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

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# Chapter 1

## Measuring Dental Fear using the CFSS-DS. Do Children and Parents Agree?



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## Abstract

### *Background*

In most studies the parental version of the CFSS-DS is used. However, no information is available concerning the extent to which parents are able to report dental fear on behalf of their children.

### *Aim*

This study aims to assess whether parents are accurate reporters of their child's dental fear.

### *Methods*

The CFSS-DS was filled out by 326 children in a classroom setting and by 167 parents (mostly mothers) at home on behalf of their child. Intraclass correlation coefficients were used as a measure of agreement between both CFSS-DS versions and reasons for non-agreement were assessed.

### *Results*

Mean CFSS-DS for children was 21.15 ( $SD=6.4$ ) and 23.26 ( $SD=6.7$ ) for parents. The intraclass correlation coefficient was 0.57. After selection of the 73.1% most accurate reporting parents, the ICC was 0.90. In general, parents estimate the dental fear of their children higher than their children do ( $p<0.001$ ), whereas parents of high-anxious children (HAC) estimate this fear lower and parents of low-anxious children (LAC) estimate this fear higher. Anxious parents (AP) estimate the dental fear of their children significantly higher than non-anxious parents (NAP) ( $p<0.001$ ), but the children of AP do not estimate their own dental fear higher than children of NAP.

### *Conclusions*

In general parents tend to estimate the dental fear of their children slightly higher than their children.

## Introduction

Dental anxiety is a common phenomenon in children and adolescents [King & Ollendick, 1989; Elbedour et al., 1997]. In the Dutch population, 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 suffers 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 therefore represents a problem to both dentists and patients [Bedi et al., 1992]. Research has shown that the effects of child dental fear may well persist into adolescence and, in turn, may lead to avoidance of dental care or disruptive behaviour during treatment [Klaassen et al., 2002; Krikken & Veerkamp, 2008].

The Dental Subscale of the Children's Fear Survey Schedule (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 [Chellappah et al., 1990; Alvesalo et al., 1993; Klingberg et al., 1994; Milgrom et al., 1995; ten Berge et al., 2002; Majstorovic et al., 2003; Wogelius et al., 2003; Nakai et al., 2005]. In a report by Aartman et al. [1998] the self report CFSS-DS was preferred because it possesses better psychometric properties, it measures dental fear more precisely and covers more aspects of the dental situation than other questionnaires. The parental version of the CFSS-DS has satisfactory reliability and validity. The test-retest reliability of the CFSS-DS is very high ( $r=0.97$ ) [Klingberg, 1994], although the Pearson correlation reported here is a measure of association, and not a measure of agreement. Normative data for the Dutch population were collected by ten Berge et al. [2002] (mean CFSS-score=23.9, SD=8.1). The questionnaire is used in two versions, one to be filled out by parents on behalf of their child and one for the children themselves [Aartman et al., 1998].

The most reliable method to assess dental fear in children is by using a self-report questionnaire. However, for younger children (e.g. unable to read and write) it is impossible to fill out a questionnaire and we must rely on a proxy report, preferably of their parents. For this reason, in most studies the parental version for the assessment of dental fear in young children was used. However, it remains unclear whether parents are able to accurately estimate dental fear on behalf of their child. Based on research regarding psychological problems in general, the agreement between informants (parent and child) with regard to the child's level of dental anxiety can be expected to be far from perfect [De Los & Kazdin, 2004]. A relation exists between parental dental fear and child dental fear. Also an association was found between behaviour management problems (DBMPs) of children and their parent's anxiety rating [Wogelius et al., 2003]. It has been assumed that parents know whether their children have dental fear, but it has seldom been studied and the findings and the studies mentioned in the literature about this topic are contradictory. Most studies compared the dental fear rating of parents to the actual behaviour of children instead of comparing proxy measures [Alwin et

al., 1991; ten Berge et al., 1998; Carson & Freeman, 2001; Rantavuori et al., 2009; Gustafsson et al., 2010].

