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### Dental anxiety and behaviour management problems: The role of parents

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# Chapter 4

## Child Rearing Styles, Dental Anxiety and Disruptive Behaviour; an Exploratory Study



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## Abstract

### *Aim:*

The aim of the present study was to explore the relation between children's dental anxiety, their behaviour during treatment and their parent's rearing style. Also the parents' preparation of the child for dental treatment was related to behaviour and parental rearing style.

### *Methods:*

The parents of 100 children, referred to a secondary dental care clinic were asked to fill out the Child Rearing Practices Report (CRPR), the Child Fear Survey Schedule (CFSS) and an additional questionnaire on child preparation prior to dental treatment on behalf of their child. Four rearing styles were constructed by using the results of the Nurturance and the Restrictiveness domain of the CRPR. Dentists were asked to assess the behaviour of the child during dental habituation and dental treatment using the Venham scale. The dentists were unaware of the child's CFSS score. Parents were not present during actual dental treatment.

### *Results:*

Each child's dental anxiety was related to their behaviour displayed during dental treatment. High-anxious children showed more disruptive behaviour than their low-anxious counterparts did, especially during familiarisation. Parental rearing style was neither related to child dental anxiety prior to or to behaviour during dental treatment. Parents who used a permissive rearing style were less likely to tell their children that the dentist will not hurt them compared with authoritarian parents. Parents with an authoritative rearing style were more convinced that the behaviour of their child could be managed by the dentist than parents with a permissive and neglectful rearing style. After their children's dental rehabilitation parents were less inclined to accompany their child during treatment.

### *Conclusions:*

Dental anxiety correlated positively with the behaviour displayed during treatment. No relation was found between parenting style and dental anxiety and behaviour during treatment. Parents showed more confidence in the child-dentist dyad after the rehabilitation of their child's teeth.

## Introduction

Dental treatment may be a stressful situation with a variety of potentially unpleasant stimuli. Children often show their distress with the dental situation in an aversive behaviour which sometimes leads to management problems. A wide variety exists in expression and type of behaviour [Klingberg et al., 1995]. Different pathways for the development of fear have been described. Rachman [1977] has proposed three pathways: directly through direct conditioning or indirectly via vicarious learning or via modelling. Research has provided support for all pathways, although retrospective research contributes acquisition of dental fear most often to the first, direct conditioning [Davey, 1989; Liddell, 1990; de Jongh et al., 1995]. Although the direct conditioning pathway seems most plausible, recent research indicates that objective dental experiences seem to play a minor role in children's fear acquisition, and it is suggested that subjective dental experiences may play a more decisive role [Klingberg et al., 1995; ten Berge et al., 1998]. In addition clinical support is provided for the latent inhibition theory e.g. children tend to become less afraid if they had had more non intrusive visits before treatment visits were done [Davey, 1989; ten Berge et al., 1998].

A relationship between dental anxiety, previous pain experience and the choice of coping strategy of the child has been reported in earlier studies [Versloot et al., 2004; van Meurs et al., 2005]. It is at least suggested that parents play an important role in teaching their children to deal with aversive situations [Bush et al., 1986; Hardy et al., 1993]. In general family environment factors such as parental rearing and attachment style contribute to the severity of anxiety symptoms in children. It is very interesting to study this finding more specifically in the dental situation [Muris, 2000].

Unfortunately little research has been done on the effect of parenting practices on the behaviour of children during dental treatment [ten Berge et al., 1998]. Research is mostly limited to the effect of parental presence and behaviour during dental procedures reporting different conclusions about the benefits of the presence of parents [Fenlon et al., 1993; Marzo et al., 2003]. Most children are referred to secondary dental care clinics for behaviour management problems. Problem behaviour seems not to influence the treatment content, but does influence the management techniques. Children showing more serious behaviour problems are more often treated using relative analgesia (RA) than using only management techniques [Goumans et al., 2004].

Different child rearing practices are reported to be associated with different child behaviour attitudes. For instance Muris et al. [1996] found no association between parental rearing practices and fearfulness and internalizing problem behaviour. On the other hand he found a positive association between negative rearing practises and externalizing problem behaviour.

