

Parents' perspectives on the impact of dental caries on oral health-related quality of life in preschool children

¹Dr Sunny Tandon, ²Dr. Disha Chopra, ³Dr Ashim Aggarwal, ⁴Dr Shivani Aggarwal, ⁵Dr. Anchal Varshney, ⁶Dr Raju Sharma

¹Senior Lecturer, Pedodontics & Preventive Dentistry Department, J.N. Kapoor, D.A.V Centenary Dental College Yamunanagar Haryana

²Senior Resident, Department of Dental Surgery, VMMC and Safdarjung Hospital, New Delhi

³Prof & Head, Department of Oral Surgery, Manav Rachna Dental College, FDS, MRIIRS, Faridabad, Haryana

⁴Prof & Head, Department of Oral Pathology, Manav Rachna Dental College, FDS, MRIIRS, Faridabad, Haryana

⁵Senior Lecturer, Department of Oral Pathology, Manav Rachna Dental College, FDS, MRIIRS, Faridabad, Haryana

⁶Ex Reader, Department of Pediatric dentistry, Maharaja Ganga Singh Dental College, Shri Ganganagar, Rajasthan

Corresponding Author: Dr Sunny Tandon (sunny14zpedo@yahoo.com)

Abstract:

Background- Dental caries negatively impacts the oral health of both children and their parents. The purpose of this study was to see how oral and dental health issues influenced the oral health-related quality of life of preschool children and their parents.

Methodology- Children aged 3 to 6 years old from licensed kindergartens were sampled by "proportional allocation" sampling in this cross-sectional study. The children's parents were requested to fill the Early Childhood Oral Health Impact Scale (ECOHIS).

Results- 350 children aged 3 to 6 years were tested in this study, with an average age of 4.73 years. 3.94 ± 4.17 was the mean dmft index (decayed, missing, and filled teeth). The mean score for oral health-related quality of life was 11.88 ± 6.9 , with the impact on children accounting for 9.36 ± 5.02 points and the influence on parents accounting for 2.52 ± 3.20 points.

Conclusion- In youngsters, the mean ECOHIS score increased as the dmft index increased, demonstrating a substantial link among the dmft and the ECOHIS score. These findings can be utilized to design preventive programs and boost oral health among young children.

Keywords: Parents, Child, Oral Health, Quality of life.

Background:

Quality of life is defined by the World Health Organization as "a person's perceptions of their position in life according to their culture, goals, expectations, standards, and priorities." As a result, it is personal and not visible to others, and it is founded on a person's comprehension of various areas of life. As a result, each person's quality of life is determined by their conditional features as well as their cultural and social position [1, 2].

Nowadays, health is viewed as a full notion which incorporates a variety of factors, including physical, emotional, social, and spiritual well-being. "A comfortable and effective dentition that permits individuals to continue their social role" is another definition of oral health. As a result, oral health encompasses more than the absence of gum disease, dental caries, or even the presence of healthy teeth [3]. One of the factors of quality of life is oral health. The craniofacial complex is responsible for our ability to laugh, speak, touch, kiss, weep, chew, and swallow. Oral and dental illnesses often pose limitations in the school and home contexts, resulting in missed school and work hours. Poor oral health negatively affects one's quality of life. Pain, chewing and swallowing issues, dental abscesses, embarrassment about tooth shape or missing teeth, and tooth discolouration or caries can all have an impact on everyday life and people's comfort. Because dental caries and traumatic dental injuries (TDI) are the most commonly affecting problems of young children in both developed and developing countries worldwide [4, 5], various studies in recent years have been directed on the impact of oral health on quality of life [6], particularly in young children.

Tooth caries and dental injuries in children can have a significant influence on the children's and parents' oral health-related quality of life [7–9]. Many caries is also left untreated in this age range, that has an influence on children's weight, growth, quality of life, and cognitive development, as well as hospitalization and emergency dental visits [4]. Early childhood caries (ECC) is a prevalent dental disease that affects newborns and toddlers all over the world [10]. Untreated early childhood caries (ECC) has a significantly lower dental health-related quality of life than ECC-free children [11]. Evidence also shows that ECC causes parents to miss workdays in order to care for their children or to spend time and money

on dental treatment [8]. Furthermore, because parents play an essential character in their children's oral health and in obtaining dental care, they are more likely to feel guilty when their child has oral health concerns and/or treatment requirements [12].