Only few studies were performed that explicitly looked at the agreement between parental rating of child anxiety and their child's own rating. Folayan et al. [2004] studied both parent and child ratings of child dental fear, but they reported differences only between average parent versus average child ratings using t-test, and thus did not address the issue of individual parent-child agreement. Gustafsson et al. [2010] looked at the agreement between parental ratings of child anxiety and their child's own rating in a group of referred children and a reference group. They found questionable validities of parental ratings, particularly in high-fear populations. In a study evaluating the ability of parents and their teenagers to evaluate each other's dental fear, it was concluded that parents and children cannot be used as reliable proxies for determining each other's dental fear [Luoto et al., 2010]. Thus, the actual relation between parental rating of dental fear and their (young) child's rating is hardly studied and therefore not clear.

The aim of the present study is to investigate the parent-child agreement on child dental fear and to test three specific hypotheses. Because parents tend to estimate the dental pain of their children higher than the children themselves do [Versloot et al., 2008], it is hypothesized that parents will overestimate the dental fear of their children (I). Since anxious people tend to overestimate anticipated pain and the intensity of aversive events in general, including such events as fear [Arntz et al., 1994; Rachman, 1994], it is also expected that anxious parents overestimate the fear of their children (II). In addition, it was hypothesized that there is a relation between parental dental fear and child dental fear (III).

## Material and methods

### *Subjects and procedure*

This study was conducted among 326 children and their parents visiting 3 regular primary schools in the south-western part of the Netherlands. Schools were selected for their broad variety of children of different social and cultural backgrounds and can be seen as representative for the Dutch population. The children were 7 to 11 years old.

The boards of the schools were asked for permission to perform the study and the schools informed the parents of the children about the study. Participation to the study was fully voluntary for both children and parents. Informed consent was implied by filling out the questionnaire.

The children were asked to fill out the child version of the Dental Subscale of the Child Fear Survey Schedule (CFSS-DS) in their classrooms. Their understanding of the questions, and the way to handle them, was practiced with one or two questions (e.g. "how afraid are you of spiders").

After filling out their version of the questionnaire, the parental version of the CFSS-DS was

handed out to the children, together with a letter asking the mothers of the children to fill out the questionnaire on behalf of them, without any help of their children. The mothers were asked to return the questionnaire as soon as possible.

### *Measures*

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]. Separate child- and parental versions were used. Both questionnaires consist of the same 15 items, related to different aspects of dental treatment. The possible item responses varied from 1 (not afraid at all) to 5 (very afraid), giving a range of possible scores of 15-75. In the parental version, one item was added for parents to rate their own level of dental fear on the same 5-point scale.

### *Statistical analysis*

All statistics were performed using SPSS version 17.0 (SPSS Inc, Chicago, IL, USA). Cronbach's alpha was used as a measure of internal consistency. The intraclass correlation coefficient (ICC) was used as a measure of agreement between the parental version of the CFSS-DS and the child version of this questionnaire. Independent-samples t-tests and Wilcoxon signed rank tests were used to compare CFSS-DS total scores and item scores between parents and children. One way ANOVA, Kruskal-Wallis and independent samples t-tests were used to compare CFSS-DS scores between anxious and non-anxious parents, between agreeing, overestimating and underestimating parents and between children in different age groups. Pearson and Spearman correlation coefficients were used for correlations between parental dental fear, child dental fear and parent rated child dental fear. Alpha was set at 0.05.

## **Results**

### *Descriptive statistics*

The study was conducted among 326 children and their parents. The CFSS-DS was filled out by 325 children (165 girls, mean age=7.91,  $SD=0.82$ , no differences in mean age, one boy refused to fill out the questionnaire) and 167 parents (51.2%, 158 were mothers). Of all children, 10.5% reported dental fear (CFSS-DS scores>32). Children from non-responders reported more dental anxiety than children from responders,  $t(323)=2.108$ ,  $p=0.04$  (Table 2). Unfortunately, a non-response investigation was prohibited in order to protect privacy. Ninety-six percent of the questionnaires were filled out by mothers. The mean anxiety score of the parents ( $F_p$ ) was 1.54 ( $SD=0.79$ ) with no differences between mothers and other informants (Mann-Whitney-U  $p=0.83$ ). Cronbach's alpha was calculated for the child version ( $\alpha=0.85$ ) and parental version ( $\alpha=0.90$ ), which appeared to be in an acceptable range.

