Submitted: 14 September, 2025 Accepted: 27 November, 2025 Published: 03 May, 2026 DOI:10.22514/jocpd.2026.068

ORIGINAL RESEARCH

Journal of Clinical Pediatric Dentistry

Analysis of the oral-health-related quality of life of parents and that of their adolescent children before attending a first dental consultation among a sample from Salamanca (Spain): a cross-sectional study

Adrián Curto[1,*], Beatriz Egido[1], Virginia Franco-Varas[2], Nuno Gustavo d'Oliveira[3], Clara Sandibel Garcete Delvalle[4], Daniel Curto[5], Alberto Albaladejo Martínez[6], Cristina Gómez-Polo[1]

[1]Faculty of Medicine, University of Salamanca, 37007 Salamanca, Spain
[2]Faculty of Medicine and Nursing, University of the Basque Country, 48940 Leioa, Spain
[3]Faculty of Dentistry, University of Barcelona, 08907 L'Hospitalet de Llobregat, Spain
[4]Department of Dentistry, Faculty of Medicine, CEU San Pablo University, 28003 Madrid, Spain
[5]Department of Pathology, 12 de Octubre University Hospital, 28041 Madrid, Spain
[6]Faculty of Health Sciences, Miguel de Cervantes European University, 47012 Valladolid, Spain

***Correspondence**
adrian_odonto@usal.es
(Adrián Curto)

Abstract

Background: The concept of oral-health-related quality of life (OHRQoL) encompasses patients' subjective perceptions of their oral health status and emotional well-being. Several factors have been reported that can influence the adolescents' OHRQoL, including dental caries, malocclusion, and the parental educational and socioeconomic levels. Parents significantly influence their children's oral health and development. However, the relationship between parents' and adolescents' OHRQoL remains unclear. This study aimed to investigate the possible relationship between the OHRQoL of parents and their adolescent children in a population from Salamanca, Spain. **Methods**: This cross-sectional study was conducted at the Dental Clinic of the University of Salamanca (Spain) between 2023 and 2025. A total of 130 adolescents (aged 11–14 years) who had never attended a dental consultation and their parents were recruited. Parents completed the Spanish version of the Oral Health Impact Profile (OHIP-14), while adolescents completed the Spanish version of the Child Perceptions Questionnaire (CPQ-Esp$_{11-14}$). Correlations between parents' and adolescents' OHRQoL scores were assessed using Spearman's correlation coefficient (*rho*). **Results**: The mean age of the participating adolescents was 12.55 $\pm$ 1.43 years (girls: 50%; boys: 50%), and the mean age of the was 43.2 $\pm$ 3.32 years. The mean score for the individual domains of the CPQ-Esp$_{11-14}$ was 17.4 $\pm$ 3.6. Higher scores in the psychological discomfort dimension of the OHIP-14 were significantly correlated with more negative OHRQoL outcomes in the functional limitation (*rho* = 0.16), emotional well-being (*rho* = 0.16) and social well-being (*rho* = 0.17) dimensions of the CPQ-Esp$_{11-14}$ ($p < 0.05$). **Conclusions**: This study observed a significant relationship between the psychological discomfort dimension of the OHIP-14 in parents and the OHRQoL of their adolescent children.

Keywords

Associated factors; Child impact; Children; Family impact; Oral health; Parents; Quality of life

1. Introduction

Quality of life (QoL) is defined as an individual's perception of their position in the social context and values in which they live, and in relation to their objectives or goals [1]. In recent years, there has been increasing interest in using standardized tools to evaluate how oral conditions and diseases affect patients' QoL [2].

The concept of oral-health-related quality of life (OHRQoL) is multidimensional, reflecting the influence of oral health conditions on daily activities, self-esteem, and overall QoL [3, 4]. Poor oral health, particularly dental caries and periodontal disease, can cause pain, discomfort, and difficulties in speaking and eating, which ultimately affect children's and adolescents' academic performance and social interactions [3–5]. Classic clinical indicators alone fail to capture the impact of oral conditions on patients' psycho-social well-being [5].

Previous studies have suggested the fundamental role of social factors such as income, educational level, and oral health status in the deterioration of OHRQoL among both children and adults [6, 7].

