Original Research
Pediatric Dentistry

Mothers' sense of coherence and oral health-related quality of life of preschoolers: a 3-year cohort study

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Declaration of Interests: The authors certify that they have no commercial or associative interest that represents a conflict of interest in connection with the manuscript.

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https://doi.org/10.1590/1807-3107bor-2023.vol37.0013

Submitted: December 8, 2021
Accepted for publication: August 15, 2022
Last revision: August 30, 2022

Abstract: The aim of the present study was to assess whether mothers' sense of coherence (SOC) was a predictor of decline in oral health-related quality of life (OHRQoL) of preschoolers. A 3-year cohort study was conducted in Diamantina, Brazil. At baseline, 162 preschoolers aged one to three years were randomly selected from among children registered in local Primary Healthcare Units. In the first stage, mothers completed a sociodemographic questionnaire, the Brazilian version of the Early Childhood Oral Health Impact Scale (B-ECOHIS), and the Brazilian short version of the Sense of Coherence Scale (SOC-13). The total score obtained from the SOC-13 was used to select exposed and unexposed children. Clinical examinations were performed to detect the presence of dental caries, traumatic dental injury, and malocclusion. At follow-up, mothers completed the sociodemographic questionnaire and the B-ECOHIS again. The incidence of severe dental caries and adherence to the proposed treatment at baseline were evaluated. A decline in OHRQoL was considered if there was an increase in the B-ECOHIS score of at least one unit. The chi-square test and Poisson regression were performed. A total of 151 preschoolers participated in the study, among whom 37.7% showed a decline in OHRQoL. Mothers' SOC was not associated with a negative impact on OHRQoL (RR = 1.24; 95%CI = 0.81–1.88), while the incidence of severe dental caries had a greater impact on the decline in OHRQoL (RR = 2.02; 95%CI = 1.29–3.16). Mothers' low SOC was not a predictor of decline in the OHRQoL of preschoolers after a 3-year follow-up period.

Keywords: Sense of Coherence; Quality of Life; Child, Preschool; Dental Caries.

Introduction

In recent decades, theoretical approaches to the interaction of biological, social, and psychological factors as determinants of the health-illness process have been introduced in health research.[1] In dentistry, the concept of oral health-related quality of life (OHRQoL) stands out.[2] OHRQoL is a subjective and multidimensional construct that measures the impact of oral health on individuals' psychosocial and functional well-being.[3] OHRQoL is an important health outcome in pediatric dentistry, as oral health problems can result in pain, esthetic compromise, and functional

limitations that affect the routine and well-being of children and their families.[4-6]

The Wilson and Cleary model has been used to guide the understanding of potential predictors of the impact on quality of life, such as characteristics of the individual, clinical factors, and environmental context.[7] Dental caries appears to be the clinical factor with the greatest potential to have a negative effect on the OHRQoL of preschoolers and their parents/caregivers.[8-11] Among the environmental determinants, several studies have evaluated the role of socioeconomic factors, such as family income and caregivers' education, in OHRQoL.[6,11,12]

There is also growing interest in the influence of parents' psychological factors on children's OHRQoL, and sense of coherence (SOC) should be highlighted in this context.[11,13,14] SOC is the main construct of the salutogenic theory, which reflects the capacity of individuals to deal with adversities or stressful life events, managing internal and external resources to solve them effectively.[15] SOC has three dimensions in its construct: comprehensibility (cognitive aspects), manageability (behavioral aspect), and meaningfulness (motivational aspect).[15]

Some factors may explain the possible influence of mothers' SOC on OHRQoL. First, mothers are considered the main decision makers regarding their children's health, which can influence their children's oral health status.[14] Therefore, as observed in the literature, mothers with a lower SOC are associated with a higher probability of having children with dental caries, dental pulp exposure, or filled teeth.[16,17] On the other hand, a high maternal SOC is related to more favorable oral behaviors and more frequent use of dental care by children.[18,19] Second, oral problems, such as dental caries, are potential stressors, and given that SOC is related to the ability of caregivers to solve them, this construct can influence how caregivers perceive their children's oral needs.[20,21]

