Original Article

Parents' sense of coherence in the use of dental services by children aged 12 years old in the city Manaus/AM

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Aim: The aim of this study was to evaluate the association between the sense of coherence (SOC) of parents/guardians and the use of dental services by children who are 12 years old. **Methods:** This is a cross-sectional study conducted in the eastern zone of the city of Manaus, with 358 children enrolled in the 7th grade in the municipal public school system. Data collection was performed through self-administered questionnaires sent to parents/guardians, which contained questions about socioeconomic conditions, use of dental services by children and Antonovsky's SOC-13 scale. Data were examined by descriptive and bivariate analysis, using the Chi-square test, with a 5% significance level. **Results:** Of the 358 children, 58.4% were female; in addition, 75.4% of the parents/guardians self-reported to be brown and 39.9% of them had a family income of ½ to 1 minimum wage. SOC was categorized as strong SOC and weak SOC by the median. The association between strong or weak SOC and the use of dental services in terms of frequency (p= 0.839) and reason for last visit (p= 0.384), was not significant. Conclusion: It was concluded that SOC of parents/guardians and utilization of dental services by children were not associated.

Keywords: Sense of coherence. Dental health services. Child health.

Introduction

The utilization of health services represents the center of health systems operation, comprising every direct or indirect contact with the services, being considered the result of the interaction between the individual who is seeking care and the professional who will perform it and guide the patient within the system[1]. It is also considered a complex health behavior, determined by a wide variety of factors, predisposing or restricting the use of these services by users[2,3].

Access to and use of dental services are considered essential factors for prevention and management of oral diseases[4], and it has been demonstrated that regular use of these services results in less tooth loss and dental caries[5]. On the other hand, obtaining access to dental care is often challenging. This situation represents a public health problem in countries where the use of dental services is observed to be unequal among different social and demographic groups[4,6].

Childhood and adolescence are particularly relevant times for studying the use of oral health services. In a way, the ages of growth reflect the family context in the search for such services[7]. Thus, understanding the use of dental services by children becomes even more complex, as it reflects the interaction between psychosocial, material, cultural, and behavioral factors, as well as the perception of the individual or of their parents/guardians about their health condition and the need for care[8,9].

Among the psychosocial factors that may influence the use of dental services, the sense of coherence (SOC) has been shown to be a protective factor for the adoption of more favorable oral health behaviors[10]. SOC is the basis of the salutogenic theory developed by Antonovsky, which measures the individual's ability to deal with adverse situations without influencing his/her quality of life[11]. The SOC is composed of the following attributes: understandability, manageability, and meaningfulness. That is, an individual's SOC shows the degree to which he/she sees life as comprehensive, manageable, and meaningful[12]. According to the salutogenic model, it is important for people to focus on their resources and their ability to generate health rather than on the causes of their illness. A stronger SOC leads a person to perceive the environment as less stressful, disruptive, and chaotic. It also facilitates the selection of more effective health behaviors[13].

Several studies that have worked with SOC have shown that people with lower levels of education, low income, and weak SOC tend to take their children to dental care less frequently[14]. On the other hand, parents or caregivers with a strong SOC showed association with higher frequency and more favorable dental services utilization pattern, reflecting directly in the oral health of their children[15,16]. Such findings show that the level of parent/guardian SOC can be considered an important psychosocial determinant of children's oral health status and practices[10,17]. Added to this is the fact that children are dependent on their parents to have good general and oral health, which points to the relevance of considering not only individual factors, but also the psychological and sociodemographic factors of parents/caregivers in order to ensure comprehensive health in childhood.

Therefore, the aim of this study was to evaluate the association between SOC of parents/guardians and the use of dental services by 12-year-old children in the city of Manaus/AM.

Materials and Methods

Study Design and Population

As part of a larger research project entitled: "Socioenvironmental determinants, clinical oral conditions, health-related behaviors, and psychosocial factors psychosocial factors of quality of life in children: a longitudinal study" (Process no. 423309/2016-1), the present study was a cross-sectional, conducted in the eastern zone of the city of Manaus between September and December 2016 with 12-year-old school-age children and their parents and/or guardians. The eastern zone, which is composed of 11 neighborhoods, is the second most populous zone of the city, characterized by being a socially deprived urban area.

