

Fathers vs. Mothers: Evaluation of Parent Proxies for Early Childhood Dental Visits in an Indian Population

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Abstract

Context: Dental disease during early childhood can affect the oral health related quality of life, without timely treatment; which can be facilitated by the child's caregiver.

Objectives: To study the differences in perception of early childhood oral health related quality of life between fathers and mothers having children below six years of age, and to establish which parent can act as the child's dental proxy.

Study Design: A questionnaire study was conducted among parents of sixty-nine children visiting the Department Of Pedodontics, Manipal College of Dental Sciences, Mangalore.

Methods and Material: The children were examined for the dmft (decayed, missing, filled teeth) scores, while their parents were asked to fill the ECOHIS (Early Childhood Health Impact Scale) questionnaire. The correlation between the ECOHIS scores and dmft was then compared.

Statistical analysis used: A paired t-test was used to compare the fathers' and mothers' responses. The reliability of the questionnaire and the parents' responses was determined using Cronbach's alpha. Correlation of ECOHIS scores to the dmft values was done using a linear regression model.

Results: The mothers' ECOHIS responses had a significant correlation with the dmft scores of the child. Hence, the mothers had a more accurate knowledge about the child's oral health than the fathers.

Conclusion: The study helped determine that mothers can be reliable dental proxies for their children below six years of age.

Keywords: Child's dental proxy; dmft; ECOHIS

Impact Scale (ECOHIS) which was developed and validated in English in the United States [2].

The Early Childhood Oral Health Impact Scale (ECOHIS) is a thirteen question instrument designed to assess the impact of oral health problems and related treatment on the quality of life of preschool children (below six years of age) and their families. It is divided into two parts, namely the Child Impact section and Family Impact section. As the name suggests, the child impact scale assesses the impact of oral disease on the child, whereas the family impact scale assesses the impact of oral disease on the family.

The questionnaire is scored using a simple five-point Likert Scale, with responses ranging from "never" to "very often" (equivalent to a score of 0 to 4 respectively) with a "don't know" option. The individual item scores are simply added to create a total scale score which ranges from 0 to 52. Higher scores denote a greater oral health impact and/or poorer Oral Health Related Quality of Life (OHRQOL) and vice versa.

ECOHIS has been found to be adaptable to a variety of languages and cultures, having been validated in French [6], Spanish [7], Portuguese [8] and Farsi [9].

Preschool children may suffer from a number of oral health problems such as teething pains, early childhood caries (ECC) and dental trauma. According to a study done in Bangalore in 2012, the prevalence of ECC was 27.5% and the mean dmft score was 0.854 [10]. The prevalence of ECC has a significant effect on the child's quality of life (QOL) [11]. The QOL of a child with ECC only improves with proper dental treatment [5].

Children below six years of age have difficulty in understanding basic health concepts and are incapable of adequately assessing themselves [12]. Children's self-concept and health recognition is age dependent, and results from continuous cognitive, emotional, social and language development. According to child development psychology, the age of six marks the beginning of abstract thinking and self-concept [13]. This necessitates the ECOHIS questionnaire to be filled by a parental proxy.

Introduction

The assessment of quality of life is an integral part of evaluating health programs [1]. Oral Health Related Quality of Life (OHRQOL) evaluates the impact of oral health problems on an individual's physical, mental, social health and well-being [2]. In recent years, numerous instruments have been developed to improve and validate OHRQOL in children and adolescents [3, 4, 5]. One such instrument is the Early Childhood Oral Health

Societal, cultural and economic changes in the past few decades have led to a change in parenting roles. In the present day family, fathers have to take an active role in everyday care and nurturing of children. Medical research has shown that fathers are becoming more involved with their children, and partake in attending the child's well-care visits [14,15]. It has also been reported that involvement of both parents is ideal for the child's development and well-being. A study done in Saudi Arabia, to determine perceptual differences between fathers and mothers, on the impact that oral health has on the child, suggested fathers have significantly less accurate knowledge of the OHRQOL of their children than mothers [16]. This gives rise to the question as to whether the father can act as a suitable dental proxy for the child in our society.

Thus this study aims to determine which parent is the more suitable dental proxy for his/her child by studying the differences in perceptions of early childhood oral health related quality of life between fathers and mothers.

