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Dental anxiety and behaviour management problems: The role of parents

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Chapter 7b

Parental Presence during Dental Treatment; the Child's, Parent's and Dentist's Point of View



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Submitted for publication

Abstract

Purpose

The purpose of this study was to assess the opinion of children, parents and dentists related to parent's absence or presence in the surgery.

Methods

Ninety children were randomly assigned to a parent present or a parent absent group. Based on the intake session, dentists were asked if they preferred the parent to accompany their child or not. Children, parents and dentist were asked to report on the treatment after a habituation session and after the first two treatment sessions. Children were asked how they felt during the treatment; parents and dentist were asked about child behaviour, about each other's behaviour and about their own feelings regarding the treatment.

Results

The children of parents who were preferred by the dentist to stay in the waiting room were more anxious than the children of parents who were preferred by the dentist to accompany their child in the surgery. The latter parents also had more confidence in the upcoming treatment of their child. Besides the first habituation session, no differences in behaviour were found between the parent present and parent absent group.

Conclusions

Behaviour of children was not less or more disruptive in parents absence or presence during the dental treatment. Results were irrespective of the preference of the dentist about their presence. Although dentists did expect difficulties in the treatment of some children, these were not encountered.

Introduction

When treating children, dentists may expect behaviour management problems (DBMPs) in about 10% of cases [Klingberg & Broberg, 2007]. DBMPs can be overcome by effective communication and various behaviour management techniques, such as positive reinforcement, gradual exposure and desensitization. The interaction between dentists and children is a special type of interaction (forced interaction), as children do not voluntarily decide to visit the dentist. The decision is usually made for them by their parents. It is also parents who make the decision for them to go to school, to eat healthy food, to brush their teeth, and to use fluoride toothpaste. As such, parents have an important influence on the dental health and dental behaviour of their children.

However, should a parent stay with the child in the surgery during dental treatment? This question has been investigated in a number of studies over the years, without reaching consensus [Lewis & Law, 1958; Venham et al., 1978; Fenlon et al., 1993; Marcum et al., 1995; Freeman, 1999; Marzo et al., 2003]. Two opinions exist about parents' presence in the surgery. Those who oppose the presence of parents believe that parents project their own anxiety on the child and make the dentist feel uncomfortable [Marcum et al., 1995; Marzo et al., 2003], stating that parental presence may reinforce uncooperative child behaviour and the resultant lack of effective dentist-patient communication will prevent the dentist to communicate adequately with the child. On the other hand, supporters of parent's presence during dental treatment state that parent's absence interferes with the children's cooperation with the dentist. They also believe that parents' presence reinforces compliance with treatment and preventive regimes [Venham et al., 1978; Freeman, 1999]. Although many dentists are reported to support the statement that children would be more cooperative without their parents' presence, they often allow parents to be present during dental treatment [Marcum et al., 1995; Ramos et al., 2010]. While management of a child's behaviour during treatment can be difficult, its combination with a demanding parent may be even more difficult. Understandably, most parents prefer to stay, especially with younger children. In some cases, they also want to help the dentist manage their child's behaviour [Peretz & Zadik, 1998; Arathi & Ashwini, 1999]. As all dentists wish to put their patients' interest first, the major concerns in this discussion are children's preferences with regard to their parents' presence in the surgery, and the treatment outcome itself.

As there are continued questions on the advisability of parents' presence in the surgery, and as there is limited information in the Netherlands on the effect of parents' presence on their children, it was decided to further investigate this problem. The aim of this research was to assess the opinion of children, parents and dentists about various aspects of the treatment related to parental absence or presence in the surgery. And second to assess whether, presuming parents' presence influences the treatment, the dentists are able to decide in advance which parents they should allow or deny presence during treatment.

Materials and methods

Subjects and procedure

This study was conducted among children between 4 and 12 years old who were referred to a secondary paediatric dental care clinic in Utrecht, the Netherlands. All children were referred by their family dentist to this clinic for a variety of reasons. The most common reasons were dental anxiety, behaviour management problems and extensive caries. Children and parents who did not speak and understand the Dutch language sufficiently were excluded, as well as children with developmental delay, and children who needed emergency treatment which made gradual exposure impossible. As a standard procedure in this dental care clinic, parents do not accompany their child during dental treatment. This study was approved by the medical ethical committee of the Free University of Amsterdam (ref. 2008/017).

