THE EFFECT OF AGE, GENDER AND SOCIO ECONOMIC STATUS ON PERCEIVED DENTAL ANXIETY OF 4 TO 8 YEAR OLD CHILDREN

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ABSTRACT

Aim: This study describes the effect of age, gender and socioeconomic status on perceived dental anxiety of 4 to 8 year old children.

Materials & Method: The study group included 109 children age 4 to 8 year old (54 girls and 55 boys). Dental anxiety was assessed by giving scores using Facial image scale and Venham picture test after asking the question as to how a child would feel if he/she has to visit a dentist.

Results: Statistical analysis was done using one way analysis of variance test, independent student's t test and paired Student's t test. The results obtained showed that there was no effect of age and gender on dental anxiety while it was found more for children from low socioeconomic status.

Conclusion: Age, gender and socioeconomic status play an important role as determining factors in dental anxiety, hence should be considered while measuring dental anxiety.

Key words: Age, Perceived Dental Anxiety; Facial Image Scale; Venham Picture Test; Gender; Socioeconomic Status.

Introduction

Child dental anxiety leads to prolonged chairside time and avoidance of dental care. It is essential that anxious children are identified at the earliest age.[1] Childhood dental anxiety is also associated with poor oral health. Thus, the frequency of dental diseases is greater among children with more anxious behaviour in comparison to non-anxious children. Dentists need to identify behaviour that indicates anxiety for effective dental treatment.[2] Age, gender and socioeconomic status play an important role as determining factors in dental anxiety.[3] The aim of this article is to analyze perceived dental anxiety in young children with the help of Venham picture test and Facial image scale.

Materials & Method

The study Facial image scale was given by Buchanan and Niven, 2002, and it involves five faces ranging from a very happy to a very unhappy face. [Figure 1]
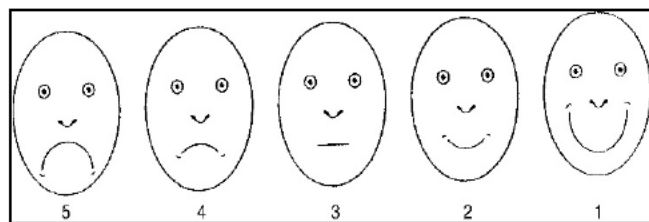

Figure 1: Showing facial image scale

Scores are given from 1 to 5 in this scale.[4] Venham picture scale was given by B Larry L.Venham in 1977. This scale is used by showing the child 8 picture cards of anxious and non-anxious pose and the number of times child chooses the fearful pose is noted.[5] [Figure 2]

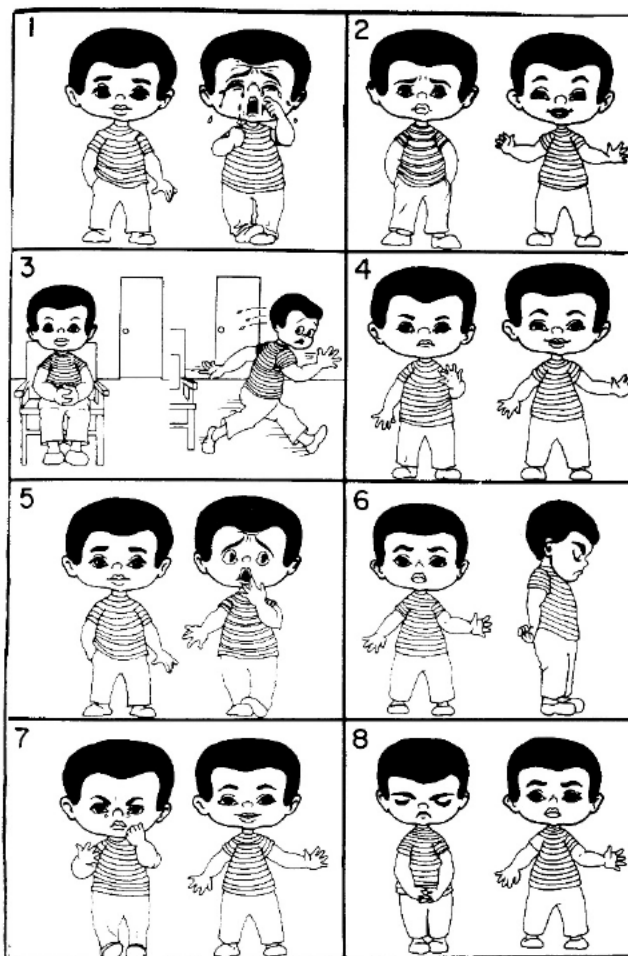Score is given from 0 to 8. All cards were shown in their numbered order.

