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Dental anxiety and behaviour management problems: The role of parents

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Chapter 5

Child Dental Anxiety, Parental Rearing Style and Referral Status of Children



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Abstract

Objective

Treating children can be difficult for both dentist and child. In some cases treatment fails and those children are referred to a specialist paediatric dentist. Different factors can be put forward for referral of children, such as child factors, dentist factors and parent factors. Possible child factors can be dental anxiety and the child's temperament. A possible parent factor is the parental rearing style. The objective of this study was to assess the possible associations between dental anxiety, parental rearing style and referral status of children.

Methods

Parents of 120 non-referred and 335 referred paediatric dental patients were asked to fill out the Child Rearing Practices Report (CRPR) and the Child Fear Survey Schedule Dental Subscale (CFSS-DS) on behalf of their children.

Results

The questionnaires were filled out by 115 (96%) parents of primary schoolchildren and by 331 (99%) parents of referred children. Referred children were significantly younger than non-referred children, $t(442)=6.9$, $p<0.01$, and had significantly more dental anxiety, $t(430)=-8.7$, $p<0.01$. No differences existed between parents of referred children and parents of non-referred children on parental rearing-style. No differences existed between fearful and non-fearful children on parental rearing-style and also no correlation existed between children's dental anxiety and their parent's rearing style. However, non-referred children with parents using an authoritarian parenting style were more anxious than the other non-referred children.

Conclusions

In the present study, referral status and dental anxiety of 4-12 year old children were not associated with parental rearing style.

Introduction

Dental anxiety is a common phenomenon in children and adolescents. In The Netherlands, an estimated 14% of children suffer from dental fear. Six percent of these children reported high levels of dental fear, likely to interfere with their treatment. Another 8% also suffered from some degree of dental fear or may be at risk of developing high dental fear [ten Berge et al., 2002]. Dental fear may lead to neglect of dental care and disruptive behaviour during treatment [Krikken & Veerkamp, 2008]. For this reason, dental treatment can be demanding for dentists, parents and especially children. Children often show their distress with aversive behaviour in reaction to the dental situation, which sometimes leads to behaviour management problems. These management problems are often attributed to the child's dental anxiety or temperament. Besides child factors, such as dental anxiety and temperament, also parent and dentist factors are thought to contribute to dental behaviour management problems [Klingberg & Broberg, 2007].

Only a few studies have been performed concerning the relation between parental rearing style and behaviour of children during dental visits. In general family environments, factors such as parental rearing and attachment style contribute to the severity of anxiety symptoms in children [Rapee, 1997]. In another study, no association was found between parental rearing practices and fearfulness and internalizing problem behaviour. However, a positive association was reported between negative rearing practices and externalizing problem behaviour [Muris, 1996]. Parental rearing style was also found to influence the number of coping strategies, especially avoidant strategies and aggressive strategies during everyday stressful situations [Hardy et al., 1993]. In addition, parental presence and behaviour seem to be related to children's way of coping with aversive medical situations [Blount, 1991]. In a dental situation, higher heart rates and anxiety scores were associated with greater permissiveness and less reliance on rewards and discipline [Venham et al., 1979]. Parental dental anxiety seemed to be related to parenting style but was not related to child dental anxiety [Krikken & Veerkamp, 2008; ten Berge et al., 2003]. Thus, parental rearing style seems to have some influence on child behaviour and coping strategies, the exact mechanism however remains unclear. Especially the population of referred children should be studied in full detail since the operating dentist needs all additional attention to guide them in the dental situation.

The aim of the present study therefore is to investigate the possible relationship between parental rearing style, child dental anxiety and referral status of children.

Methods

Subjects

This study was conducted among parents of two groups of children aged 4-12 years old in the Netherlands. The first, or non-referred group, consisted of 120 children visiting regular primary schools in the Netherlands. These data were randomly drawn from a larger study

including 500 parents of preschool children in the northern part of the Netherlands, and can be seen as representative for the Dutch population. The second, or referred group, consisted of 335 children referred to two second line paediatric dental practices in Amsterdam, the Netherlands. All referred children were referred by their family dentist because of behaviour management problems during dental treatment and/or dental anxiety.

