the number of responses; grey color represents undergraduates, pink colour represents postgraduates and orange colour represents parents who completed school) Higher number of parents who were undergraduates (39.9%) and postgraduates (50.48%) were confident about appearance of the dentist would play a role in building the child’s trust. However this difference was not statistically significant (Chi-square test; p-value = 0.213- not significant).

Table 2: Table representing the percentage of responses for the questionnaire based on educational status

Questions	Completed school	Undergraduate	Postgraduate	p-value
Do you think music plays a role in calming your child's anxiety?	6.25%	37%	50%	0.518*
Do you think uncooperative children should be treated separately in order to prevent other children from getting scared?	5.7%	37%	46.6%	0.592*
Is rewarding the child after the treatment necessary to gain trust and for further motivation?	6.2%	39.4%	50%	0.300*

*p-value > 0.05, Statistically not significant

CONCLUSION

Within the limitations of this study, it can be concluded that parents showed preference towards a colourful dental setup, with music being played in the waiting area, cartoon walls and a colourful play area followed by treatment by a dentist with a colourful attire which reduces their child's anxiety. These results would influence a change by instilling a positive dental attitude towards dentistry.

REFERENCES

- [1] Shahnavaaz S, Hedman-Lagerlöf E, Hasselblad T, Reuterskiöld L, Kaldo V, Dahllöf G. Internet-Based Cognitive Behavioral Therapy for Children and Adolescents With Dental Anxiety: Open Trial [Internet]. Vol. 20, Journal of Medical Internet Research. 2018. p. e12. Available from: <http://dx.doi.org/10.2196/jmir.7803>
- [2] Panchal V, Jeevanandan G,

Subramanian E. Comparison of instrumentation time and obturation quality between hand K-file, H-files, and rotary Kedo-S in root canal treatment of primary teeth: A randomized controlled trial. J Indian Soc Pedod Prev Dent. 2019 Jan; 37(1): 75–9.

- [3] Ravikumar D, Jeevanandan G, Subramanian EMG. Evaluation of knowledge among general dentists in treatment of traumatic injuries in primary teeth: A cross-sectional questionnaire study. Eur J Dent. 2017 Apr; 11(2): 232–7.
- [4] Govindaraju L, Gurunathan D. Effectiveness of Chewable Tooth Brush in Children-A Prospective Clinical Study. J Clin Diagn Res. 2017 Mar; 11(3): ZC31–4.
- [5] Subramanyam D, Gurunathan D, Gaayathri R, Vishnu Priya V. Comparative evaluation of salivary

- malondialdehyde levels as a marker of lipid peroxidation in early childhood caries. *Eur J Dent*. 2018 Jan; 12(1): 67–70.
- [6] Dumas SA, Amanda Dumas S, Polk D. Pediatric dental clinic location and utilization in a high-resource setting [Internet]. Vol. 75, *Journal of Public Health Dentistry*. 2015. p. 183–90. Available from: <http://dx.doi.org/10.1111/jphd.12086>
- [7] Jeevanandan G. Kedo-S Paediatric Rotary Files for Root Canal Preparation in Primary Teeth - Case Report. *J Clin Diagn Res*. 2017 Mar;11(3):ZR03–5.
- [8] Lakshmanan L, Mani G, Jeevanandan G, Ravindran V, Subramanian EMG. Assessing the quality of obturation and instrumentation time using Kedo-S files, Reciprocating files and Hand K-files [Internet]. Vol. 23, *Brazilian Dental Science*. 2020. Available from: <http://dx.doi.org/10.14295/bds.2020.v23i1.1822>
- [9] Govindaraju L, Jeevanandan G, Subramanian EMG. Comparison of quality of obturation and instrumentation time using hand files and two rotary file systems in primary molars: A single-blinded randomized controlled trial [Internet]. Vol. 11, *European Journal of Dentistry*. 2017. p. 376–9. Available from: http://dx.doi.org/10.4103/ejd.ejd_345_16
- [10] Govindaraju L. Clinical Evaluation of Quality of Obturation and Instrumentation Time using Two Modified Rotary File Systems with Manual Instrumentation in Primary Teeth [Internet]. *Journal Of Clinical And Diagnostic Research*. 2017. Available from: <http://dx.doi.org/10.7860/jcdr/2017/30069.10602>
- [11] Govindaraju L, Jeevanandan G, Subramanian EMG. Knowledge and practice of rotary instrumentation in primary teeth among indian dentists: A questionnaire survey [Internet]. Vol. 9, *Journal of International Oral Health*. 2017. p. 45. Available from: http://dx.doi.org/10.4103/jioh.jioh_4_17
- [12] Jeevanandan G, Govindaraju L. Clinical comparison of Kedo-S paediatric rotary files vs manual instrumentation for root canal preparation in primary molars: a double blinded randomised clinical

