CATÓLICA
FACULDADE DE MEDICINA DENTÁRIA
VISEU

ASSOCIATION BETWEEN ORAL CONDITION IN A POPULATION OF PORTUGUESE CHILDREN AND QUALITY OF LIFE

Dissertação apresentada à Universidade Católica Portuguesa
para obtenção do grau de Mestre em Medicina Dentária

Por: Nícia Filipa Martins Ferreira

Viseu, 2024

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Por: Nícia Filipa Martins Ferreira

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Viseu, 2024

We Keep moving forward, opening new doors, and doing new things, because we're curious and curiosity keeps leading us down new paths."
Walt Disney

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ABSTRACT

Introduction: Studies show a high prevalence of oral problems in children, affecting the quality of life related to oral health. There is a lack of comprehensive epidemiological studies on the oral conditions of Portuguese children. **Objectives:** To evaluate the prevalence of caries, consequences of non-treatment, malocclusion, traumatic dental injuries and MIH in a population of Portuguese children, verifying their association and sociodemographic characteristics with quality of life related to oral health. **Methods:** After approval by the Health Ethics Committee (CES-UCP no. 30/2019), the study included children aged 3 to 12 years and their guardians. Sociodemographic information and quality of life assessed by the ECOHIS-Pt or P-CPQ-Pt instruments via interview. Clinical data were obtained by oral examination. Statistical analysis compared groups using Student's t test, adopting a significance level of 5% ($P < 0.05$). **Results:** 131 children participated in the study, 76 females, 73 with mixed dentition, most living in urban areas, with parents who had between 10 and 12 years of education and a family income of two or more local minimum wages. The prevalence of caries was 48.1% and 9.2% with consequences of non-treatment. More than 80% of children had malocclusion, 16.8% had a history of traumatic dental injuries, and 15.3% had MIH. The average scores showed good quality of life related to oral health. There was an association between quality of life and place of residence, parents' marital status, mother's professional status, monthly family income, tooth decay and traumatic dental injuries, with a greater impact among children under 6 years of age. **Conclusion:** Portuguese children have a high prevalence of oral diseases, and these have a negative impact on the quality of life of preschool children.

Keywords: Pediatric Dentistry; Epidemiology, Health Surveys; Oral Health; Quality of Life

RESUMO

Introdução: Estudos mostram alta prevalência de problemas orais em crianças, afetando a qualidade de vida relacionada à saúde bucal. Faltam estudos epidemiológicos abrangentes sobre as condições orais de crianças portuguesas. **Objetivos:** Avaliar a prevalência de cárie, consequências do não tratamento, má oclusão, lesões dentárias traumáticas e MIH em uma população de crianças portuguesas, verificando a sua associação e de características sociodemográficas com a qualidade de vida relacionada à saúde oral. **Métodos:** Após aprovação pela Comissão de Ética para a Saúde (CES-UCP nº 30/2019), o estudo incluiu crianças de 3 a 12 anos e seus responsáveis. As informações sociodemográficas e qualidade de vida avaliadas pelos instrumentos ECOHIS-Pt ou P-CPQ-Pt via entrevista. Os dados clínicos foram obtidos pelo exame oral. A análise estatística comparou grupos pelo teste t de Student, adotando um nível de significância de 5% ($P < 0,05$). **Resultados:** Participaram do estudo 131 crianças, 76 do sexo feminino, 73 com dentição mista, maioria residente em região urbana, com os pais que tinham entre 10 e 12 anos de estudo e renda familiar de dois ou mais salários-mínimos locais. A prevalência de cárie foi 48,1% e 9,2% com consequências do não tratamento. Mais de 80% das crianças apresentavam má oclusão, 16,8% tinham histórico de lesões dentárias traumáticas e 15,3% MIH. Os escores médios mostraram boa qualidade de vida relacionada à saúde oral. Houve associação entre a qualidade de vida e local de residência, estado civil dos pais, situação profissional da mãe, renda familiar mensal, cárie dentária e lesões dentárias traumáticas, com maior impacto entre crianças com menos de 6 anos de idade. **Conclusão:** Crianças portuguesas apresentam elevada prevalência de doenças orais e estas repercutem de maneira negativa na qualidade de vida de crianças pré-escolares.