A recent systematic review has concluded that there is scientific evidence that SOC exerts an influence on OHRQoL.[22] However, it has also been demonstrated that few studies, mainly cohort studies, have investigated the relationship between the caregivers' SOC and its impact on the OHRQoL of young children.[22] Exploring the predictors of impairment of OHRQoL can promote the development of multidisciplinary health strategies to facilitate the dialogue between children, caregivers, and the dental team.[8] In addition, it can provide an outcome measure for clinicians to determine the priorities of oral needs, as well as assess the impact of performed treatments.[23-26] Thus, the aim of the present study was to evaluate the influence of mothers' SOC on the decline in the OHRQoL of preschoolers during a three-year follow-up period. It was hypothesized that mothers with a lower SOC would report a greater negative impact on quality of life than those with a higher SOC.

Methodology

Ethical approval

This study was approved by the Human Research Ethics Committee of Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM), Brazil (process no. 1.921.084). All mothers signed an informed consent form and were informed about the aims of the study, clinical examination procedures, and assurance of confidentiality. The 'Strengthening the Reporting of Observational studies in Epidemiology (STROBE)' recommendations were used to guide the design of this study.

Study design and participants

A 3-year cohort study was conducted in Diamantina, which is located in the state of Minas Gerais in the southeast region of Brazil. A total of 162 preschoolers were selected from a representative sample of children and their mothers. The baseline assessment was carried out in 2014 when children aged one to three years were randomly selected from a list provided by the Local Health Department. This list included children who lived in the city and were vaccinated in public health centers in 2013 and 2014. The representativeness of this list can be illustrated by the vaccination coverage rate of 97.8% in 2013 and 105.37% in 2014 (data from the Brazilian National Health System). Three years after the first evaluation, the second phase of the study was started. At that stage, the children then

aged four to six years were selected based on the exposure factor: mothers' SOC. The exposed group consisted of children whose mothers had a low SOC (SOC-13 ≤ 47, dichotomized by the median), while the unexposed group included those children whose mothers had a high SOC (SOC-13 > 47). Thus, the selection of participants for each group was randomized using a list of exposed and unexposed children based on baseline information.

Pilot study

The pilot study was carried out with a sample of 30 preschoolers and their mothers (not included in the main study sample) to test the data collection procedures and the applicability of the instruments. Children in the pilot and in the main studies were randomly selected from a list of children aged one to three years provided by the Local Health Department. No change in methodology was deemed necessary.

Sample size

The sample size of the longitudinal study was calculated using the results of the pilot study and considering a relative risk of 1.5, 95% confidence interval (CI), 80% test power, unexposed to exposed children ratio of 1:1, and an impact rate on preschoolers' quality of life (B-ECOHIS ≥1) of 68.2% among exposed children. These parameters determined the need to examine a minimum sample size of 73 children per group. To compensate for possible losses, eight children (10%) were added to each group, resulting in two groups of 81 children.

Eligibility criteria

To be included in the study, mothers needed to be fluent in Portuguese and spend at least 12 hours a day with their children. There were no cases of exclusion due to the diagnosis of Down syndrome or neurological disorders, such as cerebral palsy (based on reports of parents/caregivers), or uncooperative behavior during the clinical examination.

Data collection

The mothers were contacted by phone and asked to visit the Pediatric Dentistry clinic of UFVJM, where the data collection was performed (non-clinical and clinical variables). The collected variables are shown in Figure.