Experts have employed a variety of methods to measure Oral Health-Related Quality of Life (OHRQoL), some of those are specifically created for children under the age of six [4, 13]. Meetings with children who can speak and write, as well as surveys completed by children or their parents, are generally used to examine these parameters. Due to their incapacity to read and write, the Early Childhood Oral Health Impact Scale (ECOHIS) is now one of the most acceptable procedures for measuring the oral health-related quality of life in children [6, 14].

Pahel [15] devised the questionnaire, which was translated and assessed for usage in other countries such as France, China, Brazil, and Iran [15–19].

Dr. Jabbarifar et al. investigated the validity and reliability of the Persian version of the Scale using a questionnaire completed by 246 parents of children aged 2 to 5 years in Tehran and Isfahan after translating the Scale into Persian. The Persian version of the ECOHIS was found to be valid and reliable in assessing the effects of oral health on the quality of life of preschool children with Persian-speaking parents [20].

Given the importance of patient-centered approaches to clinical decision-making in recent years and the attention paid to the oral health-related quality of life in dentistry, the current research was directed to investigate the effect of oral health on the quality of life of preschool children and their parents in Firozabad, UP 283203.

Methodology:

The Research was conducted from 2nd Jan – 14th March. The rights of all participants were safeguarded. Before the study, parents gave their informed consent. Furthermore, the data was managed anonymously and privately throughout the research process.

Study population and sampling- Using 0.05 Type I and 0.2 Type II error rate, a sample size of 330 preschool children were assessed. In addition, 20% was added to account for possible losses, resulting in a total sample of 350 preschool children.

This cross-sectional descriptive-analytical study involved 350 children aged 3–6 years who were chosen from around 6000 children enrolled in Firozabad, UP 283203 kindergartens. As a result, a list of kindergartens in Firozabad, UP 283203 three municipality districts was compiled. The number of children in each municipality district's kindergartens was then calculated, and the number of children in each district was determined. A large number of kindergartens were chosen at random (each kindergarten was assigned a number, and the numbers were chosen at random).

Children aged 3–6 years old whose parents spoke Hindi fluently were chosen. A history of systemic disorders or taking specific medications were both factors for exclusion. Parents who did not fill out the questionnaires were also not included in the study.

The goal of the study was elucidated to kindergarten teachers in the first session. Then, preschool educators and administrators were given demographic questionnaires as well as consent forms to fill out by parents. Data on the child's gender, age, ethnicity, birth order, and parents education level were included in the demographic information.

Questionnaires and data collection- The parents then completed the Hindi version of the Early Childhood Oral Health Impact Scale in the following session. The questionnaire consists of 13 questions, classified into two sections: "impact on children" and "impact on parents". The first 9 questions of the questionnaire examine the impact of the children's oral health, including items such as talking, sleeping, and eating. The second section, "impact on parents", has 4 questions in 2 subscales: parents' concerns (2 questions) and parents' functions (2 questions).

The response choices were "never," "rarely," "occasionally," "often," "very often," and "don't know," with scores ranging from 0 to 5. The remaining components for each part were averaged to calculate a score for the missing things. The overall score of this index goes from 0 to 52, with a higher total score suggesting more oral health issues and a lower quality of life connected to oral health.

Children's oral examination- The researcher used dental diagnostic instruments to measure the dmft index (decayed, missing, and filled teeth) according to the World Health Organization standards. Furthermore, all of the oral examinations were conducted by a single investigator who had been trained and calibrated. As a result, only intra-examiner dependability was assessed. To establish intra examiner reliability, the oral examination of ten randomly nominated participants was done twice. The intra examiner reliability Kappa coefficient was 0.87. It might be translated as "excellent."

The youngster was sit down on a chair in front of a window for clinical examination, and a torch was used if needed. Furthermore, in the oral health evaluation forms, another individual earlier trained by the

project manager recorded the codes for the dmft index (provided by the World Health Organization).

Data analysis- The SPSS program version 16 was used to analyze the data, which included mean, standard deviation, frequency, and percentage. The Shapiro–Wilk test was then used to determine the data's normality. For data with a normal distribution, the Independent t-test was used, and for data without a normal distribution, the Mann–Whitney test was employed. Significant P-values were defined as those less than 0.05.