Palavras-chaves: Odontopediatria; Epidemiologia; Inquéritos epidemiológicos; Saúde Oral; Qualidade de vida.

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TABLES INDEX

INDEX OF ACRONYMS, ABBREVIATIONS AND SYMBOLS

±	More or less
%	Percent
DAI	Dental Aesthetic Index
N	Sample size
P	P-value
CPQ	Child Perceptions Questionnaire
OHRQoL	Oral Health-Related Quality of Life
ECOHIS	Early Childhood Oral Health Impact Scale
dmft	Decayed, Missing, and Filled Teeth in primary dentition
DMFT	Decayed, Missing, and Filled Teeth in definitive dentition
TDI	Traumatic dental injury
MIH	Molar Incisor Hypomineralization
>	Greater than
<	Less than
OMS	WHO World Health Organization
FMD-UCP	Faculdade de Medicina Dentária – Universidade Católica Portuguesa
MIMD	Mestrado Integrado de Medicina Dentária
P-CPQ-Pt	Parental-Caregiver Perceptions Questionnaire – Portuguese version
ECOHIS-Pt	Early Childhood Oral Health Impact Scale – Portuguese version
PPE	Personal protective equipment
=	Equal

1. THEORETICAL FOUNDATION

1. THEORETICAL FOUDATION

1.1 Oral conditions

Oral health, according to the World Health Organization (WHO), is defined as the state in which an individual is free from chronic pains in the mouth or face, oncological oral diseases, infections, or cavities, and does not experience tooth loss or other systemic conditions that affect their overall well-being. (1)

1.1.1. Dental carie

Caries affects approximately 90% of the world's population, with a higher prevalence in childhood ranging from 60% to 90%. It is characterized by the partial or total destruction of a tooth caused by bacteria associated with an improper diet or poor oral hygiene. This process initiates with the breakdown of carbohydrates into acids, leading to the demineralization of the enamel. (2) The susceptibility of teeth varies with age and their maturation process, and factors such as the shape, presence, and depth of grooves and fissures can contribute to cleaning difficulties, ultimately resulting in the development of cavities. In situations with lower sociodemographics levels, there are often serious and unacceptable levels of this disease. This may be attributed to financial and social factors that hinder access to dental appointments and affect the perception of the importance of dental care.

In childhood, the premature loss of primary teeth can have noticeable effects on speech and eating, potentially resulting in future consequences related to poor development and growth. Addressing this issue becomes challenging due to a decline in children's cooperation with cavity treatment and prevention efforts. In extreme cases, sedation may be necessary, adding to the cost of treatments.(3) Various techniques are employed in children to prevent future caries lesions and promote healthy oral hygiene habits. These include Atraumatic Restorative Treatment (ART), the application of fluoride, oral hygiene instructions, and guidance from a nutritionist, among other preventive measures. (2) Children who are 71 months of age or older and have carious lesions may be indicative of Early Childhood Caries (ECC). ECC, characterized by rapid development and affecting multiple teeth, is often associated with the consumption of sweets, sugar, and honey. This can lead to various health

issues, including gastrointestinal problems, poor nutrition, abscesses, infections, pain, and difficulties in chewing and sleeping. (4)

One method of counting the presence of cavities is through the dmft (decayed, missing, filled primary teeth) index in children under the age of 6, while the DMFT (decayed, missing, filled definitive teeth) can be used for assessing dental caries in children, from 3 years of age and older.(3)