Subjects and Methods

Institutional ethics approval was obtained before the commencement of the study. The English version of the Early Childhood Oral Health Impact Scale (ECOHIS) was translated to Kannada and the validity of the questionnaire was assessed by the well-accepted forward-backward translation technique recommended by Guillemin *et al* [17].

A written informed consent was obtained from the parents of the children participating in the study. The questionnaire, either the English or Kannada version, depending on the parent's preference, was then administered to the parents. A total of sixty-nine children, aged two to six years of age, visiting the Department of Pedodontics, Manipal College of Dental Sciences, Mangalore were included in the study. To ensure pairing between the responses of the father and the mother, only children accompanied by both the parents were included in the study. A comprehensive extra-oral and intra-oral examination of the children was also done and their dmft scores were recorded using a ball ended probe and mouth mirror, in a dental chair with illumination.

The completed questionnaires were collected and the responses were scored, with the scores ranging from zero (for never) to a maximum of four (for very often). The total scores for the Child Impact section, the Family Impact Section and the ECOHIS overall were calculated, along with the number of "don't know" responses. These were then compared between the fathers and the mothers.

The data collected was analysed using SPSS (version 17, IBM, Armonk, NY, USA). Demographic data such as age of the child, age of the parent and mean dmft score were tabulated.

The reliability of the questionnaire and the fathers' and mothers' responses was determined using Cronbach's alpha. The fathers' and mothers' responses were then compared using paired t-test, in three categories – child impact, family impact and ECOHIS overall. Also, a linear regression model was made using

the dmft as the dependent variable and the ECOHIS scores of the fathers and the mothers as co-variants, to determine which parent had a more accurate insight into their child's oral health.

Results

A total of sixty-nine children participated in the study, forty boys and twenty-nine girls, with an average age of 4.96 ± 1.11 years. Among the parents that participated in the study, the mean age of the fathers was 38.9 years ± 6.6 years; while the mean age of the mothers was 31.1 years ± 4.8 years. The mean dmft score for the study sample was 5.36 ± 3.0. Table 1

The fathers had a much higher number of don't know responses (105) as compared to the mothers (33) and this difference was found to be statistically significant (p<0.001). The mothers recorded higher scores for each of the sections of the ECOHIS questionnaire, namely the child impact, family impact and ECOHIS score overall as compared to the fathers Figure 1.

The paired t-test done to compare the fathers' and mothers' responses on their views on the impact of the child's oral health, showed that the fathers' and mothers' views were significantly different (P<0.001) regarding the impact of oral health problems on the child, and the overall impact. However, the views of both the fathers and mothers regarding the impact the child's oral health problems had on the family, were not significantly different (P=0.211) Table 2.

The reliability of parent responses was calculated using Cronbach's alpha. There was good agreement between fathers and mothers responses for both the family impact and child

Table 1: Parent age & dmft.

		Father's Age	Mother's Age	dmft
N	Valid	66	63	69
	Missing	3	6	0
Mean		38.97	31.13	5.36
Std. Deviation		6.619	4.878	3.044
Range		34	20	12
Minimum		28	24	1
Maximum		62	44	13

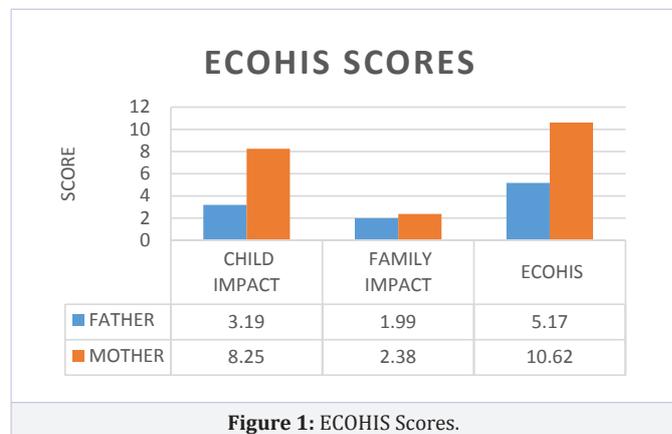


Table 2: Comparison of Fathers and Mothers Scores.