Variables at baseline

Non-clinical variables

a. *Sociodemographic variables*

The mothers were asked to answer a questionnaire addressing the following sociodemographic characteristics: child's sex and age, maternal schooling (dichotomized as ≤ or > 12 years of study, considering high school as the cutoff point), family income (using the Brazilian monthly minimum wage [BMMW] as reference, which was approximately US$ 274, and dichotomized by median as ≤ or > two times the BMMW), and access to dental care. Mothers were also asked whether their children had ever been to the dentist at some point in their lives.

b. *Mothers' sense of coherence*

The Brazilian short version of the Sense of Coherence Scale (SOC-13) was used to assess mothers' SOC at baseline.[16,27] The questionnaire was self-administered and answered by the mothers. This validated instrument is composed of 13 items distributed into three domains: comprehensibility (five items), manageability (four items), and meaningfulness (four items). Response options are on a 5-point Likert scale and record how often an event has occurred in the mother's life. Thus, the total SOC-13 score is calculated by summing the scores of the three domains, ranging from 13 to 65, with higher scores indicating greater adaptability to stress.

c. *Oral health-related quality of life*

The Brazilian version of the Early Childhood Oral Health Impact Scale (B-ECOHIS) was used to assess the OHRQoL of the children and their families and the questionnaire was answered by mothers.[28] This instrument was self-administered and it consisted of 13 items distributed into two sections – the child impact section and the family impact section. These sections were divided into domains: four in the child impact section (symptom, function, psychological, and self-image/social interaction), and two in the family impact section (parent distress and family function). Response options and their respective