Oral health plays a key role in the general well-being of children and adolescents, influencing their physical, emotional, and social development [8, 9]. Assessing OHRQoL provides valuable insights into how oral health status affects daily activities, diet, speech, or psychological well-being [10]. Evaluating

the impact of oral conditions on OHRQoL is essential for understanding how oral diseases influence children's daily lives [5].

Several validated tools are available to assess OHRQoL in children and adolescents, such as the Child Perceptions Questionnaire (CPQ) [11] or the Early Childhood Oral Health Impact Scale (ECOHIS) [11]. A handicap of these instruments is that they may not fully meet reliability standards due to the cognitive and communication limitations of young participants; however, their validity is currently recognized [12, 13]. For adults, common OHRQoL assessments include the Oral Health Impact Profile (OHIP) [14] and the Oral Impact on Daily Performances (OIDP) [15].

Parents play a key role in making preventive and therapeutic decisions for their children. Their perception of their children's oral health is crucial for raising awareness about the importance maintaining good oral health [16, 17]. Various family-related factors—such as parental educational and socioeconomic status—have been reported to influence children's OHRQoL [18–20]. In daily clinical practice, it is important to consider both adolescents' self-perceived oral health and their parents' assessments. Parents' OHRQoL can serve as a valuable complement to that of their children, as the information provided by parents helps clinicians make more informed preventive and therapeutic decisions for the paediatric population [16]. The important role that parents play in their children's health has been well documented. A systematic review by Firmino RT *et al*. [21], in 2018 reported that parents with low oral health literacy (OHL) exhibited less health knowledge and engaged in fewer beneficial behaviors, which was associated with a higher prevalence of dental caries among their children.

Poor oral health, particularly dental caries and periodontal disease, can cause pain, discomfort, and difficulties in speaking and eating, affecting academic performance, social interactions and overall OHRQoL. Consequently, the use of questionnaires to analyse the psychosocial impact of oral diseases has become increasingly common [22].

Research exploring the relationship between parents' OHRQoL and its potential influence on their adolescents remain limited [18, 23]. Few existing studies have jointly analysed parents' and children's OHRQoL, and none have focused on patients attending a dental consultation for the first time. This research gap is significant, as understanding how parents' perceptions affect their adolescents' OHRQoL can provide valuable insights into this critical stage of development. Considering that parents play a fundamental role in caring for their children's oral health, no previous study has examined whether a direct relationship exists between parents' and children's OHRQoL.

Given the scarcity of information in this field, this cross-sectional study aimed to evaluate the possible influence of parents' OHRQoL on their adolescent children attending their first dental appointment. The working hypothesis of this study was that parents' OHRQoL does not influence the OHRQoL of adolescents who have not previously received dental care.

2. Materials and methods

2.1 Participants, study location, and eligibility criteria

The study followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist [24]. Participants were a consecutive convenience sample of parents and their children seeking dental care at the University of Salamanca Dental Clinic between December 2023 and June 2025 and who met the study's inclusion and exclusion criteria. The final sample included 260 participants, 130 parents and 130 children.

Eligible participants were children of both sexes aged 11 to 14 years who had never attended a dental consultation and had not received dental treatment. Each adolescent was required to attend the clinic with a parent. Exclusion criteria included children with systemic or physical disorders, or those with incomplete or unfilled questionnaires.

2.2 Oral-health-related quality of life

To evaluate OHRQoL in adolescents, the Spanish version of the Child Perceptions Questionnaire validated for patients between 11 and 14 years of age (CPQ-Esp$_{11-14}$) was used [25, 26]. This questionnaire consists of 37 items rated on a 5-point Likert scale (from "never" = 0, to "every or almost every day" = 4). It encompasses four dimensions: oral symptoms, functional limitations, emotional well-being, and social well-being. The oral symptoms dimension contains 6 items; functional limitation and emotional well-being each have 9 items; and social well-being includes 13 items. Higher scores indicate poorer OHRQoL [26].

To assess parents' OHRQoL, the Spanish version of the Oral Health Impact Profile-14 (OHIP-14) was used [27]. This questionnaire includes 14 items assessing the frequency of problems experienced by patients, such as functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap. Each pair of questions represents each of the dimensions of oral quality of life listed above. Each question is scored on a 5-point Likert scale. The total score of the 14 questions is the OHIP-14 score, which can range from 0 to 56, where higher scores indicate a lower quality of life [27, 28].