- trial. *Eur Arch Paediatr Dent*. 2018 Aug;19(4):273–8.
- [13] Mahesh R, Masitah M. Fluoride, Fluoridated Toothpaste Efficacy And Its Safety In Children - Review. *International Journal of Pharmaceutical Research*. 2018; 10(04): 109–14.
- [14] Somasundaram S. Fluoride Content of Bottled Drinking Water in Chennai, Tamilnadu [Internet]. *JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH*. 2015. <http://dx.doi.org/10.7860/jcdr/2015/14691.6594>
- [15] Gurunathan D, Shanmugaavel AK. Dental neglect among children in Chennai. *J Indian Soc Pedod Prev Dent*. 2016 Oct; 34(4): 364–9.
- [16] Klingberg G, Broberg AG. Dental fear/anxiety and dental behaviour management problems in children and adolescents: a review of prevalence and concomitant psychological factors [Internet]. Vol. 17, *International Journal of Paediatric Dentistry*. 2007. p. 391–406. Available from: <http://dx.doi.org/10.1111/j.1365-263x.2007.00872.x>
- [17] Jayakaran T, Rekha C, Annamalai S, Baghkomeh P, Sharmin D. Preferences and choices of a child concerning the environment in a pediatric dental operatory [Internet]. Vol. 14, *Dental Research Journal*. 2017. p. 183. Available from: <http://dx.doi.org/10.4103/1735-3327.208767>
- [18] Packiri S, Gurunathan D, Selvarasu K. Management of Paediatric Oral Ranula: A Systematic Review. *J Clin Diagn Res*. 2017 Sep; 11(9): ZE06–9.
- [19] Roberts JF, Curzon MEJ, Koch G, Martens LC. Behaviour Management Techniques in Paediatric Dentistry [Internet]. Vol. 11, *European Archives of Paediatric Dentistry*. 2010. p. 166–74. <http://dx.doi.org/10.1007/bf03262738>
- [20] Umamaheshwari N, Asokan S, Kumaran T. Child friendly colors in a pediatric dental practice [Internet]. Vol. 31, *Journal of Indian Society of Pedodontics and Preventive Dentistry*. 2013. p. 225. Available from: <http://dx.doi.org/10.4103/0970-4388.121817>
- [21] Sandra A. Sherman, Mardelle

- McCuskey Shepley, James W. Varni. Children's Environments and Health-Related Quality of Life: Evidence Informing Pediatric Healthcare Environmental Design. *Child Youth Environ.* 2005;15(1):186–223.
- [22] Panda A, Garg I, Shah M. Children's preferences concerning ambiance of dental waiting rooms [Internet]. Vol. 16, *European Archives of Paediatric Dentistry*. 2015. p. 27–33. Available from: <http://dx.doi.org/10.1007/s40368-014-0142-z>
- [23] Christabel SL, Gurunathan D. Prevalence of Type of Frenal Attachment and Morphology of Frenum in Children, Chennai, Tamil Nadu [Internet]. Vol. 6, *World Journal of Dentistry*. 2015. p. 203–7. Available from: <http://dx.doi.org/10.5005/jp-journals-10015-1343>
- [24] Pedro IC da S, da Silva Pedro IC, Nascimento LC, Poleti LC, de Lima RAG, de Mello DF, et al. Playing in the waiting room of an infant outpatient clinic from the perspective of children and their companions [Internet]. Vol. 15, *Revista Latino-Americana de Enfermagem*. 2007. p. 290–7. Available from: <http://dx.doi.org/10.1590/s0104-11692007000200015>
- [25] Holm L, Fitzmaurice L. Emergency Department Waiting Room Stress [Internet]. Vol. 24, *Pediatric Emergency Care*. 2008. p. 836–8. Available from: <http://dx.doi.org/10.1097/pec.0b013e31818ea04c>
- [26] Aitken JC, Wilson S, Coury D, Moursi AM. The effect of music distraction on pain, anxiety and behavior in pediatric dental patients. *Pediatr Dent*. 2002 Mar; 24(2): 114–8.
- [27] Cooke M, Chaboyer W, Schluter P, Hiratos M. The effect of music on preoperative anxiety in day surgery [Internet]. Vol. 52, *Journal of Advanced Nursing*. 2005. p. 47–55. Available from: <http://dx.doi.org/10.1111/j.1365-2648.2005.03563.x>
- [28] Choungourian A. Color Preferences and Cultural Variation [Internet]. Vol. 26, *Perceptual and Motor Skills*. 1968. p. 1203–6. Available from:

-
-
- <http://dx.doi.org/10.2466/pms.1968.26.3c.1203>
- [29] Choungourian A. Color Preferences: A Cross-Cultural and Cross-Sectional Study [Internet]. Vol. 28, Perceptual and Motor Skills. 1969. p. 801–2. Available from: <http://dx.doi.org/10.2466/pms.1969.28.3.801>
- [30] Park JG. Color Perception in Pediatric Patient Room Design: Healthy Children vs. Pediatric Patients [Internet]. Vol. 2, HERD: Health Environments Research & Design Journal. 2009. p. 6–28. Available from: <http://dx.doi.org/10.1177/193758670900200302>
- [31] McCarthy JJ, Christine McCarthy M, Eilert RE. Children's and Parents' Visual Perception of Physicians [Internet]. Vol. 38, Clinical Pediatrics. 1999. p. 145–52. Available from: <http://dx.doi.org/10.1177/000992289903800304>