Figure 2: Showing Venham picture test.

Ethical committee approval

This research has been conducted in accordance with the World Meical Association Declaration of Helsinki. Ethical approval was obtained from the institutional ethical committee of School of Dental Sciences, Sharda University

and clearance was obtained from the same. Consent was taken from the basic district administrator of Gautam Budhnagar district. Consent form was obtained from the school principals and a letter of invitation and project information statement stating the objective of the study was issued to the school principals. A written consent previously approved by the ethics committee, was also obtained from the parents. Socioeconomic status was determined by Kuppuswamy's socio-economic status scale for 2014.[6]

The study was conducted in rural and urban schools, Gautam Budhnagar district (U.P), the lists of children in these schools was collected and 109 children aged between 4 to 8 years (54 girls and 55 boys) were selected randomly from these lists. The children were asked as to how they would feel if they have to visit a dentist, by both Venham Picture test and Facial image scale separately. The children were asked to point their finger at the figure they felt most like after asking the question. The scores were calculated separately for both scales. Inclusion criteria was that the child should be school going, with no previous dental visit and lack of any differential ability. Exclusion criteria was children below 4 and above 8 years, presence of any systemic disease and absence of informed consent from the parents.

Results

Among 109 children, 12 (11%) were of 4 yr. age, 17 (15.6%) were of 5 yr. age, 19 (17.4%) were of 6 yr. age, 23 (21.1%) were of 7 yr. age and 38 (34.9%) were of 8 yr. age. Also, 55 (50.5%) were males and 54 (49.5%) were females.

Overall Mean (SD) facial image scale score of study population was found to be 2.33 (1.25).

Overall Mean (SD) venham picture test scale score of study population was found to be 2.17 (1.64). [Table 1]

Age group	Facial image Scale scores		Venham picture test Scale scores		p^d value
	Mean	SD	Mean	SD	
4 yrs	2.83	1.27	3.08	1.38	0.55, NS
5 yrs	2.35	1.46	2.65	1.66	0.28, NS
6 yrs	2.58	1.07	2.32	1.77	0.31, NS
7 yrs	2.09	0.95	1.65	1.34	0.038, S
8 yrs	2.24	1.38	1.89	1.71	0.16, NS
Overall	2.35	1.25	2.17	1.64	0.132, NS

[d]*Paired Student's t test*

Table 1: Agewise comparison of both scales scores

Agewise comparison of Mean scale scores showed that there was no significant difference in mean Scale scores of different age categories. There was no statistically

significant difference between mean scale scores of males (2.22) and females (2.11). [Table 2]

Gender	Facial image Scale scores (1)		Venham picture test Scale scores (2)		p^d value
	Mean	SD	Mean	SD	
Males	2.31	1.27	2.22	1.63	0.588, NS
Females	2.39	1.23	2.11	1.67	0.121, NS
Overall	2.35	1.25	2.17	1.64	0.132, NS

[d]*Paired Student's t test*

Table 2: Genderwise comparison of both scales cores

Socioeconomic statuswise comparison of facial image scale scores showed that Mean (SD) facial image scale scores of low SES and high SES were 2.71 (1.15) and 1.92 (1.24) respectively. Mean scores of low SES children was found to be significantly higher than that of high SES children (Table 3). Mean venham picture test scores of low SES children was found to be significantly higher (2.73) than that of high SES children (1.50). [Table 3]

Ses	Facial image Scale scores (1)		Venham picture test Scale scores(2)		p^d value
	Mean	SD	Mean	SD	
Ses low	2.71	1.15	2.73	1.73	0.92, NS
Ses high	1.92	1.24	1.50	1.25	0.017, S
Overall	2.35	1.25	2.17	1.64	0.132, NS