*Agreement*

The intraclass correlation coefficient between the CFSS-DS child and the CFSS-DS parent was 0.57, which should be considered as a moderate agreement. Differences were calculated between child dental fear reported by their parents (DFp) and child dental fear reported by the children (DFc) (mean difference=-2.11, SD=5.86), ranging from -31 to 15. Despite this broad range, 73.1% (122 cases) of parent reports differs no more than 1 standard deviation (6 points) from their children. Selection of this group results in an intraclass correlation coefficient of 0.90, indicating excellent agreement.

In some studies and dental practices children are categorised in low-anxious and high-anxious using cut off scores. Children who scored 32 or more on the CFSS-DS were defined as high-anxious children (HAC), children scoring less than 32 were defined as low-anxious children (LAC). Using this cut off score, only 15 (<10%) parents rated a level of dental anxiety in a different category than their child's rating of dental anxiety. However, 43% of parents of HAC rated the level of dental fear in a different category than their child did. This method gives a sensitivity of 47%, a specificity of 96%, a positive predictive value of 57% and a negative predictive value of 94% (Table 1).

**Table 1.** Cross-tabulation between dental anxiety rated by children and by their mothers.

		DFc		
		HAC	LAC	Total
DFp	HAC	8	6	14
	LAC	9	144	153
	Total	17	150	167

DFp, Child dental fear reported by their parents; DFc, child dental fear reported by children; LAC, low-anxious children (CFSS-DS<32); HAC, high-anxious children (CFSS-DS≥32).

Mean DFc was 21.9 (SD=6.8) and DFp 23.3 (SD=6.7). In general, parents tended to rate their child's dental fear higher than the children did,  $t(166)=-4.64, p<0.001$  (hypothesis I). However, parents of HAC, tended to rate their child's dental fear lower than the children did,  $t(13)=2.35, p=0.034$ , and parents of LAC tended to rate their child's dental fear higher than the children did,  $t(152)=-5.95, p<0.001$  (see Table 2).

In order to investigate where the difference in estimated dental fear comes from, children and parents were compared on mean CFSS-DS item scores. Results are presented in Table 2. It is interesting to see that significant differences on item scores can be found on those items that seem primarily related to actual dental treatment.

*Parental influence*

Parents who reported at least some degree of fear (2 or higher) were defined as anxious parents (AP), the others (score 1) were defined as non-anxious parents (NAP). Children of AP were slightly more anxious, however not significantly, than children of NAP,  $t(165)=-0.909$ ,

**Table 2.** Assessment of child dental fear (CFSS-DS) by parents (DFp) and children (DFc).

		N	Mean score	SD	Range	p
DFc	Respondents	167	21.2	6.4	15-44	
	Non-respondents	158	22.7	7.2	15-51	0.036*
All children	DFc	325	21.9	6.8	15-51	
	DFp	167	23.3	6.7	15-51	<0.001**
HAC	DFc	34	37.0	4.5	15-31	
	DFp	14	32.9	7.2	15-51	0.036**
LAC	DFc	291	20.2	4.5	32-51	
	DFp	153	22.4	5.9	22-48	<0.001**

DFc, Child dental fear reported by their mothers; DFc, child dental fear reported by children; LAC, low-anxious children (CFSS-DS<32); HAC, high-anxious children (CFSS-DS≥32).

\* Independent samples t-test, \*\* paired samples t-test.

**Table 3.** Comparison of mean CFSS-DS scores rated by children (DFc) and their parents (DFp).

Item	DFc	SD	DFp	SD	p
Dentists	1.23	0.49	1.43	0.56	<0.001*
Doctors	1.35	0.67	1.35	0.54	0.886
Injections	2.04	1.16	2.08	0.89	0.543
Having somebody examine your mouth	1.14	0.38	1.20	0.47	0.187
Having to open your mouth	1.01	0.11	1.10	0.37	0.003*
Having a strangers touch you	1.49	0.70	1.43	0.60	0.341
Having somebody look at you	1.11	0.34	1.29	0.47	<0.001*
The dentist drilling	1.93	1.08	2.22	0.92	0.001*
The sight of the dentist drilling	1.49	0.88	1.81	0.88	<0.001*
The noise of the dentist drilling	1.28	0.59	1.79	0.87	<0.001*
Having somebody put instruments in your mouth	1.40	0.84	1.56	0.73	0.010*
Choking	1.62	0.94	1.65	0.83	0.683
Having to go to the hospital	1.80	1.14	1.83	0.87	0.517
People in white uniforms	1.09	0.36	1.22	0.56	0.002*
Having the nurse clean your teeth	1.19	0.45	1.32	0.53	0.003*

DFp, child dental fear reported by their mothers; DFc, child dental fear reported by children.

p=0.06, based on their own rating.