All new patients in a four-month period were randomly divided into two groups using a list of random numbers. In one group, the parents were present in the surgery during treatment sessions (PP, parent present); in the other group, they remained in the waiting room (PA, parent absent). After registration in the clinic, parents were sent a letter specifying the procedure in the dental clinic, the appointment time and the Child Fear Survey Schedule Dental Subscale (CFSS-DS) to be filled out before their first appointment. During the intake session, all parents were present in the surgery. At the end of that session, before parents made appointments for the consecutive treatment sessions, they were informed about the study and asked to participate. Parents were informed that withdrawal from the study or refusal to participate would not have any influence on the actual treatment. After giving written consent, they filled out a form asking the level of confidence (CO-P, confidence of the parent) they had in the upcoming treatment of their child. Then they were told to which of the two groups they had been assigned. All children were treated by one of two paediatric dentists. The consecutive sessions were a habituation session and two treatment sessions. After each of these sessions, parents were asked to report on their child's behaviour (CB-P, child behaviour rated by the parent), the dentist's behaviour (DB-P, dentist behaviour rated by the parent) and their own feelings (F-P, feeling parent) about the dental treatment. After the second treatment session parents were asked to report about the total treatment (E-P, evaluation by parent).

After the intake session the dentists were asked whether they preferred the parent to be in the surgery during dental treatment (DA, dentist agrees) or if they preferred the parent to wait in the waiting room (DR, dentist refuses). This, of course, had no consequence for the randomization protocol but served to assess the level of commitment with the parent the dentist expected. After each treatment session, the dentists were asked to report on the child's behaviour (CB-D, child behaviour rated by the dentist), the parent's behaviour (PB-D, parent behaviour rated by the dentist) when present in the surgery and whether the behaviour of the child (FC-D, feelings about the child rated by the dentist) and the parents (FP-D, feelings about the parent rated by the dentist) had disturbed them during their treatment. After each treatment session, the parents were asked to report on the dentist's behaviour (DB-P, dentist

behaviour rated by the parent) and how they felt about the treatment of their child (F-P, feelings of the parent). The children were asked to rate their own perception (P-C, perception of the child) of the treatment.

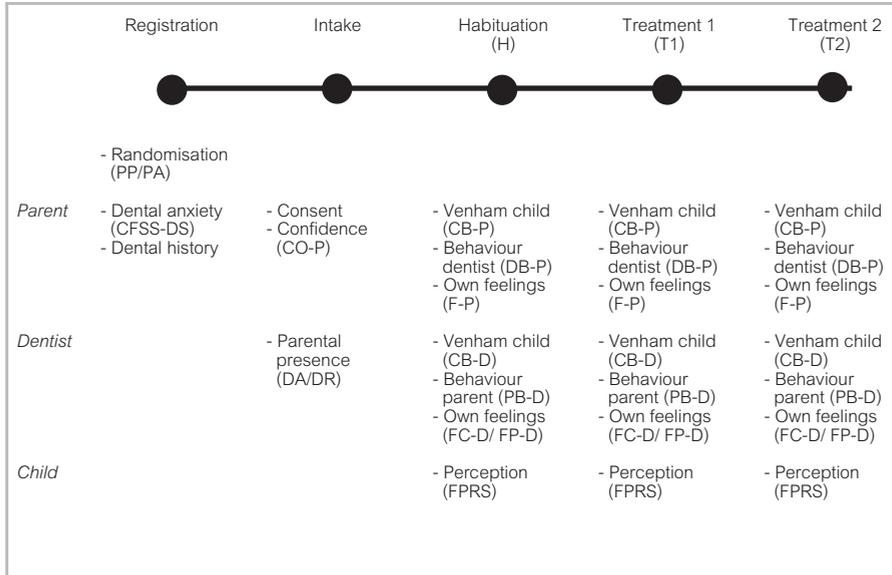


Figure 1. Design of the study
 PP, parents present in the surgery during dental treatment; PA, parents waiting in the waiting room during dental treatment; CFSS-DS, Child Fear Survey Schedule Dental Subscale; DA, dentist prefers the parent to join their child during dental treatment; DR, dentist prefers the parent to stay in the waiting room during dental treatment; FPRS, Wong-Baker Faces Rating Scale.

Measures

Dental anxiety was measured using the CFSS-DS [Cuthbert & Melamed, 1982], a questionnaire with sufficient validity and reliability [Aartman, 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. It includes an item where parents are asked to rate their own level of dental fear on the same 5-point scale. Most parents are well able to estimate their child’s level of dental fear using the CFSS-DS [Milgrom et al., 1994; Klingberg, 1994; ten Berge et al., 2003; 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., 1998].

