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Research Report

Trans-adapted, reliability, and validity of children fear survey schedule-dental subscale in Bahasa Indonesia

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ABSTRACT

Background: *The most frequently used measuring instrument for determination of dental fear in children nowadays is the children's fear survey schedule-dental scale (CFSS-DS).* ***Purpose:*** *The purpose of this study was to explore the reliability and validity of the scale with Indonesian trans adapted version of the scale, thus the scale can be reliable to be used in other similar research in Indonesia.* ***Methods:*** *Total of 113 participants, who were parent's 3 to 12 years old children. Children were divided into two age groups, group I 3-6 year old (83 children and group II 7-12 year old (30 children). Eighty three children from the first group were divided into first dental visit group (30 children) and non first dental visit group (53 children). Test-retest approach was applied to 30 first dental visit children aged 3-6 year old. Original scale was translated to Indonesian language.* ***Result:*** *The result showed the high value of the Cronbach's coefficient of internal consistency α=0.956. Three factors were extracted by screen test method with Eigen values higher than 1, which explained 93.05% variance of results.* ***Conclusion:*** *CFSS-DS scale is reliable and valid psychometric instrument for dental fear evaluation in children in Bahasa Indonesia. The differences between this study and those of others may appear due to many factors.*

Keywords: *Reliability; validity; CFSS-DS; children; Bahasa Indonesia*

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INTRODUCTION

Recently, there have been many advancements in dental technology regarding pain management and many strategies are established to make patients feel comfortable during dental treatment. However, these have not changed the individual perception that makes them see dental treatment as something that creates fear. The international classification has included this anxiousness and fear toward dental procedures into "specific phobia".[1]

Fear toward dental treatment or dental fear (DF) is a major problem to an individual, especially in children and adolescent. The DF prevalence in children and adolescent is about 5-20% in some countries,[2] depending on the measuring method, the children's age, and culture.[3] Several measuring methods have been used to measure DF in children, including behavioral rating such as Frankl Scale;[4,5] physiological measurement such as heart rate, skin galvanic reflect and nasal skin temperature and also questionnaire.[6] Other community-based study and large-scale study performed in school or clinic usually depends on questionnaire data to assess the DF prevalence.[3]

Currently, there is only little information related to DF in children in a long-term perspective. The model theory of Berggren in 1984 predicts that individual with DF tends to postpone dental treatment and eventually leads to poor dental and oral health.[7] In children, this delay can be noticed through the postponing of first dental visit that should be established when the child is already one year old or, at the latest, 3 years old.[8,9]

The postponing of dental treatment may persist in adult individuals.[7,10] DF in adult can be complex in terms of

various psychological factors frequently found in adults. Study in woman population shows that DF is related to several psychological factors, such as depression.[11] The result of some studies shows that DF is related to various long-term medical effects.[12-13] Therefore, a DF assessment that is suitable for children, adolescence, and adults is very valuable.

One of the questionnaires that is usually used to assess DF is the children's fear survey schedule-dental subscale (CFSS-DS).[14] Sherer, as stated by Beena, then developed the CFSS-DS as a tool to assess DF.[15] Cuthbert used this measuring instrument in their study and modified it to assess DF. Currently, the developed instrument has been translated and adapted into several languages and countries,[3] but not in Indonesian. The Cronhbach coefficient for internal reliability for this instrument is about α=0.85 to 0.92.[3, 16-20] In addition to be used worldwide with high reliability level, CFSS-DS must have a simple and fast application for evaluating DF. On the contrary, even though it has good results, several studies consider that DF self-reporting measurement cannot be used to differentiate common fear and DF.[21]

A self-report measurement tool should demonstrate reliability by being both repeatable, yielding consistent results in a group of stable patients and internally consistent which demonstrating that the items on the questionnaire are strongly related to each other.[22] Most scientific questionnaires used in dentistry have been developed in English-speaking areas. International multicenter-based studies including populations with different cultural backgrounds and other languages are growing. The process of cross-cultural adaptation tries to produce equivalency between source and target based on content.[23] There is a great need for cross-cultural adapted questionnaires as they allow comparison of data across different countries.

