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Original Article

Reviewing the parental standpoint about origin of the dental fear in children referred to dentistry centers of Isfahan University of Medical Sciences

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Abstract

BACKGROUND: Dental fear leads to lack of child cooperation. In general, without the patient's cooperation, success in remedy is impossible. This study aimed to evaluate parental view about the origins of the dental fear in children as well as their view about factors contributing to the prevention of child dental fear.

METHODS: This was a cross sectional descriptive and analytical study which was carried out on 200 parents of children aged 6-12 years referred to dentistry center of Isfahan University of Medical Sciences. The level of dental fear in these children was screened using Children's Fear Survey Schedule - Dental Subscale (CFSS-DS). This questionnaire consisted of 15 questions and each question had a 5-point Likert-type Scale. Total scores ranged from 15 to 75. Based on the scores, children were divided into two groups: Group with low fear (score of 25 or less) and group with high fear (score of 37 or more). The parents were asked about the causes of their child's dental fear.

RESULTS: There was an inverse significant correlation between the average score of fear and the age of the children. In the group with high fear, most of the parents (31%) had chosen previous dental experiences as the cause of their child's fear. There was no significant relationship between parental belief and their gender, the level of education, the level of their own dental fear and the child's age and fear score.

CONCLUSIONS: According to the parent's standpoint, previous dental experience was a major factor in the development of childhood dental fear. Temperamental factors also played a major role in some of the fearful children. Most of the parents in group with high fear attributed their child's fear to the external factors and seemed they were unable to control and prevent it. Therefore, more attention should be given to the behavior and attitude of the parents as well as dentists in the future researches.

KEY WORDS: View, dental fear, child, parents.

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Fear can be considered as an inevitable thrilling, a response to a certain external threat and with an identified origin in which individual is afraid without no clear reasons. Dental fear leads to lack of cooperation of the children and generally without the cooperation, treatment will not succeed and this is why the child's dental fear and anxiety from dentistry services is a main concern of children, parents and dentists.[1] Studied researches among the group of children indicated that a considerable proportion of them (around 30 to 43 percent) are afraid of dentistry.[2] On the other hand, one of the most important consequences of fear is the painfulness of the dental operation because fear can reduce irritability threshold of the children.[3] A study in the United States also showed that 18 percent of adults and 5 percent of the children under 13 years old, avoid referring to the dentist due to intensity of fear and

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anxiety which this avoidance from visiting the dentist was more prevalent among the males than among the females.[4] Many studies have shown that among the children with dental fear, there are many reasons why they are afraid of it; for example, some of the children have fear directly due to the negative experiences of dentistry. While, dental fear of some other children can be due to social factors such as parental fear or attitude of the family towards this treatment.[5] In many different evaluated articles about the quality of establishing fear and fear acquisition, many different ways are described some of which explained the origin and source of the fear.

Rachman in a study titled as "the conditioning theory of fear acquisition" explained fear acquisition in two ways: directly, through direct conditioning or indirectly through vicarious learning or modeling. Rachman stated in his study that although many studies support all these ways, in most of the cases, dental fear has been attributed to the first item i.e. direct conditioning.[6]

Milgrom et al found that oral hygiene is a very important effective factor,[7] while others e.g. Townend et al announced that subjective dental experiences such as dentist hypnosis and sympathy from the dentist are more important.[8]

In addition to Rachman methods, researches have indicated other factors including mood and temperamental factors such as general fear and shyness which are resulted from dental fear.[9]

Gherunpong et al in their study have classified the causes of dental fear into two groups with endogenous and exogenous origins.[10] The study of Locker et al showed that patients whose fear onset has been started at the childhood are placed in exogenous origins class and indicated that conditioning is more important in children.[11]

Ten Berg et al in a study investigated the causes of dental fear in childhood and reviewed the role of dental experience and direct conditioning. According to this study, no significant difference was observed in fear score of the boys and girls. In addition, fear had no significant association with age ($p > 0.05$).[12]