		Mean Score	N	Standard Deviation	Paired Differences		T	df	P VALUE
					Mean Difference	Std. Deviation			
Child Impact	Father	3.19	69	5.574	-5.058	5.501	-7.638	68	<0.001*
	Mother	8.25	69	5.939					
Family Impact	Father	1.99	69	3.027	-0.391	2.574	-1.263	68	0.211
	Mother	2.38	69	2.269					
Ecohis	Father	5.17	69	7.784	-5.449	7.099	-6.376	68	<0.001*
	Mother	10.62	69	7.025					

*P<0.05 is significant; P<0.01 is highly significant

impact parts of the questionnaire. Table 3

The reliability of the fathers' and mothers' responses was also determined using Cronbach's alpha and both the fathers' and mothers' responses were found reliable, as Cronbach's alpha value is greater than 0.8. Table 4

Finally, the linear regression model was done in order to compare the fathers' and mothers' responses with the dmft scores Table 5 & Table 6. It showed a positive correlation between the dmft scores and the fathers' and mothers' ECOHIS scores.

Linear regression

However, when a linear regression model was made,

Table 3: Reliability of Parent Responses.

Category	Cronbach's alpha
Child Impact	0.912*
Family impact	0.805*
*Cronbach's alpha>0.7 is acceptable	

Table 4: Reliability of the fathers' and mothers' responses.

Parent's responses	Cronbach's alpha
Father	0.880*
Mother	0.706*
*Cronbach's alpha <0.7 is acceptable	

Table 5: Relationship between fathers' responses and dmft.

Coefficients**						
Model		Unstandardized Coefficients		Standardized Coefficients	t	P VALUE
		B	Std. Error	Beta		
		1	(Constant)	4.816		
	FATHER ECOHIS	.106	.046	.270	2.293	.025*

** Dependent Variable: dmft; *P<0.05 is significant

comparing both father's and mother's responses simultaneously, with the child's dmft; it showed that mother's ECOHIS has a significant correlation, while the father's responses do not. Table 7& Figure 2

Discussion

Pediatric dentists often rely on parents to provide information on their child's oral health and the impact it has on their child. The validity of the information provided by the parent and thus whether the parent is a reliable proxy for the child continues to be researched extensively [18]. With respect to oral health, studies have shown that even though parent reports may be incomplete, the information obtained from parents is valid, reliable and useful [19].

In India, traditionally, mothers have been more involved in childcare, with fathers playing the role of the "bread winner" in the family. However with medical research conclusively providing evidence that fathers have an important role to play in complete and healthy infant and child development, the scenario is slowly changing. Also societal, cultural and economic factors have resulted in more mothers choosing a profession. This has resulted in the child being accompanied by the father for his/ her dental visit. Thus it is important to evaluate whether fathers can act as reliable proxies for children during their dental visits.

In the present study, the early childhood oral health impact scale (ECOHIS) has been used to assess the difference in perception of parents on oral health related quality of life (OHRQoL) of their children due to its cross cultural validity and adaptability across a variety of languages and cultures [17].

Literature evaluating and comparing parental perception on children's oral health and their related quality of life is limited.[16] In the present study, mothers scored higher in all sections of the ECOHIS questionnaire thus suggesting that mothers displayed greater concern about the child's oral health and the impact it had on the child and family. This is in contrast to the findings of S.C Pani *et al* who reported that fathers gave higher scores for ECOHIS as compared to mothers among Saudi parents [16]. Zhang *et al* also reported fathers scoring higher than mothers while studying parental perception of orthodontic treatment needs using the CPQ₁₁₋₁₄ [20].The findings of this study suggest that the fathers and mothers did not have a significant difference

Table 6: Relationship between mothers' responses and dmft.

Coefficients**						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	3.592	.621		5.785	.000
	Mother ECOHIS	.167	.049	.385	3.412	.001*

**Dependent Variable: dmft; *P,0.01 is highly significant

Table 7: Relationship between fathers' and mothers' responses and dmft.

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
1	(Constant)	3.633	.627		5.794	.000
	Father ECOHIS	.034	.053	.086	.635	.528
	Mother ECOHIS	.146	.059	.338	2.503	.015