Until now, studies on DF in Indonesia using CFSS-DS are very rare. Considering the high reliability and validity of this instrument in other countries, trans-adaptation and CFSS-DS psychometric analysis, which is applicable in Indonesia, needs to be performed. Hence this study was aimed to translate CFSS-DS from English to Indonesian; perform a transcultural adaptation; and test the Indonesian version (CFSS-DS) psychometrically with regard to reliability and validity in a cross-sectional study.

MATERIAL AND METHODS

The process of questionnaire development followed a standard procedure in six phases, known as 'stages', according to the established guidelines for self-assessment instruments this procedure is internationally recognized and has been well documented in numerous applications.[23] The study has been approved by the ethical committee for research from Faculty of Dentistry Universitas Padjadjaran.

CFSS-DS consists of 15 questions related to dental treatment using the Likert scale optional answers of 1-5 (1-not afraid, 5-very afraid). The total score that indicates DF is minimum of 38.[15] A single translator, and then being re-translated into English by other translator by observing the comparability with the original version translate CFSS-DS from English into Bahasa Indonesia (Table 1). The Indonesian version is applied on a small number of participants and then a modification on the translation was performed for better comparison.

The study participants were parents who take their 3-12 years old children to the Pediatric Dentistry Department of Bandung Dental Hospital, Indonesia. Pediatric patients with acute dental symptoms or other dental emergencies were not included in the study. The participants were parents of 3-6 years old children who never visited dentist before (n=30); parents with 3-6 years children old who had visited dentist in the past (n=53); and parents with 7-12 years old children who had visited dentist in the past (n=30). Total participants were 113 parents. Demographic data is shown in Table 2.

The purpose of this study was explained to the parents and a written informed consent was also provided. The CFSS-DS questionnaire was given and completed by the parents before dental treatment. A test-retest approach was performed for reliability verification during within 10 days period between the tests to explore the consistency of participants in answering the questionnaire.[3]

Psychometric is a set of statistical models and methods developed especially to summarize, describe, and make a conclusion from data collected in psychological studies.[24] Psychometric is needed to explore the psychometric characteristics of each questionnaire before being used. Some of the basic psychometric characteristics from a questionnaire are reliability and validity.[25, 26]

Table 1. Translated version of the scale from English to Bahasa Indonesia

No	Items
Apakah anak anda merasa takut:	
1.	Pada dokter gigi?
2.	Pada dokter?
3.	Disuntik?
4.	Bila seseorang memeriksa mulutnya?
5.	Bila diminta membuka mulut?
6.	Bila ada orang yang tidak dikenal menyentuhnya?
7.	Bila diperhatikan oleh orang lain?
8.	Bila giginya di-bor oleh dokter gigi?
9.	Bila membayangkan giginya dibor dokter gigi?
10.	Pada suara bor dokter gigi?
11.	Bila seseorang memasukkan alat-alat dokter gigi ke dalam mulutnya?
12.	Tersedak oleh alat-alat dokter gigi?
13.	Bila harus pergi ke rumah sakit?
14.	Melihat orang berpakaian putih?
15	Bila perawat gigi membersihkan gigi dan mulutnya?

Table 2. Demographic and descriptive data

Age (years) (mean±SD)	5.56 ± 2.16	
Gender distribution	%	n
Girls	63.7	72
Boys	36.3	41
Dental visit	%	n
First	83	73.5
Recall	30	26.5

SD: standard deviation

The intraclass correlation coefficient (ICC 2,1; two observation time points of one item) was calculated within 10 days for two surveys in order to evaluate the reproducibility of the results (under constant conditions).[27] A random sampling strategy was used to select the patients, who were asked to complete the questionnaire at test-retest approach to maximize the probability that the patients who received the questionnaire were representative of the entire population.[28]

An ICC value of 0.00 indicated 'no reliability', >0.75 was defined as 'good' and 1.00 as 'perfect'.[27] Chronbach's alpha quantified the level of the relationship between different items within the questionnaire (internal consistency, homogeneity, item to total correlation), and thus determined how well the instrument, as a single entity, measured the individual properties (0.00 = none, 1.00 = perfect homogeneity).[27-29] Chronbach's alpha of the single items represents the homogeneity between the test–retest results. A Bland–Altman plot and analysis for assessing the agreement between the test and retest measurements was performed.[28]

