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To Assess the Effect of Parental Anxiety on Children's Behaviour and Correlate Children's Dental Anxiety with Subsequent Dental Visits

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Abstract:
Background:*If the anxiety levels of parents is recognized it can help the clinician in designing the behaviour management strategies for the child.*
Aims: *To assess the effect of parental anxiety on children's behavior and correlate children's dental anxiety with subsequent dental visits.*
Materials and Methods: *A total of 175 children of age 6–12 years were randomly selected from various schools of Ghaziabad. Parental dental anxiety was assessed using the Corah's dental anxiety scale (DAS), and child anxiety level was measured using children fear survey schedule-dental subscale (CFSS-DS).*
Statistical Analysis Used*: Pearson's correlation coefficient analysis, ANOVA, and Friedman test were used for statistical analysis of data.*
Results: *There is a significant positive correlation (P < 0.0001) between DAS scores and CFSS-DS scores at all four dental visits. The mean CFSS-DS scores at the first, second, third and fourth dental visits are 34.07, 31.04, and 27.26, respectively, indicating that the score is more during the first dental visit as compared to the second and third visits.*
Conclusion: *The dental anxiety levels of parents may have an influential factor in determining the anxiety levels of children. Moreover, all children also exhibited an improvement in the levels of dental anxiety from the first dental visit as compared to the subsequent dental visits.*
Keywords:*Children fear survey schedule-dental subscale, Corah's dental anxiety scale, parental fear, anxiety*

I. Introduction

Mild fear and anxiety are normal experiences, which are consistent with normal growth and development, but they become a cause for concern when the daily functioning gets impaired. It is well accepted that anxiety is a multidimensional construct that consists ofsomatic, cognitive, and emotional elements.[1]

Dental behavior management problems (DBMPs) is a collective term for uncooperative and disruptive behavior, which result in delay of treatment or render treatment impossible.[1]

Parents do transmit feelings of fear and anxiety passively to their children. Usually mothers with high anxiety levels exert a negative influence on their children's behavior. It has also been observed that we can predict, and influence a child's dental behaviour through the mother's attitude toward dental treatment.[2]

Many measurement techniques like behavioral ratings, psychometric scales, physiological measures, and projective techniques have been proposed to assess dental fear and anxiety and DBMPs.[1]

Hence, the present study has been conducted in order to evaluate the effect of parental anxiety on the child's level of dental anxiety and also to examine whether subsequent visits to the dental clinic would decrease the children's level of dental anxiety.[3]

Aim

To assess the effect of parental anxiety on children's behavior and correlate understanding children's dental anxiety with subsequent dental visits.

Objectives

1. To determine the relationship between level of parents' anxiety and the children.
2. To observe the levels of dental anxiety on subsequently exposing the same children to the dental environment.

II. Materials And Methods

The present study was conducted in Department of Pedodontics and Preventive Dentistry in ITS Dental college, Ghaziabad, Muradnagar.

The study was conducted on 175 children of age 6–12 years. Of these 175 cases, 98 were boys and 77 were girls.

Inclusion criteria

1. Children between 6 and 12 years of age irrespective of gender.
2. Children who are coming to the dental clinic for the first time
3. Children who can come to the dental clinic with parents.

Exclusion criteria

1. Patients with congenital anomalies, developmental, and/or systemic disorders
2. Children with any history of prolonged illness
3. Children who had previous dental experiences.

The research protocol was submitted to the Institutional Ethical Committee and after ethical approval, written informed consent was taken from all the parents for participation in the study.The dental fear and anxiety of children was measured using the Corah's dental anxiety scale (DAS) and children fear survey schedule-dental subscale (CFSS-DS).The questionnaires for measuring the scales was available in English and Hindi.

Parental dental anxiety was assessed using the DAS. The DAS comprises of four multiple-choice questions which deals with the individual's expectations of going and being treated by a dentist.Each question consists of five response alternatives ranging from 1 (no anxiety) to 5 (extreme anxiety) and yields a total score between 4 (not anxious) and 20 (extremely anxious).Child anxiety level was measured using CFSS-DS for those children who attended the dental clinic for the first time.CFSS-DS consists of 15 items which includes different aspects of dental situation, ranging from 1 (not afraid) to 5 (very afraid).Total score ranges from 15 to 75 and score of 38 and above indicates dental fear.Both the scales were completed on the first day of both parents and children before any form of dental procedure was performed.After the first visit, only the anxiety level of the child was recorded during the subsequent dental visits.