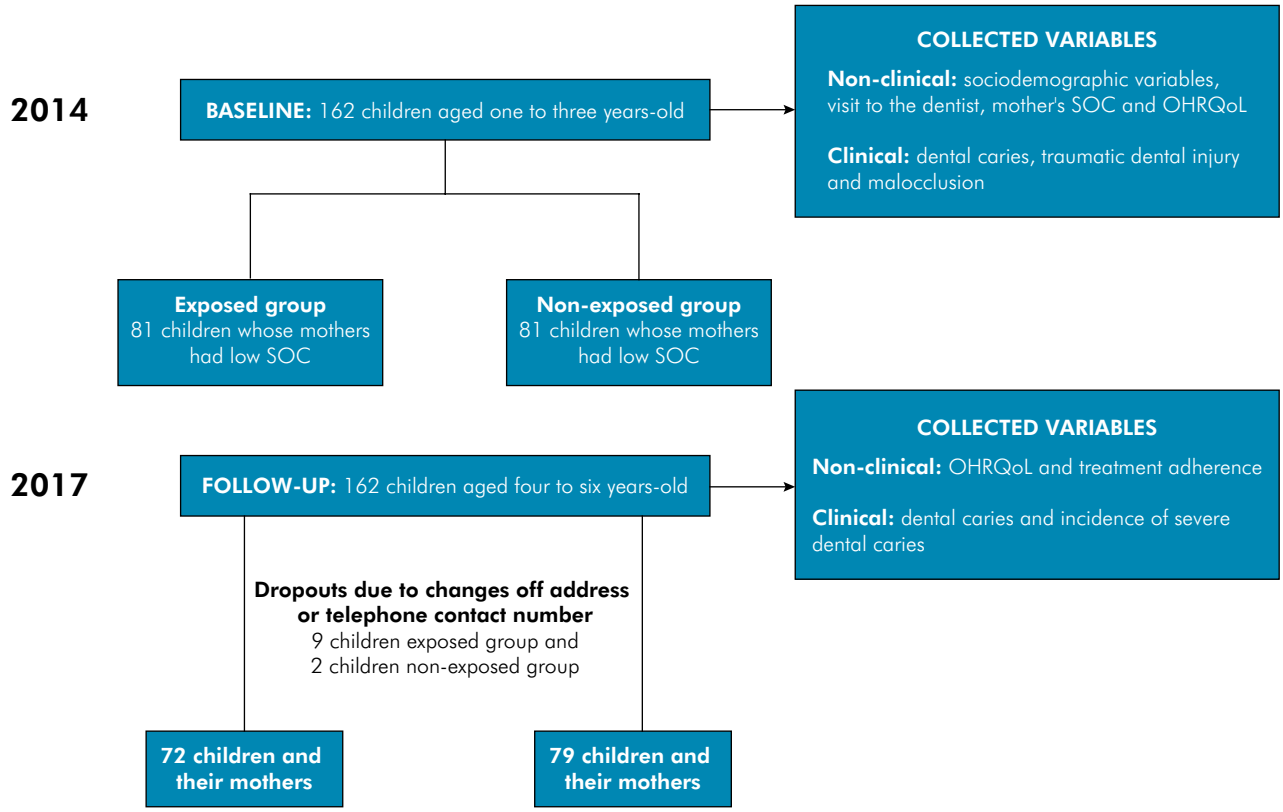

Figure. Description of study steps, sample size, and dropouts after three years of follow-up.

codes were as follows: very often = 4; often = 3; sometimes = 2; almost never = 1; never = 0; don't know = no score. The total score was calculated by summing the codes of the response options of the domains for the child impact (nine items in total) and family impact sections (four items in total), ranging from 0 to 52, with higher scores denoting poorer OHRQoL.

Clinical variables

The children were clinically examined by two dentists (I.B.F. and A.B.R.), who had undergone training and calibration exercises in two stages, including the following clinical variables: dental caries, malocclusion, and traumatic dental injury. The first stage consisted of theoretical explanation and evaluation of images of dental caries, malocclusion, and dental trauma. The International Caries Detection and Assessment System (ICDAS) was used as an evaluation criterion for dental caries;[29] the criteria proposed by Foster and Hamilton were used for malocclusion;[30] and the criteria established by Andreasen et al.[31] were used for traumatic dental injury.

In the second stage, a convenience sample of 50 children was evaluated by examiners and by an experienced researcher. The sample consisted of patients in the deciduous dentition phase aged one to six years who sought dental care at the UFVJM clinic during one month. After one week, the oral examination was repeated on 30 children to determine intra-examiner agreement. Inter-examiner and intra-examiner kappa coefficients were satisfactory (> 0.7 for all clinical data at baseline).

The children were examined while sitting in a dental chair under artificial lighting with the aid of a mouth mirror and a WHO probe (Golgran Ind. e Com. Ltda, São Paulo, Brazil). Prophylaxis was performed and all surfaces of each tooth were examined after being air-dried. All surfaces were classified based on one of three stages of dental caries, regardless of caries activity (active or inactive): (1) initial carious lesions (ICDAS codes 1 and 2); (2)

established carious lesions (ICDAS codes 3 and 4); or (3) severe carious lesions (ICDAS codes 5 and 6).[29] The worst condition of dental caries was considered for the classification of each child and for the statistical analysis. The presence of anterior open bite, posterior crossbite, overjet > 3 mm, anterior crossbite, or deep open bite was recorded, and children with at least one of these clinical conditions were classified as having malocclusion.[30] Traumatic dental injury was dichotomized as absence or presence.[31] All children evaluated at baseline were referred for preventive or curative treatment at the Pediatric Dentistry clinic of UFVJM.

Follow-up variables

Non-clinical variables

The questionnaires were applied as described for the baseline assessment. The mothers completed the sociodemographic questionnaire and the B-ECOHIS again. In the pilot study, the mean B-ECOHIS score increased from baseline to follow-up. Thus, the measured outcome was the decline in quality of life between baseline and follow-up. Children who had an increase in B-ECOHIS score by at least one unit were classified as having a decline in OHRQoL. Therefore, this variable was analyzed as dichotomous. In the follow-up, adherence to the proposed treatment was evaluated by recording those children who visited the clinic for the proposed treatment and completed it.

Clinical variables

The examiners who had participated in the baseline assessment were retrained and recalibrated for dental caries using the same methodology as at baseline. Inter-examiner and intra-examiner kappa coefficients were satisfactory (> 0.7). The examiners and the research team member who drew the charts were unaware of the baseline results. The data on dental caries collected at baseline and at follow-up were compared to determine the incidence of severe dental caries (ICDAS codes 5 and 6).

