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Dental anxiety and behaviour management problems: The role of parents

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Chapter 6

Child Dental Anxiety, Parental Rearing Style and Dental History Reported by Parents



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Abstract

Aim

To examine the relationship between self-reported parental rearing style, parent's assessment of their child's dental anxiety and the dental history of children.

Materials and Methods

Parents of primary school children were asked to complete questionnaires about their parenting style, using four different questionnaires. Parents also completed the Child Fear Survey Schedule Dental Subscale (CFSS-DS) on behalf of their child and a questionnaire about the dental history of their child.

Results

454 Interview forms were available for analysis. Minor associations were found between dental anxiety and parenting style. Anxious parents were more permissive and less restrictive in their parenting style. Parents of children who did not visit their dentist for regular check-ups reported more laxness and less restrictiveness. Children who had a cavity on the moment of investigation, children who had suffered from toothache in the past and children who did not have a nice and friendly dentist reported more dental anxiety.

Conclusion

No clear associations between parenting style and dental anxiety were found. Known causes of dental anxiety were confirmed.

Introduction

Dental treatment of young children can be a challenging task for children, dental staff and parents. Directly or indirectly, it may lead to dental anxiety [Rachman, 1994], which is strongly associated with behaviour management problems (DBMPs) [Klingberg et al., 1995], which is the most common reason for referring children to a secondary dental care clinic [ten Berge et al., 1999]. Despite the strong association between dental anxiety and behaviour management problems, there is no straightforward relationship between the two. Some children with dental anxiety exhibit behaviour management problems, whereas others do not. On the other hand, not all children who exhibit behaviour management problems are highly dentally anxious.

When dentists are asked about the aetiology of behaviour management problems in children, they often state that they believe it to be wholly or partly the result of parental rearing style. They often suggest that a permissive parenting style, whereby parents do not set clear acceptance limits to their child's behaviour at home, probably leads to more behaviour management problems during dental treatment.

In a previous study, a strong association between child dental anxiety and behaviour management problems was found, but no associations between parental rearing style and dental anxiety or behaviour management problems [Krikken & Veerkamp, 2008]. The way parents prepared their child before their dental treatment differed slightly between parenting styles. This study was performed in a group of referred children (high-anxious children and children with behaviour management problems) [Krikken & Veerkamp, 2008]. In another study with dental anxiety as an independent variable no association were found between parental rearing style on one hand and the referral status of their children on the other [Krikken et al., 2012].

In both studies, the authors were unable to show associations between dental anxiety and/or behaviour management problems and parental rearing style. Therefore, either this association does not exist, or the specific design and methods used did not enable them to demonstrate it. In both studies the same questionnaire to assess parenting style were used: the Child Rearing Practices Report (CRPR), which consists of two subscales, Nurturance and Restrictiveness. Items from the subscale Nurturance seem sensitive to social desirable answers (subjects tend to choose the answers that would present them in a favourable way). An example of an item from the subscale Nurturance is "I express my affection by hugging, kissing and holding my child". It would be interesting to assess whether our predicted associations can be found using different questionnaires measuring parental rearing style, such as the Parenting Scale (PS), the Amsterdam version of the Parental Attitude Research Instrument (A-PARI) and the Parenting Styles and Dimensions Questionnaire (PSDQ).

We therefore used different questionnaires to examine the relationship between self-reported rearing style and the parent's assessment of their child's dental anxiety. As dental treatment can directly lead to dental anxiety associated with behaviour management problems

[de Jongh et al., 1995] we also examined the association between the child's dental history and dental anxiety as reported by parents and parenting style.

Methods

Subjects and procedure

This study was conducted among 1200 children between 4 and 13 years old who go to primary schools in the north-eastern part of the Netherlands. The boards of these schools were asked for permission to perform the study. The parents of the children were informed about the study by a letter and asked to participate. The study was approved by the medical ethical committee of the Vu Medical Center Amsterdam, the Netherlands (ref 10/071).

Parents were asked to fill out the interview schedule on behalf of their child. When siblings attended the same school, parents were asked to fill out the questionnaire on behalf of their oldest child. The schedules were collected anonymously at school.