All parents were informed about the study by a letter, and asked to participate. The study was approved by the medical ethical committee of the Free University of Amsterdam (ref. 06/164, 10/071)

Procedure

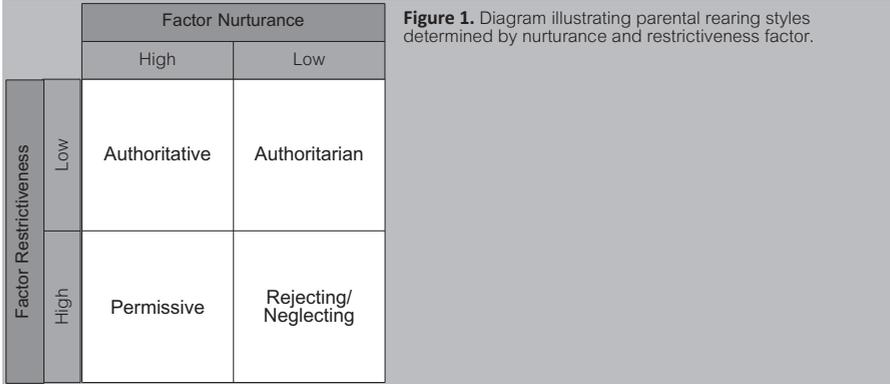
Parents of the non-referred children were asked to fill out the questionnaires at home on behalf of, but without any help from, their children. Parents of the referred children were asked to fill out the questionnaires while they were waiting in the waiting room during their child's first dental (habituation) session.

Measures

Child dental anxiety was assessed using the Dental Subscale of the Children's Fear Survey Schedule. The CFSS-DS is a well-known instrument for assessing dental fear in children, initially presented by Cuthbert and Melamed [1982]. This instrument has been translated into several languages and has been used to assess the level of dental fear of children in a number of studies. The CFSS-DS has satisfactory reliability and validity [Aartman et al., 1998]. The questionnaire consists of 15 items related to different aspects of dental treatment. The items can be answered on a 5-point scale from 1 "not afraid at all" to 5 "very afraid". Total scores thus range from 15 to 75.

Parental child-rearing style was assessed using the Child Rearing Practices Report [Rickel & Biasatti, 1982; Dekovic et al., 1991], has been used in a great variety of longitudinally studies in different countries [McNally et al., 1991; Lindhout et al., 2009]. This 40-item questionnaire consists of two subscales. The first scale, called 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 second scale, called Nurturance, relates to parenting practices focusing on sharing feelings, for example, "I express my affection by hugging, kissing and holding my child" [Rickel & Biasatti, 1982]. All items were translated into Dutch by one of our investigators and translated back by a native speaker. The items can be answered on a 5-point scale from 1 "fully disagree" to 5 "fully agree". Parents were categorized to one of four parenting styles using Reitman and Gross' [1997] method, in which Restrictiveness and Nurturance scores were classified as high or low using a median split (Figure 1). 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 towards 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 Neglectful parenting is neither controlling, permissive, nor warm [Baumrind, 1971].



Statistical analysis

All statistics 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. Sample size was based on a power calculation (comparing the sample of referred and non-referred children) using an independent-samples t-test (two-tailed). Given a small effect size (0.3), alpha=0.05, power=0.80 and an allocation ratio of 3:1, required samples sizes are N1=117 and N2=351. Achieved power for comparing the 4 rearing styles was 0.40 for a small effect size (f=0.10) and 0.99 for a medium effect size (f=0.25). Alpha was set at 0.05.



Results

Descriptive statistics

The response rate was 96% for parents (n=115) of non-referred children (53 girls, mean age = 8.8, SD = 2.5, range 4-12 yrs) and 99% for parents (n=331) of referred children (171 girls, mean age=7.1, SD=2.3, range 4-12 yrs). Mean CFSS-DS-score for all children was 28.0 (sd=11.0). Reliability analysis (Cronbach's alpha) yielded the following: CFSS-DS α =0.9, Restrictiveness α =0.9, Nurturance α =0.8.

Referral status

Referred and non-referred children were compared on mean dental anxiety, age and rearing-style. Results are shown in Table 1. As could be expected, referred children were more anxious (mean=30.1, SD=11.4) than non-referred children (mean=20.8, SD=5.1), t(430)=-8.7, p<0.01. Referred children were younger (mean=7.1, SD=2.3) than the non-referred

children (mean=8.8, $SD=2.5$), $t(442)=6.9$, $p<0.01$. No differences existed between parents of referred children and parents of non-referred children on parental rearing style.