Data analysis

The data were analyzed using the Statistical Package for Social Sciences (IBM SPSS Statistics for Windows, Version 22.0, IBM Corp, Armonk, NY, USA). The chi-square test was performed to compare the characteristics between follow-up and dropout of participants. The chi-square test was also performed to assess the association between mothers' SOC and other independent variables. Multivariate analysis was performed taking into account confounding variables that might have an impact on the decline in children's OHRQoL, such as sociodemographic variables, dental visits, mothers' SOC (dichotomized by the median), and treatment adherence, in addition to clinical variables, such as malocclusion, traumatic dental injury, severe dental caries at baseline, and incidence of severe dental caries. First, the associations between the independent variables and the decline in the B-ECOHIS score were tested using the chi-square test. Unadjusted and adjusted relative risks of decline in OHRQoL were estimated using Poisson regression models by means of a hierarchical approach (groups of variables ranging from distal to proximal determinants). The categories were sociodemographic variables, clinical variables at baseline, and follow-up (in that order). Poisson regression analysis with robust variance was performed for each level. Explanatory variables with p-value ≤ 0.20 and those with theoretical relevance to the study were incorporated into the adjusted regression model. After adjustments, variables with p-value < 0.05 at the same and previous levels were kept in the final model, in which they were considered significantly associated with the decline in OHRQoL, *i.e.*, those variables with p-value < 0.05. Confidence intervals (CI) of 95% were considered for the calculation of relative risks (RR).

Results

A total of 151 children (72 in the exposed group and 79 in the unexposed group) and their mothers completed the study, corresponding to a response rate of 93.2%. The main reason for dropouts was the child's absence on the day scheduled for the follow-up evaluation (Figure). Most of the children were female (53.0%). The mean age of children at baseline was 28.54 months (± 10.79) and 66.61 months (± 11.91) at follow-up. Mothers' mean SOC at

baseline was 47.74 (± 6.76). At follow-up, the overall mean B-ECOHIS score was 4.07 (± 5.70).

Table 1 shows the results of the descriptive and comparative analyses of the sociodemographic and clinical variables at baseline and follow-up.

Table 2 presents the analysis of the associations between sociodemographic and clinical variables according to the decline in the B-ECOHIS score.

Table 1. Baseline characteristics between follow-up and dropout of participants.

Variables	Follow-ups	Dropouts	p-value
	n (%)	n (%)	
Sex			
Female	80 (53.0)	06 (54.5)	0.920*
Male	71 (47.0)	05 (45.5)	
Age at baseline			
1 year	57 (37.7)	03 (27.3)	0.371***
2 years	45 (29.8)	03 (27.3)	
3 years	49 (32.5)	05 (45.5)	
Family income at baseline			
≥ 2 BMMW	65 (43.0)	03 (27.3)	0.308**
< 2 BMMW	86 (57.0)	08 (8.5)	
Maternal schooling at baseline			
≥ 12 years	48 (31.8)	01 (9.1)	0.115**
< 12 years	103 (68.2)	10 (90.9)	
Mother's SOC at baseline			
High SOC (> 47)	79 (52.3)	07 (63.6)	0.468*
Low SOC (≤ 47)	72 (47.7)	04 (36.4)	
Dental visit at baseline			
Yes	60 (39.7)	02 (18.2)	0.207**
No	91 (60.3)	09 (81.8)	
Presence of severe dental caries at baseline			
No	110 (72.8)	07 (63.6)	0.500**
Yes	41 (27.2)	04 (36.4)	
Presence of malocclusion at baseline			
No	83 (55.0)	07 (63.6)	0.756**
Yes	68 (45.0)	04 (36.4)	
Presence of traumatic dental injury at baseline			
No	116 (76.8)	07 (63.6)	0.299**
Yes	35 (23.2)	04 (36.4)	

BMMW: Brazilian monthly minimum wage; *Chi-square test; **Fisher's exact test; ***Linear trend test.

Table 2. Analyses of associations between characteristics of children and demographic/socioeconomic and clinical variables according to the decline in the B-ECOHIS score (n = 151).