1.1.2 Consequences of untreated caries lesions

Traditional indices are effective for gathering information about caries, the need for restoration, and surgical treatment. However, they do not capture data on the consequences of untreated carious diseases, such as pulp involvement and slow abscess formation.(5) Information obtained from the index of teeth indicated for extraction may highlight the need for removal, but it often does not specify the underlying cause. The reasons for extraction can vary and may include factors such as trauma, aesthetic concerns, orthodontic considerations, or the need for preparation for prosthetic procedures.(5,6) To address this gap and specifically evaluate the consequences of untreated caries lesions, the PUFA index was introduced.(5) In the PUFA index, the letter "P" signifies pulp involvement, indicating situations where the entrance to the pulp chamber is visible or when the structure of the tooth crown has been so damaged that only roots or fragments of these remain.(5) "U" stands for ulceration, resulting from trauma caused by sharp areas of teeth, which can impact the tongue and oral mucosa. (5) This situation may arise due to sharp margins of displaced teeth with pulp involvement or root fragments. (5) "F" denotes a fistula, identified when pus is discharged from a tooth with pulp involvement. (5) "A" signifies an abscess, where a tooth with pulp involvement exhibits a swelling filled with pus. (5)

1.1.3 Malocclusion

Malocclusion, considered the 3rd biggest oral health problem, is characterized by tooth irregularities or poor harmony between dental arches, influencing aesthetics, function, and quality of life. Hereditary factors, osteogenic development, the child's health status, nutritional habits, incorrect breathing, and pacifier sucking contribute to the onset or worsening of this condition. It's important to note that not all malocclusions

require treatment. To determine the priority of treatment, indices such as the "Index of Orthodontic Treatment Need" or "Dental Aesthetic Index" are employed. Essential cases for treatment include conditions like cleft lip or palate. (7,8) Malocclusions can be classified into three main classes: Class I, Class II, and Class III. Class I Malocclusion is characterized by the positioning of the mesiobuccal cusp of the upper first molar in alignment with the mesiobuccal groove of the lower first molar. Class II malocclusion is characterized by the lower molar occludes distal to the upper molar. Class II malocclusion is further divided into two subdivisions, with Class II Division 1 characterized by the upper central incisors protruding forward, and Class II Division 2 characterized by a retroclined upper central incisor. Class III Malocclusion is characterized by the lower molar occludes mesially to the upper molar.(9)

Open bite occurs when there is little to no contact between the upper and lower front teeth during maximum intercuspation. Overbite is characterized by the vertical overlap of the upper incisors over the lower incisors by more than 2mm. Overjet refers to the horizontal projection of the upper incisors beyond the lower incisors by more than 2mm in the horizontal plane. Anterior crossbite happens when the lower incisors occlude in front of the upper incisors. Posterior crossbite occurs when the upper molars occlude in a lingual relationship with the lower molars.(10). The types of arch in deciduous teeth are associated with the spacing between the deciduous teeth. The presence of diastemas, suggests that in a normal course, there will be sufficient space for the permanent dentition. In this context, the ideal arch type is Baume type I, characterized by the presence of diastemas. Conversely, in Baume type II, there are no diastemas. Both types, Baume I and Baume II, can occur independently and coexist in the oral cavity, leading to a classification known as mixed Baume.(11)

In a study conducted in the Castelo Branco region of Portugal, involving a sample of 49 children aged between 5 and 12 years, the focus was on the prevalence of malocclusions and the sociodemographics status of the parents. The findings indicated that the majority of children in the sample were under the care of a dentist. Among them, 33.3% of 5-year-olds and 40.7% of 12-year-olds exhibited malocclusions. Additionally, a significant proportion of mothers had an education level beyond the 8th grade, and the reported frequency of good brushing habits was notable. Interestingly, the study revealed a lack of agreement between the criteria used to define malocclusion and the self-perception of appearance among the participants. (12) On the other hand, it appears that early intervention prevents various problems.

1.1.4 Traumatic dental injuries

Traumatic Dental Injuries (TDI) refer to injuries affecting teeth, periodontal tissues, and the surrounding soft tissues. Children and adolescents may experience dental traumas of varying severity due to accidents or assaults. These injuries can affect both deciduous and permanent dentition, influencing the course of treatment. However, delayed response or lack of awareness by adults, including parents and educators, about potential complications can jeopardize pulp viability. Accidents affecting deciduous dentition may have implications for permanent dentition due to damages that can lead to pulp necrosis and root absorption, either internally or externally.