Parents’ confidence (CO-P) in their child’s upcoming treatment was measured on a 5-point scale ranging from 1 (no confidence at all) to 5 (a lot of confidence) answering the question: “How much confidence do you have with regard to the upcoming treatment of your child”.



Children's behaviour during dental treatment was assessed by parents (CB-P) and dentists (CB-D) using Venham's (modified) clinical rating of anxiety and cooperative behaviour. The scale consists of 6 points, ranging from 0 (relaxed) to 5 (out of contact) [Venham et al., 1980].

Children's perception (P-C) of their treatment was assessed using the Wong-Baker Faces Scale (FPRS) [Wong & Baker, 1988]. The FPRS is a scale of six hand-drawn faces, ranging from smiling to crying, that were developed on the basis of analyses of children's drawings of faces (ranging from 0 to 5) representing different degrees of discomfort [Chambers et al., 1999]. To avoid individual variation the instructions for the children were standardized (written) and read out loud to the children.

The behaviour of parents during dental treatment was assessed by the dentist (PB-D) on a 5-point scaling ranging from 1 (relaxed) to 5 (very nervous). The behaviour of the dentist was rated by parents (DB-P) on a 5-point scale ranging from 1 (calm/relaxed) to 5 (angry/loses control).

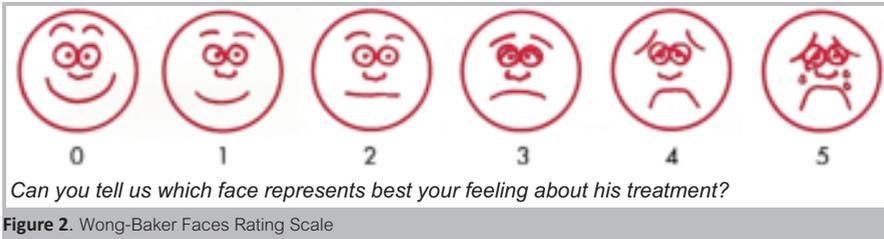


Figure 2. Wong-Baker Faces Rating Scale

The parents' emotional feelings (F-P) regarding their child's treatment was assessed on a 4-point scale ranging from 1 (not at all) to 4 (a lot) answering the question: "How much did the treatment of your child upset you?"

The dentist's emotional response on the behaviour of children and parents on the treatment was rated (FC-D and FP-D) on a 5-point scale ranging from 1 (not at all) to 5 (very much) answering the question: "How much did the behaviour of the child disrupt you during the child's dental treatment?" and "How much did the behaviour of the parent disrupt you during the child's dental treatment?"

Parent's evaluation (E-P) of their child's treatment was assessed after the second treatment session on a 5-point scale ranging from 1 (very difficult) to 5 (very easy) answering the question "Evaluating the treatment, how do you think it went?"

Data analysis:

All statistical analyses were performed using SPSS version 20.0 (IBM, SPSS Statistics, USA). One-way ANOVA and independent-samples t-tests were performed to test for equality of means for parametric data. For non-parametric data Chi-square tests, Mann-Whitney-U tests and Kruskal-Wallis tests were performed. Correlations were calculated using Spearman correlation coefficient. Alpha was set at 0.05.

Results:

Descriptives

Of the 175 referred children, 90 children (mean age=6.2, sd=1.6, 45 boys) met all inclusion criteria to participate in the study. Reasons for exclusion were: treatment under general anaesthesia (25), parents did not show up for the consecutive treatment (24), developmental disorders (10), parents unwilling to participate (9), and various other reasons (17). Of the 90 included children, 47 were treated with the parent present in the surgery and 43 with the parent sitting in the waiting room. The patients were approximately equally divided between the two dentists (47/43). The mean CFSS-DS score was 32.4, $SD=10.5$ (no differences between boys and girls). No significant differences on any of the dependent variables were found between the two dentists, with one exception. In 48 cases the dentists preferred the parents to be present in the surgery during the child's dental treatment. One dentist preferred parent's absence during dental treatment significantly more often, $\chi^2(1)=11.26$, $p<0.01$.

Effects on child behaviour by parent's presences versus absence in the surgery.