Variables	Decline in the B-ECOHIS score		p-value
	No	Yes	
Sex			
Female	47 (58.8)	33 (41.3)	0.346*
Male	47 (66.2)	24 (33.8)	
Age at baseline			
1 year	40 (70.2)	17 (29.8)	0.160**
2 years	26 (57.8)	19 (42.2)	
3 years	28 (57.1)	21 (42.9)	
Family income at baseline			
≥ 2 BMMW	39 (60.0)	26 (40.0)	0.620*
< 2 BMMW	55 (64.0)	31 (36.0)	
Maternal schooling at baseline			
≥ 12 years	31 (64.4)	17 (35.4)	0.687*
< 12 years	63 (61.2)	40 (38.8)	
Mother's SOC at baseline			
High SOC (> 47)	48 (66.7)	24 (33.3)	0.285*
Low SOC (≤ 47)	46 (58.2)	33 (41.8)	
Dental visit at baseline			
Yes	39 (65.0)	21 (35.0)	0.572*
No	55 (60.4)	36 (39.6)	
Presence of severe dental caries at baseline			
No	74 (68.5)	34 (31.5)	0.012*
Yes	20 (46.5)	23 (53.5)	
Presence of malocclusion at baseline			
No	52 (62.7)	31 (37.3)	0.911*
Yes	42 (61.8)	26 (38.2)	
Presence of traumatic dental injury at baseline			
No	73 (62.9)	43 (37.1)	0.754*
Yes	21 (60.0)	14 (40.0)	
Treatment adherence			
Yes	87 (65.4)	46 (34.6)	0.029*
No	07 (38.9)	11 61.1)	
Incidence of severe dental caries			
No	68 (74.7)	23 (25.3)	< 0.001*
Yes	26 (43.3)	34 (56.7)	

BMMW: Brazilian monthly minimum wage; *Chi-square test; **Linear trend test.

The presence of severe dental caries at baseline was significantly associated with a decline in OHRQoL, as well as with non-adherence to dental treatment and with the incidence of severe dental caries. Table 3 shows the unadjusted and adjusted Poisson regression analyses between covariables and the decline in the B-ECOHIS score. The unadjusted analysis revealed that the decline in OHRQoL was greater among children who had severe dental caries at baseline, as well as among those who did not adhere to dental treatment and had severe dental caries. The final adjusted hierarchical model revealed that the mothers' SOC was not a risk factor for the decline in the children's OHRQoL (RR = 1.24; 95%CI: 0.81–1.88). Thus, among the variables analyzed, the incidence of severe dental caries (RR = 2.02; 95%CI: 1.29–3.16) was a risk factor for a greater decline in children's OHRQoL after the three-year follow-up period.

Table 4 presents the sample distribution according to mothers' SOC. The report of dental visits was higher among mothers with a low SOC (p = 0.014).

Discussion

In the present study, the hypothesis that a low maternal SOC at baseline would be a predictor of decline in children's OHRQoL after a 3-year follow-up period was not confirmed. To date, knowledge about the relationship between a caregiver's SOC and its impact on children's OHRQoL through cohort investigations still has been limited.[22] A cross-sectional study conducted with a large sample of preschoolers showed that caregivers with a low SOC reported a poorer OHRQoL.[14] Another investigation involving a sample of children aged 0 to 6 years demonstrated, through a theoretical conceptual model, that regardless of the mothers' SOC, clinical factors (decayed teeth and tooth loss) and caregivers' education were the main determinants of children's OHRQoL.[11]

The differences in study designs and in sample recruitment processes may explain these conflicting findings. Despite the lack of significant results in our study, there was a tendency of low mothers' SOC to work as a protective factor in relation to the impact on OHRQoL. Quality of life measures

Table 3. Unadjusted and adjusted Poisson regression analyses between covariables and the decline in the B-ECOHIS score.

