BIOSCIENCE JOURNAL

IMPACT OF SOCIAL CAPITAL AND CLINICAL FACTORS ON THE ORAL HEALTH-RELATED QUALITY OF LIFE OF VULNERABLE CHILDREN AND THEIR FAMILIES

Karolina AZEVEDO[1], Patrícia Rafaela DOS SANTOS[2], Caroline Nogueira de MORAES[2], Gabriell Bonifácio BORGATO[1], Silvia Amélia Scudeler VEDOVELLO[2], Diego Patrik Alves CARNEIRO[1,2]

[1]Itu Dental School, Centro Universitário Nossa Senhora do Patrocínio, Itu, São Paulo, Brazil.
[2]Department of Community Dentistry, Piracicaba Dental School, Universidade Estadual de Campinas, Piracicaba, São Paulo, Brazil.

How to cite: AZEVEDO, K., et al. Impact of social capital and clinical factors on the oral health-related quality of life of vulnerable children and their families. *Bioscience Journal*. 2025, **41**, e41023. https://doi.org/10.14393/BJ-v41n0a2025-78461

Abstract

This study assessed the impact of individual social capital and clinical variables on the oral health-related quality of life (OHRQoL) of vulnerable children and their families. This cross-sectional observational study included children of both sexes and their parents or guardians. The OHRQoL was assessed using the Brazilian version of the ECOHIS questionnaire. Individual social capital was evaluated through participation in community, school, and religious activities. The criteria recommended by the WHO were used to analyze dental caries and malocclusion. Adjusted logistic regression models estimated the odds ratios at a 95% CI; the multiple regression model included variables with $p < 0.20$ in the individual analyses, and those with $p \leq 0.05$ remained in the final model. Younger children with caries occurrence and lower social capital are 1.74 (95% CI: 1.13-2.68), 2.89 (95% CI: 1.88-4.45), and 3.69 (95% CI: 2.36-5.78) times more likely to experience a higher impact on OHRQoL ($p < 0.05$). Families of children with caries occurrence and lower social capital are 2.31 (95% CI: 1.52-3.50) and 3.56 (95% CI: 2.29-5.54) times more likely to experience a higher impact on OHRQoL ($p < 0.05$). Families of children with caries experience and lower social capital are 2.11 (95% CI: 1.40-3.19) and 3.55 (95% CI: 2.89-5.50) times more likely to show a higher impact on total OHRQoL ($p < 0.05$). Dental caries experience and lower individual social capital were associated with a higher impairment of the OHRQoL of children and their families in conditions of social vulnerability.

Keywords: Children. Dental caries. Malocclusion. Quality of life. Social capital.

Corresponding author:
Diego Patrik Alves Carneiro
diegopatrikmoa@gmail.com

Received: 06 June 2025
Accepted: 02 September 2025
Published: 29 September 2025

1. Introduction

Oral health is considered a multifaceted concept that is consistently shaped by the values and attitudes of individuals and communities, reflecting the physical, social, and psychological aspects critical to the quality of life (Glick et al. 2016; Roque et al. 2021). In this context, quality of life has become a central component in patient oral health perception and the redirection of health services (Glick et al. 2016; Nóbrega

et al. 2019; de Albuquerque et al. 2023). Oral health-related quality of life (OHRQoL) is a multidimensional construct that indicates the impact of oral problems on the daily activities and well-being of individuals (Nóbrega et al. 2019; de Albuquerque et al. 2023; Oliveira et al. 2025). Thus, the concept of oral health comprises not only the absence of disease but a positive state supported by personal and social resources, such as social capital (Furuta et al. 2012; Knorst et al. 2023).

Nonetheless, children living in socially vulnerable conditions are disproportionately affected by oral diseases, such as dental caries and malocclusion. These conditions cause pain, functional limitations, and aesthetic concerns, directly compromising the daily lives of children and their family dynamics (Nóbrega et al. 2019; de Albuquerque et al. 2023). Hence, the presence or absence of social capital may be decisive, as families with strong social networks tend to have better access to preventive care and treatment, while those with lower social capital face barriers that intensify the negative impact of oral problems (Furuta et al. 2012; Batra et al. 2014; Knorst et al. 2019; Knorst et al. 2022).