Different parenting styles can be distinguished. Authoritative parenting emphasizes parental control within an ethos of warm, responsive parenting that explains reasons, values the child as an individual and aims to encourage the child toward independence. Authoritarian parenting is controlling, values obedience to set standards, favours punishment and

is less warm than authoritative. Permissive parenting is where the parent lacks control, makes few demands on the child, but is warm, and Rejecting-Neglecting parenting is neither controlling, permissive, nor warm [Baumrind, 1971].

The aim of this study was to examine the relationship between self-reported parenting style, parent's assessment of their child's dental fear, and dentists' assessment of the child's behaviour during dental treatment. In addition the way the parents prepared their children prior to dental treatment was assessed, hypothesising that permissive and rejecting-neglecting parents would tend to prepare children in a less supportive way so causing their child to act more disruptively during dental treatment.

## Materials and methods

### *Subjects and procedure*

This study was conducted among 100 children (50 girls) aged between 4-12 years. The random sample was drawn from children referred to the Centre for Special Dental Care in Amsterdam (SBT) or the department paediatric dentistry at ACTA by their family-dentist due to Dental Behaviour Management Problems (DBMPs) or straightforward dental anxiety. Only written referrals were accepted for treatment.

During the initial assessment session of these children, the parents were informed about the study by a letter and were asked to participate. Participation was fully voluntarily and not conditional to treatment. This study was approved by the medical ethical committee of the Free University of Amsterdam (ref. 06/164).

Parents were asked to fill out a questionnaire about their child rearing practices and some additional questions on preparation for dental treatment. The questionnaires were completed while waiting for their child during the habituation session (a session prior to treatment, reintroducing dentistry to the child). Parents did not accompany their child during treatment as a standard procedure in both dental care clinics. The CFSS-DS was routinely used to assess child dental fear and kept in the patient records. The dentists were asked to rate the average child behaviour and the most anxious behaviour using the Venham scale of the habituation session and the first three treatments according to a fixed protocol [Veerkamp et al., 1995]. Parents were asked to fill out the questionnaire about their preparation again after the final treatment.

### *Measures*

**CFSS-DS.** The CFSS-DS is a questionnaire to assess dental anxiety with known validity and reliability [Aartman et al., 1998; Klaassen et al., 2002]. It consists of 15 items to be answered on a 5-point Likert-type scale from 1) "not afraid at all" to 5) "very afraid". Total scores range from 15 to 75. Parents have been found to be well able to assess their child's level of dental fear by using the CFSS-DS [Klingberg, 1994; Milgrom et al., 1994]. Children scoring in

the “non-clinical range” (scores below 32) generally are non- or low fearful, and are expected not to cause problems during treatment. Children scoring in the “borderline range” (scores between 32 and 39) may either be at risk of becoming fearful or possibly already suffering from some degree of dental fear, but their behaviour may also depend on other factors such as treatment circumstances or child temperament. Children scoring in the “clinical range” (scores of 39 and higher) are considered to be highly fearful, and regular treatment is often more difficult as a result of disruptive behaviour [ten Berge et al., 1998]. All parents were asked to rate their own level of dental fear on the same 5-point Likert type scale.

*Venham scale.* The Venham scale is a Likert type behaviour rating scale ranging from 0) “relaxed” to 5) “out of contact” (Fig 1) [Venham et al., 1980]. The scale has known validity and reliability [Veerkamp et al., 1995; Aartman et al., 1998]. Initially developed for preschool children the scale proved to work very well after minor modifications [Veerkamp et al., 1991]. The anxiety and behaviour section were merged based on their high internal correlations [Veerkamp et al., 1995]. Because not all children were treated in an equal number of sessions, the Venham scores of only the first three treatment sessions were used in the analyses (i.e. the habituation and the first and second treatment session). The mean and highest Venham scores of the habituation session and the first and second treatment appointment were added (totmeanVen and tothighVen).

