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Publication date
2013

Link to publication

Citation for published version (APA):
Krikken, J. B. (2013). *Dental anxiety and behaviour management problems: The role of parents*.

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Download date:26 Jan 2022

Chapter 9

Longitudinal changes in Dental Fear and Coping behaviour in Children, Adolescents and Young Adults with Cleft Lip Palate

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Abstract

Aim

The aim of the present study was to test the hypothesis that continuous exposure to dental treatment leads to a reduction of dental anxiety of CL/P children and to assess the role of coping strategies in the persistence or reduction of their dental anxiety.

Materials and methods

The Dental Subscale of the Child Fear Survey Schedule (CFSS-DS) and the Dental Cope questionnaire (DCQ) were filled out by 171 children (4-18 years old, 72 girls) with CL/P at T1 and 118 children (7-21 years old, 53 girls) at T2. Dental anxiety of the study group was compared to a normative group of Dutch children at baseline (T1) and three years later (T2). Changes in dental anxiety were assessed in relation to coping strategies used.

Results

At T2, dental anxiety had reduced significantly (24.8 vs 22.9, p=0.01) to a level equal to a normative Dutch group. In addition children used significantly fewer coping strategies caused by a reduction in the number of internal coping strategies. High-anxious children and children who became more anxious during the three year period used more external coping strategies.

Conclusions:

Findings support the hypothesis that continuous exposure to dental treatment on average leads to a reduction in dental anxiety. The use of coping strategies might play a role in the decrease or increase of dental anxiety.

Introduction

Dental visits can be stressful for children since they potentially include a number of aversive stimuli, activating memories of earlier unpleasant or painful dental or medical treatments. Children that are not able to cope with these stressful events are at risk of developing dental anxiety, which is a common phenomenon in children and adolescents [Chhabra et al., 2012; Salem et al., 2012]. In the Dutch population, an estimated 14% of children suffer from dental anxiety. Six percent of children report high levels of dental anxiety that are likely to interfere with treatment; another 8% suffer from some degree of dental anxiety, or may be at risk for developing high dental anxiety or phobia [ten Berge et al., 2002b].

Because dental anxiety may cause people to avoid going to the dentist, it represents a problem to both dentists and patients [Taani et al., 2005; de Jongh et al., 2011]. Its aetiology is thought to be multifactorial [ten Berge et al., 2002a]. Rachman suggested three pathways of anxiety acquisition: classical conditioning, modelling and transmission of negative information provided by others [Rachman, 1977]. Although research has supported each of these pathways, most evidence is provided for the classical conditioning pathway [Davey, 1989; de Jongh et al., 1995; Liddell & Gosse, 1998]. Inconsistent results of studies in children indicated that Rachman's pathways do not entirely explain the development of dental anxiety in children, and suggest that other determinants may also play a role, for instance a child's personality characteristics [Klingberg et al., 1995], such as temperament [Gustafsson et al., 2010b], negative emotionality [Krikken et al., 2010], introversion or extraversion. A child's coping ability [Versloot et al., 2004], the subjective perception of the child about the dental treatment [ten Berge et al., 2002a] and the parental rearing style [Krikken & Veerkamp, 2008] might also play an additional role in de acquisition of dental anxiety.

As the three pathways described by Rachman do not totally explain the anxiety acquisition of children, the latent inhibition theory was introduced, which states that children tend to develop dental anxiety less quickly if they have had some neutral or positive dental experiences before an invasive treatment occurs [Lubow, 1973; ten Berge et al., 2002a]. However, the opposite might also be true, when the first dental visit of children starts with an intrusive event, they might develop dental anxiety more easily. Children with Cleft Lip Palate are exposed to repeated medical and dental procedures in early childhood; processes related to the development of dental anxiety and should be considered as a vulnerable group. CL/P is a common congenital anomaly with an overall prevalence of 1.7 per 1000 live births in the Netherlands [Rozendaal et al., 2012]. CL/P is considered to have a multifactorial origin involving a combination of genetic and environmental influences. Repairing the defects and treating functional problems involves a series of procedures such as reconstructive surgery, speech therapy, orthodontics and dental treatment. These procedures can cause dental anxiety by conditioning, the direct pathway of anxiety acquisition. In addition, dental anxiety can be acquired indirectly since these children might get a lot of information about present and future treatments and also because they had little chance for latent inhibition to occur.