Social capital is a set of resources linked to family relationships and the community's social organization, and it is essential for children's cognitive and social development (Furuta et al. 2012). In cohesive communities, the adults in the group may have a positive influence on adolescents through supervision and support (Furuta et al. 2012; Duh-Leong et al. 2021; Jespersen et al. 2021). This resource is accessible through social network participation, promoting individual and collective gains (Knorst et al. 2019). Social capital is associated with improved mental health indicators, lower mortality, and better self-rated health (Tampubolon et al. 2011; Batra et al. 2014; Flores et al. 2017; Ma et al. 2018). It also facilitates access to dental care through the support of family and friends (Batra et al. 2014).

Children whose parents actively participate in their school life tend to have better OHRQoL (Knorst et al. 2019). Communities with high social capital favor social engagement and access to services, while regions with low social capital have a higher prevalence of oral diseases and negative impacts on OHRQoL (Knorst et al. 2019; Knorst et al. 2022). Institutions such as churches also strengthen social ties and access to health resources (Leite et al. 2013; Ferreira et al. 2021). Meanwhile, neighborhoods with lower social capital have higher rates of caries, toothache, and negative impacts on quality of life (Alvarez-Azaustre et al. 2021; Knorst et al. 2022).

Although the influence of social capital on general health outcomes is well established, its role in mediating the impact of clinical oral conditions, such as dental caries and malocclusion, on the OHRQoL of socially vulnerable children and their families remains little explored. Understanding these interactions is crucial to guide preventive strategies and public health policies aimed at reducing inequalities.

In this context, the present study assessed the impact of social capital and clinical conditions, such as malocclusion and caries, on the OHRQoL of children and their families. The hypothesis was that lower individual social capital and dental caries are associated with a higher negative impact on the OHRQoL of children and their families.

2. Material and Methods

This cross-sectional epidemiological study included children aged 3 to 8 years enrolled in a full-time municipal school in Itu (SP, Brazil). This research was initially approved by the Research Ethics Committee of the University Center of Nossa Senhora do Patrocínio (CEUNSP) (#73900823.7.0000.8287).

The study included children of both sexes in the deciduous and mixed dentition phase, whose parents or guardians had initially granted authorization to complete and sign the Informed Consent Form, and who agreed to participate at the time of examinations. Children with previous or ongoing orthodontic treatment, systemic or neuromotor diseases, or communication difficulties that prevented data collection were excluded. Considering the selection criteria, 406 school children and their families participated in the study.

The study population was characterized as socially vulnerable based on school location and historical context. The selected municipal school is located in a neighborhood originally formed from a settlement more than 20 km from the city center, which limits residents' access to essential services, particularly health care. The population is relatively homogeneous in terms of socioeconomic status and treatment needs, with most families living under similar conditions of limited resources. This scenario justified using the variable of social capital in our study, as it reflects a relevant psychosocial determinant within a socially disadvantaged and geographically isolated context.

Parents or guardians responded to the Early Childhood Oral Health Impact Scale (ECOHIS) questionnaire, which was previously validated for the Brazilian population (Pahel et al. 2007; Martins-Junior et al. 2012). This version consists of 13 items, with nine referring to the impact on children and four to the effect on families. Responses were recorded on a Likert scale: 0 = never, 1 = rarely, 2 = occasionally, 3 = often, 4 = very often, and 5 = do not know (Martins-Junior et al. 2012; Fernandes et al. 2017; Carneiro et al. 2020a; Dos Santos et al. 2020). The total ECOHIS score ranged from 0 to 52. It was dichotomized by the response medians, with values lower than the median indicating no or lower impact on OHRQoL. Comparatively, higher values indicated a higher negative impact on OHRQoL (Fantini et al. 2022). The median values were 8.0 for child impact, 5.0 for family impact, and 14.0 for the total ECOHIS score.