Covariables	Unadjusted	p-value	Adjusted	p-value
	RR (95%CI)		RR (95%CI)	
Sex				
Female	1			
Male	0.82 (0.54–1.24)	0.350		
Age at baseline				
1 year	1		1	NS
2 years	1.42 (0.84–2.40)	0.194	1.38 (0.82–2.35)	
3 years	1.44 (0.86–2.40)	0.166	1.44 (0.86–2.39)	
Family income at baseline				
≥ 2 BMMW	1	0.619		
< 2 BMMW	0.90 (0.60–1.36)			
Maternal schooling at baseline				
≥ 12 years	1			
< 12 years	1.10 (0.70–1.72)	0.690		
Mother's SOC at baseline				
High SOC (> 47)	1		1	NS
Low SOC (≤ 47)	1.25 (0.82–1.90)	0.290	1.24 (0.81–1.88)	
Dental visit at baseline				
Yes	1			
No	1.13 (0.74–1.73)	0.575		
Presence of severe dental caries at baseline				
No	1	0.008	1	NS
Yes	1.70 (1.15–2.52)		1.26 (0.80–1.99)	
Presence of malocclusion at baseline				
No	1	0.911		
Yes	1.02 (0.68–1.54)			
Presence of traumatic dental injury at baseline				
No	1	0.751		
Yes	1.08 (0.67–1.73)			
Treatment adherence				
Yes	1		1	NS
No	1.77 (1.14–2.73)	0.011	1.17 (0.73–1.88)	
Incidence of severe dental caries				
No	1		1	
Yes	2.24 (1.48–3.40)	< 0.001	2.02 (1.29–3.16)	0.002

RR: relative risk; CI: confidence interval; BMMW: Brazilian monthly minimum wage; NS: Non-significant associations p >0.05.

Table 4. Sample distribution according to mothers' sense of coherence.

Variables	Mothers' SOC		p-value
	Low SOC (≤ 47)	High SOC (> 47)	
Sex			
Female	43 (53.8)	37 (46.3)	0.113*
Male	29 (40.8)	42 (59.2)	
Age at baseline			
1 year	29 (50.9)	28 (49.1)	0.971**
2 years	18 (40.0)	27 (60.0)	
3 years	25 (51.0)	24 (49.0)	
Family income at baseline			
≥ 2 BMMW	36 (55.4)	29 (44.6)	0.099*
< 2 BMMW	36 (41.9)	50 (58.1)	
Maternal schooling at baseline			
≥ 12 years	22 (45.8)	26 (54.2)	0.756*
< 12 years	50 (48.5)	53 (51.5)	
Dental visit at baseline			
Yes	36 (60.0)	24 (40.0)	0.014*
No	36 (39.6)	55 (60.4)	
Presence of severe dental caries at baseline			
No	48 (44.4)	61 (55.6)	0.207*
Yes	24 (55.8)	19 (44.2)	
Presence of malocclusion at baseline			
No	42 (50.6)	41 (49.4)	0.427*
Yes	30 (44.1)	38 (55.9)	
Presence of traumatic dental injury at baseline			
No	53 (45.7)	63 (54.3)	0.372*
Yes	19 (54.3)	16 (45.7)	
Treatment adherence			
Yes	65 (48.9)	68 (51.1)	0.426*
No	07 (38.9)	11 (61.1)	
Incidence of severe dental caries			
No	48 (52.7)	43 (47.3)	0.125*
Yes	24 (40.0)	36 (60.0)	

BMMW: Brazilian monthly minimum wage; *Chi-square test; **Linear trend test.

may express subjectivity of individuals through their life experiences, and SOC can influence this expression because it is related to the resources individuals use to cope with stressful events.[2,15] Oral problems are potential stressors for parents/caregivers of children with severe dental caries.[20] Possibly, mothers with a high SOC can deal more appropriately with children's oral problems and better understand their impact, resulting in a worse report of OHRQoL in a long-term evaluation. In this sense, mothers with a low SOC can report that the impact of oral problems is less profound than that of other day-to-day stressors.

