Relationship of dental fear with oral health behaviour among 12 and 15 years old school children of Muradnagar

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Abstract

Introduction: Fear to visit the dentist is a common observation in adults & children.

Aim: To study the relationship between dental fear and oral health behaviour of 12 and 15 years old school children of Muradnagar, Ghaziabad.

Materials and Method: Two Hundred school going children aged 12 and 15 years were evaluated for children's fear survey schedule dental subscale (CFSS-DS) and oral health behaviour by a questionnaire. Level of dental fear was assessed on 5-point likert scale from 1 "not afraid at all" to 5 "very afraid" covering 15 items and their behaviour towards oral health. Data analysis was done by SPSS version 18.

Results: Out of 200 respondents, 142 were boys & 58 were girls.7 had scores equal to or greater than 38 & were classified as having "high dental fear". High dental fear was present among girls and was found absent among boys.

Conclusion: Reported association between oral health behaviour and dental fear should not be overlooked by the dentist for children.

Keywords: Dental Anxiety, Dental Fear, Oral Health, School Children

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Introduction

For behaviour management strategy, it is very important to know about the reason of dental fear and uncooperative behaviour in a child patient. In an Indian scenario, effects of environmental factors are less likely studied.[1]Dental fear and anxiety towards a dentist are major problems for a sizeable proportion of children and adolescents. The prevalence of dental fear and anxiety varies in various countries and in some countries it is considered to be dental phobia.[2] Children usually have a phobia towards injection and drilling sound in a dental setup. Thus, people with dental fear tend to address dentists only in case of an unavoidable dental problem. This aggravates the dental problem and such patients are usually not satisfied with the dentist's work.[3] Dental fear has been recognized as a difficulty in patient management for many years, which further leads to dental avoidance in adolescents. The reason for dental fear has been attributed to patient's dental phobia and a response to certain specific stimulus. Among children, dental fear is an issue of concern for both dentists and the parents. Dental fear is common to children of different age groups and manifests in different forms.[4]

Anxious situation prior to frightening situation may affect a person's capacity for work (longer period of inability to work) and social activity thereby boosting the usage of medicines.[5,6]

The Dental Subscale of children's Fear Survey Schedule (CFSS-DS) was developed to assess dental fear in children. The scale consisted of answers in form of 5-point likert scale having 15 items including injection, and drilling. The main aim of the study was to determine the relationship between dental fear and oral health behaviour of 12 and 15 year old school children of Muradnagar, Ghaziabad.

Materials & Method

A cross sectional survey on school children was conducted to determine the relationship between dental fear and oral health behavior among the school children of Muradnagar, Ghaziabad.

The study area was schools of Muradnagar, Ghaziabad. Ethical clearance was obtained by the institutional ethical committee. Voluntary written consent from school authority, and parents of children was taken in the study to avoid any inconvenience and to ensure full cooperation. Prior scheduling of the study was done before conducting the survey and the data collection was done between July 2013 and August 2013.

Pilot study was done on 20 (10%) subjects in the month of July 2013, before starting the main study to check the feasibility of proforma and the validity of questionnaire (Cronbach's alpha =0.76). The necessary modifications were then made in the final pro forma.

Before starting the survey, the principal investigator was calibrated in the Department of Public Health Dentistry, ITS- CDSR, Muradnagar, Ghaziabad, in order to limit the examiner variability. To reduce the intra examiner variability, the subjects were randomly called on different days and examiner repeated the examination on them. A group of subjects were re-interviewed on successive days using same questionnaire. Later the results obtained were subjected to Kappa variability test. Intra-examiner reliability was calculated as 0.88 with respect to Kappa co-efficient.

Survey was conducted among 12 and 15 years old school children comprising of 105 twelve-year old and 95 fifteen years old. A written protocol was prepared for the survey. The protocol contained information like objective and the purpose of the study, description and the type of information to be collected, sampling methods and statistical methods to analyze the data.

The sample size was determined based on the results of the pilot study using the formula:

$$Z^2 P (1-P) / d^2$$

Where, P = Prevalence rate which was estimated to be 15% after the pilot study.

Z = Z statistic for a level of confidence (For the level of confidence of 95%, which is conventional, Z value is 2.0).

d = Precision (Least permissible error which was taken at 5.0%).

Using the above formula, the sample size was estimated to be 200. Schools were selected by simple random sampling out of the list available from block education office and children of 12 and 15 years of age present on the day of survey were included in the study.

Those children were excluded whose parents did not give their consent for participating in the study, who was mentally or physically handicapped and children who had medical problems or were undergoing any medication / treatment. The closed ended questionnaire consisted of two parts. The first part contained questions on age, gender, school, nationality, parent's occupation and income, Children's Fear Schedule Survey-Dental Subscale (CFSS-DS) which is most commonly used to measure dental anxiety. This 5-point likert scale which measured dental anxiety from 1 "not afraid at all" to 5 "very afraid" covering 15 items. Scores more than 38 were considered as high dental fear. While the second part comprised of 15 questions on oral health behavior.

Statistical analysis:

The statistical procedure was carried out in two steps.