AP reported the dental fear of their children significantly higher than the NAP,  $t(165)=-3.60$ ,  $p<0.001$ . So, despite what children indicate themselves, some parents will overestimate child dental fear depending on their own level of dental fear, confirming our hypothesis (II). This can also be shown from the correlations between DFc, DFp en Fp. A significant correlation existed between DFp and Fp (Spearman  $r=0.26$ ,  $p<0.001$ ) and between DFp and DFc (Pearson  $r=0.59$ ,  $p<0.001$ ). No correlation existed between DFc and Fp (Spearman  $r=0.13$ ,  $p=0.08$ ), rejecting our hypothesis (III). However, this lack of significant correlation may result from a

too small number of anxious parents. This finding will be discussed.

Parents were divided in three groups according to their ability to accurately report their child's dental fear: parents who underestimated the dental fear of their child with more than 1 *SD* (underestimating parents), parents who overestimated the dental fear with more than 1 *SD* (overestimating parents) and parents who estimated the dental fear of their child within 1 *SD* (agreeing parents). No differences exist on parental dental fear between agreeing parents, overestimating parents and underestimating parents (Kruskal-Wallis,  $p=0.12$ ).

To investigate if parents of older children were better able to rate their child's anxiety, different ages were compared. No differences could be shown in the age of the children between the groups (ANOVA,  $p=0.07$ ), although the result is marginally significant (despite reduced power as a result of unequal sample sizes). Mean scores in Table 4 do show that agreeing parents, on average, have the oldest children, although the differences are very

**Table 4.** Properties of children and their parents of underestimating parents, agreeing parents, and overestimating parents.

	Underestimating parents mean ( <i>SD</i> )	↔	Agreeing parents mean ( <i>SD</i> )	↔	Overestimating parents mean ( <i>SD</i> )
N	10 (6%)	p-value	122 (73%)	p-value	35 (21%)
DFc* (CFSS)	33.80 (5.83)	<0.001	20.83 (5.92)	0.006	18.69 (3.20)
Age** (years)	7.60 (0.70)		8.11 (0.83)		7.86 (0.088)
Fp***	1.20 (0.42)		1.52 (0.80)		1.71 (0.83)

\*  $p<0.05$  one-way ANOVA; \*\*  $p>0.05$  one-way ANOVA; \*\*\*  $p>0.05$  Kruskal-Wallis.

small (within months). This will be discussed. Children of underestimating parents were significantly more anxious than children of agreeing parents ( $t(130)=6.68$ ,  $p<0.001$ ), while the latter were significantly more anxious than children of overestimating parents ( $t(105.1)=2.80$ ,  $p=0.01$ ). See Table 4 for an overview of the mean scores.

## Discussion

The aim of this study was to assess whether parents are accurate reporters of their child's dental fear, using the CFSS-DS. The intraclass correlation coefficient indicated a moderate agreement ( $ICC=0.57$ ) between parents and children, comparable with the ICC found in earlier research [Gustafsson et al., 2010]. However, about 73% of parents rated their child's dental fear within one standard deviation (6 points) from the level of dental fear reported by the child. These parents are considered reasonably accurate reporters. In general, parents seem to rate child dental fear somewhat higher than their children do, as was hypothesized. However, parents of high-anxious children rate their child's dental fear slightly lower, while parents of

low-anxious children rate their child's dental fear slightly higher. One explanation would be that the parent's level of dental fear influences the rating of their child dental fear. Indeed, children of "anxious parents" reported a comparable level of dental anxiety as children of "non-anxious parents" yet the "anxious parents" reported the dental fear of their children significantly higher than the non-anxious parents. On the other hand, no differences existed on self-reported dental fear between agreeing parents, overestimating parents and underestimating parents. So, although parental dental fear does play some role in the estimation process, it cannot entirely explain the differences between parent and child dental fear reports.