In the Kleinberg and Broberg study, age and emotional status of the child and fear and anxiety of the mother from dental fear were identified as dental fear factors which would be reduced with increase of age and painful experience during the dental treatment would increase the possibility of creating dental fear and behavioral control problems.[13] Ten Berg in a study reviewed the parental standpoint about origin of the dental fear in children. In parents' view, the important origin of children's dental fear primarily included children with high fear resulted from previous dental treatment and then, medical problems.[2]

Since, one of the career objectives is to promote positive aspects of dentistry and improvement of oral and dental hygiene of the community and also the fact that fear of the child causes lack of cooperation of the patient during operation and also can cause psychological side effects and its resulted emergencies such as syncope and logically children are keys of the future, therefore, we should seek more ways to reduce child' fear and consequently increase their cooperation and enthusiasm during the treatment. The first step to reduce child's fear is to recognize its origin.[14] The present study aimed to review origin of high dental fear in children according to the parents' reports. This study would help reviewing the factors inducing fear in the children in order to plan some strategies to reduce dental fear. By finding the most important factors of fear and prioritization of these factors we would be able to change attitude of the community through appropriate planning and policy making. By understanding these factors through education, it would be possible to reduce fear and strengthen fear-free factors in the society. This education can have a comprehensive impact through benefiting from the mass media and education in dental schools and universities and also be effective in modifying vision of the society and controlling children's behavior. Modifying community's point of view along with identify-

ing the causes of dental fear in children can lead to more effective dental treatments.

Method

This was a cross-sectional descriptive and analytical study. The study samples included the parents of children aged 6 to 12 years who referred to dentistry centers of Isfahan University of Medical Sciences. Sampling was carried out in cluster random sampling method based on days of the week, i.e. 3 days a week, 200 samples randomly were divided into two groups.

The inclusion criteria for entering in this study was all the parents with 6 to 12 year-old children who have referred to dentistry centers of Isfahan University of Medical Sciences. Parents did not have mental retardation.

Data collection method was conducted through completing the questionnaire. The questionnaire consisted of two parts, the first part was the standard Children's Fear Survey Schedule- Dental Subscale (CFSS-DS) questionnaire which had been previously used to determine fear rate of the children in different studies. The mentioned questionnaire was a standard questionnaire which assessed child's fear using 15 questions contain all the dental conditions (such as injections, examinations, the voice of drill, the appearance of drill, color of the cover and etc). Each question had 5 choices which are ranked from 1 (I am never afraid) to 5 (I am very afraid). The total score of the individual was varied from 15 to 75 scores. The people with fear score less than 25 included the group with low fear and the people with fear score higher than 37 included the group with high fear. The second part of the questionnaire was designed by the researcher to review standpoint of the parents about origin of the dental fear which was prepared using scientific books and articles and also consulting with several dental department professors and psychiatric nursing consultants. Furthermore, in order to determine its reliability, test re-test was used. Thus, a preliminary study was done on 10 parents in each group using 2 times tests with two weeks interval which its reliability was confirmed (r = 87%).

Therefore, each group was given its own specific questionnaire designed by the researcher and the parents were asked about causes of high dental fear in their children in the group with high fear and the group with low fear. Besides, these two questionnaires had also common questions which were about total fear of the child, probable problems that parents had during their previous meetings, preventive ways from fear of the child and fear of the parents.

In this study, descriptive statistics was conducted by determining mean and frequency distribution, chi-square, ANOVA, Kruskal-Wallis and non parametric correlation. P value of less than 0.05 was considered significant.

Results

In this study, 200 parents with 6 to 12 year-old children who referred to dentistry centers of Isfahan University of Medical Sciences participated into two groups based on their child's level of fear (group with high fear and group with low fear). According to our study, in the group with high fear, 44% of the study subjects were male and 56% of them were female. Among the males, 27.3% (12 subjects) were under high school graduates, 27.3% (12 subject) were high school graduates, 6.8% (3 subjects) had associate degree and 38.6% (17 subjects) had BS/A or higher degree. And among the females, 16.1% (9 subjects) were under high school graduates, 32.1% (18 subject) were high school graduates, 14.3% (8 subjects) had associate degree and 37.5% (21 subjects) had BS/A or higher degree. According to the results of this study, in the group with low fear, 25% of the males (11 subjects) were under high school graduates, 29.5% (13 subjects) were high school graduates, 2.3% (1 subject) had associate degree and 43.2% (19 subjects) had BS/A or higher degree. Among the females of the group with low fear, 19.6% of the males (11 subjects) were under high school graduates, 39.3% (22 subjects) were high school graduates, 41.1% (23 subjects) had BS/A or higher degree.