Results:

350 children aged 3–6 years, with a mean age of 4.73 years, were studied, with 189 (54%) males and 161 (46%) females. In addition, 228 children were born first, 106 were born second, and 16 were born third or fourth.

The primary teeth had the lowest and highest dmft index of 0 and 20, individually, with an average of 3.94 and a standard deviation of 4.17. In this study, the decaying teeth (d) component was associated with a larger proportion (89.85 percent) of the dmft index.

There was no significant association among the mean dmft index and the family's gender or birth order, according to the findings. Though, child age, ethnicity, and parent's education level all demonstrated a significant connection with the mean dmft index (P 0.05).

Furthermore, no significant relationship was found among the mean score of oral health-related quality of life and gender, family birth order, or ethnicity. Despite this, the mean score of oral health-related quality of life was shown to be strongly linked with the child's age and parents' educational level (P 0.05). (Table 1).

Table 1: Mean of dmft score and Impact on oral health-related quality of life according to independent variables

Variables	N(%)	dmft Score		P-value	Impact on OHRQoL		P-value
		Mean	SD		Mean	SD	
Gender							
Boys	189(54%)	3.93	4.22	0.935*	11.27	6/60	0.09**
Girls	161(46%)	3.63	4.12		12.59	7/22	
Child's age							
2 ≤age<3	51(14%)	1.94	2.28	>0.0001****	8.21	4.87	>0.0002***
3 ≤age<4	94(27%)	3.10	3.48		11.54	6.63	
4 ≤age<5	104(30%)	3.84	3.28		12.88	6.68	
5 ≤age<6	101(29%)	6.07	5.23		13	7.67	
Mother's education							
Illiterate/Elementary	21(6%)	8.05	5.35	>0.0001****	13.85	6.62	>0.001***
Secondary	18(5%)	6.38	3.36		16.22	7.28	
Diploma	91(26%)	4.96	4.39		13.35	7.62	
University	220(63%)	2.93	3.57		10.72	6.33	
Father's education							
Illiterate/Elementary	16(4%)	6.87	4.47	>0.0001****	15.81	8.19	0.004***
Secondary	34(10%)	6.35	4.82		13.50	7.45	
Diploma	84(24%)	5.34	4.68		13.20	7.21	
University	216(62%)	2.81	3.35		10.81	6.40	
Birth order							
First child	228(65%)	3.85	3.98	0.457***	11.81	6.82	0.450***
Second child	106(30%)	3.97	4.54		12.26	7.23	
Third child	16(5%)	5.43	4.21		10.31	6.20	

* Calculated by independent T-test

** Calculated by Mann–Whitney test

*** Calculated by Kruskal Wallis test

**** Calculated by analysis of variance (ANOVA) test

The mean score for oral health-related quality of life was 11.88± 6.91 (range 0–33); the kid impact was

9.36 ±5.02 (range 0–25), and the parent impact was 2.52 ±3.20 (range 0–16) (Table 2).

Table 2: ECOHIS responses in the survey of parents of 3–6-year-olds (N = 350)

Impacts	Never (%)	Hardly ever (%)	Occasionally (%)	Often (%)	Very often (%)	Don't know (%)
Child impact						
Oral/ dental pain	169(48.3)	75(4.21)	58(6.16)	35(10)	12(4.3)	1(3.0)
Difficulty drinking	249(1.71)	48(7.13)	23(6.6)	16(6.4)	8(3.2)	6(7.1)
Difficulty eating	204(3.58)	66(9.18)	36(3.10)	22(3.6)	16(6.4)	6(7.1)
Difficulty pronouncing words	186(1.53)	95(1.27)	21(6)	22(3.6)	19(4.5)	7(2)
Missing preschool or school	32(1.9)	87(9.24)	109(1.31)	74(1.21)	43(3.12)	5(4.1)
Trouble sleeping	61(4.17)	124(4.35)	67(1.19)	52(9.14)	41(7.11)	5(4.1)
Irritable or frustrated	94(9.26)	117(4.33)	73(9.20)	41(7.11)	21(6)	4(1.1)
Avoid smiling or laughing	154(44)	101(9.28)	27(7.7)	15(3.4)	10(9.2)	43(3.12)
Avoid talking	180(51.4)	82(23.4)	27(7.7)	16(4.6)	10(9.2)	35(10)
Parent's impact						
Been upset	186(1.53)	82(4.23)	42(12)	27(7.7)	8(3.2)	5(4.1)
Felt guilty	218(3.62)	78(3.22)	17(9.4)	16(6.4)	12(4.3)	9(6.2)
Time off from work and home	240(6.68)	45(9.12)	41(7.11)	12(4.3)	8(3.2)	4(1.1)
Financial impact	225(3.64)	50(3.14)	35(10)	16(5.4)	8(3.2)	16(6.4)