Social capital includes individual characteristics (Ferreira et al. 2021; Knorst et al. 2022). Parents answered about individual social capital through the following questions: (a) How often do you practice religious activities? 0 = never or rarely, 1 = once every three months, 2 once a month, 3 once a week, or 4 = every day or almost every day, the answers were categorized as frequently (codes 2, 3, and 4) or never/rarely (codes 0 and 1); (b) Over the last 12 months, have you participated in any volunteer groups?; and (c) Do you participate in any group related to your child's school activities? 0 = no or 1 = yes. For analysis purposes, individual social capital was dichotomized by the response medians, with lower values indicating lower social capital and higher values indicating higher social capital.

Dental caries was recorded using the dmft/DMFT indexes (mean number of decayed, missing, and filled teeth) according to WHO codes and criteria. Caries experience was dichotomized into absent (dmft/DMFT = 0) or present (dmft/DMFT > 0) (WHO, 1997; Dos Santos et al. 2020; Carneiro et al. 2020b).

Malocclusion classification followed the criteria by Foster and Hamilton (1969) and Grabowski et al. (2007). The anteroposterior relationship was assessed based on canine intercuspation and classified as Class I (the maxillary deciduous canine occluding in the embrasure between the mandibular canine and first molar), Class II (the upper deciduous canine occluding mesial to the mandibular canine), and Class III (the upper deciduous canine occluding distal to the mandibular canine). Asymmetric relationships between deciduous canines were also evaluated. Overjet considered the relationship of incisors, horizontally. The absence of distance between maxillary and mandibular incisors was defined as normal overjet (0 to 2 mm). Increased overjet occurred when the distance was > 2 mm, and anterior crossbite (negative overjet) when the distance was < 0 mm. Normal overbite was suggested when upper incisors overlapped lower incisors by up to 2 mm. An overbite greater than 2 mm was considered an increased overbite. An anterior open bite (decreased overbite) was indicated in the absence of contact between the anterior teeth when the posterior teeth were in occlusion. Posterior crossbite occurred when the upper posterior segment presented a lingual centric occlusion to the lower posterior segment (Foster and Hamilton, 1969; Grabowski et al. 2007). School children were diagnosed with no malocclusion when all conditions were normal. The presence of at least one of the mentioned conditions indicated malocclusion (Carneiro et al. 2020a; Dos Santos et al. 2020).

Statistical Analysis

Descriptive analyses of the data were initially performed with absolute and relative frequencies. The analyses of association with the outcome (lower or higher impact on OHRQoL) first applied logistic regression models to each independent variable. The magnitudes of these individual associations were estimated based on regression model coefficients, considering the crude odds ratios with respective 95% confidence intervals. Finally, the variables with $p < 0.20$ in the individual analyses were investigated in a multiple logistic regression model, and only the variable that remained significant ($p \leq 0.05$) in multiple models persisted in the final model. The data were analyzed using the R program at a 5% significance level.

3. Results

Data from 406 participants were evaluated, including 47.3% women and 52.7% men (Table 1). The mean age of the sample was 5.6 years, varying from 3 to 8 years. The children had an average of 1.7 decayed teeth, ranging from 0 to 20. Also, 73.2% of the study participants had malocclusion. Table 1 presents the descriptive analyses of individual social capital and the scores of OHRQoL impact.

Table 1. Profile of study participants (n=406).

Variables	Statistic
Sex	
Women, n (%)	192 (47.3%)
Men, n (%)	214 (52.7%)
Age	
Mean (standard deviation), in years	5.6 (0.9)
Median (minimum and maximum), in years	6.0 (3-8)
Dental caries	
Mean (standard deviation)	1.7 (2.7)
Median (minimum and maximum)	0.0 (0-20)
Malocclusion	
Absence, n (%)	109 (26.8%)
Presence, n (%)	297 (73.2%)
Individual Capital Social	
Mean (standard deviation)	1.3 (1.0)
Median (minimum and maximum)	1.0 (0-8)
Oral health impact score on children's quality of life	
Mean (standard deviation)	8.7 (7.4)
Median (minimum and maximum)	8.0 (0-26)
Oral health impact score on family quality of life	
Mean (standard deviation)	5.9 (5.1)
Median (minimum and maximum)	5.0 (0-15)
Oral health impact score on total quality of life	
Mean (standard deviation)	14.6 (12.1%)
Median (minimum and maximum)	14.0 (0-38)

