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Original Research Article

Influence of parenting styles on oral health status, emotional status and behavior of children in the dental setting

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ABSTRACT

Background: Parents are the most important source of information regarding their child's oral health and emotional and behavioral problems. Thus, child-rearing practices may influence various aspects of children's life. Furthermore, the association of parenting styles with the psychological attributes, oral health status, and behavior of children and adolescents has been studied less in an Indian dental setup.
Methods: This cross-sectional study was conducted on 182 healthy children of 4-14 years accompanied by their parents in east Lucknow. The oral health status of the children was assessed via a self-designed questionnaire as caries status and oral health-related behavior. During the procedure, the children's behavior was recorded via Frankl's behavior rating scale. Parenting style and dimension questionnaire (PSDQ) and strengths and difficulties questionnaire (SDQ) were completed by the parents to assess their parenting style and the emotional status of the children, respectively.
Results: A statistically significant association was found between parenting styles and caries status ($p<0.01$). Significant correlations were noted between parenting styles and oral health-related behavior in terms of sweet beverage consumption ($p=0.022$) and snacking habits ($p=0.036$). Significant differences were observed in child's behavior according to parenting styles and between parenting styles and total difficulties ($p<0.01$).
Conclusions: Children of authoritative parents had less caries, better oral health-related behavior, less internalizing and externalizing problems, and more cooperative behavior in the dental operatory compared to other parenting styles.

Keywords: Child's dental behavior, Emotional status, Parenting styles

INTRODUCTION

A child's behavior in the dental clinic is influenced by various factors like dental attire, office environment, presence of parents in the operatory, etc., which are under the control of the dentist, whereas other factors such as home environment, socioeconomic status, past dental experiences are beyond the dentist's control. Parenting styles influence children's emotional, physical, cognitive, and social development.

The attitudes, ideas, and behaviors that parents employ to form a parenting strategy or parental emotional atmosphere used to nurture their children are referred to as parenting styles.[1] Baumrind has categorized parenting into three types: authoritative, authoritarian and permissive.[2] Authoritative parents offer emotional support to their children and respond to their demands. The authoritarian parenting style is characterized by low sensitivity to the child's opinion and autonomy, as well as the imposition of strict demands on the child without regard for their ability to comprehend and mature. The permissive parenting style is known for its high warmth and low demandingness. These parents exert no control over the child's behavior and demand no behavioral adjustment.[3]

Many times, when a child doesn't cooperate in the clinic, parents may complain about the personality and conduct of their children without realizing that their parenting style is the foremost reason behind the child's unsought behavior.

Problem behavior in children is often manifested in either externalizing or internalizing behavior. In externalizing type of problem behavior, negative emotions are directed against others, manifested as anger, aggression, and frustration. On the other hand, internalizing behavior includes fearfulness, withdrawal, inhibition, and anxiety. In internalizing type of problem behavior, negative emotions are directed at oneself rather than others. Moreover, these behavior types lead to problems in various aspects of life, including school, peer relationships, and mental health.[4] Behavioral screening questionnaire, such as the strengths and difficulties questionnaire (SDQ), is helpful for the detection of social-emotional and behavioral problems in community and clinical settings.[5]

Parents play a pivotal role in imparting values and developing healthy habits, which greatly concern a child's dietary and oral hygiene habits. Thus, child-rearing practices may influence oral health status and the risk of developing dental problems in the pediatric population. Furthermore, the association of parenting styles with the psychological attributes, oral health status, and behavior of children and adolescents has been studied less in an Indian dental setup.

With this background, this study aimed to investigate the influence of parenting styles on oral health status, emotional status and behavior of children in the dental setting.

METHODS

Study design

This cross-sectional study included parent-child pairs for a period of six months from June 2021 to November 2021 for the purpose of data collection and analysis.

Study place

The present cross-sectional study was conducted in the department of pediatric and preventive dentistry, Babu Banarasi Das College of Dental Sciences, BBD University, Lucknow. Clearance was obtained from Institutional Ethical Committee, and written informed consent was obtained from the parents before the enrolment of the children in the study.