The conditioning pathway of anxiety acquisition might also be mediated by the children's ability to cope, which may in turn be influenced by other factors, such as age, training, cognitive development, parental support and dental experience.

In paediatric dentistry various methods are used to help children to overcome their dental anxiety. One of the methods used is gradual exposure or desensitization. With this exposure-based technique children learn to deal with their anxieties. Only when a child can accept a dental stimulus in a relaxed way, a next, more anxiety provoking stimulus is presented.

As high hospital exposure is a factor indicated by parents to play are role in the acquisition of dental anxiety [Davey, 1989; ten Berge et al., 2001], it is reasonable to presume that children with CL/P will initially have more anxiety for dental treatment than children without this condition, which was also found in a previous study [Vogels et al., 2011]. In addition, CL/P children are mentioned to have a higher risk of anxiety disorders in general [Demir et al., 2011; Millar et al., 2011]. As they are exposed to different medical and dental procedures during childhood, it is presumed that these children also have the opportunity to overcome their dental anxiety as a result of exposure.

The present study is a follow up of a previous study [Vogels et al., 2011] with a twofold aim. First: to test the hypothesis that continuous exposure to dental treatment leads to a reduction of dental anxiety of CL/P children. Second: to assess the role of coping strategies in the persistence or reduction of dental anxiety.

Materials and methods

Participants and procedure

This study was conducted among children with a CL/P in the age range of 4-18 years old (n=200) and their parents. In the Netherlands, 16 different cleft palate teams exist. All children in the present study were treated by the same cleft palate team (Amsterdam, VU Medical Center). All children visited their family dentist twice a year for check-up and prophylaxis.

All children and their parents received questionnaires by mail and were asked to return them (T1). After 3 years the same participants received the same questionnaires with the request to fill them out and return them (T2). All participants on both moments were asked to fill out the Dental Subscale of the Child Fear Survey Schedule to assess their dental anxiety. Children aged 6-18 years old were asked to complete the Dental Cope Questionnaire (DCQ) in order to assess which coping strategies they would use in a dental situation. This study was approved by the medical ethical committee of VU Medical Center Amsterdam, the Netherlands (ref 05/121).

Measures

Dental anxiety was measured using the Dutch version of the Dental Subscale of the Child Fear Survey Schedule (CFSS-DS) [Cuthbert & Melamed, 1982]. The CFSS-DS is a questionnaire

with sufficient validity and reliability [Aartman et al., 1998; ten Berge et al., 1998]. It consists of 15 items to be answered on a 5-point scale ranging from 1 (not afraid at all) to 5 (very afraid). Total scores range from 15 to 75. One item was added for parents to rate their own level of dental fear on the same 5-point scale. The majority of parents has been shown to be well able to estimate their child's level of dental anxiety by using the CFSS-DS [Gustafsson et al., 2010a; Krikken et al., 2012]. Research has indicated the following classification of scores for Dutch children: a non-clinical range (not anxious, scores below 32), a borderline range (potentially anxious, scores between 32 and 39) and a clinical range (very anxious, scores of 39 and higher) [ten Berge et al., 2002b].

The coping strategies of the children were assessed using the Dental Cope Questionnaire (DCQ). The DCQ is a self-report checklist that requires the child to imagine a painful situation at the dentist and to assess which coping strategies he or she would use. Therefore, this questionnaire can only be used for children from 6 years and older. It is a revised version of the Kidcope, which was developed as a specific pain coping questionnaire for children [Spirito et al., 1988]. The questionnaire starts with the question "Have you ever had pain at the dentist", scoring: often, sometimes, never. This question was followed by 15 coping strategies related to the dental setting, such as "When I am at the dentist and it does hurt": "I tell myself it will soon be over", "I think about something else", and "I get angry at the dentist". The child is asked to rate both the use of each strategy scoring: yes or no (part A), and the perceived effectiveness of each strategy (part B), scoring: not at all, a little or a lot [Spirito et al., 1988]. Three groups of strategies are used in the analysis: internal coping strategies (6 items), external strategies (5 items) and destructive strategies (4 items) [Versloot et al., 2004].