Table 2 presents the logistic regression results, demonstrating that children under 6 years old with caries occurrence and lower social capital are 1.74 (95% CI: 1.13-2.68), 2.89 (95% CI: 1.88-4.45), and 3.69 (95% CI: 2.36-5.78) times more likely to experience a higher impact on OHRQoL ($p < 0.05$). The families of children with caries occurrence and lower social capital are 2.31 (95% CI: 1.52-3.50) and 3.56 (95% CI: 2.29-5.54) times more likely to experience a higher impact on OHRQoL ($p < 0.05$). The entire family group of children with caries experience and lower social capital is 2.11 (95% CI: 1.40-3.19) and 3.55 (95% CI: 2.89-5.50) times more likely to show a higher impact on total OHRQoL ($p < 0.05$).

4. Discussion

This cross-sectional study investigated the influence of social capital and clinical variables on the OHRQoL of children and their families in socially vulnerable conditions. The findings revealed that lower social capital and caries experience had a higher negative impact on the OHRQoL of children and families, as well as total OHRQoL. Psychosocial (social capital) and clinical (dental caries) factors were associated with negative impacts on OHRQoL, reinforcing the relevance of considering these dimensions together when evaluating oral well-being in vulnerable populations.

Social capital represented a prominent factor in OHRQoL. Children from families with lower community, school, or religious engagement had a significantly higher risk of OHRQoL impairment. This finding corroborates previous longitudinal studies (Knorst et al. 2019; Ferreira et al. 2021; Knorst et al. 2022), which demonstrated that lower social capital (individual or contextual) is associated with worse oral health outcomes, including a higher prevalence of caries, toothache, psychosocial impact, and lower OHRQoL among children whose parents do not participate in school activities.

Dental caries experience also stood out as a variable highly associated with worse OHRQoL, consistent with national and international publications (Nóbrega et al. 2019; de Albuquerque et al. 2023). The pain, discomfort, and functional limitations caused by dental caries directly compromise children's daily activities and family routines, especially in contexts of limited access to dental care. In this sense, there is an interdependence between unfavorable clinical conditions and social factors, such as community support, which can hinder or facilitate access and adherence to dental treatment (Batra et al. 2014; Duh-Leong et al. 2021).

Table 2. Results of association analyses with impact on OHRQoL (n=406).