According to the findings, as the children's dmft index increased, so did their mean score for oral health-related quality of life (Table 3). In comparison to the kid impact, this relationship was more substantial in the family effect. It should be emphasized that a rise in the mean quality of life score indicated a worsening of oral health.

Table 3: Impact of severity of caries on oral health-related quality of life—child and family impact section

	dmft=0 (Caries free)	1 ≤ dmft ≤ 5	dmft ≥ 6	Total	P-value
N (%)	111(31.7%)	136(38.9%)	103(29.4%)		
COHIS (Child impact section)	8.42±4.24	9.66±5.30	9.96±5.32	9.36±5.02	0.05*
ECOHIS (Family impact section)	0.87±1.70	2.72±3.25	4.01±3.57	2.52±3.20	0.000*
Total	9.29±5.04	12.38±8.25	13.97±8.89	11.88±6.91	

Discussion:

The mean score of oral health-related quality of life in preschool children in Firozabad, UP 283203 was 11.88± 6.91, which agrees with a study by Amirabadi et al. [21] in preschool children in Zahedan (10.94 ±7.69) and other research in preschool children in Babol (6.65 ±3.57) [22]. Furthermore, Sajjadi et al. found that the ECOHIS score for Kerman preschool children was 4.07± 0.79 for children and 3.28± 0.83 for their parents in research of Kerman preschool children [23]. According to research by Shaghagheian et al. [24], preschool children in Shiraz had an ECOHIS score of 19.46 ±8.42. Discrepancies between our findings and those of a prior study can be explained by the use of different answer scores and ECOHIS score analysis. The scores of the responses according to the actual questionnaire (ECOHIS) [15] ranged

from 0 to 4 in the current study, and therefore the total scores ranged from 0 to 52, whereas the scores of the responses ranged from 1 to 5 in some of the above studies, and thus the totality of the scores ranged from 13 to 65. A lower score suggests a higher quality of life associated with oral health, it appears that the contributors had a good quality of life.

In the current investigation, the mean dmft index was 3.93 ± 4.22 , compared to 1.54 ± 2.47 in a Mexican study by Segovia-Villanueva et al. [25] and 2.1 ± 3.1 in a Brazilian study by Scarpelli et al. [19]. According to these investigations, the children in the current study had worse dental health than the children in the previous research. However, when likened to the mean dmft index of Babol (4.39 ± 3.69) and Kerman (5.6 ± 3.6) preschool children, the latest research participants had higher scores [22, 23].

The current study's findings revealed that as the mean dmft index climbed, so did the total score of oral health-related quality of life. Findings in our research are also consistent with earlier research [7–10] that looked at the effects of dental caries on preschool children's OHRQoL. This outcome was stronger on parents' quality of life than on children's, showing that children's oral health has a higher influence on parents' quality of life than it does on children's quality of life. The significance of the health of children for parents is the reason for this discovery. Parents are normally very anxious about their children's health, although youngsters may lack perspective and insight; as a result, parents' quality of life is impacted more than children's. Sakaryali et al. also found that either basic or severe ECC both causes functional and aesthetic issues in children, as well as affecting parents' daily lives [8].

Furthermore, according to the findings of the Paula et al. [26] study, the mean score of quality of life connected to children's dental health declined as parents' education level grew. Children from high-income and well-educated families had improved oral health-related quality of life, according to Kumar et al. [27]. Nanayakkara also discovered that children with less-educated fathers had higher dmft scores and a lower oral health-related quality of life [28]. The findings of our research were also consistent with a Diaz et al. [7] observation that revealed a link between mother's education and better preschool children's OHRQoL, as measured by the Colombian ECOHIS. Given the stronger effect of a mother's education than a father's, as demonstrated in the current research, it can be inferred that moms are more active in enhancing children's oral health-related quality of life. According to Sajjadi et al. [23], the OHRQoL improved solely when the education of the mother rose, whereas the father did not affect the OHRQoL. Greater general and specialized knowledge are usually expected to result in amplified health awareness, particularly oral health mindfulness, or make parents more worried about their children's dental health. Decreased education levels, on the other hand, can lead to lower-income, unemployment, and poor working circumstances, all of which can have an impact on health-related behaviors and oral health.