Measures

Data were collected by means of an interview schedule consisting of 3 parts. The first part of the schedule consisted of questions about age and gender of the children and the occupation of their parents, followed by questions about the dental history of the children. For example, "How many times a year does your child visit the dentist for a check-up?", "At what age did your child start visiting a dentist?", "Did your child have dental treatment like fillings, anaesthesia or extraction in the past?" and "Has your child ever suffered from toothache?". Finally, parents were asked if their dentist was nice and friendly to their child (yes or no).

In the second part of the schedule, dental fear was measured using the Dutch version of the Dental Subscale of the Child Fear Survey Schedule (CFSS-DS) [Cuthbert & Melamed, 1982; ten Berge et al., 1998]. This questionnaire consists of 15 items related to different aspects of dental treatment. The possible item response varies from 1 (not afraid at all) to 5 (very afraid), giving a sum score between 15 and 75. One item was added for parents to rate their own level of dental fear on the same 5-point scale.

In the third part of the schedule, parental rearing style was assessed using four different questionnaires. Since completing all questionnaires (117 questions) by all parents would be very time consuming, we used a design in which all parents completed only two of them (Figure 1). To avoid bias, the questionnaires were used in different combinations and different sequences. All questionnaires were divided in an A version and a B version, depending on the order in which the parental rearing style questionnaires were arranged.

The Child Rearing Practices Report (CRPR) [Block, 1965], consists of 40 items rated on a 6-point scale ranging from 1 (totally disagree) to 6 (totally agree) and assesses attitudes, values, goals and behaviours of parents with regard to child-rearing [Rickel & Biasatti, 1982]. This instrument consists of two subscales. The subscale Restrictiveness 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". The subscale Nurturance relates to parenting practices focusing on sharing feelings. For example, "I express my affection by hugging, kissing and holding my child".

	Version a	Version b
Questionnaire 1	A-PARI/ CRPR	CRPR/ A-PARI
Questionnaire 2	A-PARI/ PSDQ	PSDQ/ A-PARI
Questionnaire 3	A-PARI/ PS	PS/ A-PARI
Questionnaire 4	CRPR/ PSDQ	PSDQ/ CRPR
Questionnaire 5	CRPR/ PS	PS/ CRPR
Questionnaire 6	PSDQ/ PS	PS/ PSDQ

Figure 1. Combination of questionnaires

A-PARI, Amsterdam version of the Parental Attitude Research Instrument; CRPR, Child Rearing Practices Report; PSDQ, Parenting Styles and Dimensions Questionnaire; PS, Parenting Scale.

The Parenting Scale (PS) is a 30-item measure designed to assess parental discipline strategies [Arnold et al., 1993]. Parents rate their probabilities of using specific discipline strategies in response to child misbehaviours. Individual items include statements such as "When my child misbehaves..." followed by a parent's response on 7-point scales, those are anchored by one effective and one ineffective discipline strategy. After reverse coding some of the items, a score of 1 indicates effective discipline and 7 indicates ineffective discipline. This questionnaire consists of 3 factors: over-reactivity (11 items), laxness (9 items) and verbosity (7 items).

The Amsterdam version of the Parental Attitude Research Instrument (A-PARI) is a shorter and revised version of the Parental Research Attitude Instrument developed by Schaefer and Bell [Schaefer & Bell, 1958]. This Dutch version of the PARI is a self-report questionnaire, consisting of 15 items related to four different child rearing styles. Previous research yielding Dutch normative data has shown that the scale consists of the following scales: authoritarian control (5 items), promotion of autonomy (2 items), overprotection (4 items) and self-complaints (4 items) [de Leeuw, 1986; van Veldhuizen & Meijer, 1990]. All items can be scored on a 4-point scale ranging from 1 (do not agree at all) to 4 (agree totally). Example items are "It's my duty seeing to it that my child does as I tell him/her" (authoritarian control), "Children should learn to be independent as soon as possible" (promotion of autonomy), "I have to try preventing my child from getting disappointed" (overprotection), and "My child's happiness needs a lot of sacrifice from my part" (self complaints).