In the group with high fear, 31 percent of the parents believed the cause of their child's high

fear at the first priority was due to previous dental experiences. The following items had been chosen by the parents as the first priority of the fear causes: 4% due to medical problems (history of medical treatment such as admission to the hospital, outpatient treatment and etc). 29% due to temperamental factors in child, 19% due to behavior of the dentist, 15% due to social factors i.e. the image around the child had transferred to him/her such as fear of the parents, talks of the classmates and etc and 2% also selected others. Frequency distribution of the most affective cause of fear, selected by the parents in group with high fear is illustrated in table1.

In the group with low fear, the causes of low fear of the child were asked from the parents; 30% believed it was due to behavior of the dentist, 31% due to parental guide, 14%due to lack of pain and 25% due to the character of the child. Fifty four percent of the parents in group with high fear believed that their children were coward in general and that was not the reason they be afraid only of the dentist. In the group with low fear, 28 percent of the parents believed that their children were coward in general.

As the second prioritymain concern, 17% of the study subjects mentioned the previous treatment experiences, 7% medical problems, 10% temperamental factors of the child, 17% behavior of the dentist, 15% social factors and 34% of the study subjects did not selected any of the choices as their second priority about their children's fear.

As the third priority, 4% of the study subjects mentioned previous treatment experiences, 5% temperamental factors of the child, 12% behavior of the dentist, 6% social factors and 73% did not select any of the choices.

Frequency distribution of the selected items in the group with low fear is illustrated in table 2, and demogra[hic data of both group are given in table 3.

Although the majority of the men selected previous treatment experiences as the first priority and the majority of the women selected temperamental factors of the child, there was no significant correlation between parental view about low fear of the child and gender of the children according to results of chi-square analysis ($p = 0.47$). Statistically, according to the results of Kruskal-Wallis test, there was no association between parental view about low fear of the children and educational level of the parents ($p = 0.149$). Kruskal-Wallis test showed that fear level of the parents had been affectless in their view about high fear of the child ($p = 0.8$).

Results of ANOVA ($p = 0.35$) showed that statistically there was no significant correlation between parental view about high fear of the children and their children's fear score based on CFSS- DS index.

According to statistical chi-square test, there was no significant correlation between parental view about the cause of high fear in the child and age of the children. Calculating Pearson correlation coefficient showed that in the group with high fear there was an inverse significant

Table 1. Frequency distribution of the selected items at the first priority as the causes of fear in the group with high fear based on gender of the parents

Causes of fear	Previous experiment		Medical problems		Child's bad mood		Behavior of dentist		Social factors		Others	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	16	36.4	1	2.3	10	22.7	10	22.7	7	15.9	0	0
Female	15	26.8	3	5.4	19	33.9	9	16.1	8	14.3	2	3.6
Total	31	63.2	4	7.7	29	56.6	19	38.8	15	30.2	2	3.6

Table 2. Frequency distribution of the selected items as the low fear at the first, second and third priorities in the group with low fear

Selected Priorities Causes of Low fear	Selected at the 1st priority		Selected at the 2nd priority		Selected at the 3rd priority	
	Number	Percentage	Number	Percentage	Number	Percentage
Behavior of dentist	30	30	22	22	7	7
Parental guidance	31	31	24	24	4	4
Lack of pain	14	14	5	5	1	1
Child's temperament	25	25	11	11	5	5
Others	0	0	0	0	2	2
unselected	0	0	38	38	81	81
Total	100	100	100	100	100	100

Table 3. Mean and standard deviation of fear score of the children in both groups

Group	Characteristic	Mean	SD
With high fear	Age	8.27	1.86
	Fear score	50.77	9.06
With low fear	Age	8.54	2.15
	Fear score	18.62	2.21

correlation between fear score and age of the child (p = 0.04, rl = -0.203).