All OHRQoL questionnaires for both children and parents were distributed by an investigator before their first dental visit. The investigator was blinded to the patients' medical histories during data collection. Participants were instructed to complete the CPQ-Esp$_{11-14}$ and OHIP-14 questionnaires independently.

2.3 Data analysis

Data were analysed using the Statistical Package for Social Science (SPSS, version 28.0, SPSS Inc., Chicago, IL, USA). Quantitative variables were described using centrality measures (mean and median) and variability (range and standard deviation). The Spearman's correlation (*rho*) coefficient was used to examine associations between variables. Statistical significance was set at $p < 0.05$.

3. Results

This study was conducted among 130 parents and their children recruited during the study period. The mean age of the parents was 43.2 ± 3.32 years (range: 40–50 years; median = 42 years). The children were between 11 and 14 years old, with a fairly balanced distribution. The 13-year-old group had the highest frequency (n = 41; 31.5%), while the 11-year-old group had the lowest (n = 28; 21.5%). The gender distribution of the adolescents was 1:1.

3.1 Children's oral-health-related quality of life

The descriptive analysis of the OHRQoL variables in the child population, assessed using the CPQ-Esp$_{11-14}$ questionnaire, is presented below. The questionnaire includes four dimensions of the patients' OHRQoL: oral symptoms, functional limitation, emotional well-being, and social well-being. Among these, the social well-being dimension had the greatest impact, whereas the oral symptoms dimension had the lowest scores. Considering the possible score range of the CPQ-Esp$_{11-14}$ questionnaire and the scores reported by participants, the overall OHRQoL of the study population was not poor (Table 1).

To facilitate comparisons among the 4 OHRQoL dimensions, mean values were calculated by dividing the total score of each dimension by the number of items it contained. These standardized scores were expressed on the same 0–4 scale as the questionnaire responses. All mean values were close to the midpoint (2) of the scale. The dimension with the greatest impact on OHRQoL was functional limitation (1.95 ± 0.41), whereas emotional well-being had the lowest mean score (1.79 ± 0.31) (Table 2).

Based on gender (Table 3), no statistically significant differences were observed in any of the CPQ-Esp$_{11-14}$ dimensions ($p > 0.05$), and the respective effect sizes were low. Based on age (Table 4), statistically significance differences ($p < 0.05$) were only observed in the oral symptoms dimension, suggesting a trend toward improved OHRQoL among older patients. Similar trends were observed in the other dimensions, although these did not reach statistical significance.

3.2 Parent's oral-health-related quality of life

Descriptive analysis of the parents' OHRQoL, as measured by the OHIP-14 questionnaire, showed that in almost all dimensions, the average values (mean and median) exceeded the scale's midpoint (4) on a 0–8 scale, suggesting that the OHRQoL of the studied population was moderate. However, the mean total OHIP-14 score was 37.6, which clearly exceeded the scale's central value (28) on a 0–56 scale, indicating that parent's overall OHRQoL could be considered poor.

We observed that the dimension with the greatest impact was that of psychological discomfort (5.99 ± 1.04) compared to the disability dimension, which had the lowest impact in the sample analyzed (5.09 ± 1.55) (Table 5).

3.3 Relationship of the OHRQoL of parents with that of their adolescent children

The main objective of this study was to analyze the possible correlation between parents' and adolescent's OHRQoL. Correlation analyses were performed between each CPQ-Esp$_{11-14}$ dimension and the corresponding OHIP-14 dimensions using Spearman's correlation coefficient. In general, no strong or statistically significant correlations were found ($p < 0.05$), except for certain relationships involving the psychological discomfort dimension of the parents' OHIP-14 questionnaire. This dimension showed significant correlations ($p < 0.05$) with the functional limitation, emotional well-being, and social well-being dimensions of the CPQ-Esp$_{11-14}$ questionnaire. In the study population, greater psychological discomfort reported by parents directly associated with higher negative im-

TABLE 1. Exploratory and descriptive analysis of the variables of the OHRQoL (CPQ-Esp$_{11-14}$) of the adolescent participants (n = 130).

CPQ-Esp$_{11-14}$	Mean	SD	Median	Range (Minimum–maximum)	Possible range
Oral symptoms	10.88	3.78	10.00	5–22	0–24
Functional limitation	17.58	3.68	16.00	10–25	0–36
Emotional well-being	16.14	2.79	16.00	11–21	0–36
Social well-being	25.01	4.10	24.00	19–35	0–52

SD: Standard deviation; CPQ-Esp$_{11-14}$: Spanish version of the Child Perceptions Questionnaire.