Data analysis

All statistical analyses were performed using SPSS version 18.0 (SPSS Inc, Chicago, IL, USA). The majority (90%) of the returned CFSS-DS questionnaires were filled out completely or had 1 or 2 missing items (N=10 at both T1 and T2). Missing values were replaced by item mean. ANOVA tests, independent samples t-tests and paired samples t-tests were performed to test for equality of means. For non-parametric data Kruskal-Wallis, Mann-Whitney-U tests, Wilcoxon signed rank tests and chi-square tests were used. One sample t-test was used to test equality with normative data. Correlations were calculated using Pearson's and Spearman correlation. Alpha was set at 0.05.

Results

Descriptives

At T1 (the first data collection) 178 out of 200 participants responded (89%). The data of seven participants contained too many missing values and were excluded. The remaining group of 171 participants contained 99 boys and 72 girls (mean age 9.8 *SD* 4.1, no differences

between boys and girls). At T2, addresses of 29 children were not available anymore. At T2, addresses of 29 children were not available anymore. Therefore, 171 subjects were asked to fill out the questionnaires. One-hundred eighteen patients responded (69%), these were 65 boys and 53 girls (mean age 13.3 *SD* 3.9, no differences between boys and girls). The majority of the questionnaires were filled out by the parents of the children (T1: 74.8% and T2: 69.0%), the other questionnaires were filled out by the children themselves. Measured at T1, no differences existed between children of parents who responded at T2 and children of patents who did not respond at T2 (CFSS-DS: t(151)=-0.19, p=0.85; DCQ: Z=-1.58, p=0.11). However, parents who did not respond at T2 were significantly more anxious at T1 than parents who did respond at T2, Z=-2.52, p=0.01. Parental dental anxiety did not differ between T1 and T2 (p=0.72). As all children attended their own family dentist for dental check-ups and dental treatment, no exact data were available on caries experience. Retrospectively from half of the children, this could be determined. Of these children, almost 31% had caries and were treated for this condition.

Dental anxiety:

Cronbach's alpha was calculated for the CFSS-DS at T1 (0.93) and T2 (0.94). At T2 children reported less dental anxiety (mean 24.8 *SD* 10.1 vs mean 22.9 *SD* 10.0) compared to T1, t(101)=2.54, p=0.01. Further analysis at item level showed that they particularly became less afraid on the items "dentists", "Having somebody put instruments in your mouth" and "Having the dentist clean your teeth". Both at T1 and T2, girls reported significantly more dental anxiety than boy's (t(151)=-2.09, p=0.04 and t(111)=-3.09, p<0.01). This difference between boys and girls was most prominent when children were 10 to 12 years of age.

At T1, children aged 4-6 years experienced significantly more dental anxiety than children in a normative group of Dutch children (ten Berge et al., 2002b), t(37)=2.92, p<0.01. Dental anxiety reduced to a level equal to a normative Dutch group at T2 (Table 1). There were no differences in CFSS-DS scores between CL/P children and children in the normative group for the 7-9 and 10-12 year old children. One-way ANOVA with post hoc analysis indicated that both at T1 and T2 the reported dental anxiety in the youngest group of children (4-6 years old) was significantly higher than in the other age groups, F(4,148)=5.87, p<0.01 and F(4,108)=2.55, p=0.04 (Table 1).

Children who never or sometimes experienced pain at the dentist reported less dental anxiety than children who often experienced pain at the dentist (T1: t(61)=-2.39, p=0.02, T2: t(103)=-3.41, p<0.01).

Although on average children reported less anxiety after 3 years, 58 children reported less anxiety, 9 children reported the same level of dental anxiety and 35 children reported more dental anxiety (no differences in age, between boys and girls and CFSS-score at T1). Children with reduced dental anxiety did not differ in their perceived pain experience at the dentist compared to children with an increased level of dental anxiety or whose dental anxiety did not change at both T1 and T2. At T2, children whose dental anxiety increased or did not

Table 1. Comparison of mean CFSS-DS scores at T1 and T2, for different age groups, and to Dutch normative data.

