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Original Article

Evaluation of Parental Perception Regarding Smile of Children According to Visual Analog Scale

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Abstract

Introduction: Most patients go to dental offices nowadays looking for an esthetically pleasant smile, being stimulated by the esthetic patterns suggested by the society which associate a beautiful smile to success. The role of a dentist is to provide the best functional as well as esthetic restoration to the child as per his needs. **Subjects and Methods:** It is a questionnaire-based observational study. Questionnaire-based photographs (six in number) distributed among 400 parents who came with their children (<5 years) to the malls of Vadodara city. Each photograph showed different conditions of smile, namely, nonspaced dentition, spaced dentition, carious teeth, traumatic injury, teeth with plaque, and missing teeth. Each parent was asked to grade them in ascending order of appearance of the photographs as per their esthetic view. The parents were also asked to grade numerically from 1 to 6 in ascending order. **Results:** A descriptive statistical analysis was carried out in the present study. Results on continuous measurements were presented on mean ± standard deviation and results on categorical measurements were presented in number (%). Perception of esthetics given by parents with preference and position is as follows: nonspaced dentition, teeth with plaque, spaced dentition, traumatic injury, carious teeth, and missing teeth. **Conclusions:** It was concluded that parents are more concerned about the cleanliness and structure of their child's teeth which can create and play a role in esthetics.

Keywords: Children, esthetic, parent's perception

Introduction

The psychological impact of facial esthetics is of great influence on the overall quality of life. Thus, smile esthetics plays a key role in overall esthetics.[1]

The concept of esthetics as a science is strongly related to the concept of beauty, and contains a highly subjective component. Although Esthetics and beauty complement each other. According to Chain *et al*.,[2] beauty exists as an end, pleasing by the form. The beauty also depends on the cultural and historical period in which it is being analyzed, as it determines what is pleasant to be admired at a certain moment or place.[3]

Esthetics in dentistry means to make beauty and attraction, to raise the confidence, and to make patients happy with an essential, expressive, and socially esteemed piece of their bodies. Most patients go to dental workplaces these days searching for an esthetically pleasant smile, being empowered by the esthetic patterns recommended by the public and the media, which relate a beautiful smile to success.[4]

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Dental esthetics plays an important role in personal development. On the other hand, it is possible that child's perception of beauty may or may not be similar to his parents.

The key part of dental practitioner here is to give the best functional and esthetic restoration to the kid according to his requirements. Clarifying the kid what is best for him must not conciliate his needs.

It is also important for the clinician to look at the parent's perspective of their child's self-image. The motives for treatment must be realistic and intentions to be practical.

Subjects and Methods

The study was a questionnaire-based observational study conducted among the parents visiting with their children (<5 years) to different malls of Vadodara city. The

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study was approved by the Institutional Ethical Committee (SVIEC/ON/DENT/SRP/17086). The parents whose children were between the age of 3 and 5 years were included and who refused to give consent and did not fill the questionnaire form completely were excluded from the study. Informed consent was obtained from the parents. Vadodara city has a total of 12 commercial malls. The city was divided into three zones, and from each zone, mall was selected by lottery method.

The sample size for the present study was calculated with the formula n = (DEFF × Np[1-p])/([d2/Z21-α/2 × [N-1] + p × [1-p]). Substituting the values in the formula, a sample size of 357 was derived. However, an additional 10% was included in the study (n = 392.7 [rounded off to 400]). The sample size of the present study was thus estimated to be 400 at 95% confidence interval.

Assessment of Parent's Perception of Child's Smile and Esthetics

Self-prepared questionnaire pro forma was validated and then was given to the parents by the investigator comprising of six postcard size photographs, which showing varying dental situations affecting a child's smile [Figure 1]. It has been proved that even slight change in dimensions of the teeth, color of teeth, gingiva, color or contour of gingiva, or lip line during smiling can easily modify the perception of the viewers.[5,6] Hence, a photograph of esthetic smile was selected and modified using Adobe Photoshop 7 software program to create various situations such as (1) nonspaced dentition, (2) spaced dentition, (3) carious anterior teeth (early childhood caries [ECC]), (4) traumatic injury to anterior teeth, (5) teeth with plaque, and (6) missing anterior teeth. The dimensions of teeth, gums, and the level of lip line were similar in every picture.

Each parent was asked to grade the photographs according to the visual analog scale (VAS) (from 0 to 3) where 0 indicates as worst, 1 indicates as bad, 2 indicates as good, and 3 indicates as the best smile according to parent's appreciation.[7] Parents were verbally interviewed for their views on each picture and answers were noted simultaneously on a separate sheet with details of the parents.