TABLE 2. Descriptive analysis of the mean values of the items of the dimensions of the OHRQoL (CPQ-Esp$_{11-14}$) of the participating adolescents (n = 130).

CPQ-Esp$_{11-14}$	Mean	SD	Median	Range (Minimum–maximum)
Mean of Oral symptoms dimension items	1.81	0.63	1.67	0.83–3.67
Mean of Functional limitation dimension items	1.95	0.41	1.78	1.11–2.78
Mean of Emotional well-being dimension items	1.79	0.31	1.78	1.22–2.33
Mean of Social well-being dimension items	1.92	0.32	1.85	1.46–2.69

SD: Standard deviation; CPQ-Esp$_{11-14}$: Spanish version of the Child Perceptions Questionnaire.

TABLE 3. Comparison of OHRQoL variables (CPQ-Esp$_{11-14}$) according to the gender of adolescent children (n = 130).

CPQ-Esp$_{11-14}$	Boys (n = 65): Mean (±SD)	Girls (n = 65): Mean (±SD)	Test: Mann-Whitney *p*-Value	Effect size R^2
Oral symptoms	10.72 (±3.66)	11.05 (±3.91)	0.626	0.002
Functional limitation	17.28 (±3.41)	17.89 (±3.93)	0.542	0.007
Emotional well-being	15.82 (±2.73)	16.46 (±2.83)	0.169	0.014
Social well-being	24.23 (±3.27)	25.78 (±4.68)	0.077	0.036

SD: Standard deviation; CPQ-Esp$_{11-14}$: Spanish version of the Child Perceptions Questionnaire.

TABLE 4. Comparison of OHRQoL variables (CPQ-Esp$_{11-14}$) according to the age of adolescent children (n = 130).

CPQ-Esp$_{11-14}$	11 years (n = 28): Mean (±SD)	12 years (n = 32): Mean (±SD)	13 years (n = 41): Mean (±SD)	14 years (n = 29): Mean (±SD)	Test: Kruskal–Wallis *p*-Value	Effect size R^2
Oral symptoms	12.07 (±3.64)	11.53 (±4.41)	10.24 (±3.22)	9.93 (±3.61)	0.042*	0.052
Functional limitation	18.82 (±3.41)	17.56 (±4.23)	17.29 (±3.56)	16.83 (±3.30)	0.214	0.036
Emotional well-being	16.96 (±2.67)	15.91 (±3.07)	16.10 (±2.69)	15.66 (±2.68)	0.406	0.028
Social well-being	26.18 (±4.20)	25.09 (±4.40)	24.83 (±3.90)	24.03 (±3.87)	0.313	0.031

*SD: Standard deviation; CPQ-Esp$_{11-14}$: Spanish version of the Child Perceptions Questionnaire. *: significant ($p < 0.05$).*

TABLE 5. Exploratory and descriptive analysis of the variables of the OHRQoL (OHIP-14) of the parents (n = 130).

OHIP-14	Mean	SD	Median	Range (Minimum–maximum)
Functional limitation	5.39	1.10	6	4–8
Physical pain	5.18	0.85	5	4–8
Psychological discomfort	5.99	1.04	6	4–8
Physical disability	5.34	0.62	5	5–7
Psychological disability	5.26	1.26	5	4–8
Social disability	5.35	1.29	6	2–7
Handicap	5.09	1.55	5	2–8
Total score	37.6	5.09	36	32–51

SD: Standard deviation; OHIP-14: Oral Health Impact Profile.

pact in these three corresponding dimensions of their children's OHRQoL (Table 6).

4. Discussion

To our knowledge, this is the first study to evaluate the potential relationship between parents' OHRQoL and that of their adolescent children who had no prior dental experience in the city of Salamanca, Spain.

Patient-reported outcome measures (PROMs) are valuable tools that assess patient's health status from their own perspective, providing insight into how they perceive their health and treatment outcomes [28]. In pediatric dentistry, PROMs are increasingly used to quantify the impact that oral pathologies have on the psychosocial well-being of children [29–31].