The children included in the study had no known psychological problems. In paediatric dentistry, however, the CFSS-DS is commonly used for assessing dental anxiety in children referred for dental treatment because of behaviour management- or dental anxiety problems. In our study population, 10.5% of the children reported high dental fear, whereas in the normative group of Dutch children 14% reported high dental fear. So, our study population seems to be somewhat less anxious. It is therefore uncertain whether the results of this study can be extrapolated to a group of referred children. Also, children of non-responders were more anxious than children of responders. Apparently, parents of anxious children were less likely to fill out the questionnaire. This also impairs the generalizability of our study. Unfortunately, the boards of the school did not give permission to do a non-response investigation because of privacy, so we were not able to figure out these differences. In addition, in paediatric dentistry the majority of newly referred children with behaviour management problems due to dental anxiety are between 4 and 6 years old. As these children are too young to be able to fill out our questionnaire, a sample of older children was used in the present study which also limits its generalizability. This group of children however, approaches best our group of interest. In our study, the difference in mean age between children of underestimating, agreeing and overestimating children was not significant. However, there were highly unequal samples sizes, resulting in a lack of power. Looking at the raw data suggests that children of agreeing parents are slightly older, implying that it is easier for parents to rate dental fear in older children. Therefore, there is a need for more research that compares parental rated anxiety of older children to the parental rating of younger children. In our sample, almost 90% of the parents had no or only a little dental anxiety themselves, which made it impossible to find a correlation between Fp and DFC, if present. Future research should focus on obtaining data with more dispersion in parental dental fear in order to investigate the association between parental dental fear, child dental fear, and the way parents rate dental fear for their children.

The results of our study do show some differences with results from earlier research. One study did not find any difference between the scores on the CFSS-DS as scored by the parents and the children separately. However they did not differentiate between low-anxious and high-anxious children. In general, these children were somewhat more anxious than our children were (CFSS-child 29.9 and CFSS-parent 29.3). These CFSS scores are between the scores of our low-anxious and high-anxious children [Folayan et al., 2004]. Our results contradict

those of another study, who found parental ratings exceeding self-ratings in their study group (children referred for behaviour management problems) while the reverse was seen in the reference group (children visiting ordinary public dental clinics) [Gustafsson et al., 2010]. In this study the children were referred because of dental anxiety. Referring children to a secondary dental care clinic may lead parents to focus on their child's anxiety. This attention can lead to an overestimation of dental fear. The children in Gustafsson's study group were somewhat more anxious than our high-anxious children (35.0 vs 32.9). The children in their reference group were also somewhat more anxious than our low-anxious group (22.5 vs 20.2). However, our total population (which can be compared to a reference group) scored comparable to their reference population (21.2 vs 22.5).

In conclusion, the results from this study suggest that a great majority of parents are able to rate the level of dental fear of their children with a tendency to rate somewhat higher than their children did. More specific research needs to be done to assess characteristics of those parents who are not able to rate their children's fear or the underlying mechanisms leading to this process.

### **Why this paper is important to paediatric dentists**

This article supports that the majority of parents is reasonably able to rate their child's dental fear accurately. This article points at the possible pitfalls in interpreting a parent proxy measure of child dental fear.

This article supports the idea that, especially in anxious children, a second measure of dental fear next to the parental rating should be used.