The measuring instrument validity is defined as precision and accuracy of a measuring instrument related to its measuring function. One of the validity instruments is construct validity.[30] In general; the validity of an individual item is quantified by bivariate correlations between the item and a comparable instrument with the same construct. The construct validity was rated as follows: Spearman's rank correlation *r* š 0.81–1.0 excellent, 0.61–0.80 very good, 0.41–0.60 good, 0.21–0.40 sufficient, and 0.00–0.20.[19]

The statistical method used was descriptive statistic for age and sex/gender distributions. The CFSS-DS scale reliability was defined using the Cronbach coefficient for internal consistency. The test-retest reliability approach was quantified using the intraclass correlation coefficient ICC, resulting from analysis of variance. For every ICC coefficient, the corresponding 95% confidence interval is also stated as a measure of precision. The CFSS-DS validity was defined by construct validity exploration using factor analysis through Varimax rotation. The discriminant validity was analyzed using T-test based on the age group (3-6 years old and 7-12 years old) and also based on the information of previous visit/ never visit to the dentist. All statistical analysis was performed using Statistical Package Version 21.0 (SPSS Inc., Chicago, IL, USA) for Mac OSX.

RESULTS

The survey took place from December 2013 to the end of February 2014. One hundred and thirteen subjects out of 150 responded (75%), which consist of parents of 3-12 years old children (mean 5.56 ± 2.16). Of these, 30 were selected at random to create a subsample for the test-retest reliability testing. All the participants completed the questionnaire in the clinic.

The whole process (Stages 1-6) of transcultural adaptation and translation was implemented according to standardized guidelines.[27] The process of forward and backward translation ran without any major obstacle. Definitive adaptation took place at the consensus meeting and consisted mainly of simplification of the content of various questions. All transcultural adaptations correspond to colloquial speech in Indonesian-speaking areas.

In the pilot phase, the CFSS-DS was tested on parents of patients (n=50). There were no difficulties with the contextual interpretations of different points or with the grading of the response options. A sentences 'are your child afraid of…' as a heading sentence was added before the following items in order to increase ease of reading. Testing the scoring system consist of item analysis, CFSS-DS Reliability, CFSS-DS Factor Analysis, Discriminant Validity. Descriptive data of CFSS-DS distribution showed CFSS-DS score range from 15-69 (mean 27.62±11.77) with the Skew 1.519, and $S_{e\text{-}skew}$ .227. The distribution is asymmetric because the skewness value is more than two times higher than $S_{e\text{-}skew}$ value.

Arithmetic means and deviation standards of the component as a result of CFSS-DS subject (Table 3). The highest mean on subjects is found in the following CFSS-DS components: 3) injections, 8) the dentist drilling, 4) having somebody examine the mouth, 5) having to open your mouth, and 1) dentists.

The ICC values for the items ranged from 0.501 (Item 9) to 0.901 (item 1 and 2). The use of internal consistency determination is consistent for result validity exploration obtained from CFSS-DS scale. The highest score of Cronbach coefficient for internal consistency is α=0.966. The corrected value of total-items correlation (Table 5). The value for all scale items is indicated higher than the r value for an alpha of 0.05 and a degree of freedom of df=n-2=0.16, showing 15 valid scale items. The Pearson correlation value for the test-retest approach reliability shows a high correlation r=0.853 (p=0.000).

The CFSS-DS component factor analysis uses varimax rotation to explore psychometric instrument validity. Two factors are extracted using screen-test method with an Eigen value that is higher than 1, which explains 78.744% of variants. The CFSS-DS component analysis result is shown in Table 3.