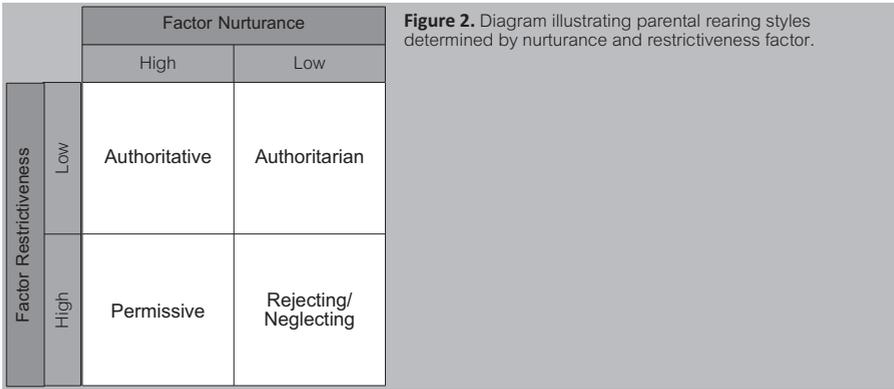
0 = relaxed:	smiling, willing, able to converse, displays behaviour desired by the dentist
1 = uneasy:	concerned, may protest briefly to indicate discomfort, hands remain down or partially raised. Tense facial expression, ‘high chest’. Capable of cooperating
2 = tense:	tone of voice, questions and answers reflect anxiety. During stressful procedure, verbal protest, crying, hands tense and raised, but not interfering very much. Protest more distraction and troublesome. Child still complies with request to cooperate
3 = reluctant:	pronounced verbal protest, crying. Using hands to try to stop procedure. Treatment proceeds with difficulty
4 = interference:	general crying, body movements sometimes needing physical restraint. Protest disrupts procedure.
5 = out of contact:	hard loud crying, swearing, screaming. Unable to listen, trying to escape. Physical restraint required

**Figure 1.** Venham scale and description of types of behaviour in the dental setting

*Child Rearing Practices Report (CRPR).* In the present study, a 40-item questionnaire version of the Child Rearing Practices Report (CRPR) was used [Rickel & Biasatti, 1982; Dekovic et al., 1991]. Factor analysis showed that the CRPR can be used in this shorter form, (with scales Restrictiveness and Nurturance) instead of its longer 91 items precursor. The subjects can be assigned a score on these dimensions by computing a subject’s mean score on items of the scales. All items were translated into Dutch by one of our investigators and translated back by a native speaker to ensure reliability. The 40-item Likert-scale version yields two factors: Restrictiveness, which relates to parenting practices focusing on control of child behaviour, for example, “I prefer my child not to try things if there is a chance (s)he might fail”;

and Nurturance, related to parenting practises focusing on sharing feelings, for example, "I express my affection by hugging, kissing and holding my child" [Rickel & Biasatti, 1982]. Baumrind's [1971] four parenting styles which examine each individual's combination of Restrictiveness and Nurturance practices together were derived from CPRP data using Reitman and Gross's [1997] method in which Restrictiveness and Nurturance scores were classified as high or low using a median split. Authoritative parenting style is high on Restrictiveness and high on Nurturance; Authoritarian parenting is high on Restrictiveness but low on Nurturance; Permissive parenting is low on Restrictiveness but high on Nurturance and Neglectful parenting is low on Restrictiveness, and low on Nurturance [Woolfson & Grant, 2006] (fig 2).

Part two



*Child preparation.* There were 17 questions added to investigate each parent's preparation style of the child before dental treatment (fig. 3). Parents were asked about what they told their child, if they felt comfortable accompanying their child and if they expected their child to behave cooperatively during treatment.

*Data analysis.*

Mann-Whitney-U tests were used to compare the behaviour of high and low-anxious children. Differences in anxiety between the four rearing style groups were analysed using a one way ANOVA test. Kruskal-Wallis tests were used to compare the behaviour during treatment of the child rearing styles and to analyse differences in preparation. A Wilcoxon signed rank test was conducted to compare parents' opinion about preparation before and after treatment of their children. Relations between dental anxiety and child rearing profiles and between anxiety of the parent and the child were correlated using Spearman's rank correlation test.

