

Influence of Maternal Past Dental Experience and Child's Temperament on Behavior Management Problems in Dental Office

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Abstract

Introduction: Children are all unique and special in their own way, and as pediatric dentists, we recognize that children cannot all be treated the same. The child's behavior on every dental visit depends on variables such as parental behavior, parental anxiety, past medical/dental history, the awareness of their dental problem, type of dental procedure, the behavior management, and the procedural techniques followed by the dentist. The aim of the following study was to assess the following background variables with a view to estimate their influence on behavior management problems using a structured interview and analyzing their separate and combined predictive power: (1) Mother's previous dental experience and (2) Child's temperament.

Materials and Methods: A total of 100 children of the age group 6-8 years, who reported for their first dental appointment with their mothers, were included in the study. An assessment of the behavior exhibited by each child was made using the four-point scale of Frankl, and their mothers were asked to rate their own past dental experiences. Children were also categorized according to temperament.

Results: Out of 13 children, whose mothers had a pleasant past dental experience, 11 children (84.62%) displayed positive behavior. On the contrary, only 4 children (28.57%) of mothers with unpleasant dental experience exhibited positive behavior, and this difference was statistically significant ($z = 2.9283$, $P = 0.0038$). Furthermore, children with negative temperament generally exhibited negative dental behavior.

Conclusion: In this study, a correlation between maternal anxiety, child anxiety, and negative behavior in the dental office was observed. Appropriate use of management techniques not only helps us to efficiently perform dental treatment but also instills a positive dental attitude in the child, which ensures desired behavior even on successive visits.

Key words: Behavior management problem, Child emotionality, Maternal anxiety, Positive dental behavior, Temperament

INTRODUCTION

The foundation of practicing dentistry on children is the ability to guide them through their dental experiences while instilling in them a positive attitude toward dentistry. Behavioral dentistry is an interdisciplinary science, the

objective of which is to develop in a dental practitioner an understanding of the interpersonal social forces that influence a patient's behavior.

Children are all unique and special in their own way, and as pediatric dentists, we recognize that children cannot all be treated the same. The initial consultation appointment allows the dental team to not only establish treatment needs but just as important, determine how to manage behavior. The child's behavior on every dental visit depends on variables such as parental behavior, parental anxiety, past medical/dental history, the awareness of their dental problem, type of dental procedure, the behavior management, and the procedural techniques followed by

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the dentist.¹ Furthermore, children's developmental age and the corresponding level of cognition and emotionality play a prominent role in clinical behavior.² Interwoven with these primal characteristics is the child's temperament, broadly embraced and defined as how a child responds to novel environments and strangers.³ Temperament is thought to have a genetic basis, and some aspects of the temperament domain significantly influence children's behavior in clinical settings including dental offices. For example, shy or withdrawn, non-approachable, and moody children generally may not be cooperative for routine dental procedures.⁴

The issue of dental fear and anxiety has been studied extensively and presents a significant problem to patients and dentists alike. It appears that a common method of anxiety assessment is for clinicians to use their clinical judgment and experience in determining anxiety levels. This is the method used by the majority of UK dental practitioners, and therefore, is highly relevant.⁵

The aim of the following study was to assess the following background variables with a view to estimate their influence on behavior management problems using a structured interview and analyzing their separate and combined predictive power:

1. Mother's previous dental experience
2. Child's temperament.

MATERIALS AND METHODS

The study was conducted in the Department of Pedodontics and Preventive Dentistry, Buddha Institute of Dental Sciences and Hospital, Patna, India. About 100 children of the age group 6-8 years, who reported for their first dental appointment with their mothers, were included in the study. An assessment of the behavior exhibited by each child was made using the four-point scale of Frankl, which has been found reliable by various authors.

The criteria for scoring were as follows.

- Rating 1: Definitely negative: Refusal of treatment, crying forcefully, fearful, or any overt evidence of extreme negativism.
- Rating 2: Negative: Reluctant to accept treatment, some evidence of negative attitude but not pronounced.
- Rating 3: Positive: Acceptance of treatment, at times cautious, willingness to comply with the dentist, at times with reservation but patiently follows cooperatively.
- Rating 4: Definitely positive: Good rapport with the dentist, interested in the dental procedures, laughing and enjoying the situation.

In addition, the mothers were asked to rate their own past dental experiences as follows:

- Group A: Pleasant.
 Group B: Indifferent (neither pleasant nor unpleasant).
 Group C: Unpleasant.
 Group D: No prior dental exposure.

Children were categorized into following groups according to temperament (Thomas and Chess, 1977).⁶

- Group 1: Easy child (adaptable, playful, responsive to adults).
 Group 2: Slow-to-warm-up child (slow adaptability, takes longer to elicit positive behavior).
 Group 3: Difficult child (fussy, difficult to soothe, has problems sleeping and eating).

Data were statistically analyzed, frequency tables of variables were generated, and cross tabulations were derived where necessary. The Chi-square test was employed to determine the association between variables.