Table 3. Descriptive (n=113) and reliability (n=30) data

	Item Content	Mean	SD	ICC	CA	$R_{item-total}$	Factors		Factors	
							1	2	1a	1b
1.	Dentists	2.00	.945	.901	.960	.548	.081	.909	.793	.335
2.	Doctors	1.59	.903	.901	.955	.827	.707	.479	.104	.843
3.	Injections	2.81	1.292	.720	.966	.395	.719	-.254		
4.	Having somebody examine the mouth	2.09	1.057	.804	.956	.735	.322	.865		
5.	Having to open your mouth	2.09	1.023	.788	.956	.739	.324	.876		
6.	Having a stranger touch you	1.65	.906	.832	.953	.898	.812	.465	.908	.302
7.	Having somebody look at you	1.64	.0887	.837	.953	.891	.812	.455	.901	.305
8.	The dentist drilling	2.14	1.209	.818	.959	.659	.731	.153	.392	.747
9.	The sight of the dentist drilling	1.60	.762	.501	.959	.598	.660	.167	.412	.603
10.	The noise of the dentist drilling	1.80	1.045	.818	.952	.915	.809	.456	.734	.575
11.	Having someone put instruments in your mouth	1.74	1.007	.753	.952	.918	.815	.473	.836	.433
12.	Choking	1.65	.924	.770	.953	.895	.821	.444	.880	.436
13.	Having to go to the hospital	1.69	9.83	.787	.952	.942	.832	.498	.918	.347
14.	People in white uniforms	1.57	.865	.900	.954	.869	.720	.541	.902	.232
15.	Having the nurse clean your teeth	1.56	.865	.900	.954	.868	.716	.544	.899	.233
	% of explained variance						67.944	10.800	73.690	8.560
	Eigen value						10.192	1.620	8.843	1.027

SD: standard deviation; CA: Chronbach's alpha; ICC: intraclass correlation coefficient

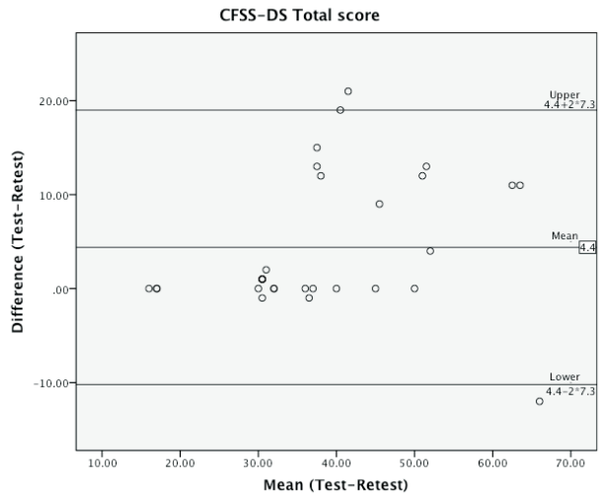

Figure 1. Bland-Altman plot of the difference against the mean for test-retest data.

The first factor explains 67.944% variants and shows CFSS-DS that illustrates a situation that is not related directly to dentist and varied. Therefore, for factor 1, the analysis factor was performed again (Table 3). Factor two explains 10.800% variants and shows CFSS-DS component that illustrates dentist directly (having to open your mouth).

The component factor analysis that is included in factor 1. Two factors are extracted using screen-test method with an Eigen value that is higher than 1, which explains 82.250% variants. Factor 1a (73.690%) explains the fear related to less-invasive relationship with dentist (doctors, having a stranger touch you, having somebody look at you). Factor 1b (8.560%) shows fear that is related to the invasive procedure (injections, the dentist drilling, the sight of the dentist drilling).

Scatter diagram of the differences plotted against the averages of test and retest measurements (Figure 1). The mean difference was 4.4 points, SD 7.3 (CFSS-DS total score test mean = 40.83, SD 14.06; CFSS-DS total score retest mean = 36.43, SD 12.34).

The pediatric patients in this study are differentiated based on age group and whether they have visited/never visited (recall/first visit) a dentist. The T-test result shows a significant difference of CFSS-DS value mean between children who have/have never visited dentist (p=.000), and also between 3-6 years old children and 7-12 years old children (p=.010).

DISCUSSION

Many studies on DF in children have been performed in several countries. As a culture and social norm, behavior can affect expression and fear development in children and, because of variations of dental treatment system in various cultures; normative data from every culture is needed. In this study, the Indonesian version of CFSS-DS showed good internal consistency, test-retest reliability, construct validity and discriminant.

The Indonesian version of scale is longer in sentences than the English version in some items due to be more understandable. Such as the word "choking" is added by the words "by dentist instrument", so it is more adaptable for participant to understand what it is meaning for without changing the purpose of the original question.

In the process of transcultural adaptation of the questionnaire, all the questions were worded precisely and comprehensibly. The question using word 'having' (item 4-7, 11, 13, and 15) was made more precise in the Indonesian version by use the phrase 'being…by….' (example: item 6: 'having a stranger touch you' transformed in to 'being touched by a stranger').