According to our findings, the incidence of severe dental caries had the greatest negative impact on the decline in OHRQoL, regardless of the mothers' SOC. The negative impact of severe dental caries on OHRQoL is well established in the literature given its clinical consequences, such as pain, which can make children's feelings evident, increasing caregivers' perception of its impact on their children's OHRQoL.[6,10] Regarding the impact on family functioning, parents/caregivers may need to take some time off work, financially invest in dental care, and report feelings of guilt about their children's oral health status.[25]

In the final model, the presence of severe dental caries at baseline was not associated with OHRQoL after the adjustment for the incidence of severe dental caries. It is known that OHRQoL is not only related to current oral health experiences, but also to those from the past.[9] Guedes et al.[8] evaluated the effect of different types of carious lesions on OHRQoL in 352 children and found that the presence of moderate and/or extensive lesions at baseline is a significant predictor of OHRQoL impairment after two years of follow-up. In this latter study, the incidence of severe dental caries was not an explanatory variable.[8] Therefore, we believe that these clinical variables may have worked together, with the incidence of severe dental caries having greater strength in the regression model. In addition, the B-ECOHIS, used to measure the impact on OHRQoL, focuses its questions on the last three months, thus tending to reflect the impact of recent experiences.

Sociodemographic variables, such as maternal schooling and family income were not associated with the impact on OHRQoL. A similar finding was reported in previous studies involving Brazilian preschoolers.[10,33] Of note, socioeconomic factors can have an indirect influence on OHRQoL reports, as they can determine the ability of families to solve oral

problems, in addition to being the lens through which caregivers see their children's oral health needs,[12] mediating the use of dental care.[32] In our study, a possible reason for the lack of association is that the participants had the same treatment opportunity throughout the follow-up period, regardless of their socioeconomic status. Despite the lack of association, knowledge about the socioeconomic background of families is relevant because socioeconomically disadvantaged children have a higher risk of dental caries, which is strongly associated with a negative impact on OHRQoL.[8,9,10]

The analysis of independent variables according to SOC showed that the frequency of reporting dental visits was higher among mothers with a low SOC. A previous study involving Brazilian preschoolers revealed that clinical indicators are associated with the use of dental care.[34] Thus, our finding can be explained by the tendency for children of mothers with a low SOC to have a higher prevalence of severe dental caries at baseline, evidencing their demand for dental care.[34]

The loss to follow-up of some patients should be considered a limitation of the present study. Nevertheless, this loss did not compromise the representativeness of the sample as there were no differences between the characteristics of the included or lost sample, as shown in Table 1. Other oral problems, such as traumatic dental injury and malocclusion, which can be confounding variables, were not associated with OHRQoL report. Possibly, that might have to do with the lesser importance given by parents/caregivers to malocclusion in the primary dentition and also with the report of a negative impact on quality of life when clinical signs and symptoms are involved, such as in cases of severe dental caries or complicated dental trauma.[23,35] In our study, the prevalence of complicated dental trauma at baseline was low (0.7%).

The strengths of our study include the original evidence provided by a cohort study with a population-based sample. The lack of data on the trajectory of variables over time, such as changes in the mothers' SOC, is a limitation, though. The literature supports that although this construct can change, it tends to be stable and lasting throughout life.[36] Further studies should be carried out to clarify the importance of the mothers' SOC in reporting children's OHRQoL, mainly through longitudinal assessments.

Conclusion

The present study reinforces the importance of exploring the predictors of impairment of children's OHRQoL, as it is an important outcome from the caregivers' perspective that can be used to determine oral health care priorities. Based on our findings, the incidence of severe dental caries was a predictor of decline in OHRQoL, suggesting the need to formulate strategies for preventing and treating the early signs of dental caries in childhood. Clinicians should be aware that the establishment of interventions to solve oral health problems should go beyond their physical effects. Thus, multidisciplinary efforts are needed, involving psychological and social aspects of the health-disease process of dental caries.

Acknowledgments

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (Capes) – Finance Code 001, Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).

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