T1					T2				T1 vs T2				
age	norm	n	mean	*SD*	age	n	mean	*SD*	n	mean	*SD*	mean	*SD*
4-6	24.6	38	**31.0**	**13.5**[1,2]	7-9	31	**26.7**	**13.1**[1]	24	29.5	12.9	28.6	14.2
7-9	23.6	29	23.4	6.4	10-12	23	21.0	6.0	21	**23.6**	**7.0**	**20.9**	**6.1**
10-12	23.4	40	23.1	9.5	13-15	30	22.9	9.3	29	23.5	10.7	23.1	9.4
13-15	na	30	20.58	6.3	18-21	19	18.3	3.5	19	**21.6**	**6.4**	**18.3**	**3.5**
18-21	na	16	23.4	8.2	22-24	10	23.9	12.58	9	25.2	10.6	24.8	13.3
Total		153	24.8	10.1		113	22.9	10.0	102	**24.7**	**10.2**	**23.2**	**10.3**

CL/P, Cleft Lip Palate; T1, CFSS-DS scores of CL/P children at base line; T2, CFSS-DS scores of the same CL/P children 3 years later; na, not available. T1 vs T2, mean scores based on subjects with data at both time points. Significant differences (<0.05) printed in **bold**. [1]compared to the older age groups. [2]compared to normative data.

chance between T1 and T2 used significantly more destructive coping strategies than children with decreased dental anxiety (0.47 vs 0.08, p=0.02). No differences were found for the other dependent variables between children whose dental anxiety increased and whose dental anxiety decreased.

Coping strategies:

On average, participants said they used 6.6 (*SD* 1.9, n=73) coping strategies in response to dental pain at T1 and 5.8 (*SD* 2.0. n=92) at T2. At T2 significantly fewer coping strategies were used compared to T1, Z=-2.59, p=0.01 (6.6 vs 5.8, n=59). There was a decrease in the number of external and destructive coping strategies used, but an increase in the number of internal coping strategies used (Table 2). Using the Kruskal-Wallis test, no differences were found in the number of coping strategies used between different age groups, $X^2(4)=1.78$, p=0.78 and $X^2(4)=2.69$, p=0.61. The three most frequently used coping strategies at T1 and T2 were “I do what the dentist tells me”, “I think it is good for my teeth” and “I think it is part of dentistry”. These data are detailed in Table 2.

Some differences were found between boys and girls both at T1 and T2 with regard to the coping strategies used. At T1 girls used significantly more external coping strategies and more coping strategies in total than boys, Z=-2.15, p=0.03.

At T1 no correlation was found between the percentage of children that did use a strategy and the rated efficacy of that strategy (r=0.23). At T2 a moderate correlation was found (r=0.45, p=0.02).

The six most effective strategies, when looking at the sum of response categories: “a bit” and “very much” were approximately the same for T1 and T2. (“I like it when the nurse holds my hand”, “I think of other things” and “I tell myself it will be over soon”). The least effective strategies were also used least include “I get angry at the dentist” and “I close my mouth”. The reported effectiveness of a strategy was taken into account only when a child reported having used it.

Table 2. Percentage of children reporting different coping strategies and mean number of used coping strategies based on the Dental Cope Questionnaire (DCQ)

When I am in pain at the dentist...	T1				T2				T1 vs T2
	All (n=73)	Boys (n=39)	Girls (n=34)	p	All (n=92)	Boys (n=53)	Girls (n=39)	p	p
Destructive strategies									
I get angry at the dentist	9.6	8.5	11.1	0.69	9.1	3.2	16.7	0.02	1.00
I think of a reason to sneak out	6.0	4.3	8.1	0.47	4.6	1.6	8.5	0.09	1.00
I close my mouth	10.8	8.5	13.9	0.45	6.5	3.2	10.9	0.11	0.10
I get angry at mum and dad	8.4	6.4	11.1	0.44	6.5	3.3	10.6	0.12	0.66
Mean number of destructive strategies used	0.34	0.28	0.42	0.58	0.22	0.12	0.36	0.07	0.31
External strategies									
I ask what the dentist is doing	51.2	48.9	54.1	0.64	52.3	48.4	57.1	0.36	1.00
I look at the mirror	49.4	47.8	51.4	0.75	56.9	51.6	63.8	0.20	0.70
I tell the dentist	60.2	60.9	59.5	0.90	61.8	58.7	66.0	0.44	0.71
It is good to have friends with me	24.1	13.0	37.8	**0.01**	10.3	8.2	13.0	0.41	**0.01**
I like it when the nurse holds my hand	21.7	10.9	35.1	**0.01**	24.8	21.3	29.2	0.35	1.00
Mean number of external strategies used	2.07	1.81	2.38	**0.05**	2.00	1.88	2.17	0.30	0.39
Internal strategies									
I think of other things	49.4	47.8	51.4	0.75	56.0	56.5	55.3	0.91	0.49
I tell myself it will be over soon	42.0	35.6	50.0	0.19	44.2	38.3	52.3	0.16	0.58
I do what the dentist tells me	97.6	97.8	97.2	0.86	95.4	98.4	91.5	0.09	1.00
I tell myself I have to do this because it is good for my teeth	95.1	93.3	97.3	0.41	65.7	69.4	60.9	0.36	**<0.01**
I think it is my own fault I have cavities	58.4	50.0	68.6	0.10	38.6	37.9	39.5	0.87	**0.02**
I think it is part of dentistry	68.8	70.5	66.7	0.72	62.5	69.5	53.3	0.09	0.20
Mean number of internal strategies used	3.62	3.68	3.55	0.31	4.20	3.68	3.55	0.61	**0.01**
Mean number of coping strategies used	6.62	6.13	7.18	**0.03**	5.77	5.68	5.90	0.87	**0.01**