1. Data compilation and data presentation
2. Statistical analysis

Descriptive and Inferential statistical analysis was carried out in this study. Results on continuous measurements were presented on mean ±SD (Min-Max) and results on categorical measurements were presented in numbers (%). Student's t test was applied keeping p-value < 0.05 at 95% confidence level.

[(Not significance (p value: p > 0.05), Significant (p value: 0.01 < P < 0.05), highly significant (p value: p < 0.01)]. The statistical software SPSS version 18.0 was used for analysis of the data.

Results

A total of 200 children aged 12 and 15 years participated in the study. 71.0% (n =142) were males and 29.0% (n =58) were females (Graph 1).

CFSS-DS has score range of 15–75, in which score of 38 and above is considered as high dental fear.

Children were found to be most afraid of choking (36.5%), drilling of the tooth (34.5%) and injection (31.5%). (Table 1).

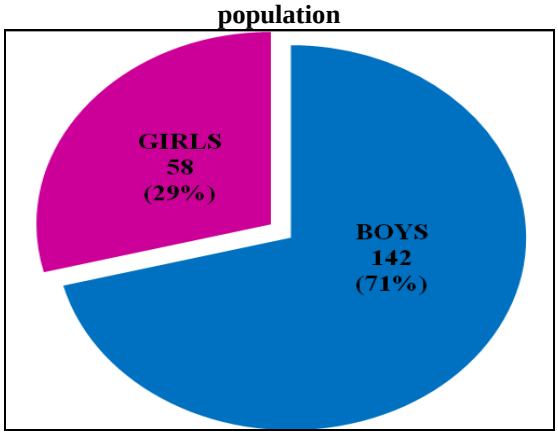
According to CFSS-DS, high dental fear was absent in males while females (12.1%) (n =7) were having high dental fear (Table 2, Graph 2). Dental Fear Score was more in females (28.59+6.75) as compared to males (24.07+6.77) and it was found to be highly statistically significant (p < 0.001) (Table 3).

Dental fear score was found to be more in children who have not received dental health care in the past (31.02+5.54) as compared to, those who have received dental health care in the past (21.04+4.58) and it was found to be highly statistically significant (p < 0.001) (Table 4).

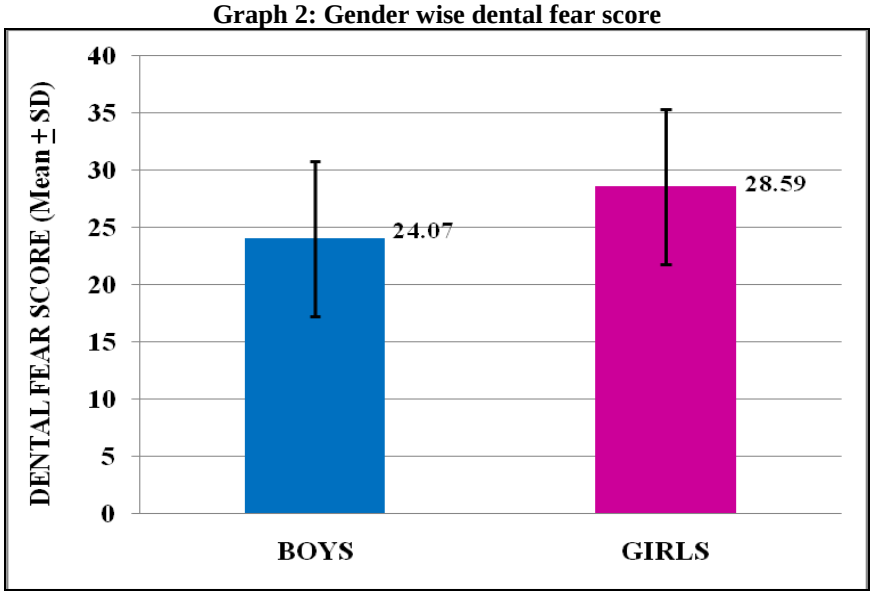
Oral health behaviour score was more in females (12.31+1.15) as compared to males (11.92+1.52), was found statistically non-significant (p = 0.77) (Table 5). There was slight difference in oral health behavior score in those having high dental fear (12.00+0.00) and those not having high dental fear (12.03+1.46) (Table 6, Graph 3).

Oral health behaviour score was found to be more in those who have received dental health care in the past (12.30+1.15) as compared to those who have not received dental health care in the past (11.67+1.68) and it was found to be highly statistically significant (p = 0.002) (Table 7).