Data collection

One hundred and eighty-two healthy children of age 4-14 years accompanied by their parents who required non-invasive or minimally invasive treatment and children whose parents could understand and answer the questionnaire were included in the study. Medically or developmentally compromised children and those with a past dental history were excluded from the study. The sample size was determined by:

$$n = \frac{(z_\alpha + z_\beta)^2}{[\ln(1-e)]^2}\left[\frac{1-p_1}{p_1} + \frac{1-p_2}{p_2}\right]$$

Where p_1=0.1043 (10.43%) least proportion of dental health risk with parenting style (authoritative), p_2=0.9583 (95.83%) maximum proportion of dental health risk with parenting style.[6]

Whereas e=0.5 (p_1-p_2), the risk difference considered to be clinically significant, type I error, α=5%; type II error β=10% for setting power of study 90%

Parents were informed about the study, and related information was provided. Necessary infection control steps and universal protocol, including disposable examination gloves, were taken to prevent cross-contamination between children. Each subject was clinically screened, and children who required non-invasive treatment such as oral prophylaxis, topical fluoride therapy, or minimally invasive treatment such as restorations at their first dental visit were included in the study. Parents of the participating children were concurrently given the parenting styles and dimension questionnaire (PSDQ), strengths and difficulties questionnaire (SDQ) to assess the parenting styles and psychological attributes, respectively. PSDQ form, which was originally in the English language, was translated into the Hindi language for the convenience of the parents. SDQ for parents in the Hindi language was downloaded from sdqinfo.org.[7]

Study tools

Parenting styles and dimensions questionnaire

The parenting styles and dimension questionnaire (PSDQ) assessed each subject's parenting style. This questionnaire classifies parenting styles into authoritarian, authoritative, and permissive based on the topology suggested by Baumrind.[2]

In this study, a 32-item short version of the questionnaire (PSDQ-32) from the original 62-item questionnaire was used.[8] The PSDQ questionnaire consisted of 32 items with responses based on a 5-point Likert scale (1=never, 2=once in a while, 3=half the time, 4=very often, and 5=always) and categorized parents as authoritative, authoritarian, and permissive. It comprises of 15,12, and 5 items for authoritative, authoritarian, and permissive parenting, respectively.

An overall mean score in each parenting style category was calculated, and the highest mean score placed the parent in the assigned parenting category.

Psychological attributes

Each subject's emotional status was obtained using the Strengths and difficulties questionnaire, which was completed by parents (SDQ-P).[9] It is a short screening tool comprised of 25 items divided into five subscales: emotional symptoms, conduct problems, hyperactivity-inattention, peer relationship problems, and prosocial behavior. A 3-point Likert scale was used for rating each item (zero = not true; 1 = somewhat true, and 2 = certainly true). The scores of all subscales except for the prosocial scale were summed up, and the overall score, named total difficulties score, was in the range of 0-40. Higher scores in subscales indicate difficulties, except for the prosocial behavior subscale, where a high score reflects strength. The categories were pooled in internalizing problems and externalizing problems subscales for analysis purposes. The internalizing problems subscale is comprised of the emotional symptoms and the peer relationship problems subscales. The externalizing problems subscale is composed of the conduct problems and the hyperactivity-inattention subscales. Each subscale was dichotomized into normal and abnormal using the mean score.

Behavior in the dental clinic

The behavior of the children was scored using the Frankl scale during non-invasive (oral prophylaxis, topical fluoride therapy) or minimally invasive treatment (atraumatic restorative technique, chemo-mechanical caries removal) in a single visit.[10] For statistical convenience, the behavior was dichotomized into positive and negative categories. The other questionnaire elicited data on demographics like age, gender, and oral health behaviors, namely the frequency of tooth-brushing, snack eating habits, and drinking sugar-sweetened and caries status via DMFT/dmft index.

All the data was transferred to excel sheets and analyzed by the statistician who was blinded. Statistical analyses were performed using SPSS software version 24. The chi-square test was used to carry out the statistical analysis.

RESULTS

A total of 182 child-parent pairs were recruited during the study. The children belonged to the age group of 4-14 with a Mean±SD of 8.93±3.08. Amongst the children included, 95(52.19%) were males, and 87 (47.8%) were females.

Table 1: Distribution of parents according to parenting style.