OHRQoL is a multidimensional construct reflecting individuals' subjective perception of how oral health affects their overall well-being and ability to perform daily activities [32]. The concept of OHRQoL has become an important tool to broadly analyze the oral health status of adolescents [30, 33, 34].

Different questionnaires have been developed to quantify OHRQoL in both adult and pediatric populations, many of which have been adapted to different languages and cultural contexts. Measures to evaluate children's OHRQoL have undergone considerable development in recent years. Among the widely used tools are the Child Perception Questionnaire (CPQ) [11, 35], the Child Oral Impacts on Daily Performances (Child-OIDP) [36], the early childhood oral health impact scale (ECOHIS) [11], and the Child Oral Health Impact Profile (COHIP) [37]. Two versions of the CPQ are available: one for children aged 8–10 years (CPQ8–10) [38] and another for those aged 11–14 years (CPQ11–14) [39]. This study uses the latter, validated for children aged 11 to 14 years. This tool has been used in previous studies [30, 40]. Given that the present investigation was conducted in Spain, the Spanish version (CPQ-Esp$_{11-14}$) was used [26]. For adult participants, various instruments have been proposed to evaluate OHRQoL, including the Oral Health Impact Profile (OHIP) [14], the Oral Impact on Daily Performances (OIDP) [15], and the Dental Impacts on Daily Living (DIDL) [41]. In this study, the Spanish version of the OHIP-14 was used [27], a tool that has

TABLE 6. Correlation (rho) between the variables of the OHRQoL of parents (OHIP-14) and their adolescent children (CPQ-Esp$_{11-14}$) (n = 260).

OHIP-14 \ CPQ-Esp$_{11-14}$	Oral symptoms	Functional limitation	Emotional well-being	Social well-being
Functional limitation	−0.01 (p = 0.433)	−0.00 (p = 0.486)	0.06 (p = 0.260)	0.05 (p = 0.288)
Physical pain	−0.01 (p = 0.465)	0.06 (p = 0.265)	0.06 (p = 0.249)	0.05 (p = 0.292)
Psychological discomfort	0.10 (p = 0.118)	0.16 (p = 0.036)*	0.16 (p = 0.036)*	0.17 (p = 0.027)*
Physical disability	−0.07 (p = 0.231)	−0.02 (p = 0.425)	−0.07 (p = 0.222)	−0.03 (p = 0.359)
Psychological disability	0.03 (p = 0.368)	0.06 (p = 0.258)	0.05 (p = 0.271)	0.10 (p = 0.128)
Social disability	0.04 (p = 0.328)	−0.01 (p = 0.468)	−0.09 (p = 0.144)	−0.05 (p = 0.298)
Handicap	0.09 (p = 0.145)	0.10 (p = 0.122)	0.05 (p = 0.301)	0.12 (p = 0.094)
Total score	0.07 (p = 0.213)	0.09 (p = 0.162)	0.06 (p = 0.245)	0.10 (p = 0.136)

**: significant ($p < 0.05$). OHIP-14: Oral Health Impact Profile; CPQ-Esp$_{11-14}$: Spanish version of the Child Perceptions Questionnaire.*

been extensively applied in the scientific literature [42, 43].

The specific determinants that best predict OHRQoL remain uncertain. Previous studies have analyzed the influence of different factors, including the educational level of the father [20, 44], that of the mother [19], the family's socioeconomic status [18–20, 44], and the parents' age [18].

Although parental reports of OHRQoL may not fully reflect the adolescents' own perceptions, they provide valuable complementary information. Importantly, omitting parental assessments may result in the loss of relevant insights into family-level factors affecting children's oral well-being [45].

In the present study, the functional limitation dimension demonstrated the greatest impact among adolescents (1.95 ± 0.41), whereas emotional well-being showed the lowest impact (1.79 ± 0.31). This finding may be explained by the fact that the adolescents had never attended a dental consultation and therefore had not received any dental care or treatment. It would be interesting to conduct a longitudinal evaluation to assess whether adolescents' OHRQoL improves after receiving dental treatment, particularly regarding their functional and aesthetic perceptions.

No significant differences were observed in OHRQoL according to sex or age. The literature remains inconclusive on these aspects. Several studies have reported, consistent with our results, that gender does not significantly influence OHRQoL [46–48], whereas others found that girls experience a greater negative impact compared with boys [49–52]. Similarly, most studies indicate that age does not significantly influence OHRQoL among adolescents [46, 53–55].