Children enrolled in the municipal public school network who were 12 years old at the initial research period were included in the study, and those using orthodontic appliances, and those with any syndrome and/or requiring special care were excluded.

A representative sample of 12-year-old children enrolled in the 7th grade in municipal public schools was then selected by stratified random sampling according to the size of the school population in the 11 neighborhoods of eastern Manaus. Thus, 25 schools were randomly selected, proportionally to the number of schools per neighborhood. The sample size was estimated at 528 children. Of these, 86 did not return the consent form or their parents did not agree with their participation. Of the remaining 442 adolescents, 27 were excluded due to the use of orthodontic appliances.

Pilot study and instrument reliability

Prior to the main study, a pilot study was carried out involving parents/guardians of 10 schoolchildren children who were not selected for the main study sample. Parents/guardians were interviewed to verify the understanding of the questionnaire items on the sense of coherence.

Data collection

Data collection was performed using self-administered questionnaires sent to parents and/or guardians, containing questions about socioeconomic characteristics, use of dental services, and SOC.

The socioeconomic characteristics included questions to the parents and/or guardians about number of people in the household (total number of people making up the family unit in the household); number of rooms in the house (total number of rooms in the dwelling, used by residents to meet basic needs such as rest, food preparation, hygiene, and others); number of assets (measured by the continuous variable from 0 to 11 assets, where 0 meant no assets in the household and 11 meant the maximum number of assets); family income (sum of monthly

incomes of the components of the family unit, in minimum wages in Brazil, in effect in 2016, which was classified into three categories: less than or equal to BRL 440.00 – up to half a minimum wage, between BRL 441.00 to BRL 880.00 – between half and one minimum wage, and BRL 881.00 or more – more than one minimum wage).

Regarding the use of dental services, we asked whether the child had dental insurance, how many times they had visited the dentist during their life, how long it had been since their last visit, and for what reasons their parents/guardians had taken them to the dentist.

The SOC of parents/guardians was measured using the Antonovsky's SOC-13 scale, cross-culturally adapted for the Portuguese language[18]. Each question has five response options that follow a Likert-type psychometric pattern, always from the worst to the best condition. The scores of the questions that are negative to the sense of coherence were inverted for the final composition of the scale score. The minimum value of the scale is 13 and the maximum, 65[18]. The higher the sum of the items, the higher the sense of coherence.

Data analysis

The data were analyzed by descriptive analysis, including the distribution of variables by medians, means, and standard deviations. The chi-square (χ) test was performed, with a significance level of 5%, to evaluate the association between the dependent variable (use of dental services) and the independent variable (SOC of parents/guardians). All analyses were performed in SPSS (Statistical Package for Social Sciences) version 22.0 software.

Ethical Aspects

The study project was submitted to the Municipal Education Secretary of the city of Manaus (SEMED) and to the Research Ethics Committee of the Federal University of Amazonas (CAAE: 57273316.1.0000.5020). All eligible students, including their parents, signed the Free and Informed Consent Form and the Minor's Consent Form.

Results

The final sample consisted of 358 children, due to the exclusion of 57 of them for lack of complete data in the questionnaire. Of these, 149 children (41.6%) were male and 209 (58.4%) were female. Of the parents/guardians, 75.4% declared themselves as brown; 13.1% as white; 5.9% as black; 4.2% as indigenous, and 1.4% as yellow. Regarding the number of years of schooling, most parents/caregivers declared to have eight to eleven years of schooling (72.9%), equivalent to complete elementary school (8 years) and complete high school (11 years). Most of the population studied (41.6%) had a family income of ½ to 1 minimum wage, which at the time of data collection was BRL 441.00 to BRL 880.00. Children with their respective parents/guardians lived predominantly in households with less than two residents per room (70.7%), and on average each family owned 6.62 assets in the household (Table 1).

Table 1. Sociodemographic characteristics of the study population (n=358), Manaus - 2016.