a. Dependent Variable: dmft

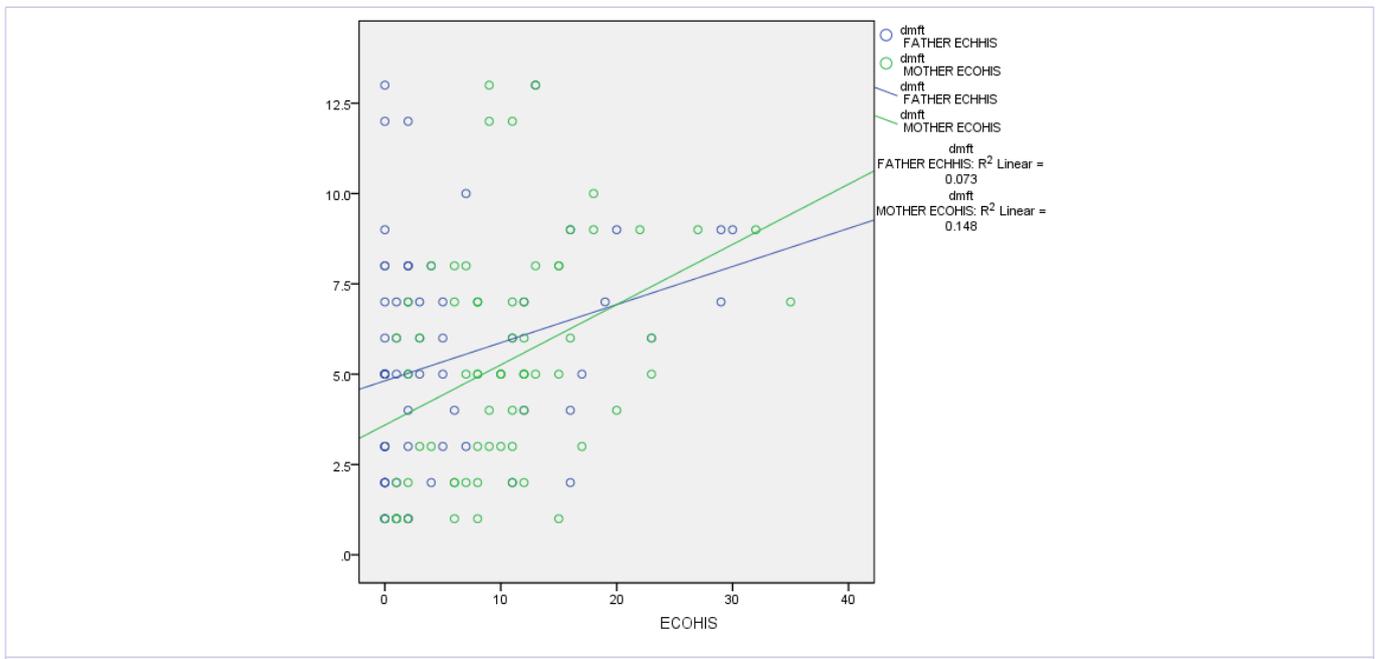


Figure 2: Graph showing the relationship between the fathers' and mothers' responses and the child's dmft scores.

in opinion, on the impact the child's oral health problems had on the family; while their opinions significantly varied when it came to the impact it had on the child at a personal level, and the overall quality of living of the child. This could be due to the fact that in the study population, the mothers were more likely to be involved with childcare and thus were more aware of the impact the child's oral health had on the child.

In the present study, fathers reported a significantly higher number of don't know responses than the mothers and most of these don't know responses were in the child-impact section of the questionnaire. This is similar to the findings of S.C Pani *et al*

in their study on Saudi parents [16]. Even though the "don't-know" responses do not affect the results of a study similar to the present one, this highlights a poorer awareness among fathers of the numerous impacts poor oral health can have on their child.

The linear regression model revealed a positive correlation between both parent responses and the 'dmft' of their child. This in contrast to the findings of the study done among Saudi parents where the fathers' responses were not found to have any correlation with the 'dmft' of their children [16]. This suggests that in the study population, fathers were aware of their child's oral health needs. However, only mothers' responses were

found to have a significant correlation with the child's 'dmft'. Thus, suggesting that mothers were more likely to have a more accurate insight on the child's oral health problems and its impact on the child's quality of life. Thus the findings of the present study suggest that while both the father and mother could be relied on to provide an insight on the child's oral health, it is the mother who was more likely to have a more complete and accurate knowledge of the child's oral health needs.

In the present study the influence of factors such as age of the parents, socio-economic status and birth order were not considered. Further studies assessing the impact of these factors will provide us with a better understanding of parental perception on child oral health and related quality of life.

Conclusion

The present study suggests that, in an Indian population, while both the father and mother can be relied on to provide an insight on the child's oral health, it is the mother who was more likely to have a more complete and accurate knowledge of the child's oral health needs. Therefore, the study has helped establish that, for children below six years of age, the mother is more suitable to act as the child's dental proxy.

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