[d]*Paired Student's t test*

Table 3: Socioeconomic statuswise comparison of both scales cores

Agewise comparison of both scale scores revealed that mean facial image Scale score was significantly higher than mean venham picture test scale among 7 year age group. [Table 1] Genderwise comparison of both scale scores revealed that among both males and females, there was no statistically significant difference between two scales scores. [Table 2] Socioeconomic statuswise comparison of both scale scores revealed that among high SES, the mean facial image scale score was significantly higher than mean venham picture test scale score. Among low SES, there was no statistically significant difference between two scales scores. [Table 3]

Discussion

In the present study, the Facial image scale and Venham picture test were used as they are easy to understand and to be used with young children. Venham picture test is a

useful tool for those interested in measuring young children's responses to stressful situations. It provides the researcher greater access to the largely unexplored, experiential world of the stressed child.[5]

There is a high correlation between validity of Venham picture test and Facial image scale according to Buchanan H *et al*.[4] The Venham picture test does have some limitations. The figures on the cards are all male, this may present problems when the young patient is a girl. The scale still takes some time to complete, when considering very young patients.

When the role of gender on dental anxiety is analysed, some research reports as by Assunção CM, Losso EM, Andreatini R, de Menezes JN[2] and several other studies[3,7-11] reported no gender differences, while Javadinejad S, Farajzadegan Z, Madahain M[12] and some other studies[13-17] have shown that girls report higher anxiety. The present study showed that females had a similar level of anxiety as compared to males. Genderwise comparison of both scale scores revealed that among males, the mean score of Facial image scale was significantly higher than mean scale score of Venham picture test. Among females, there was no statistically significant difference between two scales scores.

Several studies have implicated the relationship between age and dental anxiety as a decrease in dental anxiety with increasing age as Dogan MC *et al*[3] and similar results have been given by studies done by other authors.[5,8,18] Assunção CM, Losso EM, Andreatini R, de Menezes JN found no significant differences in the level of dental anxiety between children and adolescents. Kaur R *et al*[19] showed that 4-6 and 6-8 years revealed equal anxiety level. Coric A *et al*[10] reported no effect of age on children's anxiety. The present study demonstrated that there was no significant relationship of age with anxiety probably due to children of different age groups watching television commercials regarding dental awareness. Agewise comparison of both scale scores revealed that Mean facial image Scale score was significantly higher than mean Venham picture test score among 7 year age group.

Coric A *et al*[10] said that there is no relationship of socioeconomic status with dental anxiety. Alaki S *et al*[13] reported that children in public schools showed more severe anxiety than those in private schools. Dogan MC *et al*[3] and Raadall M *et al*[17] said that children from low socioeconomic status were found to be more anxious than children of high socioeconomic status. The present study showed that children from low socioeconomic status had a higher level of dental anxiety than children from high socioeconomic status. Socioeconomic statuswise comparison of both scale scores revealed that among high socioeconomic status, the mean score of Facial image scale was significantly higher than mean scale score of Venham picture test. Among low socioeconomic status, there was no statistically significant difference between two scales scores. For both scales, the dental anxiety was found to be higher for low socioeconomic status. This might be explained due to the differences in the type of services provided to the children. For instance regular medical and dental check-ups are organised by the school authorities for high socioeconomic status.

Dogan MC *et al*[3] had eliminated children with previous dental experience as they wanted to investigate those fears and anxieties that arise from modelling or exposure to threatening information. Agarwal M, Das UM[1] have shown that previous dental exposure did not have significant influence on Venham Picture Scale scores of school children. In the present study, the children with previous dental visits are not included.

Studies done in school environment are helpful in finding out the perceived dental anxiety of children as the children once enter the dental clinic already are already anxious, whereas if at school, can relate their anxiety irrespective of any influence from their parents and are free of the objective fear which they get once they enter the dental clinic or are waiting in the waiting area of a dental clinic. This fact is supported by the studies done in school environment as done by Agarwal M, Das UM[1] and other studies.[3,11-13,17,20] The present study is done in a school environment.

Conclusion

In recent times dental anxiety in children is a significant challenge in providing dental care. Hence it is of paramount importance for the pediatric dentist not only to identify an anxious child but also to instill a positive attitude for dentistry. It is essential for a paediatric dentist to identify perceived dental anxiety in his patient before starting the treatment. Age, gender and socioeconomic status play an important role on perceived dental anxiety. Pre appointment counselling and behaviour management will play an important role in anxious patients for effective dental treatment and will also save time of the dentist as well as the patient.

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