Variable	N	%	Mean ± SD	Variance
Sex (children)				
Female	209	58.4	-	-
Male	149	41.6	-	-
Race/skin color (parents/caregivers)				
Yellow	5	1.4	-	-
White	47	13.1	-	-
Indigenous	15	4.2	-	-
Brown	270	75.4	-	-
Black	21	5.9	-	-
Years of schooling (parents/caregivers)				
1-7	55	15.4	-	-
8-11	261	72.9	-	-
≥12 years	42	11.7	-	-
Monthly family income				
≤ BRL 440,00	91	25.4	-	-
BRL 441,00-880,00	149	41.6	-	-
BRL > 881,00	118	33.0	-	-
N. of residents per room				
< 2 residents	253	70.7	-	-
2 residents	71	19.8	-	-
3 residents or more	34	9.5	-	-
N. of goods in the household				
			6.65 ± 2.55	0-11

The median and mean scores for parent/guardian sense of coherence were 47.00 and 46.27 (SD=6.68), respectively; 196 (53.9%) of the parents/guardians had scores less than or equal to 47 and 165 (46.1%) had scores greater than 47. When stratifying the SOC 13 questions, the question 6 ("Do you think the things you do in your life have little meaning?") had the lowest mean (1.99) and question 3 ("Are you interested in what is going on around you?") had the highest (3.90).

Regarding the use of dental services by children, 46.1% of parents/guardians said they took their children to the dental office less than 1 year ago, and 15.9% answered that the children never had a dental appointment. It was also evidenced that the main reasons for the last visit were: revision/prevention (31%), followed by treatment (26.8%), and pain or extraction (26.2%). The public service was the most used (47.8%,) and 89.4% of the children had no dental care plan. When asked why the child had never been to the CD or had not been in the last year, 81 answered there was no need. On the other hand, 68 children needed it, were referred to the dental office, but did not attended (Table 2).

Table 2. Frequency and percentage of questions about use of dental services (n=358) - Manaus, 2016.

Questions	Frequency (%)
When was the last time your child visited a dentist?	
Never	57 (15.9)
Less than 1 year	165 (46.1)
1-2 years	84 (23.5)
3 years and more	52 (14.5)
What was the reason for the last visit?	
Checkup / Prevention	111 (31.0)
Pain	46 (12.8)
Extraction	48 (13.4)
Treatment	96 (26.8)
Not applicable	57 (15.9)
If your child has been to the dentist at least once in his or her life, where was the last visit?	
Public Service	171 (47.8)
Private Service	82 (22.9)
Health insurance or health plan	41 (11.5)
Other	7 (2.0)
Why has your child never been to the dentist or did not go to the dentist last year?	
He/she didn't have to	81 (22.6)
Needed it, but didn't use it for whatever reason	38 (10.6)
Needed, sought, but did not go to	68 (19.0)
Used in the last year	171 (47.8)
Does your child have a dental plan?	
Yes	38 (10.6)
No	320 (89.4)

Table 3 presents the chi-square (χ) test to analyze the association between the SOC of parents/guardians, categorized into weak SOC (score below or equal to the median) and strong SOC (score above the median) and the utilization of dental services. No significant difference was found between strong and weak SOC regarding the frequency in the use of dental services (p = 0.839). Both groups showed a higher frequency for using dental services for less than 1 year, followed by 1 to 2 years and 3 years or more. Similarly, no significant difference was found between SOC and the reason for the last dental visit (p = 0.384) (Table 4).

Table 3. Association between poor and strong parent/guardian SOC and utilization of dental services (n=358) - Manaus, 2016.

SOC	Use of Dental Health Services				Total	p
	Never	Less than 1 year	1-2 years	3 years and more		
Poor	33 (17.1%)	85 (44.0%)	46 (23.8%)	29 (15.0%)	193 (100.0%)	
Strong	24 (14.4%)	80 (48.5%)	38 (23.0%)	23 (13.9%)	165 (100.0%)	0.839
Total	**57 (15.9%)**	**165 (46.1%)**	**84 (23.4%)**	**52 (14.5%)**	**358 (100.0%)**	

p>0,05

Table 4. Association between poor and strong parent/guardian SOC and reason for using dental services (n=358) - Manaus, 2016.