Each participant had to evaluate the perception regarding smile of children also, for which an A3-size paper comprising similar photographs as described earlier of various possible anterior dental appearances with the same code and the sequence. The parents were asked to grade numerically from 1 to 6 in ascending order, that is, from the most esthetic to the least esthetic type of smile according to their perception. The responses were evaluated to check the perception of parents regarding the smile of their children and knowledge toward dental esthetics. This grading was considered as the attitude of parents toward esthetics.

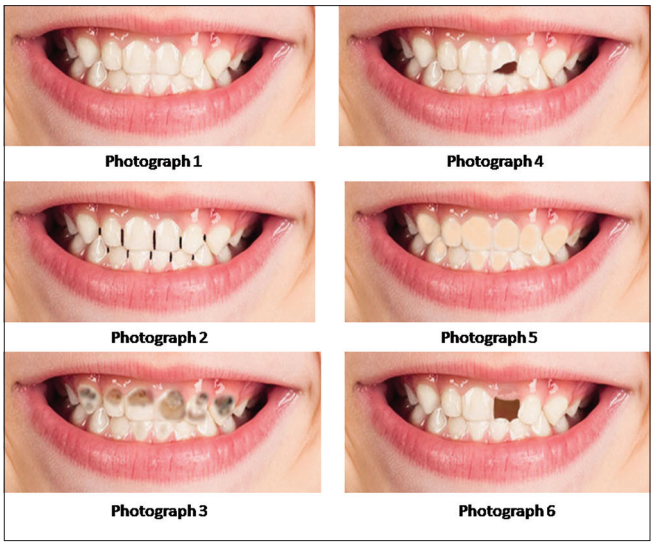
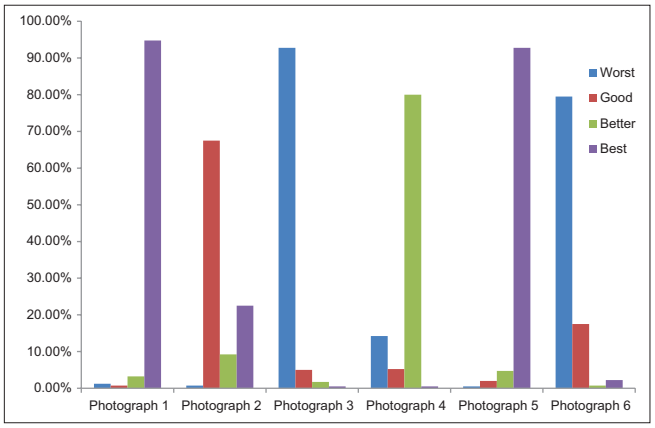
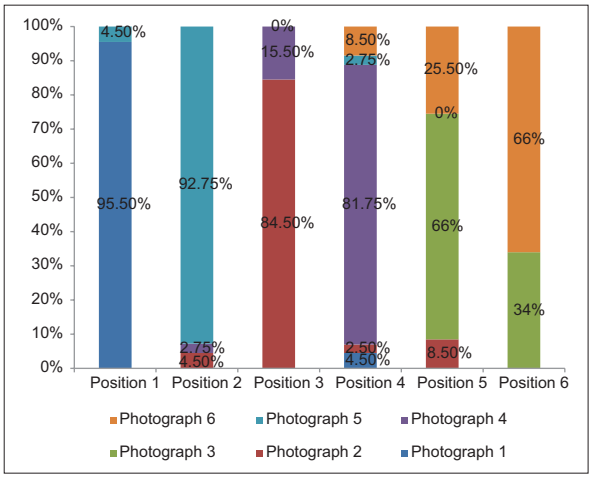


Figure 1: Photographic questionnaire used



Graph 1: Distribution of the study participants based on their responses to all six photographs



Graph 2: Distribution of the study participants based on the position assigned to each photograph (n = 400)

Results

Descriptive statistical analyze was carried out in the present study. The results on continuous measurements were presented on mean ± standard deviation and results on categorical measurements were presented in number (%). The collected

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data were entered into the Microsoft Excel (2007) spreadsheet. Descriptive statistical tests were computed using Excel statistical operations. Inferential statistics was done using Statistical Package for the Social Sciences version 18.0 (SPSS IBM inc., Ahmedabad, Gujarat, India) for Microsoft Windows. All the photographs present in the sheet were considered as each single question. The order or sequence of photographs in statistical analysis was kept the same as it is in the pro forma. Percentage of each answer was determined and then tabulated. According to the tabulated data, pie charts were prepared for easy understanding.

Discussion

Children are not miniature adults! They are unique and special so is their smile!