The parent present (PP) group and the parent absent (PA) group were compared to assess differences on the dependent variables. An overview of all mean scores and standard deviations can be seen in the first column of Table 1. During the habituation session, parents felt more stress (F-P) about the treatment of their child when they remained in the waiting room, $Z=-2.65$, $p=0.01$. In this session, dentists reported more disruptive behaviour by the children (CB-D) when the parents were present during treatment, $Z=-2.70$, $p<0.01$. The behaviour of these children and parents did not disrupt the dentists more (FC-D/ FP-D).

Dentist's opinion about parent's presences versus absence in the surgery

During the intake session, dentists were requested to decide if they preferred a parent to accompany their child during treatment (DA) or if they rather wanted the parent to stay in the waiting room (DR). These two groups of parents were compared on the dependent variables. An overview of the mean scores and standard deviations of the dependent variables is presented in the second column of Table 1. Children of DR parents were more anxious (CFSS-DS) than children of DA parents, $t(88)=-2.28$, $p=0.03$. Also, DR parents tended to be more anxious than DA parents, $Z=-1.656$, $p=0.098$. No differences were found on age, gender and dental history. DA parents were more confident in the success of the upcoming treatment of their child than DR parents, $Z=-2.62$, $p<0.01$. When treatment was done, they were equally satisfied (E-P) about the whole procedure. The self-report by the child (P-C) did not differ between the research conditions, though there was an increasing trend of child discomfort during sequential sessions for both groups. Also the report by parents (CB-P) and dentists (CB-D) of the behaviour of the child did not differ between the conditions. Also they reported an increasing trend in uncooperative behaviour during sequential sessions for both groups. However, the dentists reported more stress in the behaviour of DR parents (PB-D) during all

Table 1a. Differences in behaviour of children, parents and dentists depending on parent's presence in the surgery

	All children (n=90)		All children (n=90)		All children (n=90)		All children (n=90)		Parent's present (n=47)		Parent's present (n=47)	
	PP (n=47)	PA (n=43)	DA (n=48)	DR (n=42)	DR (n=42)	DR (n=42)	DR (n=42)	DR (n=42)	DR (n=42)	DR (n=20)	DR (n=20)	DR (n=20)
	mean	SD	mean	SD	mean	SD	mean	SD	mean	SD	mean	SD
Dental anxiety (CFSS-DS)			30.06	9.08	35.00	11.43						
Dental anxiety parent			1.48	0.92	1.90	1.28						
Age (years)			6.31	1.59	6.10	1.54						
Parental confidence (CO-P)			4.52	0.65	4.12	0.80						
Parental satisfaction (E-P)	4.13	1.01	4.15	1.01	4.33	0.82	3.96	1.13	4.35	0.81		
Parent												
<i>Habituation</i>												
Child behaviour (Venham)	0.60	1.01	0.71	0.99	0.62	0.96	0.63	0.97	0.55	1.10		
Dentist behaviour (DB-P)							1.15	0.36	1.05	0.22		
Own emotions (F-P)	1.21	0.41		0.63			1.44	0.58	1.40	0.50		
Treatment 1												
Child behaviour (Venham)	0.79	1.06	0.85	1.07	0.69	0.98	0.96	1.19	0.55	0.83		
Dentist behaviour (DB-P)							1.11	0.42	1.10	0.31		
Own emotions (F-P)	1.43	0.54		0.70			1.44	0.58	1.40	0.50		
Treatment 2												
Child behaviour (Venham)	1.19	1.23	1.10	1.13	0.90	1.08	1.33	1.27	1.00	1.17		
Dentist behaviour (DB-P)							1.04	0.19	1.15	0.37		
Own emotions (F-P)	1.45	0.54		0.63			1.33	0.45	1.60	0.60		

CFSS-DS, Child Fear Survey Schedule Dental Subscale; FPRS, Wong-Baker Faces Rating Scale; PP, parent present; PA, parent absent; DA, dentist agrees; DR, dentist refuses. Significant differences (<0.05) printed in **bold**.