SOC	Reason for Using Dental Services					Total	p
	Check-up / Prevention	Treatment	Extraction	Pain	Never been		
Poor	51 (26.4%)	55 (28.5%)	27 (14.0%)	27 (14.0%)	33 (17.1%)	193 (100.0%)	
Strong	60 (36.4%)	41 (24.8%)	21 (12.7%)	19 (11.5%)	24 (14.5%)	165 (100.0%)	0.384
Total	**111 (31.0%)**	**96 (26.8%)**	**48 (13.4%)**	**46 (12.8%)**	**57 (15.9%)**	**358 (100.0%)**	

p>0,05

Discussion

The present study investigated the possible role of parent/guardian SOC and the use of dental services by 12-year-old children in the city of Manaus/AM. The results showed that the frequency of use of dental services by children, as well as their pattern of use (prevention, treatment, or pain) showed no significant association with the SOC score of parents/guardians in families with low socioeconomic status.

Such results indicate that not all child oral health-related behaviors are related to parents/guardians SOC, corroborating the findings of Qiu et al.[19] (2013) and differing from those found in national studies[14-16]. Comparable results were also found in studies with adults[20] and adolescents[21]. The reason for SOC not being associated with all oral health-related behaviors has not yet been clarified. A possible explanation for this would be that children's oral health behaviors are mainly influenced by the oral health behaviors of parents/guardians and not necessarily by their SOC, or the analysis used was not able to detect the differences.

The mean score obtained by the responses of parents/guardians on the SOC 13 scale was 46.27, a mean similar to the studies of Bonanato et al.[17] (2009) and Fernandes et al. (2017)[14], which obtained 47.50 and 47.2 points, respectively. The total score in the study ranged from 22 to 62 points, similar to the study of Bonanato et al.[17] (2009), which showed a range of 23 to 62.

A significant percentage (84.1%) of children participating in this study used the dental service at least once in their lives and about 16% had never been to the dentist, findings that are relatively lower (18.9%) than those reported by da Silva et al.[22] (2011) and those presented in the last national survey on oral health (18.1%)[23], which may express the increased access to and use of dental services by children, as also identified in a previous study[24]. The frequency of use of dental services proved to be regular, since more than half of the children had an appointed with the dentist within 2 years. Despite this, the use of dental services among children was more related to treatment than to prevention, suggesting a need for change in the work process of oral health teams, especially regarding the expansion of prevention and health education, for a model of integral care to child and adolescent health[7]. Another worrying fact is the non-use of dental services, represented by children who sought care but were not seen; this suggests failures in the organization of the local health system. On the other hand, a recent study conducted in Brazil showed an association between greater coverage of oral health teams in the Family Health Strategy (ESF-SB), greater use of dental services in the public network, and the use of services for treatment by 12-year-old children, revealing the influence that contextual factors have on individual choices[7].

In addition, a very small proportion of children had dental insurance, indicating that these families rely exclusively on the public system to ensure basic oral health care for their children. This is particularly relevant for the use of dental services, since Brazilian individuals with private health insurance tend to use more dental services than those who do not have health insurance[25]. These aspects are paramount to address inequalities in the use of dental services by underprivileged children[15].

Thus, it is evident that, considering the SOC in isolation may not be enough to clarify the use of dental services, in view of other factors that are involved in the complexity of the behavior or attitude of using or not using such services. Some limitations of the present study should be considered. The cross-sectional study design restricts the causal relationships between the variables. It should also be recognized that the use of self-completed questionnaires may result in measurement bias to some extent. However, the use of validated questionnaires for the Brazilian population potentially reduces reporting error. Finally, only 12-year-old children residing in socially disadvantaged areas were investigated. Therefore, our findings should not be attributed to other age groups and children of other socioeconomic levels.

Conclusion

The results showed that the SOC of parents/guardians and the use of dental services, both in terms of frequency and pattern of use, were not correlated, suggesting that the SOC of parents/guardians, analyzed in isolation, cannot explain the use of dental services for children.

Data Availability

Datasets related to this article will be available upon request to the corresponding author.

Conflict of interest

None.

Author Contribution

JMRV and MABR designed the study. ACG, LNQ, VCS contributed to data collection and analysis. ACG, VCS wrote the first draft of the article. All authors read and approved the final manuscript and actively actively participated in the discussion of the manuscript's findings.

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