The Parenting Styles and Dimensions Questionnaire (PSDQ) is a 32-item instrument composed of three scales measuring authoritarian (for example "Scolds and criticizes to make child improve"), authoritative ("Gives child reasons why rules should be obeyed"), and permissive parenting ("Finds it difficult to discipline child"). All items are answered on a five-point scale from 1 (never) to 5 (always). Criterion validity has been demonstrated by significant predictions of child behaviour from authoritative, authoritarian, and permissive parenting styles

[Robinson et al., 1995].

Statistical analysis

All statistical analyses were performed using SPSS version 18.0 (SPSS Inc, Chicago, IL, USA). One-way analysis of variance (ANOVA) and independent-samples t-tests were performed to test for equality of means. The Pearson correlation coefficient was used as a measure of linear association. Alpha was set at 0.05.

Results

Descriptive statistics

Of the original 1200 interview schedules, 302 were not handed out due to siblings in the same school. Out of the remaining 898 schedules, 464 (51.7%) were returned (mean age = 8.7, $SD=2.5$, 49.4% boys). For all questionnaires (CFSS-DS, A-PARI, CRPR, PSDQ and PS) missing values were replaced by item mean when 4 or fewer items were missing. When more items were missing the questionnaires were not included ($N=10$). The remaining 454 interview schedules were used for the analysis. Most questionnaires were filled out by mothers (92.4%). About 86% of the children had at least one sibling.

Almost all children (99%) visit the dentist at least once a year for a check-up. The mean age of their first dental visit was 2.3 years ($SD=1.3$). 42.6% of the children had at least one cavity in the past, 40.3% was treated with at least one restoration, 21.7% had a history of at least one extraction and 26.5% of the children had ever had a local anaesthesia injection. Of all children, 26% suffered at least one time from toothache.

Mean CFSS-DS score was 21.79 ($SD=6.50$). About 2.4% of these children were high-anxious, using 38 as the cut-off score [ten Berge et al., 2002b]. Girls were slightly more anxious than boys (22.5 vs 21.2), $t(438)=-2.15$, $p=0.03$.

Order and combination effect

As all parenting style questionnaires were combined to one of the other questionnaires in two sequences, we assessed whether this influenced the results. The A version and B version of all questionnaires were compared. Significant differences were found between the Nurturance factors of the CRPR in questionnaire 1. When parents filled out the A-PARI prior to the CRPR, they scored lower on the factor Nurturance. Also a significant difference was found between the authoritative factors of the PSDQ in questionnaire 2. When the parents filled out the A-PARI prior to the PSDQ, the parents scored higher on the factor authoritative.

All questionnaires were combined to other questionnaires. Therefore, we assessed whether these combinations influenced the mean outcomes. The scores of both the CRPR factors Nurturance and Restrictiveness were slightly influenced by the other questionnaires. In

combination with the PSDQ the scores were lower than in combination with the PS and the A-PARI. Repeating this analysis within version A and version B showed that this difference was not caused by the sequence in which the questionnaires were filled out.

Although a few significant differences were found as a result of the combination of questionnaires or order effect, these differences were relatively small. Therefore, all the data were merged without further adjustment for subsequent analyses.

Parenting style and dental anxiety.

Correlations were calculated between dental anxiety (CFSS-DS) and parenting style. Only 2 weak but significant correlations were found. These were for the Restrictiveness factor of the CRPR, $r=-0.14$, $p=0.03$ ($n=228$), and the laxness factor of the PS, $r=-0.14$, $p=0.04$ ($n=224$; see Table 1).

Table 1. Pearson correlation between parental rearing style and dental anxiety.

		Mean	SD	rDA	N
A-PARI	Sum	42.89	7.14	-0.05	226
	Over-protection	11.61	2.30	-0.10	227
	Promotion of autonomy	5.72	1.37	-0.04	227
	Authoritarian control	12.41	3.07	0.02	227
	Self complaints	12.90	2.18	-0.09	226
PSDQ	Authoritative	46.77	5.54	0.06	225
	Authoritarian	17.21	2.73	0.02	225
	Permissive	7.90	1.59	0.09	226
PS	Laxness	20.20	6.47	-0.14*	224
	Over reactivity	22.51	6.61	0.01	224
	Verbosity	25.98	5.38	-0.02	224
CRPR	Restrictiveness	69.91	13.67	-0.14*	228
	Nurturance	96.54	7.57	-0.13	228