Studies in several countries support CFSS-DS as a psychometric instrument with high reliability to measure DF in children. The coefficient values of α Cronbach CFSS-DS in several studies are α=0.85 in Greek sample,[17] α=0.89 in Japanese sample,[3] α=0.861 in Bosnia Herzegovina children.[16] A value of α = 0.85is also resulted in a test in Dutch and Finland. The α Cronbach coefficient for internal consistency in this study is 0.956, which is similar to that of a study in Taiwan, α=0.90,[31] and in India, α=0.92.[32] Based on the result of other studies, it is predicted that this study result is based on the item description in the CFSS-DS scale that is quite distinct and easily understood by the subject.

Based on the CFSS-DS scale structure factor, there are three factors indicated, i.e. Factor I (explains 73.69% variants), which is characterized by fear due to less-invasive procedure; Factor II (explains 8.56% variants), which is characterized by dental invasive procedure characteristic.; and Factor III, which is marked by direct fear of dentist (explains 10.80% variants). Nakai *et al.*[3] also identified three factors while the study in Bosnia Herzegovina children identified four factors.[16]

The discriminant validity with t-test is applied to find the difference in DF level based on children groups (3-6 years old and 7-12 years old) and also based on dental visit experiences (previous visit or never visited). The test result shows a significant difference on DF score (p value = .000) in children who have visited/never-visited dentist. Children who have never visited a dentist show higher DF score (31.87±14.03) compared to the children who had visited dentist in the past (22.81±5.571). This result is relevant with the result from Yoshida's study showing that the CFSS-DS score mean for the first visit is 38.1±13.2 in the first visit and 23.8±7.1 in children who had visited dentist in the past.[33]

The T-test analysis shows a significant difference (p-value - .002) between the scores of 3-6 years old group (29.33±12.63) and 7-12 years group (22.90±6.042). This is in compliance with Raj's study that concludes that DF is reduced along with the increased age (CFSS-DF Score of 4-6 years old group is 28.78± 5.742 and for 10-14 years old group, it is 25.93± 5.586).

In conclusion CFSS-DS scale is reliable and valid psychometric instrument for dental fear evaluation in children in Bahasa Indonesia. The differences between this study and those of others may appear due to many factors, such as socioeconomic, parental age, and education background that was not being tested in this study.