RESULTS

The frequency distribution of the mother's past dental experiences is shown in Table 1.

It was noted that quite a high percentage of the mothers had no prior dental experience.

Out of 13 children, whose mothers had a pleasant past dental experience, 11 children (84.62%) displayed positive behavior. On the contrary, only 4 children (28.57%) of mothers with unpleasant dental experience exhibited positive behavior, and this difference was statistically significant ($z = 2.9283$, $P = 0.0038$). 9 children (64.28%) exhibited negative behavior and 1 child (7.14%) showed signs of definitely negative behavior (Table 2).

Among mothers with indifferent experience, 16 children (59.26%) revealed negative behavior, 1 child (3.7%) exhibited definitely negative behavior, and 10 children (37.04%) showed positive behavior.

About 24 children (52.17%), whose mothers did not have any prior dental experience, exhibited positive behavior, 3 children (6.52%) children exhibited definitely negative behavior, and 19 children (41.31%) demonstrated the negative behavior (Graph 1).

From Table 3, it is safe to conclude that significantly higher number of children, whose mothers had a pleasant past dental experience displayed positive behavior when compared with other groups.

Frequency distribution of temperaments of children as reported by their mothers is shown in Table 4.

Assessment of children's behavior according to temperament is demonstrated in Table 5 as well as Graph 2, where it can be observed that majority of children of Group 1 showed positive behavior, whereas all the children of Group 3 showed negative behavior.

Table 1: Mother's past dental experience

Group	Mother's past dental experience	Percentage
Group A	Pleasant	13
Group B	Indifferent	27
Group C	Unpleasant	14
Group D	No prior exposure	46

Table 2: Behavior rating of children

Group	n (%)			
	Rating 1	Rating 2	Rating 3	Rating 4
Group A (n=13)	0 (0)	2 (15.38)	11 (84.62)	0 (0)
Group B (n=27)	1 (3.7)	16 (59.26)	10 (37.04)	0 (0)
Group C (n=14)	1 (7.14)	9 (64.28)	4 (28.57)	0 (0)
Group D (n=46)	3 (6.52)	24 (52.17)	19 (41.31)	0 (0)

Table 3: Comparison between various groups

Groups compared (for positive behavior)	P value	Significance
Group A Group B	0.0048	Statistically significant
Group A Group C	0.00338	
Group A Group D	0.00578	The difference was not statistically significant
Group B Group C	0.5892	
Group B Group D	0.71884	
Group C Group D	0.38978	

Table 4: Children's temperament

Group	Temperament	Percentage
Group 1	Easy child (adaptable, playful, responsive to adults)	31
Group 2	Slow-to-warm-up child (slow adaptability, takes longer to elicit positive behavior)	43
Group 3	Difficult child (fussy, difficult to soothe, has problems sleeping and eating)	16

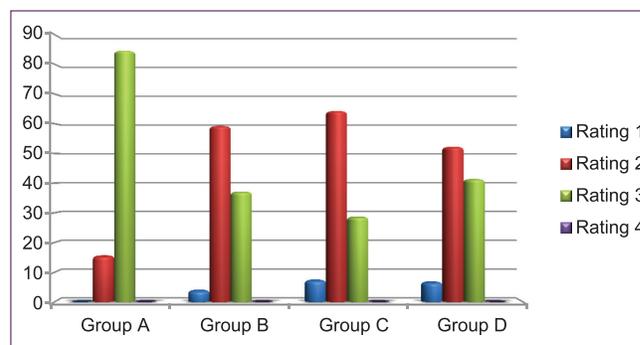
Table 5: Behavior exhibited by children of different temperament

Behavior rating	n (%)		
	Group 1 (n=31)	Group 2 (n=43)	Group 3 (n=16)
Positive (Rating 3 and 4)	28 (90.32)	16 (37.21)	0 (0)
Negative (Rating 1 and 2)	3 (9.68)	37 (86.05)	16 (100)

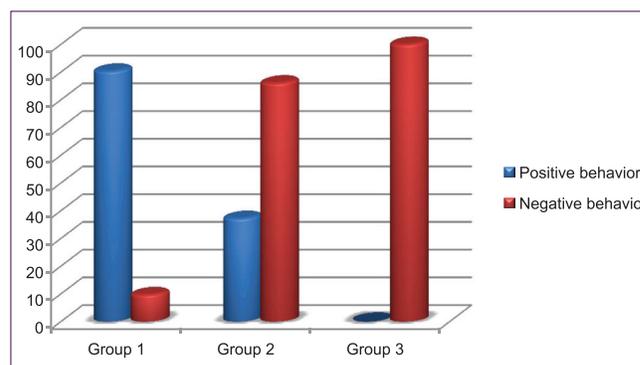
DISCUSSION

The origin of dental fears is numerous, complex, and multifactorial, being associated with age, socioeconomic status, oral health status, and dental pain experience.⁷ A few of the determinants of dental fear includes dental behavior management problem (DBMP), mother-child relationship, temperament, predictability, and controllability.⁸ DBMP is a collective term for behaviors resulting in the delay or cancellation of treatment as determined by the treating dentist or dental staff. DBMP has been discussed in a multifactorial context where personal, environmental, and situational factors interact. Children and adolescents vary in age, competence, temperament, personality, intellectual capacity, and maturity. They also differ greatly in life experience, family situation, and cultural background. All these aspects affect the child's or adolescent's ability to tolerate dental examinations and treatment.⁹