		false				true
<b>How do you prepare your child for a visit to the dentist?</b>						
1	I give every possible information	<input type="radio"/>				
2	I tell him/her about the visit at the last moment	<input type="radio"/>				
3	I promise something special afterwards	<input type="radio"/>				
4	I tell my child the dentist will not hurt him/her	<input type="radio"/>				
5	I am more careful and nice to my child	<input type="radio"/>				
<b>Preceding dental treatment:</b>						
6	I am well able to accompany my child when s/he feels distressed	<input type="radio"/>				
7	I am capable to prepare my child	<input type="radio"/>				
8	I am nervous	<input type="radio"/>				
9	I told my child as little as possible	<input type="radio"/>				
10	I feel relieved when the dentist takes over	<input type="radio"/>				
11	My child needs a lot of support	<input type="radio"/>				
<b>During dental treatment:</b>						
12	I am able to accompany my child when s/he feels distressed	<input type="radio"/>				
13	I expect my child can be managed by the dentist	<input type="radio"/>				
14	I would rather accompany my child	<input type="radio"/>				
15	It is better I am not accompanying my child	<input type="radio"/>				
16	My child would be better treatable when I am accompanying	<input type="radio"/>				
17	It is clear to me why the dentist prefers to treat my child without me	<input type="radio"/>				

**Figure 3.** Additional questions about parent's preparation style used in a Dutch paediatric dentistry study on parental attitudes and rearing practices.



## Results

### Participants

The research population finally consisted of 75 children (26 girls (mean age 76 months (*SD*: 24.8)). Of the questionnaires 96% were filled in by one of the parents (71% mothers). Reasons for not participating were parents' too limited knowledge of the Dutch language, the child was planned to be treated under general anaesthesia, the child had other problems than dental (depression, personality problems), did not return or the accompanying adult simply did not want to participate.

### Measurements

Dental anxiety did correlate with the behaviour displayed during treatment; high-anxious children (HAC) scored significantly higher than low-anxious children (LAC) both on the mean Venham and the Venham peak score (Mann-Whitney U  $p=0.03$  and  $p<0.01$  res.). Further study on the effects per session found that this difference was in both scores mainly caused by the behaviour during the habituation session. The average CFSS scores were 37.9, (girls 35.6 and boys 39.1, difference n.s.), range 16-70. Boys and girls did not differ in mean and highest

Venham scores over the first three appointments (meanVen 2.3 and HighVen 4.6).

No differences in anxiety (CFSS-score) between the four rearing style groups were found (ANOVA,  $p=0.99$ ). Also no difference was found between the child rearing style and the child behaviour during the total treatment (totmeanVen) and the most anxiety provoking moment (tothighVen) (Kruskal-Wallis  $p=0.40$  and  $p=0.378$ ). Child dental anxiety did not correlate with the child rearing profiles (Spearman, Restrictiveness-CFSS:  $p=0.79$ , Nurturance- CFSS:  $p=0.79$ ).

Dental anxiety was not related to mother's anticipatory nervousness on the proceedings during treatment. HAC's did not have more nervous mothers ("Prior to dental treatment I am nervous") than LAC's. Also parents' dental anxiety was not related to their anticipatory nervousness. There was, however, a weak positive correlation between the anxiety of the parent and the child (Spearman,  $r=0.35$ ,  $p<0.01$ ).

Differences between the rearing styles were only found on item level: for two questions of the additional list. Parents with a permissive rearing style were less likely to tell their children that the dentist will not hurt him/ her (avoidant reassurance) and were less confident that the behaviour of their child could be managed by the dentist compared with parents with an authoritarian rearing style. Parents with a permissive and parents with a neglectful rearing style were less convinced that their child would be manageable than parents with an authoritative rearing style. (Table 1). In the first column of table 1 the mean scores for the questions "I tell my child the dentist will not hurt him/her" (a) and "I expect my child to be treatable" (b) are listed. In the next columns the differences between the mean score of two rearing styles are mentioned together with their significance. Significant differences are marked with an asterisk (\*).