Significant differences (<0.05) printed in **bold**.

At T2, children who often experienced pain (n=15) at the dentist reported to use more destructive (Z=-3.12, p<0.01) as well as more internal coping strategies (Z=-2.18, p=0.03) than children who never or sometimes experienced pain at the dentist (n=93). At T1, no differences were found.

Dental anxiety and coping behaviour:

Children were categorized as low-anxious and high-anxious using a CFSS-DS score of 32 as a cut-off (ten Berge et al., 2002b). High-anxious children used more coping strategies at T1 than low-anxious children did. They especially used more destructive and external coping strategies and fewer internal coping strategies (Table 3). At T2 low-anxious children used fewer internal coping strategies than at T1 and High-anxious children used fewer external

coping strategies.

Children who became more anxious in the three year period between T1 and T2 or whose anxiety did not change used significantly more destructive coping strategies at T2 compared to the children who became less anxious (p=0.02) (Table 3).

Table 3. Number of coping strategies used based on the Dental Cope Questionnaire (DCQ)

T1	DCQ	LAC (n=87)	HAC (n=190)	p	Δ-	Δ+	p	
	All coping strategies	6.54	8.40	<0.05	6.36	7.03	n.s.	
	External coping strategies	2.01	3.00	n.s.	1.95	2.28	n.s.	
	Internal coping strategies	4.29	3.40	n.s.	4.18	4.28	n.s.	
	Destructive coping strategies	0.22[1]	1.83	<0.05	0.28	0.43	n.s.	
T2	DCQ	LAC (n=87)	HAC (n=190)	p	Δ-	Δ+	p	T1/ T2 p
	All coping strategies	5.63	6.40	n.s.	5.38	6.14	n.s.	<0.05
	External coping strategies	1.85	2.82	<0.05	1.86	2.15	n.s.	<0.05
	Internal coping strategies	3.67	3.17	n.s.	3.53	3.66	n.s.	<0.05
	Destructive coping strategies	0.11	1.41	<0.05	0.02	0.48	<0.05	n.s.

LAC, Low-anxious children (CFSS-DS<32); HAC, High-anxious children (CFSS-DS≥32); Δ-, children who's dental anxiety decreased between T1 and T2; Δ+, children who's dental anxiety increased or did no change between T1 and T2.

Correlations:

At T1 a significant moderate negative correlation existed between the CFSS-DS score and age of the children (r= -0.31, p<0,05) indicating a reduction of dental anxiety with increasing age. At T2 also a negative, but weaker correlation was found (r= -0.19, p<0.05).

Weak, but significant correlations were found between dental anxiety of parents and the CFSS-DS score of their child (Spearman: r=0.24, p<0.05 at T1 and r=0.32, p<0.01 at T2).

Discussion

This study aimed to compare the anxiety levels of children with CL/P at baseline and three years later, testing the hypothesis that continuous exposure to repeated medical or dental procedures leads to a reduction of dental anxiety. Also, the number and efficacy of dental coping strategies were assessed. After three years all changes pointed into a comparable direction; children learned to cope and in most children anxiety decreased, which supports the introduced theoretical basis. This can be seen in a number of findings.