A-PARI, Amsterdam version of the Parental Attitudes Research Instrument; sum, the total score of the A-PARI; CRPR, Child Rearing Practices Report; restrictiveness, total score of the restrictiveness factor of the CRPR; nurturance, total score of the nurturance factor of the CRPR; PSDQ, Parenting Styles and Dimensions Questionnaire; authoritative, total score on the authoritative factor of the PSDQ, authoritarian, total score of the authoritarian factor of the PSDQ; permissive, total score of the permissive factor of the PSDQ; PS, Parenting Scale; laxness, total score on the laxness factor of the PS; over-reactivity, total score on the over-reactivity factor of the PS. rDA, Pearson correlation with Dental Anxiety.
* $p<0.05$.

Parents who reported at least some degree of dental anxiety (2 or higher) were defined as anxious parents (AP), the others (score 1) were defined as non-anxious parents (NAP). AP scored higher on the Permissive factor of the PSDQ, $t(222)=-2.05$, $p=0.04$ and lower on the Restrictiveness factor of the CRPR, $t(225)=2.50$, $p=0.01$. Correlations were calculated between the subscales of the parental rearing style questionnaires. Results are shown in Table 2.

Dental anxiety and dental history

Children who visit their dentist for regular check-ups were less anxious than children who never visit their dentist for regular check-ups (34.9 vs 21.7), $t(452)=4.65$, $p<0.01$. Children who had dental cavities at the moment of investigation were more anxious than children who did not have cavities at that moment (24.3 vs 21.5), $t(434)=2.63$, $p<0.01$. However, children who had an experience of dental decay in the past were not more anxious than children without such experience, $t(450)=0.27$, $p=0.79$. Also, dental treatment experiences (fillings, anaesthesia and extractions) were not associated with dental anxiety of children, $t(450)=1.20$, $p=0.23$; $t(450)=-0.71$, $p=0.48$; $t(450)=-0.42$, $p=0.68$. However, children who had a history of toothache were more anxious than children without a history of toothache (22.8 vs 21.4), $t(452)=2.05$, $p=0.04$. Also, children whose parents reported that their child's dentist was nice and friendly were less anxious (21.4 vs 26.4), $t(452)=-4.82$, $p<0.01$.

Parenting style and dental history

Some small differences in parental rearing style were found for the dental history items of the interview schedule. Parents of children who did not visit their dentist for regular check-up scored higher on the factor Laxness of the PS, $t(212)=2.12$, $p=0.04$. Parents of children who had caries in the past scored lower on the CRPR factor restrictiveness, $t(216)=1.97$, $p=0.05$.

Discussion:

The aim of the present study was to investigate the possible relationship between self-reported parenting style, parent's assessment of their child's dental anxiety and the dental history of children. Weak correlations between dental anxiety as measured with the CFSS-DS and parental rearing style were found. Also minor associations between parental rearing style and the dental history of children were found. Children who had a history of toothache or had a cavity at the moment of investigation were more anxious than the other children. Also children who did not visit their dentist regularly for check up were more anxious.

Although (paediatric) dentists often tend to attribute behaviour management problems of their patients to the parental rearing style of the parents, in this study only minor associations were found between parenting style and dental anxiety. In similar earlier studies the results were contradictory.

One reasonable explanation for not finding an association between parental rearing style and dental anxiety could be that parental rearing style is the end result of a long dynamic process of interaction between child and parents, rather than some static property that parents possess. This suggestion is supported by the work of Kiff et al. [2011]. They concluded that child behaviour and parenting style mutually influence each other. Children's adaptation in behaviour as a reaction to parenting might be related to this behaviour. On the other side this adaptation might also be influenced by the parenting style. Additionally, over time, children's

Table 2. Pearson correlations between the subscales of parental rearing style questionnaires.