When analyzing the possible statistical correlation between parents' and adolescents' OHRQoL, we observed a weak relationship between psychological discomfort dimension of the OHIP-14 questionnaire and the functional limitation, emotional well-being, and social well-being dimensions of the CPQ-Esp$_{11-14}$ ($p < 0.05$). That is, a worse OHRQoL of parents implies a greater impact on the OHRQoL of their children in the aforementioned dimensions. The psychological discomfort dimension of the OHIP-14 includes items such as "Have you been worried about problems with your mouth?" and "Have you felt stressed?". Thus, parents' perceived oral health concerns and emotional distress may influence their children's psychosocial and functional oral health outcomes, aligning with our finding.

This study focused on adolescents aged 11–14 years, a critical developmental period for oral health risk factors. During adolescence, social and emotional well-being of OHRQoL are often affected, influencing social behaviors such as smiling or speaking [56]. Malocclusion within this age group may reduce adolescents' perceptions of social acceptance, lower their self-esteem, and negatively affect their OHRQoL [57].

The socioeconomic status and educational level of families also play key roles in shaping parents' perceptions of their children's oral health [18, 58]. Evidence suggests that these variables are significant predictors of adolescent OHRQoL. Children from high-income households generally exhibit better OHRQoL compared with those from lower-income families [18, 58, 59], likely due to easier access to healthcare (both preventive and therapeutic) [58]. Parental age has also been reported as a contributing factor, with older parents often associated with lower OHRQoL scores in their children [58, 60, 61].

A study most comparable to ours was conducted by Yang *et al.* [18], in 2023, who examined the influence of parents' OHRQoL on that of their children with severe early childhood caries (S-ECC). This study recruited 300 children with S-ECC and their parents in the eastern region of China. The early childhood oral health impact scale (ECOHIS) was used to analyze the OHRQoL, while the 5-item oral health impact profile (OHIP) was used for their parents. The mean age of the children was 4.1 ± 0.7 years (range: 3–5 years). ECOHIS scores ranged from 0 to 38, with a mean score of 16.2 ± 7.2. The mean OHIP score was 2.9 ± 2.7. Significant associations were observed between parental OHIP and children's ECOHIS scores ($p < 0.05$). It should be noted, however, that this previous study did not specify whether participants had prior dental check-ups or treatments, a variable that may substantially influence the relationship between parental and children OHRQoL.

In 2015, Abreu LG *et al.* [23] conducted a study evaluating the relationship between OHRQoL of parents and their

adolescent children in need of orthodontic treatment. The short version of the CPQ11–14 was used to assess adolescents' OHRQoL, while the Parental-Caregiver Perceptions Questionnaire (P-CPQ) was applied to parents. This study evaluated a total of 141 adolescents aged 11–12 years, whereas our study included a slightly broader age range of 11–14 years. The authors concluded that there was limited agreement between the data reported by parents and that described by their adolescent children in need of orthodontic treatment. The dimension of OHRQoL with the greatest impact on adolescents was oral symptoms (4.16 ± 2.45), while in our study it was functional limitation (1.95 ± 0.41). The oral symptoms dimension assesses oral health-related issues such as toothache or bleeding gums. In our study, there is a certain consistency in the fact that the functional limitation dimension had the greatest impact, as this dimension assesses the limitations presented by the patient in terms of chewing. It would have been informative to determine whether the adolescents in this sample required orthodontic treatment, considering that functional limitation yielded the highest score. Abreu LG *et al*. [23] further reported that social well-being and oral symptoms were the dimensions showing the highest correlations between adolescents' and parents' OHRQoL. This study did not differentiate between mothers and fathers. Abreu LG used the intraclass correlation coefficient (ICC). Specifically, the ICC was 0.59 for the social well-being dimension and 0.54 for the oral symptoms dimension. In the study described here, Spearman's correlation coefficient (*rho*) was used, and the social well-being dimension was also the one in which we observed the highest correlation between the OHRQoL of parents and that of their adolescent children (*rho* = 0.17). It is important to highlight that this study analyzed adolescents who had not previously attended a dental appointment and, therefore, had not undergone any dental treatment. Consequently, their functional and aesthetic concerns—such as malocclusion, chewing difficulties, or aesthetic dissatisfaction—could have contributed to reduced emotional and social well-being, ultimately affecting OHRQoL. During adolescence, perceived facial and dental appearance plays a critical role in self-image and psychosocial development [62].