The results of this prospective study suggest that young children (4-6 years old) had more dental anxiety than older children with CL/P. Furthermore, CL/P children in the youngest age

group reported more dental anxiety than children from the general Dutch population at T1. At T2, three years later, the younger children reported still more anxiety than the older children, but it reduced to a level equal to Dutch normative data. The finding that younger children were more anxious than older children and that girls reported more dental anxiety than boys is in line with earlier studies in normative groups [ten Berge et al., 2002b]. During the 3-year period of this study dental anxiety reduced significantly, which confirms the hypothesis that age and continuous exposure to dental treatment leads to a reduction of dental anxiety of CL/P children. Anxiety reduced in particular for those items describing procedures that are most frequently used during regular dental check-ups of children. Three years after baseline, there was a significant reduction in the number of coping strategies used for dealing with dental pain. The mean number of external and destructive coping strategies reduced, but the number of internal coping strategies increased. Apparently, children learned that getting angry (destructive coping) and needing external support (external coping) are less effective in coping with pain than internal coping strategies. The decrease in the need for external support is also related to the maturity level of children. As children grow older, they learn to manage their problems themselves without the need for external support. Also the correlation between the percentage of children that did use a strategy and the rated efficacy of that strategy became stronger. This also underlines the learning process of the child. They try to use one strategy, but when it is not effective enough, they will start to use another strategy. This is also supported by the fact that high-anxious children used more external and destructive coping strategies than low-anxious children. Probably, these children are less clever in selecting the most effective coping strategy.

Although in general children became less anxious in the dental situation after three years, more than one third of children became more anxious. Results suggest that these children tended to use more destructive coping strategies compared to the other children both at T1 and T2. This difference increased in the three year period. It may be that these children became more anxious because they use ineffective coping strategies. The opposite may also be true; these children used ineffective coping strategies because they were anxious. However, the first of these explanations seems most likely as our results showed that these children neither were more anxious at baseline nor did they experience more pain at the dentist.

High-anxious children used more destructive coping strategies than low-anxious children and children who became more anxious between T1 and T2 also used more destructive coping strategies. This is in line with an earlier study, which states that avoidance based coping is positively related to dental anxiety [van Meurs et al., 2005; Marsac & Funk, 2008]. Supposedly, these children coped with their emotions about the dental treatment by trying to avoid it (thinking about reasons to sneak out, closing their mouth). These behaviours are very disturbing for the operating dentist, creating impatience. The behaviour of the dentist in turn might lead to a negative emotional experience of the treatment by the child, which leads to dental anxiety [ten Berge et al., 2002a]. This will always be a challenging point and something to keep in mind when treating children. When children do not show their distress to the operating dentist,

this dentist has the risk to overestimate the child's coping abilities and he thereby might contribute to anxiety acquisition. The same might happen when the child does show his distress and the dentist becomes impatient or even angry. Changes in coping strategies also take place as a result of the maturity level of a child. Younger children will require more support from their parents or siblings, whereas older children will have a tendency to cope on their own with challenging tasks. Also factors like previous dental experiences, the behaviour of the dentist and their own behaviour during that treatment might influence their future coping behaviour.

Some drawbacks of the study need to be discussed. Specific data about the dental treatments the children were exposed to in the period between T1 and T2 were not available. As CL/P children are exposed to more dental treatments than other children it is supposed that they had substantial exposure to treatments. Although exposure might be an important explanation for the reduction of dental anxiety of these children, also their age and maturity level together with possible psychological treatment or other anxiety reducing interventions might play a role in this. No differences were found between responders and non-responders at T2 on the CFSS and DCQ measured at T1. However, responding parents were significantly less anxious than non-responding parents. Apparently, dental anxiety of parents might play a role in the compliance of children in the clinical setting of the CL/P team, including avoiding the CL/P team. As the addresses of half of these children were not available anymore, we were not able to assess whether the anxiety of these children also reduced during the three year period. As we know from the conditioning pathway, avoidance of an anxiety provoking event reinforces this anxiety. This would have been interesting, especially as there was a correlation between the anxiety of parents and the anxiety of children.

Though research in this population is difficult it should be taken into account that the vulnerability of the group makes it necessary to at least think of all possible mechanisms that are associated with the development and consecutive reduction of their dental anxiety. If dentists cause anxiety it is not enough to assume that this will disappear with age but there is a need to look for mechanisms that facilitate or enhance this process.

In conclusion, findings from our study support the hypothesis that on average continuous exposure to dental treatment leads to a reduction in dental anxiety. The use of coping strategies might play a role in the decrease or increase of dental anxiety. In further research, it would be interesting to investigate the possibility of teaching children how to use coping strategies effectively in order to guide them through the dental treatment and reduce dental anxiety. This is especially the case for vulnerable children, such as the CL/P children.

Acknowledgements

We thank all children and parents for participation in this study..

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