In addition, Nemati et al. [22], reported no significant difference in the influence of oral health on quality of life among girls and boys. The reason for this is that the children in this study were extremely young (preschool), and gender disparities in these children's awareness of the aesthetic components of oral health may not have yet influenced their knowledge.

The findings of this research revealed a significant association among the age and mean score of oral health-related quality of life, that was similar to the findings of a study by Li et al., who found that quality of life had a significant relationship with age, i.e. that as one gets older, the impact of oral health on quality of life increases [29]. Reduced oral health-related quality of life as children get older is to be expected, as teeth exposure to risk factors increased as they get older, and hence the children would suffer more. In other words, masticatory and communication problems are more obvious at 5–6 years of age than at 3–4 years of age; however, the continuation of the problem until later ages will catch the attention of the parents. Another conclusion of our study, similar to that of Sakaryali et al. [8], was that the child's birth order in the household had no significant relationship with OHRQoL.

This study had some flaws, such as some children refusing to cooperate during their dental examinations, some parents refused to answer few questions, and some kindergarten officials refusing to comply.

Furthermore, the current study focused solely on preschool children in kindergartens. To confirm the current study's findings, more population-based research on OHRQoL valuation of preschool children residing in Firozabad, UP 283203 is needed.

Conclusion:

The current research found that Firozabad, UP 283203 preschool children's dental health had an impact on their own and their parents' quality of life. In youngsters, the mean ECOHIS score increased as the dmft index increased, demonstrating a substantial link among the dmft and the ECOHIS score.

On a national level, these findings can be used to design preventive programs and enhance oral health in early childhood.

References:

1. Bonomi AE, Patrick DL, Bushnell DM, Martin M. Validation of the United States' version of the World Health Organization Quality of Life (WHOQOL) instrument. *J Clin Epidemiol.* 2000;53(1):1–12.