After the rehabilitation of their child's dentition, permissive parents were less inclined to accompany their child during further visits than before ("During treatment I would rather accompany my child") (Wilcoxon signed rank  $p=0.02$ ) and were more confident that the

**Table 1.** Parent's thoughts about the dental treatment as reported in a Dutch paediatric dentistry study on parental attitudes and rearing practices.

	mean	authoritative		permissive		neglectful		
			p		p		p	
authoritarian	a	3.87	1.05	0.059	1.92	0.000*	1.00	0.097
	b	4.57	-0.25	0.378	1.15	0.003*	0.57	0.077
authoritative	a	2.82			0.87	0.100	-0.05	0.078
	b	4.82			1.40	0.003*	0.82	0.027
permissive	a	1.95					-0.92	0.139
	b	3.42					-0.58	0.229
neglectful	a	2.87						
	b	4.00						

a. "I tell my child the dentist will not hurt him/her"; b. "I expect my child can be managed by the paediatric dentist"  
 \* = Significant difference in question a and b ( $p<0.05$ ).

behaviour of their child could be managed by the dentist ("I expect my child can be managed by the dentist") (Wilcoxon signed rank  $p=0.01$ ). Authoritative parents were less convinced their child would be better cooperative for treatment when they were present in the treatment room ("My child would be more treatable when I am accompanying him/her") Wilcoxon signed rank  $p=0.05$ ).

## Discussion

This study was conducted among 75 children. Divided into four parenting styles the groups are too small to draw hard conclusions on the subject. Though this study was conducted among children referred for their anxiety or disruptive behaviour during dental treatment, the scores of the CFSS varied from 16 to 70 (mean 37.9,  $SD:13.5$ ). As the group had a reasonable spread of anxiety levels thus few interesting remarks can be made.

This study confirms the relationship between dental anxiety and problematic behaviour during treatment. It is remarkable that this is especially notable during the habituation session. Apparently referred children show most disruptive behaviour during re-introducing dentistry resulting in a relatively quick reduction of problem behaviour. The present study however suggests no support for a relation between parenting style of the child's primary caregiver on one hand and the level of dental anxiety of the child or the behaviour of the child during dental treatment on the other. This suggests that the aetiology of child disruptive behaviour during dental treatment cannot be ascribed to the rearing style of parents. Though this study describes a situation where parents do not attend their child in the operator/surgery the results underline the strong influence of the dental team on the child. Further studies need to assess whether the presence of a parent during treatment interferes with the child-dentist interaction. Fenlon et al. [1993] suggested that the role of the paediatric dentist could override any effect of parental presence or lack of it.

In this research parents with an authoritative rearing style seem to be more likely to tell their child that the dentist will not hurt him or her, but were more confident that their child would be treatable. These seem to be two opposite situations. On the one hand a child gets an acknowledgement of an aversive aspect of the upcoming treatment and at the same time gets the message that they are competent to deal with this treatment [McMurtry et al., 2006]. As in other medical circumstances, experts seem to have stereotyped ideas that do not correspond to parental reports of their child rearing practices, suggesting the need of careful clinical evaluations [Gerhardt et al., 2003; Noll et al., 1998].

The reason for not having found a difference in behaviour between the different rearing styles in this study could be the absence of parents in the treating room. If there is any influence of a rearing style on child behaviour, parental attitude seems to be a situational variable. Creating an artificial distance between parent and child creates room for reassuring communication between dentist and child.

No association was found between parental rearing practices and fearfulness and problem behaviour. On the one hand this confirms the earlier study of Muris et al. [1996], who did not find an association between parental rearing practices and fearfulness and internalising problem behaviour on the other. He did, however, find a relation between negative rearing practices and externalising problem behaviour. Combining results might indicate that anxiety, or its expression as the behaviour management problems during treatment, is caused by situational or child related aspects and the parental rearing variable is more associated with the development of other factors such as coping behaviour. By dividing the parents into four rearing style groups by just taking a median split, we suggest that our research population was representative of the Dutch population. However, this study has its limitations to draw final conclusions of that kind, and this should be the subject of further study.

### Conclusion

Dental anxiety is positively related with the disruptive behaviour that a child displays during treatment. No relation has been shown between parental rearing style and dental anxiety of the child or the behaviour of the child during dental treatment. After rehabilitation of their child's teeth parents showed more confidence in the child-dentist dyad. Their subjective need to accompany their child in the dental treatment visit is reduced.

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