In dentistry, the child's smile is evaluated based on the condition of the child's dentition. However, children are not the best judges and their parents act as their advocates in determining what is best for children. It is, therefore, only imperative to assess the parental perception regarding their child's smile which will help to achieve a better understanding to meet the parents' expectations while treating young children.

The present study was conducted among the parents of young children aged 3–5 years. The American Academy of Pediatric Dentistry and the American Dental Association support the concept of "Dental home" which is the ongoing relationship between the dentist who is the primary dental care provider and the patient and includes comprehensive oral health care, beginning no longer than age 1.[5]

Dental home concept is not completely followed in a developing country like India. Hence, many children suffer from dental problems, yet it remains unnoticed or uncared for due to lack of awareness, misconceptions, or neglect on the part of parents. Hence, the target population was the parents of young children with a notion to not only evaluate their perception on children's smile but also to create a sense of awareness about the status of their own child's dentition.

It has been observed that parent's expectations for treatment and their comprehension of treatment differ from that of the clinician. The clinician's explanation of treatment will improve the quality of life and body image, but it may differ from parent's subjective assessment. Parents play an important role in shaping the child's perception of smile and esthetics. It is important for the clinician to look at the parent's perception of their child's self-image. This study was designed to assess parent's perception about their own child's smiles.[7]

The study was conducted in the malls of Vadodara city as it served as the best source to find parents with their kids. Parents may find it difficult to visit school on working days due to their jobs or other works. However, at malls, families spent their leisure time so approaching those who were willing to participate did not cause any of loss of time for the parents.

The development of self-concept is influenced by relationships with parents, peers, teachers, social roles, and achievements. This has been determined by using questionnaires that evaluate contributions to a child's self-concept.[6] Table 1 and Graph 1 showed the distribution of the study participants based on the parents' responses to the all six photographs and Table 2 and Graph 2 showed distribution of the study participants based on the position assigned to each photograph.

This study results showed that 94.5% of parents have given ranking no. 1 to smile of nonspaced healthy teeth due to the esthetics which correlate with the study conducted by Patel *et al*., who concluded that children with good oral health had more positive parent evaluations of their smiles than children with poorer oral health.[7] Parents gave score 3 according to VAS to this smile which is best. Most of the children models which are available on media or posters have the nonspaced healthy dentition which may have led to an impression of perfect smile on parent's mind.

About 67.5% parents gave score 1 to photograph of spaced dentition. Permanent spaced dentitions are considered for the orthodontic treatment and parents may have the same concept in their mind for primary teeth.[8] Spacing in primary

Table 1: Distribution of the study participants based on their responses to the all photographs

Responses	Worst (%)	Good (%)	Better (%)	Best (%)
Photograph 1	5 (1.25)	3 (0.75)	13 (3.25)	379 (94.75)
Photograph 2	3 (0.75)	270 (67.5)	37 (9.25)	90 (22.5)
Photograph 3	371 (92.75)	20 (5)	7 (1.75)	2 (0.5)
Photograph 4	57 (14.25)	21 (5.25)	320 (80)	2 (0.5)
Photograph 5	2 (0.5)	8 (2)	19 (4.75)	371 (92.75)
Photograph 6	318 (79.5)	70 (17.5)	3 (0.75)	9 (2.25)

Table 2: Distribution of the study participants based on the position assigned to each photograph (n=400)

Photograph	Photograph 1	Photograph 2	Photograph 3	Photograph 4	Photograph 5	Photograph 6
Position 1, *n* (%)	382 (95.5)	0	0	0	18 (4.5)	0
Position 2, *n* (%)	0	18 (4.5)	0	11 (2.75)	371 (92.75)	0
Position 3, *n* (%)	0	338 (84.5)	0	62 (15.5)	0	0
Position 4, *n* (%)	18 (4.5)	10 (2.5)	0	327 (81.75)	11 (2.75)	34 (8.5)
Position 5, *n* (%)	0	34 (8.5)	264 (66)	0	0	102 (25.5)
Position 6, *n* (%)	0	0	136 (34)	0	0	264 (66)
Total	400 (100)	400 (100)	400 (100)	400 (100)	400 (100)	400 (100)

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dentition is a normal and accepted feature. Shavi *et al*. concluded from their study that most of the children showed spaced dentition (82.1%) when compared to nonspaced dentition (17.9%).[9]

About 92.75% parents gave score 3 to photograph of teeth with plaque. There are very few questionnaire-based studies done on gingival health and plaque score as far as the primary dentitions are concerned. The awareness regarding brushing and gingival diseases has to be taken into consideration for primary dentition. It is recommended that the dentist should be evaluating gingival health along with teeth.[10]