REFERENCES

1. Nicolas E, Bessadet M, Collado V, Carrasco P, Rogerleroi V, Hennequin M. Factors affecting dental fear in French children aged 5-12 years. Int J Paediatr Dent 2010; 20(5): 366–73.
2. Gao X, Hamzah SH, Yiu YCK, McGrath C, King MN. Dental fear and anxiety in children and adolescents: qualitative study using youtube. J Med Internet Res 2013; 15(2): e29.
3. Nakai Y, Hirakawa T, Milgrom P, Coolidge T, Heima M, Mori Y. The children's fear survey schedule-dental subscale in Japan. Community Dent Oral Epidemiol 2005; 33(3): 196–204.
4. Sharma A, Tyagi R. Behavior assessment of children in dental settings: a retrospective study. Das UM, editor. Int J Clin Ped Dent 2011; 4(1): 35–9.
5. Shinohara S, Nomura Y, Shingyouchi K, Takase A, Ide M, Moriyasu K. Structural relationship of child behavior and its evaluation during dental treatment. J Oral Sci 2005; 47(2): 91–6.
6. Farhat-McHayleh N, Harfouche A, Souaid P. Techniques for managing behaviour in pediatric dentistry. J Can Dent Assoc 2009; 75(4): 283a-f.
7. De Jongh A, Schutjes M, Aartman IHA. A test of Berggren's model of dental fear and anxiety. Eur J Oral Sci 2011; 119(5): 361–5.
8. Kuthy RA, Pendharkar B, Momany ET, Jones MP, Askelson NM, Chi DL. Factors affecting age at first dental exam for Medicaid-enrolled children seen at Federally Qualified Health Centers. Pediatr Dent 2013; 35(3): E100–6.
9. Saraiva M, Bettiol H, Barbieri MA, Holanda L. P1-173 Delay in the first dental visit in a Brazilian cohort study. J Epid Comm Health 2011; 65(Suppl 1): A114–4.
10. Pohjola V, Mattila AK, Joukamaa M, Lahti S. Anxiety and depressive disorders and dental fear among adults in Finland. Eur J Oral Sci 2011; 119(1): 55–60.
11. Hägglin C, Carlsson SG, Hakeberg M. On the dynamics of dental fear: dental or mental? Eur J Oral Sci 2013; 121(3pt2): 235–9.
12. Carter AE, Carter G, Boschen M, AlShwaimi E, George R. Pathways of fear and anxiety in dentistry: A review. World J Clin Cases 2014; 2(11): 642-53.
13. Moore R. Psychosocial aspects of dental anxiety and clinical pain phenomena. Aarhus Universitet; 2000. p. 1–1.
14. Javadinejad S, Farajzadegan Z, Madahain M. Iranian version of a face version of the modified child dental anxiety scale: transcultural adaptation and reliability analysis. J Res Med Sci 2011; 16(7): 872-7.
15. Beena JP. Dental subscale of children's fear survey schedule and dental caries prevalence. Eur J Dent 2013; 7(2): 181-5.
16. Bajric E, Kobaslija S, Juric H. Reliability and validity of dental subscale of the children's fear survey schedule (CFSS-DS) in children in Bosnia and Herzegovina. Basic Med Sci 2011; 11(4): 214–8.
17. Arapostathis KN, Coolidge T, Emmanouil D, Kotsanos N. Reliability and validity of the Greek version of the children's fear survey schedule-dental subscale. Int J Paed Dent 2008; 18(5): 374–9.
18. Krikken JB, van Wijk AJ, Cate Ten JM, Veerkamp JS. Measuring dental fear using the CFSS-DS. Do children and parents agree?. Int J Paediatr Dent 2012; 23(2): 94–100.
19. Marginean I, Filimon L. Dental fear survey: a validation study on the romanian population. J Psych Educ Res 2011; 19(2): 124–38.
20. Singh P, Pandey RK, Nagar A, Dutt K. Reliability and factor analysis of children′s fear survey schedule-dental subscale in Indian subjects. J Ind Soc Pedod Prev Dent 2010; 28(3): 151.
21. El-Housseiny AA, Alamoudi NM, Farsi NM, El Derwi DA. Characteristics of dental fear among Arabic-speaking children: a descriptive study. BMC Oral Health 2014; 14: 118.
22. Kruse S, Schneeberg A, Brussoni M Construct validity and impact of mode of administration of the PedsQL among a pediatric injury population. Health Qual Life Outcomes 2014; 12(1): 168.
23. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. Spine (Phila Pa 1976) 2000; 25(24): 3186–91.

24. Rao CR, Sinharay S. Psychometrics. Elsevier; 2007. p. 34-57.
25. Lu Y, Fang JQ. Advanced medical statistics. World Scientific; 2003. p. 118.
26. Matthews DE, Farewell VT. Using and understanding medical statistics. Karger; 2007. p. 45-87.
27. Portney LG, Watkins MP. Foundations of clinical research: applications to practice. Pearson/ Prentice Hall; 2009. p. 67-99.
28. DeVon HA, Block ME, Moyle-Wright P, Ernst DM, Hayden SJ, Lazzara DJ, Savoy SM, Kostas-Polston E. A psychometric toolbox for testing validity and reliability. J Nurs Scholars 2007; 39: 155–64.
29. Everitt BS. Medical statistics from A to Z: a guide for clinicians and medical students. Cambridge University Press; 2006. p.24-89.
30. Feinstein AR. Principles of medical statistics. Taylor & Francis; 2001. p. 45-51.
31. Lee C-Y, Chang Y-Y, Huang S-T. Higher-order exploratory factor analysis of the dental subscale of children's fear survey schedule in a Taiwanese population. Community Dent Health 2009; 26(3): 183–7.
32. Singh-Manoux A, Hillsdon M, Brunner E, Marmot M. Effects of physical activity on cognitive functioning in middle age: evidence from the whitehall II prospective Cohort study. Am J Pub Health 2005; 95(12): 2252–8.
33. Yoshida T, Nakai Y, Matsumi Y, Murakami. Does regular attendance decrease children's dental fear? a longitudinal study. Washington: Proceeding IADR Conference; 2013. p. 56-61.
34. Raj S, Agarwal M, Aradhya K, Konde S, Nagakishore V. Evaluation of dental fear children during dental visit using children's fear survey schedule-dental subscale. Int J Clin Ped Dent 2013; 6(1): 12-5.

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