4.1 Strengths of this study

One major strength of this study is its inclusion of male parents, allowing an analysis of gender-specific influences on adolescents' OHRQoL—an aspect rarely examined in the literature. A second strength lies in its focus on adolescent participants, a population for whom oral health perceptions are particularly relevant to later development and psychosocial outcomes. Moreover, none of the adolescents had previously received dental consultation, effectively eliminating bias from prior clinical experiences. To our knowledge, this is the first study conducted in Spain to analyze the possible correlation between fathers' OHRQoL and that of their adolescent children during the first-ever dental visit.

4.2 Limitations and future scope

This study presents some limitations. First, its cross-sectional design precludes the establishment of causal relationships. It is necessary to consider the limitations of this convenience sample. Second, the sample was drawn by convenience from a single university center, limiting the generalizability of the findings to the broader national population. In addition, since all participating adolescents sought dental care for the first time, it is plausible that their OHRQoL was lower than that of peers who had previously received preventive or therapeutic dental treatment.

Further large-scale, multi-center, and longitudinal studies are needed to verify the findings. Expanding sample diversity across different region will help verify the observed associations between parental and adolescent OHRQoL. Future research should also jointly assess the OHRQoL of both mothers and fathers, exploring potential differences between parental roles. Moreover, evaluating external factors—such as aesthetic perception, social environment, and access to dental services—could deepen our understanding of the determinants of adolescents' oral health perceptions.

5. Conclusions

Within the limitations of this study, a slight yet statistically significant association was observed between parents' and adolescents' OHRQoL, particularly within the psychological discomfort dimension of the OHIP-14 ($p < 0.05$).

Clinical professionals and pediatric dentists should aim to improve not only adolescents' oral health but also that of their parents, recognizing that family oral health may collectively influence adolescents' overall OHRQoL.

ABBREVIATIONS

Child-OIDP, child oral impact on daily performances; CPQ-Esp$_{11-14}$, Spanish version of the child perceptions questionnaire; CPQ, child perceptions questionnaire; CPQ11–14, child oral health impact profile for 11–14 years old; CPQ8–10, child oral health impact profile for 8–10 years old; DIDL, dental impacts on daily living; ECOHIS, early childhood oral health impact scale; ICC, intraclass correlation coefficient; OHIP-14, oral health impact profile version 14; OHIP, oral health impact profile; OHL, oral health literacy; OHRQoL, oral-health-related quality of life; OIDP, oral impact on daily performances; PROMs, patient-reported outcome measures; P-CPQ, parental-caregiver perceptions questionnaire; QoL, quality of life; SD, standard deviation; S-ECC, severe early childhood caries; STROBE, strengthening the reporting of observational studies in epidemiology; COHIP, Child Oral Health Impact Profile.

AVAILABILITY OF DATA AND MATERIALS

The data presented in this study are available on reasonable request from the corresponding author.

AUTHOR CONTRIBUTIONS

AC, BE, VFV, NGD, CSGD and CGP—designed the research study. AC, BE, VFV, NGD, DC and AAM—performed the

research. AC, BE, VFV, NGD, CSGD and DC—analyzed the data. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The protocol for this study was approved by the Research Ethics Committee of the University of Salamanca, 27 November 2023 (protocol number: 1078). The present study obtained written informed consent to participate was obtained from the parents or legal guardians of participants. The study was conducted in accordance with the Declaration of Helsinki, as well as the guidelines of the STROBE guide for the conduct of observational studies.

ACKNOWLEDGMENT

The authors would like to thank the participants and their parents for their participation in this study.

FUNDING

This research received no external funding.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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How to cite this article: Adrián Curto, Beatriz Egido, Virginia Franco-Varas, Nuno Gustavo d'Oliveira, Clara Sandibel Garcete Delvalle, Daniel Curto, Alberto Albaladejo Martínez, Cristina Gómez-Polo. Analysis of the oral-health-related quality of life of parents and that of their adolescent children before attending a first dental consultation among a sample from Salamanca (Spain): a cross-sectional study. Journal of Clinical Pediatric Dentistry. 2026; 50(3): 132-139. doi: 10.22514/jocpd.2026.068.