Graph 1: Gender wise distribution of study population



Graph 2: Gender wise dental fear score



Graph 3: Oral health behaviour with past dental care received

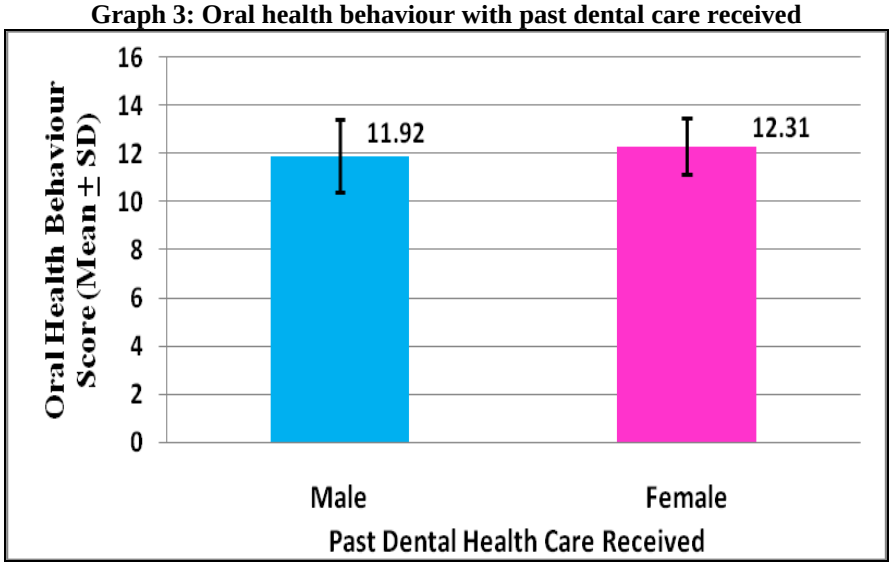


Table 1: Causes of child's fear in dental clinic

Dentist	1.0%
Doctor	3.0%
Injections	22%
Somebody examining your teeth	4.0%
To open your mouth	6.0%
A stranger touches you	10%
Somebody look at you	7%
The drilling of the tooth	14%
The site of drilling	8.0%
The noise of drilling	3%
Somebody put instruments in your mouth	10%
Choking	10%
To go to the hospital	2.0%

Table 2: Presence of high dental fear in males and females

			High Dental Fear		
			Absent	Present	Total
Gender	Males	Count	142	0	142
		% within gender	100.0%	.0%	100.0%
	Females	Count	51	7	58
		% within gender	87.9%	12.1%	100.0%
Total		Count	193	7	200
		% within gender	96.5%	3.5%	100.0%

Table 3: Dental fear score in males and females

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Dental Fear Score	Males	142	24.0704	6.76940	.56808
	Females	58	28.5862	6.74611	.88581

Table 4: Dental fear score in students who have received and not received past dental health care

	Past Dental Health Care Received	N	Mean	Std. Deviation	Std. Error Mean
Dental Fear Score	Yes	113	21.0354	4.58049	.43090
	No	87	31.0230	5.54260	.59423

Table 5: Oral health behaviour score in males and females

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Oral Health Behaviour Score	Males	142	11.9155	1.52401	.12789
	Females	58	12.3103	1.15024	.15103

Table 6: Oral health behaviour score in students with and without high dental fear

	High Dental Fear	N	Mean	Std. Deviation	Std. Error Mean
Oral Health Behaviour Score	Absent	193	12.0311	1.46008	.10510
	Present	7	12.0000	.00000	.00000

Table 7: Oral health behaviour score in students who have received and not received past dental health care

	Past dental health care received	N	Mean	Std. Deviation	Std. Error Mean
Oral Health Behaviour Score	Yes	113	12.3026	1.14949	.107206
	No	87	11.6686	1.68140	.18131

Discussion

A cross sectional study was carried out in I.T.S – Centre for Dental Studies and Research, Ghaziabad on school children of Muradnagar, to determine the relationship between dental fear and oral health behavior.

High dental fear was found to be in females compared to males and this finding was opposite to findings of study done by Suprabha et al[1]. In contrast, gender of the child patient was not related to oral health behaviour in the study done by Kyritsi et al[7].

In contrast to our study, dental fear was found to be more in those who have not received dental health care in the past but oral health behaviour score was found to be more in those who have received dental health care in the past. This is in agreement with latent inhibition theory, in which children tend to become less afraid if they have had more neutral visits (e.g., check up, cleaning of teeth) before any invasive dental treatments (e.g., restorations, extractions). According to Davey GC[8] traumatic experiences are more likely to give rise to dental anxiety if they occurred in the first dental visit than during the subsequent dental visits.

Contrary to local stereotypes, there were no significant differences in oral health behavior score between students having high dental fear and students

not having high dental fear. However, these conclusions must be interpreted cautiously because of the small sample size and it should be noted that there were some patients who were co-operative yet fearful and un-cooperative but non-fearful. Kleinberg et al[9] indicated that child patients with behavior management problems do not always have dental fear, which was also seen in this study. Hence the other factors that affect behavior of a person need to be explored before commencing the treatment.

The limitation of this study was that it was conducted on smaller sample size. As fear of dentistry is preventable, efforts need to be made to identify the sources of the problem.[10] Children who are anxious in many other situations are more likely to be afraid of the dentist. This suggests these children are at higher risk to carry their childhood fear of the dentist into adulthood.[10]

In particular, attention needs to paid to the use of epidemiologic concepts of clinical risk ascertainment using caries activity tests and early intensive preventive efforts (such as occlusal sealants) to reduce the need for injections and restorative dentistry at too early age.

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