Parenting styles	N	%	Mean	SD
Authoritative	112	61.54	4.27	±0.52
Authoritarian	24	13.19	2.29	±0.65
Permissive	46	25.27	2.65	±0.66

Amongst 182 parent-child pairs, 112 (61.54%) of parents had authoritative parenting style, 26 (13.19%) of parents had authoritarian parenting style whereas 46 (25.27%) of parents had permissive parenting style (Table 1).

Children with authoritative parents, authoritarian parents, and permissive parents showed positive behavior as 91.96%, 33.33%, and 54.35%, respectively. There was a statistically significant difference found between parenting styles and behavior (<0.01) (Table 2).

Table 2: Association between parenting style and behavior of the children in the clinic.

Parenting style	Frankl's behavior			
	Positive		Negative	
	N	%	N	%
Authoritative	103	91.96	9	8.04
Authoritarian	8	33.33	16	66.67
Permissive	21	45.65	25	54.35
Total (N)	132		50	
Chi square	23.68			
P value	<0.01*			

*p value ≤0.05.

Table 3: Association between DMFT/dmft score and parenting style.

Parenting style	DMFT/dmft score							
	0		1-2		3-5		6-8	
	N	%	N	%	N	%	N	%
Authoritative	4	3.57	65	58.04	42	37.50	1	0.89
Authoritarian	0	0.00	2	8.33	15	62.50	7	29.17
Permissive	1	2.17	25	19.57	32	69.57	4	8.70
Total (N)	5		76		89		12	
Chi square	23.68							
p value	<0.01*							

*p value ≤0.05.

Table 4: Association between Oral health-related behavior and parenting style.

Parenting style	Oral health-related behavior					
	Brushing		Sweet drinks		Eating snacks	
	<2 N (%)	<2 N (%)	Everyday N (%)	Less than once N (%)	At set time whenever N (%)	Freely N (%)
Authoritative	82 (73.21)	30 (26.79)	24 (21.43)	88 (78.57)	37 (33.04)	75 (66.96)
Authoritarian	20 (83.33)	4 (16.67)	14 (58.33)	10 (16.67)	13 (54.17)	11 (45.83)
Permissive	40 (86.96)	6 (13.04)	21 (45.65)	25 (13.04)	23 (50.0)	23 (50)
Total (N)	142	40	59	113	73	109
Chi square	8.51		11.38		9.27	
P value	0.08		0.022*		0.036*	

*p value ≤0.05.

Out of 182 children, 2.75% were caries-free. 3.57% of children with authoritative parents were caries-free, while the majority (58.04%) had caries with a DMFT/dmft score of 1-2. All the children with Authoritarian parents had caries, and 62.5% of children had a DMFT/dmft score of 3-5. 2.17% of children with Permissive parents were caries-free, and 69.57% had caries with a DMFT/dmft score of 3-5. There was a statistically significant relationship between parenting styles and DMFT (<0.01) (Table 3).

Among the 182 parent-child pairs, 26.79% of children with authoritative parents brushed twice daily, while 16.67% of children with authoritarian parents and 13.04% with permissive parents brushed twice daily.

21.43% of children with authoritative parents, 58.83% with authoritarian parents, and 45.65% with permissive parents drank sweetened beverages daily. 66.96% of children with authoritative parents, 54.17% of children with authoritarian parents and 50% of children with permissive parents were eating snacks at a set time. There was a statistically significant relation found in variables: sugar-sweetened beverages and snacking with parenting styles (Table 4).

Table 5: Distribution of subjects according to emotional problems.

Variables	Normal		Abnormal	
	N	%	N	%
Internalizing problems	109	59.89	73	40.11
Externalizing problems	98	53.85	84	46.15
Prosocial behavior (strength)	147	80.76	35	19.23
Total difficulties (overall score)	130	71.43	52	28.57

Among 182 children, 28.57% of subjects who belonged to the abnormal category had total difficulties whereas 19.23% of subjects who belonged to the abnormal category had prosocial behavior (Table 5). 54.35% of subjects with permissive parents had the highest scores on total difficulties (overall score), while 25% of subjects with authoritarian parents had the highest prosocial behavior. There was a statistically significant relationship between parenting styles and SDQ-P in terms of total difficulty score. (p value <0.01). No significant relation was found between parenting style and prosocial behavior (p value =0.0062) (Table 6).

Table 6: Association between SDQ variables and parenting style.