The global prevalence of TDI underscores that approximately one-third of all preschool-aged children have encountered a TDI affecting at least one primary tooth. Among school-aged children, a quarter have experienced a TDI in the permanent dentition, while nearly a third of adults have similarly been affected. It is noteworthy that variations in these figures may exist within individual countries. (13,14)The data elucidate that males exhibit a heightened prevalence of premature trauma in the permanent dentition; nonetheless, no gender disparity is discerned in the primary dentition. Notably, incidents in the primary dentition predominantly transpire within domestic settings, whereas in the permanent dentition, such occurrences are more prevalent within educational institutions and domestic environments. (13,14)The predominant injury in the permanent dentition manifests as a simple fracture of the crown of the upper central incisors, whereas in the primary dentition, injuries predominantly affect the periodontal tissues.(13)

Such incidents can significantly impact the quality of life, causing chewing problems and affecting social interactions.(15) Children who have been affected by dental trauma have an increased likelihood of experiencing an adverse impact on their social life. It has been observed that such individuals often refrain from expressions of joy, such as smiling and laughing, and, conversely, may demonstrate a decreased interest in others' perceptions and opinions about themselves.(16)

1.1.5 Molar Incisor Hypomineralization

Molar Incisor Hypomineralization (MIH), that have a global prevalence of MIH of 13.1%, is a systemic-origin defect that arises during the enamel amelogenesis phase of development, primarily impacting the first molars and incisors (17). The MIH affects the quality of the enamel, that is, the tooth has the correct shape, however, it has a porous surface (which can cause hypersensitivity), and a lack of minerals, and during the eruption, the edges of the tooth become worn. (18–20) Furthermore, there is a susceptibility to fractures during tooth eruption.(21,21–23) Affected teeth exhibit enamel opacities greater than 1mm, displaying a range of colors from creamy white to yellow, and even brown. These opacities can lead to an increased risk of developing caries lesions. This pathology presents a differential diagnosis with fluorosis, and amelogenesis imperfecta. Fluorosis is characterized by dental enamel damage that commonly impacts all teeth due to excessive fluoride exposure. Amelogenesis imperfecta is a hereditary condition that results in abnormal enamel formation, affecting the structure and appearance of teeth.(21)

Early diagnosis is crucial as it enables preventive measures or restorative interventions to halt the progression of fractures, pulp sensitivity, and inflammation. (21). Treatment options may include the placement of sealants, resins, micro-abrasions, composites, crowns, or, in some cases, tooth extraction on their severity. (21). In the long term, the restoration of teeth affected by MIH may exhibit poorer results compared to teeth not affected by MIH, because the affected teeth are more prone to enamel infiltration, making it challenging for restorations to adhere effectively. Due to the compromised enamel structure, restorations may have less adhesion to the enamel, necessitating the extension of cavity preparation to the tooth's hard tissue to achieve better adhesion.(24)

It is a multifactorial condition wherein these factors are distributed across prenatal (for instance maternal illnesses), perinatal, and postnatal periods (for instance measles, otitis media, urinary tract infections, antibiotic usage between others)(18,19,25). An additional factor currently under investigation is the presence of serum albumin in the matrix, which is believed to impede the mineralization process during the enamel maturation phase of tooth development.

In accordance with a systematic review evaluating the quality of life among children aged 8-10, it was found that their overall quality of life experienced a negative impact across various domains, with the exception of social well-being.(26)

1.2 **Quality of life**

The quality of life-related to oral health is influenced by oral health, as defined by the WHO as the physical, mental, and social well-being in the absence of diseases.(27) In children aged from birth to 5 years old, the Early Childhood Oral Health Impact Scale (ECOHIS) is employed, while from 6 years old onward, the Oral Health-Related Quality of Life (OHRQoL) assessment is utilized. In Portugal, among preschool-age children in 2015, the prevalence of oral health issues was recorded at 45.2%. This condition can impact the ability to chew, leading to a decrease in appetite, potential weight loss, difficulties in sleeping, and changes in behavior.(28) Oral disorders, encompassing malocclusions and dental trauma, are considered factors that affect the quality of life, according to the criteria. (29) A study revealed that oral health problems and disorders led to feelings of guilt among parents. In a sample of 1,313 children, where 26.3% had one or more cavities and 39.8% had malocclusions, 24% of parents reported experiencing guilt. Additionally, 54% of these parents believed their children had dental problems, yet 82% thought that their children's dental issues could be prevented. (30)