Table 1. Mean scores (standard deviations) for children, boys and girls, high-anxious children and low-anxious children and non-referred and referred children on age, dental anxiety and rearing-style.

| | Age in years | | Child Fear Survey Schedule Dental Subscale | | Nurturance subscale of Child Rearing Practices Report | | Restrictiveness subscale of Child Rearing Practices Report | |
|-------|--------------|-------|--|--------|---|-------|--|--------|
| | mean | (SD) | mean | (SD) | mean | (SD) | mean | (SD) |
| All | 7.5 | (2.5) | 28.0 | (11.0) | 81.6 | (6.6) | 72.0 | (15.8) |
| Boys | 7.4 | (2.4) | 26.7* | (10.8) | 81.3 | (6.6) | 71.5 | (15.1) |
| Girls | 7.7 | (2.6) | 29.3* | (11.1) | 81.9 | (6.6) | 72.2 | (16.3) |
| LAC | 8.0* | (2.5) | 22.0* | (4.5) | 81.9 | (6.6) | 71.5 | (15.3) |
| HAC | 6.6* | (2.0) | 42.1* | (8.6) | 81.3 | (6.4) | 73.9 | (17.1) |
| NRC | 8.8* | (2.5) | 20.8* | (5.1) | 81.9* | (5.7) | 71.9 | (15.4) |
| RC | 7.1* | (2.3) | 30.2* | (11.4) | 81.5* | (6.9) | 72.1 | (15.9) |

* $p < 0.05$ independent samples t-test

LAC, low-anxious children; HAC, high-anxious children; NRC, non-referred children; RC, referred children.

Exploratory analysis

Children who scored 32 or more on the CFSS-DS were defined as high-anxious children (HAC) and children who scored less than 32 were defined as low-anxious children (LAC). No differences existed between LAC and HAC on parental rearing-style (Table 1). Girls were more anxious than boys, $t(422)=2.4$, $p<0.05$. No differences could be found between boys and girls on parental rearing style (Table 1).

Table 2. Pearson's correlations between dental anxiety (CFSS-DS), age and parental rearing style (CRPR subscales Restrictiveness and Nurturance).

| | CFSS-DS: Child Fear Survey Schedule Dental Subscale | Nurturance subscale of Child Rearing Practices Report | Restrictiveness subscale of Child Rearing Practices Report |
|-------------|---|---|--|
| Age (years) | -0.3* | 0.1* | -0.0 |
| CFSS-DS | | -0.1 | 0.2 |
| Nurturance | | | -0.1 |

* $p < 0.05$

Pearson correlation coefficients were calculated between age, dental anxiety and parental rearing-style, and are shown in Table 2. A weak, but significant, negative correlation existed between the age of the children and dental anxiety ($r=-0.3$, $p<0.01$). No correlations were found between age or dental anxiety and rearing style of parents (the very weak correlation between age and subscale Nurturance does not seem to have much practical relevance).

Referred children and non-referred children were equally distributed across the four parenting-styles, $\chi^2(3)=0.6$, $p=0.89$. Also boys and girls were equally distributed with respect to the parenting styles, $\chi^2(3)=1.3$, $p=0.74$. For the total group of children, no differences existed between the four parenting styles on dental anxiety, $F(3, 418)=0.9$, $p=0.46$. For the non-referred children, a significant difference was found between authoritarian parents and the other parents on dental anxiety, $F(3,105)=2.7$, $p=0.047$. This difference however, did not exist for the referred children, $F(3,309)=0.6$, $p=0.64$ (Figure 2).

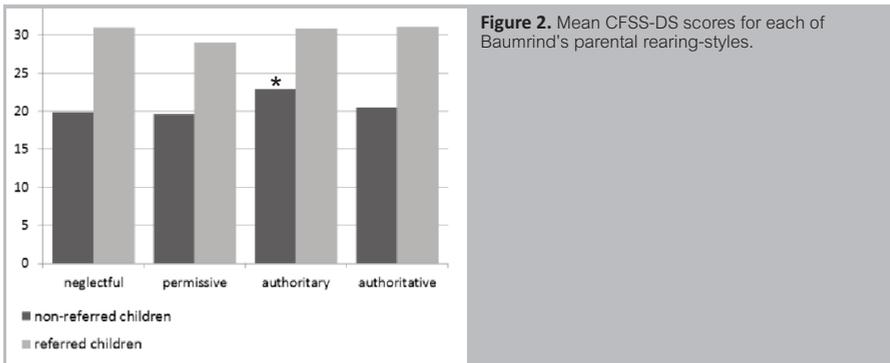


Figure 2. Mean CFSS-DS scores for each of Baumrind's parental rearing-styles.