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## References

- Aartman IH, van Everdingen T., Hoogstraten J, and Schuur AH. Self-report measurements of dental anxiety and fear in children: a critical assessment. *ASDC J Dent Child* 1998; 65(4): 252-8, 229-30.
- Alvesalo I, Murtomaa H, Milgrom P, Honkanen A, Karjalainen M, and Tay KM. The Dental Fear Survey Schedule: a study with Finnish children. *Int J Paediatr Dent* 1993; 3(4): 193-198.
- Alwin NP, Murray JJ, and Britton PG. An assessment of dental anxiety in children. *Br Dent J* 1991; 171(7): 201-207.
- Arntz A, Dreessen L, and de Jong P. The influence of anxiety on pain: attentional and attributional mediators. *Pain* 1994; 56(3): 307-314.
- Bedi R, Sutcliffe P, Donnan P, Barrett N, and McConnachie J. Dental caries experience and prevalence of children afraid of dental treatment. *Community Dent Oral Epidemiol* 1992; 20(6): 368-371.
- Carson P and Freeman R. Dental caries, age and anxiety: factors influencing sedation choice for children attending for emergency dental care. *Community Dent Oral Epidemiol* 2001; 29(1): 30-36.
- Chellappah NK, Vignehsa H, Milgrom P, and Lam LG. Prevalence of dental anxiety and fear in children in Singapore. *Community Dent Oral Epidemiol* 1990; 18(5): 269-271.
- Cuthbert MI and Melamed BG. A screening device: children at risk for dental fears and management problems. *ASDC J Dent Child* 1982; 49(6): 432-436.
- De Los RA and Kazdin AE. Measuring informant discrepancies in clinical child research. *Psychol Assess* 2004; 16(3): 330-334.
- Elbedour S, Shulman S, and Kedem P. Children's fears: cultural and developmental perspectives. *Behav Res Ther* 1997; 35(6): 491-496.
- Folayan MO, Idehen EE, and Ojo OO. Identified factors in child-dentist relationship important for the management of dental anxiety in Nigerian children. *Eur J Paediatr Dent* 2004; 5(4): 225-232.
- Gustafsson A, Arnrup K, Broberg AG, Bodin L, and Berggren U. Child dental fear as measured with the Dental Subscale of the Children's Fear Survey Schedule: the impact of referral status and type of informant (child versus parent). *Community Dent Oral Epidemiol* 2010; 38: 256-266.
- King N.J. and Ollendick T.H. Children's anxiety and phobic disorders in school settings: classification, assessment, and intervention issues. *Rev Educ Res* 1989; 59: 431-470.
- Klaassen MA, Veerkamp JS, Aartman IH, and Hoogstraten J. Stressful situations for toddlers: indications for dental anxiety? *ASDC J Dent Child* 2002; 69(3): 306-309.
- Klingberg G. Reliability and validity of the Swedish version of the Dental Subscale of the Children's Fear Survey Schedule, CFSS-DS. *Acta Odontol Scand* 1994; 52(4): 255-256.
- Klingberg G, Berggren U, and Noren JG. Dental fear in an urban Swedish child population: prevalence and concomitant factors. *Community Dent Health* 1994; 11(4): 208-214.
- Krikken JB and Veerkamp JS. Child rearing styles, dental anxiety and disruptive behavior; an exploratory study. *Eur Arch Paediatr Dent* 2008; 9(1): 23-28.
- Luoto A, Tolvanen M, Rantavuori K, Pohjola V, and Lahti S. Can parents and children evaluate each other's dental fear? *Eur J Oral Sci* 2010; 118(3): 254-258.
- Majstorovic M, Veerkamp JS, and Skrinjaric I. Reliability and validity of measures used in assessing dental anxiety in 5- to 15-year-old Croatian children. *Eur J Paediatr Dent* 2003; 4(4): 197-202.
- Milgrom P, Mancl L, King B, and Weinstein P. Origins of childhood dental fear. *Behav Res Ther* 1995; 33(3): 313-319.
- Nakai Y, Hirakawa T, Milgrom P, Coolidge T, Heima M, Mori Y, Ishihara C, Yakushiji N, Yoshida T, and Shimono T. The Children's Fear Survey Schedule-Dental Subscale in Japan. *Community Dent Oral Epidemiol* 2005; 33(3): 196-204.
- Rachman S. The overprediction of fear: a review. *Behav Res Ther* 1994; 32(7): 683-690.

- Rantavuori K, Tolvanen M, Hausen H, Lahti S, and Seppa L. Factors associated with different measures of dental fear among children at different ages. *J Dent Child (Chic )* 2009; 76(1): 13-19.
- Ten Berge M., Hoogstraten J, Veerkamp JS, and Prins PJ. The Dental Subscale of the Children's Fear Survey Schedule: a factor analytic study in The Netherlands. *Community Dent Oral Epidemiol* 1998; 26(5): 340-343.
- Ten Berge M., Veerkamp JS, Hoogstraten J, and Prins PJ. Childhood dental fear in the Netherlands: prevalence and normative data. *Community Dent Oral Epidemiol* 2002; 30(2): 101-107.
- Versloot J, Veerkamp J, and Hoogstraten J. Dental anxiety and psychological functioning in children: its relationship with behaviour during treatment. *Eur Arch Paediatr Dent* 2008; 9 Suppl 136-140.
- Wogelius P, Poulsen S, and Sorensen HT. Prevalence of dental anxiety and behaviour management problems among six to eight years old Danish children. *Acta Odontol Scand* 2003; 61(3): 178-183.