Variables	Category	n (%)	Impact		Crude OR (95%CI)	p-value	Adjusted OR (95%CI)	p-value
			Minor	$*Major				
Child score								
Sex	Women	192 (47.3%)	96 (50.0%)	96 (50.0%)	1.10 (0.74-1.62)	0.6383	-	-
	Men	214 (52.7%)	112 (52.3%)	102 (47.7%)	1			
Age	Under 6 years old	185 (48.6%)	84 (45.4%)	101 (54.6%)	1.54 (1.04-2.28)	0.0320	1.74 (1.13-2.68)	0.0125
	$From 6 years old	221 (54.4%)	124 (56.1%)	5 (43.9%)	1		1	
Caries	Absence	207 (51.0%)	130 (62.8%)	77 (37.2%)	1		1	
Occurrence	Presence	199 (49.0%)	78 (39.2%)	121 (60.8%)	2.62 (1.76-3.91)	<0.0001	2.89 (1.88-4.45)	<0.0001
Malocclusion	Absence	109 (26.8%)	48 (44.0%)	61 (56.0%)	1			
	Presence	297 (73.2%)	160 (53.9%)	137 (46.1%)	0.67 (0.43-1.05)	0.0797		
Individual social	lower	257 (63.3%)	102 (39.7%)	155 (60.3%)	3.73 (2.43-5.78)	<0.0001	3.69 (2.36-5.78)	<0.0001
capital	$Higher	149 (36.7%)	106 (71.1%)	43 (28.9%)	1		1	
AIC	Empty model=564.59						Final model=504.66	
Family score								
Sex	Women	192 (47.3%)	95 (49.5%)	97 (50.5%)	1.14 (0.77-1.69)	0.5036	-	-
	Men	214 (52.7%)	113 (52.8%)	101 (47.2%)	1			
Age	Under 6 years old	185 (48.6%)	90 (48.6%)	95 (54.4%)	1.21 (0.82-1.79)	0.3412	-	-
	$From 6 years old	221 (54.4%)	118 (53.4%)	103 (46.6%)	1			
Caries	Absence	207 (51.0%)	127 (61.4%)	80 (38.6%)	1		1	
Occurrence	Presence	199 (49.0%)	81 (40.7%)	118 (59.3%)	2.31 (1.55-3.44)	<0.0001	2.31 (1.52-3.50)	<0.0001
Malocclusion	Absence	109 (26.8%)	45 (41.3%)	64 (58.7%)	1		-	-
	Presence	297 (73.2%)	163 (54.9%)	134 (45.1%)	0.58 (0.37-0.90)	0.0157		
Individual social	lower	257 (63.3%)	103 (40.1%)	154 (59.9%)	3.57 (2.32-5.49)	<0.0001	3.56 (2.29-5.54)	<0.0001
capital	$Higher	149 (36.7%)	105 (70.5%)	44 (29.5%)	1		1	
AIC	Empty model=564.59						Final model=517.03	
Total score								
Sex	Women	192 (47.3%)	98 (51.0%)	94 (49.0%)	1.02 (0.69-1.50)	0.9422	-	-
	Men	214 (52.7%)	110 (51.4%)	104 (48.6%)	1			
Age	Under 6 years old	185 (48.6%)	88 (47.6%)	97 (52.4%)	1.31 (0.88-1.94)	0.1769	-	-
	$From 6 years old	221 (54.4%)	120 (54.3%)	101 (45.7%)	1			
Caries	Absence	207 (51.0%)	125 (60.4%)	82 (39.6%)	1		1	
Occurrence	Presence	199 (49.0%)	83 (41.7%)	116 (58.3%)	2.13 (1.43-3.17)	0.0002	2.11 (1.40-3.19)	0.0004
Malocclusion	Absence	109 (26.8%)	47 (43.1%)	62 (56.9%)	1			
	Presence	297 (73.2%)	161 (54.2%)	136 (45.8%)	0.64 (0.41-1.00)	0.0483	-	-
Individual social	lower	257 (63.3%)	103 (40.1%)	154 (59.9%)	3.56 (2.32-5.49)	<0.0001	3.55 (2.89-5.50)	<0.0001
capital	$Higher	149 (36.7%)	105 (70.5%)	44 (29.5%)	1		1	
AIC	Empty model=564.59						Final model=520.20	

*Outcome. $Dichotomized by the sample median. 1:Reference category for independent variables. OR: Odds ratio. CI: Confidence interval.

Although malocclusion occurred in more than 70% of the sample, it did not show a statistically significant association with OHRQoL, probably due to the incipient aesthetic perception of occlusion by children of preschool and early school ages, as well as their caregivers. Additionally, previous studies suggest that the impact of malocclusion on quality of life becomes more significant in older age groups, particularly adolescents, who have a higher concern with appearance and self-esteem (Dallé et al. 2019; Alvarez-Azaustre et al. 2021; Recabarren et al. 2023).

The limitations of this study include its cross-sectional design, which does not allow a causal inference, the assessment of social capital only at the individual level, and the dichotomization of continuous variables (ECOHIS score and individual social capital) by the median. Although common, this approach may reduce variability and obscure graded associations. Thus, the findings should be interpreted with caution. Nevertheless, the study has relevant strengths, including the use of validated instruments, a representative sample of a socially vulnerable population, and a robust statistical analysis.

From a practical standpoint, these findings emphasize the significance of intersectoral strategies in addressing oral health inequalities. Strengthening community networks through school, religious, and social initiatives may indirectly improve children's OHRQoL by enhancing social support, increasing preventive care access, and reducing treatment barriers. Therefore, oral health policies should not only focus on clinical interventions but also incorporate broader social determinants of health.

5. Conclusions

Dental caries experience and lower individual social capital were associated with a higher negative impact on the OHRQoL of children and their families in socially vulnerable conditions.