Moderation effect

In order to test for a possible moderating effect of age on the relation between dental anxiety and parental rearing style, the following approach using linear regression analysis was used. First, the predictors were centred (by subtracting the mean from each observation). Next, an interaction variable was calculated by multiplying the centred predictors. Finally, a regression analysis was run with the centred predictor, and the interaction variable to test whether the latter had any unique variance to add to the equation (indicating a moderator effect). Age did not act as a moderator for the association between Restrictiveness and dental anxiety (Beta=-0.002, $t=-0.03$, $p=0.98$) nor for the association between Nurturance and dental anxiety (Beta=-0.028, $t=0.59$, $p=0.56$).

Discussion

The aim of the present study was to investigate the possible association between parental rearing-style, child dental anxiety and referral status of children. Differences were assessed between referred children and non-referred children on dental anxiety, age and parental rearing style. Referred children were younger and more anxious than non-referred children. No differences existed between referred and non-referred children in rearing style. Non-

referred children of authoritarian parents were more anxious than the other non-referred children. A weak negative correlation existed between dental anxiety and the age of the children. These results suggest that an association may exist between parental rearing-style and dental anxiety of children, but parental rearing style does not seem to be associated with the referral states of children.

The results of our study are consistent with earlier research, in which the association between parental rearing style and child dental anxiety was also not straight forward [ten Berge et al., 2003; Krikken & Veerkamp, 2008]. In one study, parental rearing style was not associated with dental anxiety and/or dental behaviour [Krikken & Veerkamp, 2008]. However, an association was found between parental rearing style and the parent's attitude towards dental treatment of their child. Another study used both referred and non-referred children, but used a different questionnaire to assess parental rearing style [ten Berge et al., 2003]. Based on their findings, it was concluded that parents might play a more secondary, mediating role in the etiological process of dental fear.

Children in the non-referred group were older than children in the referred group. Younger children are more likely to be referred for behaviour management problems because they tend to be more anxious. A possible explanation for this would be that the younger children lack cognitive skills to cope with dental treatment. In addition, the younger children have a bigger treatment need, as the older children (9-12 year old) are already shedding their primary teeth. As the age of the children was not associated with the rearing style of the parents, this age difference seems of no clinical significance in our study. Non-referred children of parents with an authoritarian parenting style are more anxious than the other non-referred children. Apparently, this level of dental anxiety, and possible associated behaviour management problems, were manageable by the respective dentist and did not lead to referral.

A number of discussion points need to be addressed here. Recently, the validity of the CFSS was questioned by some authors [Gustafsson et al., 2010; Luoto et al., 2010], in particular the extent to which parents and children can rate each others fear. However, in a previous study we demonstrated that the majority of parents are accurate reporters of their child's dental fear [Krikken et al., 2012], therefore we felt safe to use parents as a proxy measure for their children's dental fear.

Another point of discussion relates to the CRPR which was used to measure parental rearing style. Because the CRPR has been used in a great variety of studies in different countries, this questionnaire was chosen to measure parental rearing. However, the mean item scores for the Nurturance subscale are all very high (>4). In other words, there is not much variance in the data because most parents agree with the items in this factor. All parents care for their child, spent warm moments with them and play with their children. So, this factor does not differentiate well between parents and the items might be especially sensitive to socially desirable answers. Moreover, it may account for the lack of association found between parental rearing style and referral status, if it exists.

The response rate in our study is very high which may be misleading. The non-referred

children were part of a larger study (N=1200), and the referred group were children two practices in one city. In other words, in both groups some selection bias exists, which may have influenced the results.

Whether or not children are referred by their dentist is partly dependent on the interaction between child, dentist and parent. In the present study the influence of parental rearing style was investigated. In conclusion, no definite answer can be given concerning the possible relationship between parental rearing style and referral status of children. Given the shortcomings of our sample, and the questionnaire used, it is necessary to extend the present study using more representative samples and a different measure for parental rearing style. Besides investigating parental aspects, future research can also focus on aspects related to the dentist (such as personality variables) and his/her practise, or the child's temperament or personality.

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