2. Organization WH. WHOQOL-BREF: introduction, administration, scoring and generic version of the assessment: field trial version, December 1996. Geneva: World Health Organization; 1996.
3. Daly B, Batchelor P, Treasure E, Watt R. Essential dental public health. Oxford: OUP; 2013.
4. Abanto J, Tsakos G, Paiva SM, Carvalho TS, Raggio DP, Bonecker M. Impact of dental caries and trauma on quality of life among 5-to 6-year-old children: perceptions of parents and children. *Commun Dent Oral Epidemiol*. 2014;42(5):385–94.
5. Gomes MC, de Almeida Pinto-Sarmento TC, de Brito Costa EMM, Martins CC, Granville-Garcia AF, Paiva SM. Impact of oral health conditions on the quality of life of preschool children and their families: a cross-sectional study. *Health Qual Life Outcomes*. 2014;12(1):55.
6. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century—the approach of the WHO Global Oral Health Programme. *Commun Dent Oral Epidemiol*. 2003;31:3–24.
7. Diaz S, Mondol M, Peñate A, Puerta G, Bonecker M, Martins Paiva S, et al. Parental perceptions of impact of oral disorders on Colombian preschoolers' oral health-related quality of life. *Acta Odontol Latinoam: AOL*. 2018;31(1):23–31.
8. Sakaryali D, Bani M, Cinar C, Alacam A. Evaluation of the impact of early childhood caries, traumatic dental injury, and malocclusion on oral health-related quality of life for Turkish preschool children and families. *Niger J Clin Pract*. 2019;22(6):817–23.
9. Rajab LD, Abdullah RB. Impact of dental caries on the quality of life of preschool children and families in Amman, Jordan. *Oral Health Prev Dent*. 2020;18(1):571–82.
10. Mansoori S, Mehta A, Ansari MI. Factors associated with oral health related quality of life of children with severe—Early Childhood Caries. *J Oral Biol Craniofac Res*. 2019;9(3):222–5.
11. Sheiham A. Dental caries affects body weight, growth and quality of life in pre-school children. *Br Dent J*. 2006;201(10):625–6.
12. Gomes MC, Clementino MA, Pinto-Sarmento TC, Martins CC, Granville-Garcia AF, Paiva SM. Association between parental guilt and oral health problems in preschool children: a hierarchical approach. *BMC Public Health*. 2014;14:854.
13. McGrath C, Broder H, Wilson-Genderson M. Assessing the impact of oral health on the life quality of children: implications for research and practice. *Commun Dent Oral Epidemiol*. 2004;32(2):81–5.
14. Barbosa TDS, Gavião MBD. Evaluation of the family impact scale for use in Brazil. *J Appl Oral Sci*. 2009;17(5):397–403.
15. Pahel BT, Rozier RG, Slade GD. Parental perceptions of children's oral health: the Early Childhood Oral Health Impact Scale (ECOHIS). *Health Qual Life Outcomes*. 2007;5(1):6.
16. Tesch FC, Oliveira BHD, Leão A. Semantic equivalence of the Brazilian version of the early childhood oral health impact scale. *Cadernos de saude publica*. 2008;24(8):1897–909.
17. Lee GH, McGrath C, Yiu CK, King NM. Translation and validation of a Chinese language version of the Early Childhood Oral Health Impact Scale (ECOHIS). *Int J Pediatr Dent*. 2009;19(6):399–405.
18. Lee GH, McGrath C, Yiu CK, King NM. Sensitivity and responsiveness of the Chinese ECOHIS to dental treatment under general anaesthesia. *Commun Dent Oral Epidemiol*. 2011;39(4):372–7.
19. Scarpelli AC, Oliveira BH, Tesch FC, Leão AT, Pordeus IA, Paiva SM. Psychometric properties of the Brazilian version of the early childhood oral health impact scale (B-ECOHIS). *BMC Oral Health*. 2011;11(1):19.
20. Jabarifar S-E, Golkari A, Ijadi MH, Jafarzadeh M, Khadem P. Validation of a Farsi version of the early childhood oral health impact scale (F-ECOHIS). *BMC Oral Health*. 2010;10(1):4.
21. Amirabadi F, Rahimian-Imam S, Ramazani N, Saravani S, Kameli S. Evaluation of dental status and its association with oral health-related quality of life in preschool children in Zahedan City, Iran: a cross-sectional study. *Middle East J Rehabil Health*. 2017;4(1):1–5. e37043. <https://doi.org/10.17795/mejrh-37043>.
22. Nemati S, Ghasempour M, Khafri S. Impact of oral and dental health on quality of life in Iranian preschool children and their families. *Electron Phys*. 2016;8(11):3296.
23. Sajadi FS, Pishbin L, Azhari SH, Moosazadeh M. Impact of oral and dental health on children's and parents' quality of life based on Early Childhood Oral Health Impact Scale (ECOHIS) Index. *Int J Dent Sci Res*. 2015;3(2):28–31.
24. Shaghaghian S, Bahmani M, Amin M. Impact of oral hygiene on oral health-related quality of life of preschool children. *Int J Dent Hyg*. 2015;13(3):192–8.
25. Segovia-Villanueva A, Estrella-Rodríguez R, Medina-Solís CE, Maupomé G. Dental caries experience and factors among preschoolers in Southeastern Mexico: a brief communication. *J Public Health Dent*. 2006;66(2):88–91.

26. Paula JS, Leite IC, Almeida AB, Ambrosano GM, Pereira AC, Mialhe FL. The influence of oral health conditions, socioeconomic status and home environment factors on schoolchildren's self-perception of quality of life. *Health Qual Life outcomes*. 2012;10(1):6.
27. Kumar S, Kroon J, Lalloo R. A systematic review of the impact of parental socio-economic status and home environment characteristics on children's oral health related quality of life. *Health Qual Life Outcomes*. 2014;12(1):41.
28. Nanayakkara V, Renzaho A, Oldenburg B, Ekanayake L. Ethnic and socioeconomic disparities in oral health outcomes and quality of life among Sri Lankan preschoolers: a cross-sectional study. *Int J Equity Health*. 2013;12(1):89.
29. Li S, Veronneau J, Allison PJ. Validation of a French language version of the early childhood oral health impact scale (ECOHIS). *Health Qual Life Outcomes*. 2008;6(1):9.