Discussion

Findings of the present study indicated that considering parental view about causes of high fear in their children in the group with high fear, the most important factor was experience of previous treatments in the dentistry. At the next priority, parents believed that temperamental factors of their children were the cause of fear. Behavior of the dentist and social factors (i.e. the image of those around such as fear of the parents, talks of the classmates and etc. affect the child) were the other causes after the temperamental factors. Locker in his study pointed out that positive or neutral history of previous dental experience may prevent from a traumatic experience and subsequently create the high level fear.[11] In this regard, Ten Berg believed that conditioning factors such as aggressive dental and medical experience are so important in creating fear in the children. Furthermore, Ten Berg noted that temperamental and inherent factors also had a major role in some of the children.[2]

Most of the parents, who stated temperamental factors as the dental fear of their children, believed that their children in general were shy, timid and coward without a specific cause or a traumatic event. Moreover, in group with high fear greater percentage of the parents believed that their child in general was a coward child in comparison with group with low fear.

These findings showed that in fact, in group with high fear, in addition to subgroup in which previous experiments and previous bad experience had been effective on the fear, there is another subgroup that in which psychological factors are more important. However, psychological factors in both subgroups are important in creating dental fear and it would not be possible to divide these groups clearly.

Mean age of the children in the group with high fear was lower than the group with low fear. Calculating Pearson correlation coefficient in the group with high fear showed a significant inverse correlation between fear score and age of the child. Ghasem pour et al also announced that with increase in the age, fear score would be reduced which can be due to psychological growth and increase of understanding of the child in the older ages.[15] Although, according to the results of this study, the majority of the mothers mentioned temperamental factors as the cause of dental fear in their children but there was no statistically significant correlation between parental view and gender of the parents. In addition, according to the results of this study, educational level of the parents also had no effect on their standpoints.

The fear level of the parents also had no effect on the mentioned factors as the origin of the dental fear of their children. However, it should be noted that the study sample group was so small and perhaps, a study in a larger group might find an association. Ten Berg et al also found no correlation between dental fear in the child and the parents. They stated that parents' fear might have a secondary role in childs' fear.[9]

According to the statistical formulas, there was no significant difference between the two age groups (6-8 and 8-12 years) in terms of origin of the high fear in parental view. However, in the lower and higher age group, higher percentage of parents mentioned child's temperament and previous treatment experiences as the dental fear of the children, respectively. In the study of Ten Berg et al there was no difference between two groups of 4-5 and 8-9 years old.[16]

Most of the parents in the group with high dental fear attributed this fear to the more external factors beyond their control (experience of previous treatment, dental problems and behavior of the dentist), while parents in the group with low dental fear believed it was more due to their guidance.

Furthermore, by reviewing parental view about preventive ways from fear of the child it was indicated that most of the parents in the group with high fear mentioned dentist attributed factors and most of the parents in the group with low fear mentioned education and encouragement as the preventive ways of the dental fear.

In other words, it seems that parents of children with low fear have more control and ability on their children toward dentistry and fear level of the child. To some extent, this also can be effective on the problems that the parents experienced in dentistry meetings. As indicated from the results of the present study, higher percentage of the parents in the group with high fear stated that so far they have experienced some problems in dentistry meetings such as their child crying so much and they were not able to control him/her.

Consequently, parents of the child with high fear could not realize any ability to control and prevent from their child's fear. Therefore, to some extent, they felt inability and attributed this to the exogenous factors. However, this difference might be because parents completed the questionnaire.

Kleingberg and Broberg also in a study about dental fear of the child and temperamental factors pointed out to a similar note [17] and therefore it is recommended that in the future researches, the behavior of the dentists as well as parental attitude be investigated. In order to help parents in learning to deal with their child and confront with dental fear and sufficient guidance of their children, the necessary training should be given before, during and after the dental meeting and ultimately, more studies are necessary to be done in order to discover the most effective treatment strategies for the children with high fear.

The authors declare no conflict of interest in this study.

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