Authors' Contributions: AZEVEDO, k.: Conceptualization, Investigation, Funding acquisition, Writing – original draft; SANTOS, P.R.: Conceptualization, Writing – original draft; MORAES, C.N.: Investigation, Writing – original draft; BORGATO, G.B.: Data curation, Supervision, Supervision, Writing – review & editing; VEDOVELLO, S.A.S.: Conceptualization, Data curation; Methodology, Supervision, Writing – review & editing; CARNEIRO, D.P.A.: Conceptualization, Investigation, Funding acquisition, Writing – original draft.

Conflicts of Interest: The authors declare no conflicts of interest.

Ethics Approval: The study was approved by the Research Ethics Committee of the Itu Dental School, Centro Universitário Nossa Senhora do Patrocínio - CEUNSP (#73900823.7.0000.8287) in accordance with the ethical standards of the 1964 Declaration of Helsinki.

Acknowledgments: The authors thank the volunteers for enabling the execution of the research.

References

ALVAREZ-AZAUSTRE, M. P. et al. Oral Health-Related Quality of Life in Adolescents as Measured with the Child-OIDP Questionnaire: A Systematic Review. *International Journal of Environmental Research and Public Health.* 2021, **18**, 12995. https://doi.org/10.3390/ijerph182412995

BATRA, M. et al. Social capital and oral health. *Journal of Clinical and Diagnostic Research.* 2014, **8**, ZE10–ZE11. https://doi.org/10.7860/JCDR/2014/9330.4900

CARNEIRO, D. P. A. et al. Does dental trauma in early childhood have the potential to affect the quality of life of children and families? *Revista Paulista de Pediatria.* 2020a, **39**, e2019329. https://doi.org/10.1590/1984-0462/2021/39/2019329

CARNEIRO, D. P. A. et al. Enamel development defects and oral symptoms: A hierarchical approach. *Community Dental Health.* 2020b, **37,** 293–298. https://doi.org/10.1922/CDH_000362020Vedovello06

DALLÉ, H. et al. Malocclusion, facial and psychological predictors of quality of life in adolescents. *Community Dental Health.* 2019, **36**, 298–302. https://doi.org/10.1922/CDH_4633Dalle05

DE ALBUQUERQUE, L. S. et al. Dental Caries, Tooth Loss and Quality of Life of Individuals Exposed to Social Risk Factors in Northeast Brazil. *International journal of environmental research and public health.* 2023, **20**, 6661. https://doi.org/10.3390/ijerph20176661

DOS SANTOS, P.R. et al. Exploring the impact of oral health-related quality of life on the child's family structure. *Brazilian Journal of Oral Science*. 2020, **190**, e206621.

DUH-LEONG, C. et al. Social Capital as a Positive Social Determinant of Health: A Narrative Review. *Academic Pediatrics.* 2021, **21**, 594–599. https://doi.org/10.1016/j.acap.2020.09.013

FANTINI, L.C. et al. What factors are associated with health-related quality of life in mixed dentition children? *Pesquisa Brasileira em Odontopediatria e Clínica Integrada.* 2022, **22**, e210157. https://doi.org/10.1590/pboci.2022.054

FERNANDES, I. B. et al. Association between sense of coherence and oral health-related quality of life among toddlers. *Community Dental Health.* 2017, **34,** 37–40. https://doi.org/10.1922/CDH_3960Fernandes04

FERREIRA, D. M. et al. Effect of individual and neighborhood social capital on gingival bleeding in children: A 7-year cohort study. *Journal of Periodontology.* 2021, **92**, 1430–1440. https://doi.org/10.1002/JPER.20-0010

FLORES, E. C. et al. Mental health impact of social capital interventions: a systematic review. *Social Psychiatry and Psychiatric Epidemiology*. 2018, **53,** 107–119. https://doi.org/10.1007/s00127-017-1469-7

FOSTER, T. D. and HAMILTON, M. C. Occlusion in the primary dentition. Study of children at 2 and one-half to 3 years of age. *British Dental Journal.* 1969, **126**, 76–79.