Parents gave more score to fractured teeth as compared to missing teeth. According to Cortes, MI-fractured teeth were not liked by the parents where it showed 95% of parents said "fractures teeth have impact on poor esthetics."[11] About 79.5% parents gave 0 score to photograph of missing teeth which are worst. The study conducted by Sakhr A. Murshid and Mohammed A. Al-Labani showed 40.54% prevalence of premature loss of primary teeth and stated that early detection and management of the space problems associated with the early loss of primary teeth would help in reducing malocclusion problems.[12]

Parents disliked the photographs having caries in the anterior teeth (ECC). In total, 92.75% parents gave score 0, which is worst. The prevalence of ECC in India is very high. A study conducted by Sunanda G. Sujan and Vasudha Sodani showed that 59.8% of children are affected with ECC in Vadodara city.[13] Another study conducted by Gomes *et al*. stated that the history of toothache and caries was significantly associated with parents' perceptions of poor oral health in their children. This is correlating with the present study suggesting that parents/guardians judged their child's oral health as poor when dental caries involves toothache.[14] The parents do correlate between ECC and toothache.

When parents were asked to arrange all the photographs in ascending order, on position 1, 95.5% parents opted for the photographs having nonspaced healthy teeth. On position 2, 92.75% parents opted for the photographs having teeth with plaque. Then, on position 3, 84.5% parents opted for spaced dentition.

On position 4, 81.75% parents opted for the photographs having fractured teeth.

On position 5, they opted for the photographs having anterior carious teeth (ECC) and at the last position, they put missing teeth.

So, henceforth, we can conclude that parents are more concerned about the color and structure of their child's teeth which can create and play a role in the personal setback.

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Conflicts of interest

There are no conflicts of interest.

References

1. Gavric A, Mirceta D, Jakobovic M, Pavlic A, Zrinski MT, Spalj S, *et al.* Craniodentofacial characteristics, dental esthetics-related quality of life, and self-esteem. Am J Orthod Dentofacial Orthop 2015;147:711-8.
2. Chain MC, Rodrigues CC, Andriani O. Estetica: Dominandoosdesejos e controlandoexpectativas. In: Cardoso RJ, Goncalves EA, editors. Estetica. Sao Paulo: Artes Medicas; 2002. p. 43-52.
3. Martins CC, Lima-Arsati Y, Paiva SM. Mothers' perception of dental esthetics in their children. Rev Odonto Cienc 2009;24:236-9.
4. Coffield KD, Phillips C, Brady M, Roberts MW, Strauss RP, Wright JT, *et al.* The psychosocial impact of developmental dental defects in people with hereditary amelogenesis imperfecta. J Am Dent Assoc 2005;136:620-30.
5. American Association of Pediatric Dentistry. Guidelines on dental home. Pediatr Dent 2018:40:29-30.
6. Harter S. The perceived competence scale for children. Child Dev JSTOR 1982;53:87-97.
7. Patel RR, Tootla R, Inglehart MR. Does oral health affect self-perceptions, parental ratings and video-based assessments of children's smiles? Community Dent Oral Epidemiol 2007;35:44-52.
8. Verdecchia F, Bee M, Lombardo L, Sgarbanti C, Gracco A. Influence of anterior tooth alignment on peer perception in 8- to 10-year-old children. Eur J Orthod 2011;33:155-60.
9. Shavi GR, Hiremath NV, Shukla R, Bali PK, Jain SK, Ajagannanavar SL, *et al.* Prevalence of spaced and non-spaced dentition and occlusal relationship of primary dentition and its relation to malocclusion in school children of davangere. J Int Oral Health 2015;7:75-8.
10. Kokich VO, Kokich VG, Kiyak HA. Perceptions of dental professionals and laypersons to altered dental esthetics: Asymmetric and symmetric situations. Am J Orthod Dentofacial Orthop 2006;130:141-51.
11. Cortes MI, Marcenes W, Sheiham A. Impact of traumatic injuries to the permanent teeth on the oral health-related quality of life in 12-14-year-old children. Community Dent Oral Epidemiol 2002;30:193-8.
12. Murshid SA, Al-Labani MA, Aldhorae KA, Rodis OM. Prevalence of prematurely lost primary teeth in 5-10-year-old children in Thamar city, Yemen: A cross-sectional study. J Int Soc Prev Community Dent 2016;6:S126-30.
13. Sodani V, Sujan SG, Shah HG, Dave B. Anticipatory guidance regarding early childhood caries (ECC) among health professionals in Vadodara city, Gujarat. J Adv Oral Res 2011;2:77-80.
14. Gomes MC, Clementino MA, Pinto-Sarmento TC, Costa EM, Martins CC, Granville-Garcia AF, *et al.* Parental perceptions of oral health status in preschool children and associated factors. Braz Dent J 2015;26:428-34.