Variables	Authoritative		Authoritarian		Permissive		P value
	N (n=112)	%	N (n=24)	%	N (n=46)	%	
Internalizing problems (73)	26	23.21	16	66.67	31	67.39	<0.01*
Externalizing problems (84)	32	28.57	19	79.17	33	71.74	<0.01*
Prosocial behavior (strength) (35)	18	16.07	6	25.00	11	23.91	0.0062
Total difficulties (52) (overall score)	18	16.07	9	37.50	25	54.35	<0.01*

*p value ≤0.05.

DISCUSSION

Parents' role and rearing practices significantly influence a child's overall development. The present study aimed to investigate the influence of parenting style on the child's oral health status, emotional status and behavior in the dental setting.

Based on the results obtained from the study, the authoritative parenting style (61.54%) was the predominant style out of the three parenting styles, followed by the permissive parenting style (25.27%) and authoritarian parenting style (13.19%) (Table 1) which was similar to the studies conducted by Dabawala et al.[11] Ng et al, Alagla et al reported two parenting styles with

the majority of the parents being authoritative.[12,13] Our finding was in contrast with the study done by Awad et al, they reported permissive parenting style as the dominant style.[14]

Frankl's behavior rating scale was used in this study, and a statistically significant correlation was found between the children's behavior and parenting styles (p value <0.01). Among the three parenting styles, children with authoritative parents showed majorly positive behavior whereas most children with authoritarian parents showed negative behavior in the dental clinic (Table 2). This was similar to the studies conducted by Aminabadi et al, Howenstein et al, Nimbulkar et al.[15-17] In contrast, the study done by Krikken et al, where they found that no significant differences existed between fearful and non-fearful children on parental rearing-style.[18]

According to Baumrind, authoritative parents exert firm control but at the same time do not hem the child in with restrictions.[19]

In the present study, it was observed that children with authoritative parents had less caries compared to children with permissive and authoritarian parents (Table 3). The low caries rate in the children of authoritarian parents is because they rationally direct the child's activity, enforce their perspective on children, keep the child's particular interests in mind, and set standards for future conduct.

Our finding was similar to the study done by Viswanath et al where they also observed that when parenting was of authoritative type, children had less caries.[20]

According to Arredondo and Vollmer et al authoritative parents encourage their children to engage in health-promoting behaviors.[21,22]

When toothbrushing frequency was compared with parenting styles, no significant differences were found (Table 4). Tooth brushing was a good oral hygiene practice among children of all parenting styles. Still, it was also interesting to observe that 26.79% of children with authoritative parenting styles brushed twice or more than children of other parenting styles.

Regarding snacking habits, children of authoritarian parents ate more at a set time, whereas children of permissive parents ate at irregular intervals. Overall, significant differences were found between parenting styles, snacking habits, and sugar-containing sweet beverages (Table 4).

According to Quek et al, authoritative parents were more likely to monitor sweets/snack intake than permissive parents. Permissive parents were less likely to ensure bedtime toothbrushing compared to authoritative parents.[23]

In the present study, the behavioral screening questionnaire- strengths and difficulties questionnaire (SDQ) was used and 71.43% of children belonged to the normal category (Table 5). A major proportion of the total difficulties were associated with the permissive parenting style and less in children with authoritative parents. There was no significant relationship between parenting styles and prosocial behavior (Table 6).

Our results were inconsistent with the study done by Pandiyan et al, where most children came under the abnormal category.[24]

In a study done by Rahman et al most children with ASD had abnormal peer problems. Prosocial behavior was strongly correlated to parental stress. Parent's ethnicity, marital status, additional caregivers, parental distress, and difficult children influenced a permissive parenting style.[25]

The present study has some limitations. Firstly, the self-reported version of the PSDQ was used instead of the spouse version of the PSDQ. Therefore, there could be differences in the responses of the mother and father, consequently, in the results. Secondly, this study was limited to children with no dental history.

CONCLUSION

The authoritative parenting style was the predominant parenting style among the studied population. Authoritative parenting style was associated with children with less caries, healthy snacking habits, and less sweet beverage consumption. Children of authoritative parents had less difficulties and displayed more positive behavior than those with permissive and authoritarian parents. However, this association was limited to children with no past experience.

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