FURUTA, M. et al. Social capital and self-rated oral health among young people. *Community Dentistry and Oral Epidemiology.* 2012, **40**, 97–104. https://doi.org/10.1111/j.1600-0528.2011.00642.x

GLICK, M. et al. A new definition for oral health developed by the FDI World Dental Federation opens the door to a universal definition of oral health. *American journal of orthodontics and dentofacial orthopedics.* 2017, **151,** 229–231. https://doi.org/10.1016/j.ajodo.2016.11.010

GRABOWSKI, R. et al. Relationship between occlusal findings and orofacial myofunctional status in primary and mixed dentition. Part I: prevalence of malocclusions. *Journal of Orofacial Orthopedics.* 2007, **68**, 26-37. https://doi.org/10.1007/s00056-007-1606-0

JESPERSEN, B. V. et al. Older Neighbors and The Neighborhood Context of Child Well-Being: Pathways to Enhancing Social Capital for Children. *American Journal of Community Psychology.* 2021, **68**, 402–413. https://doi.org/10.1002/ajcp.12520

KNORST, J. K. et al. Effect of neighborhood and individual social capital in early childhood on oral health-related quality of life: a 7-year cohort study. *Quality of Life Research.* 2019, **28**, 1773–1782. https://doi.org/10.1007/s11136-019-02138-4

KNORST, J. K. et al. Impact of community and individual social capital during early childhood on oral health-related quality of life: A 10-year prospective cohort study. *Journal of Dentistry,* 2022, **126**, 104281. https://doi.org/10.1016/j.jdent.2022.104281

KNORST, J. K. et al. The Different Roles of Structural and Cognitive Social Capital on Oral Health-Related Quality of Life among Adolescents. *International Journal of Environmental Research and Public Health.* 2023, **20**, 5603. https://doi.org/10.3390/ijerph200856037

LEITE, R. et al. Assessment of oral health needs and barriers to care in a Gullah community: Hollywood smiles. *Progress in Community Health Partnerships.* 2013, **7**, 201–208. https://doi.org/10.1353/cpr.2013.0016

MA, L. et al. Social Frailty Is Associated with Physical Functioning, Cognition, and Depression, and Predicts Mortality. *The Journal of Nutrition, Health & Aging.* 2018, **22**, 989–995. https://doi.org/10.1007/s12603-018-1054-0

MARTINS-JÚNIOR, P. A. et al. Validations of the Brazilian version of the Early Childhood Oral Health Impact Scale (ECOHIS). *Cadernos de Saude Publica*. 2012, **28,** 367–374. https://doi.org/10.1590/s0102-311x2012000200015

NÓBREGA, A. V. D. et al. Impact of dental caries on the quality of life of preschoolers measured by PedsQL questionnaire. Impacto da cárie dentária na qualidade de vida de pré-escolares mensurado pelo questionário PedsQL. *Ciencia & Saude Coletiva*. 2019, **24**, 4031–4042. https://doi.org/10.1590/1413-812320182411.04712018

OLIVEIRA, C. D. C. P. et al. Severe malocclusion and oral health-related quality of life in adolescents aged 12-15 years. *Dental Press Journal of Orthodontics.* 2025, **29,** e2424100. https://doi.org/10.1590/2177-6709.29.6.e2424100.oar

PAHEL, B. T. et al. Parental perceptions of children's oral health: the Early Childhood Oral Health Impact Scale (ECOHIS). *Health and Quality of Life Outcomes*. 2007, **5**, 6. https://doi.org/10.1186/1477-7525-5-6

RECABARREN, N. A. G. et al. Relationship between aesthetic concern and self-esteem in adolescents with severe malocclusion. *Acta Odontologica Scandinavica.* 2023, **81**, 255–258. https://doi.org/10.1080/00016357.2022.2125437

ROQUE, T. V. et al. Impact of oral conditions on the quality of life of adolescents in a rural area of Brazil. *Acta odontologica latino-americana.* 2021, **34,** 81–87. https://doi.org/10.54589/aol.34/1/081

TAMPUBOLON, G. et al. Neighbourhood social capital and individual self-rated health in Wales. *Health Economics*. 2013, **22**, 14–21. https://doi.org/10.1002/hec.1808

WORLD HEALTH ORGANIZATION (WHO): Oral Health Surveys. Basic methods. 4th edition. Geneva: World Health Organization. 1997.