According to Finn, one of the ways by which a child can acquire dental fears is subjective, based on information from others without the individual having experienced the situation himself.¹⁰ Incorporation of attitudes and behavior patterns from parents and siblings is as common as contracting measles from family members or friends, and thus, is referred to as behavior contagion. Data have



Graph 1: Behavior rating of children



Graph 2: Behavior exhibited by children of different temperament

revealed that fearful dental patients come from families that have had previous unfavorable dental experiences and in particular where these attitudes are typically expressed.¹¹

Hawley *et al.* (1974) reported that there was significant negative behavior in children who had interacted with someone with an unpleasant dental experience. Similarly, frightening comments made by other children and adults have resulted in children reacting unfavorably at the dental clinic.¹²

Most of the characters of the child such as behavior, personality, anxiety, and reaction to stress are directly influenced by the parents' characters. Both the parents play an important role in child's psychological development, but more emphasis is placed on the mother, since mothers generally have more intimate contact with the child since prenatal period. The quality of maternal interactive behavior with infants influences the physiological and behavioral response to stress, including expression of fearfulness.¹¹ This was in agreement with our study, where children whose mothers had unpleasant past dental experience also exhibited fearful behavior.

According to Hane,¹³ the function of maternal behavior was different across the two general trajectories (maternal positivity and negativity), and these influenced the development of social withdrawal in childhood. Maternal negativity is associated with poor social functioning in children who have an established history of social withdrawal, whereas maternal positivity is associated with better social outcome for preschoolers who are viewed as temperamentally shy.

Research on the role of parental fearfulness and modeling in children's fear has revealed that children of fearful mothers who often expressed their fears were very fearful themselves. A mother who bears anxieties as a result of her own previous dental experience can transmit it to her offspring, and this may produce a phobia of dental treatment in the child with preconceived notions even before the actual visit.¹⁴

Bankole established that there exists a correlation between maternal anxiety, child anxiety, and negative behavior in the dental office, which indicated a disruptive influence caused by an anxious mother,¹¹ and this finding concurred with the results of the current study.

There is clear evidence of relationships between temperament and dental fear and anxiety. As with internalizing problems, it is more connected with temperamental traits such as shyness, inhibition, and negative emotionality.¹⁵ Temperament has become

an increasingly important concept in developmental psychology and psychopathology. With the growth of developmental psychopathology as a discipline, a renewed interest in the transaction between the child's inborn tendencies (e.g. temperament, neurological vulnerability) and the caregiving environment has followed. Over the last decade, the interest in temperament in terms of reactivity (i.e. how quickly and intense, different parts of the nervous system reacts to external stimuli) has been supplemented with an interest in temperamental aspects of the regulation of affect and behavior (i.e. how well the child is able to regulate his or her activated nervous system).¹⁶

Although there is some evidence that temperament is stable over time, there are some factors that affect some types of temperament. Martin and Fox (2006) suggested that these factors include sex of the child (inhibited girls are more likely to change than inhibited boys), children's participation in out-of-home care (children who receive outside child care become less inhibited over time), parental characteristics (over controlling parents have children who remain inhibited over time), sibling relationships, and stress.⁶

Negative emotionality, a tendency to become easily and intensely upset, especially when frustrated, may also influence children's ability to cope with dental treatment, since it leads to aggressive and/or refusal behavior. This could be seen in our study as well, in cases of children of difficult temperament, who exhibited negative behavior in the dental office.⁹

The association of dental anxiety with a history of dental pain in children less than five years of age may be explained by the notion that dental fear is closely related to invasive procedures. This suggests that the fear of pain is a factor to be considered, investigated, and controlled in dental practice, particularly in pediatric dentistry, since it constitutes the first experience of oral health care.¹⁷

CONCLUSION

Successful pediatric dentistry depends not only on technical skills but also on our ability to acquire and maintain a child's cooperation. Proper assessment of children's behavior helps the dentist to plan appointments and render effective and efficient dental treatment. One of the most challenging aspects of dental practice is working with the difficult, challenging, or uncooperative children, whose primary emotions on entering a dental office are anxiety and fear. It is during these times that the dentist's clinical and patient management skills are most thoroughly tested, and success requires a personal knowledge of the patient and an

understanding of human behavior and development. In this study, a correlation between maternal anxiety, child anxiety, and negative behavior in the dental office was observed. Appropriate use of management techniques not only helps us to efficiently perform dental treatment but also instills a positive dental attitude in the child, which ensures desired behavior even on successive visits.

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