Parents' interest and active participation in their children's oral care, including tooth brushing and preventive measures against oral pathologies (such as addressing parafunctional and nutritional habits and ensuring regular dental check-ups), contribute significantly to better oral health outcomes and the establishment of healthy habits in the child. Presently, there is a general improvement in the number of people without caries lesions. However, individuals from lower sociodemographics backgrounds still experience high levels of the disease and often exhibit a limited awareness of the importance of oral health practices. Additionally, there are prevalent beliefs that hinder seeking treatment for dental problems, even when it is accessible or provided free of charge.(31)

1.3 **Importance of the study**

Several studies suggest that the oral health status of children significantly influences their quality of life pertaining to oral health. However, as of present, no study specific to the pediatric population has been identified in this regard, nor have any data been documented concerning Molar-Incisor Hypomineralization (MIH).

Hence, the current study endeavors to appraise the oral health status of children, encompassing assessments of dental caries, untreated consequences of the disease, malocclusion, traumatic injuries, and MIH, along with an examination of their ramifications on this crucial parameter, namely, quality of life.

The recognition of a lacuna in epidemiological investigations, particularly within more secluded locales in the central region of Portugal, underscores the urgent necessity for a comprehensive inquiry into oral health in this geographic area. Such an endeavor is imperative for comprehending the distinctive challenges and prevailing conditions endemic to these regions, thereby facilitating the formulation of targeted interventions aimed at ameliorating oral health outcomes.

2. OBJECTIVES

2. **OBJECTIVES**

2.1 **General Objective**

The study aims to evaluate the oral conditions of a population of Portuguese children and their association with quality of life related to oral health.

2.2 **Specific objectives**

Specifically, the study aims to understand the prevalence of the following conditions: tooth decay; consequences of not treating tooth decay; malocclusion; traumatic dental injuries and incisor molar hypomineralization – MIH in this population. It aims to describe the sociodemographic characteristics of the sample and test the possible association between these characteristics and oral conditions with quality of life related to oral health.

2.3 **Study hypothesis**

The study will test the null hypothesis that sociodemographic conditions and oral health conditions have an impact on quality of life related to oral health.

3. EXPANDED METHODOLOGY

3. **EXPANDED METHODOLOGY**

3.1 **Sample selection**

The children involved in this study ranged in age from 3 to 12 years and were participants in the "Ser Criança" Project, which is a collaborative partnership between the Faculty of Dental Medicine of the Portuguese Catholic University (FMD-UCP) and Reencontro, a social, educational, and cultural association. The primary objective is to promote oral health and scientific knowledge among the Portuguese population, particularly those in disadvantaged sociodemographics conditions. This collaboration between these institutions is formalized through a Collaboration Protocol (Attachment I).

The children who were invited to participate in this study were from preschool, first cycles, and they were enrolled in the academic year 2022/2023. Participation in the study was contingent on the consent of both the guardians and the children involved, and this consent was obtained through the signing of a free and informed consent form. (Attachment II).

3.2 **Place of performance**

The data collection for this study was conducted in the Municipality of Gouveia, encompassing various schools including Gouveia; CEB VNT; Vila Nova de Tazém; JI Melo; Ponte das Três Dentros; JI Lagarinhos; Paços da Serra; JI ABPG; Casa do Povo VNT; Moimenta da Serra; S Paio; Patronato; Santa Casa da Misericórdia de Seia and Tourais Paranhos. In the academic year 2022/2023 there were 104 children aged 3 to 5 and 325 children aged 6 to 12 enrolled in the education network.

3.3 **Inclusion criteria**

The inclusion criteria in this study comprised children with primary teeth (ages 3 to 5) or mixed teeth (ages 6 to 12). The inclusion was irrespective of gender, and the guardians of the children were fluent in the Portuguese language.

3.4 **Exclusion criteria**

The study excluded children who had systemic or cognitive impairments, those who refused to participate, individuals whose parents rejected their involvement in the study, and children whose parents were not fluent in the Portuguese language.