	A-PARI		PSDQ					PS		CRPR		
	Over-protection	Promotion of autonomy	Authoritarian control	Self complaints	Authoritative	Authoritarian	Permissive	Laxness	Over-reactivity	Verbosity	Restrictiveness	Nurturance
Sum	0.79*	0.61**	0.87**	0.79**	0.87**	-0.11	0.09	-0.14	-0.55**	-0.05	-0.72**	0.24*
Over-protection		0.38**	0.57**	0.46**	0.25*	-0.06	0.01	-0.32**	-0.37**	-0.02	-0.66**	0.21
Promotion of autonomy			0.48**	0.43**	0.12	-0.07	0.10	-0.10	-0.35**	-0.13	-0.37**	0.17
Authoritarian control				0.52**	0.25*	-0.10	0.20	0.06	-0.39**	0.01	-0.66**	0.16
Self complaints					0.37**	-0.12	-0.07	-0.16	-0.50**	-0.09	-0.56**	0.25*
Authoritative						-0.16*	-0.02	-0.17	-0.35**	0.23	-0.27*	0.54**
Authoritarian							0.24**	0.06	0.42**	0.06	0.23*	0.03
Permissive								0.41**	0.05	0.21	0.09	0.04
Laxness									0.37*	0.32**	0.02	-0.12
Over reactivity										0.25**	0.08	-0.51
Verbosity											0.05	-0.05
Restrictiveness												-0.06

A-PARI, Amsterdam version of the Parental Attitudes Research Instrument; sum, the total score of the A-PARI; CRPR, Child Rearing Practices Report; restrictiveness, total score of the restrictiveness factor of the CRPR; nurturance, total score of the nurturance factor of the CRPR; PSDQ, Parenting Styles and Dimensions Questionnaire; authoritative, total score on the authoritative factor of the PSDQ; authoritarian, total score of the authoritarian factor of the PSDQ; permissive, total score of the permissive factor of the PSDQ; PS, Parenting Scale; laxness, total score on the laxness factor of the PS; over-reactivity, total score on the over-reactivity factor of the PS.

** p < 0.01 and * p < 0.05.

behaviour might induce particular parental behaviours, just as parental behaviours may shape children's characteristics, and these bidirectional effects further accounts for children's adjustment [Kiff et al., 2011]. In another study also a complex relationship was suggested among parenting, parenting stress, child behaviour, and children's social-cognitive performance [Guajardo et al., 2009]. Although there is considerable continuity in parental child-rearing orientations from early childhood to early adolescence, the shifts in emphases generally coincide with what are considered to be developmentally appropriate areas for change [McNally et al., 1991; Roberts et al., 1984]. The change in child rearing attitudes of parents is supported by the test-retest reliability of parental child-rearing questionnaires. Test-retest reliability values range from 0.84 after 2 weeks to 0.63 after a period of 3 years, which can only be considered moderate test-retest reliability [Arnold et al., 1993; Prinzie et al., 2007; Snarr et al., 2009].

One of the limitations of self-reporting of parenting practices is that they likely suffer from social desirability effects. That is, parents may be inclined to report that they engage in, more often than is actually the case, parenting practices that are perceived by them to be socially acceptable or good. In our study slightly more than half of the parents filled out the questionnaires. As a result, our data might be biased as a result of selection on the sample of parents.

Children who never visit their dentist for a regular check-up were more anxious than children who do visit their dentist at least once a year for a check-up. This finding is in line with the theory of latent inhibition [Davey, 1989], which states that children who visit a dentist several times for a neutral dental visit are less likely to become anxious after an aversive dental visit. In our study, parents of children who did not visit their dentist for a regular check-up scored higher on the factor Laxness of the PS and these children were more anxious. In conclusion, Laxness of parents can be associated directly with dental anxiety, but this association can also be indirect as a consequence of their avoidance behaviour.

Children who had dental cavities at the moment of investigation were more anxious than children who did not have cavities at that moment. One explanation can be that these children and/or their parents postpone dental treatment because of this anxiety or these children are more anxious, because they already had an earlier treatment, or a combination of these explanations. In contrary, children who had dental treatment in the past did not have more dental anxiety indicating that within the conditioning pathway, objective dental experiences seem to play a minor role in children's fear acquisition, confirming results of earlier studies [ten Berge et al., 2002a; Nicolas et al., 2010]. In the latter studies the subjective side of dental treatment (the dentist behaviour) was more important for the acquisition of dental fear. Also having had toothache was an important association with dental anxiety, which is in concordance with earlier studies [Xia et al., 2011].

Conclusions

Based on this study's results, the following conclusion can be made. There is no straightforward association between parental rearing style and dental anxiety of children.

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