Table 1b. Differences in behaviour of children, parents and dentists depending on parent's presence in the surgery

	All children (n=90)				Parent's present (n=47)							
	PA (n=43)		DA (n=48)		DR (n=42)		DR (n=20)					
	mean	SD	mean	SD	mean	SD	mean	SD				
Child												
Habituation (FPRS)	1.60	1.16	1.56	0.80	1.69	1.10	1.45	0.86	1.74	1.26	1.40	1.00
Treatment 1 (FPRS)	1.94	1.48	1.65	0.95	1.96	1.38	1.62	1.08	2.19	1.52	1.60	1.39
Treatment 2 (FPRS)	2.17	1.43	2.26	1.48	2.21	1.27	2.21	1.65	2.11	1.22	2.25	1.71
Dentist												
Habituation												
Child behaviour (Venham)	1.13	1.04	0.58	0.73	0.81	0.98	0.93	0.89	1.00	1.04	1.30	1.03
Parent (PB-D)					1.29	0.54	1.64	0.82	1.48	0.64	1.85	0.93
Own emotions child (FC-D)	1.13	0.40	1.05	0.21					1.11	0.32	1.15	0.49
Own emotions parent (FP-D)									1.30	0.61	1.55	0.89
Treatment 1												
Child behaviour (Venham)	1.06	1.05	0.91	1.07	1.06	1.04	0.90	1.08	1.07	0.87	1.05	1.28
Parent (PB-D)					1.21	0.54	1.57	0.91	1.30	0.61	1.75	1.02
Own emotions child (FC-D)	1.17	0.43	1.16	0.43					1.11	0.32	1.25	0.55
Own emotions parent (FP-D)									1.047	0.27	1.45	0.95
Treatment 2												
Child behaviour (Venham)	1.49	1.27	1.19	1.18	1.29	1.11	1.40	1.36	1.56	1.12	1.40	1.47
Parent (PB-D)					1.21	0.50	1.67	0.95	1.30	0.61	1.95	1.15
Own emotions child (FC-D)	1.28	0.58	1.23	0.61					1.22	0.51	1.35	0.67
Own emotions parent (FP-D)									1.11	0.32	1.50	0.89

CFSS-DS, Child Fear Survey Schedule Dental Subscale; FPRS, Wong-Baker Faces Rating Scale; PP, parent present; PA, parent absent; DA, dentist agrees; DR, dentist refuses. Significant differences (<0.05) printed in **bold**.

treatment sessions, $Z=-2.20$, $p=0.03$ (habituation), $Z=-2.18$, $p=0.03$ (Treatment 1), $Z=-2.65$, $p<0.01$ (Treatment 2).

When parents were present during dental treatment, dentists reported more stress in DR parents than in DA parents during the second treatment session (PB-D), $Z=-2.20$, $p=0.03$. For all the other research parameters, no differences were found. Results can be seen in the third column of Table 1a and 1b.

Dental anxiety, age and gender

To assess differences as a result of dental anxiety, low-anxious children (LAC; $CFSS<32$) and high-anxious children (HAC; $CFSS\geq 32$) were compared on the dependent variables. HAC and LAC were equally distributed between the parent present (PP) and parent absent group (PA), $\chi^2(1)=0.40$, $p=0.67$. HAC had higher self-report (FPRS) scores during the habituation session than LAC, $Z=-2.37$, $p=0.02$. Dentists reported more disruptive child behaviour (CB-D) in HAC during the first treatment session ($Z=-3.11$, $p<0.01$) and this behaviour disrupted (FC-D) them more during the first treatment session ($Z=-2.12$, $p=0.03$). This was irrespective of the presence or absence of parents and the preference of the dentist to have them present or absent. For all other parameters no differences were found when comparing LAC and HAC. To assess differences of age and gender, children of different ages and gender were compared on the dependent variables. No significant differences were found.

Table 2. Spearman correlations between the child's, the parent's and the dentist's perception of the habituation session and the first and second treatment sessions (scores of parents only when parents were present).

		Habituation (H)			First treatment (T1)			Second treatment (T2)		
		CFSS-DS	P-C (FPRS)	BC-P (Venham)	BC-D (Venham)	P-C (FPRS)	BC-P (Venham)	BC-D (Vnham)	P-C (FPRS)	BC-P (Venham)
H	P-C	0.16								
	BC-P	-0.08	0.73**							
	BC-D	0.22	0.25*	0.21						
T1	P-C	0.23	0.17							
	BC-P	0.30*		0.31**		0.27*				
	BC-D	0.47**			0.31**	0.45**	0.54**			
T2	P-C	0.28	0.05							
	BC-P	0.26		0.04			0.30**		0.35**	
	BC-D	0.41**			0.17			0.51**	0.50**	0.65**

P-C, perception child; BC-P, behaviour of the child according to the parent; BC-D, behaviour of the child according to the dentist; FPRS, Wong-Baker Faces Rating Scale; Venham, Venham scores.