Statistical Analysis

The relationship between anxiety level of parents and child patient was correlated using Pearson's correlation coefficient analysis and the anxiety level of children on subsequent visits to the dental clinic was analyzed using ANOVA and Friedman test.

III. Observations And Results

Table 1 shows a significant positive correlation ($P < 0.0001$) between DAS scores and CFSS-DS scores at all three dental visits using Pearson's correlation.

Table 1: Correlation ("R") Between Dental Anxiety Scale Score And Children Fear Survey Schedule-Dental Subscale Score During Sequential Dental Visit

Visit to dental clinic	r	*P*
1st visit	0.3346	<0.0001*
2nd visit	0.3141	<0.0001*
3rd visit	0.3026	<0.0001*

**P*<0.0001 (significant)

Table 2 shows the mean CFSS-DS score at the first dental visit (34.07), at the second dental visit (31.04), and at the third dental visit (27.26). The mean CFSS-DS score is more during the first dental visit than the second and third dental visits.

Table 2: Mean children fear survey schedule-dental subscale scores at the first and follow-up dental visits

CFSS-DS	Mean
1st visit	34.07
2nd visit	31.04
3rd visit	27.26

Table 3: Mean Change In Children Fear Survey Schedule-Dental Subscale Total Scores From The 1st Dental Visits

Change from 1st visit	Mean change
Change from 2nd visit	3.03
Change from 3rdvisit	6.81

Table 3 shows a positive reduction seen in CFSS-DS total scores from the first dental visit.

IV. Discussion

Child dental anxiety plays an important role in a child's dental and general health.[4]Worldwide statistical analysis demonstrates that 3-43.4% of children exhibit dental anxiety.[1,5]The etiology of child dental fear is considered multifactorial and different pathways of acquiring fear have been described. Thus pediatric dentists should consider the multifactorial etiology of anxiety.

As parents' perception of dental appointments can affect the children, an assessment of parents fear prior to their child's dental treatment may aid the clinician in modifying behavior management strategies. Educating the parents about their child's dental treatment has been observed to be an effective intervention in reducing the preoperative anxiety of the parents.[6]

Venham et al. also proved that the behavior of children improved in subsequent dental visits. The improvement during subsequent visits suggests that previous visits helped the child to recognize the non threatening aspects of the visits and helped him in coping with stressful dental procedures.[7]

Various studies have been conducted to assess the correlation between parent's anxiety levels and their children.[8,9]According to Tickle et al,[8]children with anxious parents are more likely to report anxiety. Mothers with high levels of dental anxiety exerting negative influence on their children have been depicted by Ripa.[10]

Folayanet al.[2] reported significantly high level of dental anxiety among mothers as compared to fathers. Parental anxiety is considered as an important external factor that may influence the child's anxiety and behavior in the dental clinic; Lee et al., 2008;[11] Lara et al., 2012.[12] On the contrary, other studies report that parents' fear and anxiety do not have significant effects on their child's anxiety and fear.[13]

Suprabha et al. (2010) examined the association between age, gender, family characteristics, previous medical experience and previous dental experience with dental fear and behavior of the child and concluded that in 7–14-year-old although dental fear can significantly influence dental behavior, the factors affecting them were not the same.[14]

Raj et al. showed that dental fear in 4 to 14 year olds reduced with the increase in age.[15]Based on the results of various studies, there exists a need to study more about the recent scenario of parental influence on child anxiety level and the effect of subsequent dental visits on children.Therefore, the present study was conducted with the objective of trying to establish the relationship between the anxiety level of parents and their children

There is a possibility that the parents subtly transfer their dental fear to their children in clinical situations as is evident from the results which shows a positive correlation between parental anxiety and their children at four dental visits (Table 1)Parental anxiety has perhaps received the most attention within literature as an important external factor that may influence the child's anxiety and behavior within the dental setting.[6]

Results also showed a significant positive reduction seen in change of anxiety level of children from the first dental visit to subsequent dental visits (Table 2 and Table 3). Hence, it had been seen that children showed a decrease in their anxiety levels over time.

This is in accordance with similar studies which observed that children's cooperative behavior increased on the second dental visit as compared to the initial visit (Frankl et al.[16]Rayen et al.[17])

V. Conclusion

Based on the results of this study, the following conclusions were drawn:

1. The dental anxiety levels in parents have an influential role to play in influencing the anxiety levels of children.
2. Hence, identifying anxiety levels of parents can help the clinician to plan the behavior management strategies for children respectively.
3. The levels of dental anxiety observed in children was reduced from the first visit to the subsequent dental visits.

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