** $p<0.01$ and * $p<0.05$.

Correlations

Correlations were assessed between CFSS-DS scores of the children and the behaviour of children rated by themselves, the parents and the dentists. There was a moderate correlation between the dentist's and parent's reports on the child's behaviour (BC-P and BC-D) during

the habituation session and the first treatment session and between the first treatment session and the second treatment session (Table 2). During the habituation session and during the second treatment session, the dentist rated more disruptive behaviour than the parents, $Z=-2.99$, $p<0.01$ and $Z=-2.21$, $p=0.03$. Moderate correlations were found between CFSS-DS scores and behaviour reported by parents and dentists during the first and second treatment session.

Post treatment evaluation of parents.

After the treatment of the children, most parents reported positive evaluations (E-P). No differences were found between parents who were present during the treatment and parents who stayed in the waiting room during the treatment of their children ($Z=-0.97$, $p=0.33$). Only 1 out of 90 parents rated the total treatment as very difficult and 5 parents rated the total treatment as difficult. Only one of these parents was not present during the treatment sessions and one other parent was preferred by the dentist to stay in the waiting room. The behaviour of these parent's children was scored significantly more disruptive by their parents (BC-P) and by the dentist (BC-D) during the second treatment session ($Z=-3.64$, $p<0.01$ and $Z=-3.03$, $p<0.01$), however the FPRS scores did not differ.

Discussion

This study aimed to assess the opinion of children, parents and dentists on parents' presence in the surgery during dental treatment and to assess whether paediatric dentists are able to decide which parents they let in or which they keep out the surgery.

The absence or presence of parents in the surgery did not influence the children's perception about the treatment. Also parents' rating of their behaviour did not differ. However, parents felt more stress during their child's treatment when they stayed in the waiting room during the habituation session. This can be explained by considering the fact that most children in this study were referred because dental treatment with their own dentist failed. Logically, parents experience stress about the coming treatments, which is immediately decrease when they see the dentist managing their child. When parents remain in the waiting room, their stress is only decrease when the habituation session is finished.

The children of parents who were preferred by the dentist to stay in the waiting room were more anxious than the children of parents who were preferred by the dentist to accompany their child in the surgery. Dentists were not aware at that moment of the CFSS-DS scores of the children, but they observed the child and the parent and the child-parent interaction during the intake session. Also parents who were preferred to stay in the waiting room had less confidence in the upcoming treatment than parents who were preferred to accompany their child, although they did not know at that moment to which condition they were assigned. Apparently, the dentist is able to detect from either the behaviour of the child, the parent or

the interaction between both, some kind of stress or inconvenience. Based on this observation, the dentist might expect more uncooperative behaviour and therefore decide to prefer parents to stay in the waiting room.

Dentists reported more stress by the parents when they wanted these parents to wait in the waiting room during dental treatment. However, since part of these parents actually waited in the waiting room, the rating of the dentist was based on observations when picking up the child from the waiting room and bringing it back to the waiting room. Probably these moments are most stressful for parents. When the parents were accompanying their child during the treatment session, this difference was only significant during the second treatment session. All in all, the presence or absence of parents in the surgery did not influence the behaviour of children during dental treatment. The behaviour of the child is not different and also the behaviour of the child and parent did not disrupt the dentist.

Before the actual treatment started, 85 children dropped out for different reasons. Twenty-four parents did not attend for the consecutive treatment and 9 parents refused to participate in the study. As all children were assigned to the experimental group or the control group when they registered at the clinic, there were just as much parents from both groups not willing to participate and not attending. Therefore we can expect that this will not have influenced the results.

The results of the present study suggest that the presence or absence of parents during their child's dental treatment does not influence the behaviour of children during the dental treatment and this behaviour and the behaviour of their parents did not disrupt the dentist. An alternative explanation might be that the dentists in this study were well able to manage the behaviour of the children and parents irrespective of their preference on the absence or presence of parents during treatment. In future research, the specific preferences of parents and children on parent's presence and the dentist's opinion and emotions on parents' presence need further exploration both in referred children and in children in regular dental practices.

Conclusions:

1. In this study absence or presence of parents during dental treatment had only minor influences on the behaviour of their children.
2. The behaviour of children and their accompanying parents did not disrupt the treatment of the paediatric dentist.
3. Dentists were reasonably well able to identify anxious children and anxious parents.

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