3.5 **Ethical aspects**

The “Ser criança” Project has already been submitted to the Health Ethics Committee (CES) of the Universidade Católica Portuguesa (UCP) under 2019 and obtained, on 02/06/2020, a favorable opinion (Attachment III). This year, a new opinion was requested from CES – UCP to update the research team and enable the collection and characterize molecular of saliva samples in the future. This year a new opinion was requested from the ethics committee, however I am still waiting for the updated opinion.

3.6 **Instruments and measurements**

Data were collected and recorded on a form developed for the study (Attachment V), which contained data relating to the sociodemographic characteristics of the sample (the child's name, age, sex, weight, height, place of residence, parents' marital status, parents' educational qualifications, parents' professional status, household composition, and family income).

The information regarding Oral Health-Related Quality of Life (OHRQoL) was obtained through the application of the Early Childhood Oral Health Impact Scale, Portuguese version (ECOHIS-PT) of the Parental-Caregiver Perception Questionnaire validated for the population in study, designed for preschool children. For school-aged children, data collection on OHRQoL was conducted using the Parental Perception Questionnaire-Caregiver, Portuguese version (PCPQ-PT), designed for school-age children.

Regarding the child's oral condition, during the examination, the following were recorded: caries; consequences of not treating the disease; malocclusion; traumatic dental injuries and incisor molar hypomineralization.

Dental caries were evaluated according to the criteria of the World Health Organization, using the dmft index (decayed (d), missing (m), and filled (f) teeth in deciduous teeth) and DMFT index (decayed (D), missing (M), and filled (F) teeth in

permanent teeth), taking into account the oral characteristics of the child being evaluated. The result of the dmft/DMFT index was obtained through the sum of decayed, lost and filled teeth per individual. After obtaining the result of the dmft/DMFT index for each child, they were classified with (code=1) or without caries lesion (code=0).(1)

The consequences of untreated dental caries were assessed using the pufa/PUFA index, for deciduous and permanent teeth, respectively. This index indicates the presence of pulpal involvement (p/P), ulceration of tissues due to fragments of deteriorated crown (u/U), fistula (f/F), and abscess (a/A). The result of the pufa/PUFA index was obtained by adding together the teeth with pulp involvement, tissue ulceration due to deteriorated crown fragments, fistula and abscess. After obtaining the pufa/PUFA index result for each child, they were classified with (code=1) or without consequences of not treating caries (code=0).(5)

The assessment of occlusal parameters followed the references from the studies of Baume and Bjork et al.(11,32) The investigated malocclusions were recorded as present or absent and included: anterior open bite (lack of vertical contact between the incisor teeth of the upper and lower arches); overbite (greater than 4mm measured with a plastic ruler); overjet (maxillary overjet greater than 4mm measured with plastic rulers), anterior crossbite, unilateral posterior crossbite (right or left), and bilateral posterior crossbite. If the child presented any of the conditions assessed, it would be classified as having malocclusion (code=1).

Dental traumatic injuries were assessed according to the criteria of the modified classification by Andreasen et al. (33)., which describes and categorizes dental traumas as enamel fracture, enamel and dentin fracture, discoloration, intrusion, lateral luxation, extrusion, and avulsion. Subsequently, the children were classified with (code=1) or without Dental traumatic injuries (code=0).

The molar incisor hypomineralization (MIH) was classified according to the guidelines proposed by the European Academy of Pediatric Dentistry – EAPD (34), which considers demarcated opacity (score 1), post-eruptive breakdown (score 2), atypical restoration (score 3), extraction due to MIH (score 4), and unerupted (score 5). MIH is considered mild when the affected tooth presents only demarcated opacities, without fractures and occasional sensitivity, with mild concern about incisor discoloration. On the other hand, severe MIH, in addition to opacities, may involve post-eruptive enamel fracture, associated caries, persistent and spontaneous

sensitivity, and strong concern about incisor discoloration. MIH injuries were classified as mild or severe (when tooth loss occurred due to MIH, when there was no possibility of classification, and when the lesions covered more than two thirds of the tooth). After that, children were classified as with (code=1) or without MIH (code=0).

3.7 **Calibration of examiners and pilot study**

The calibration was undertaken to establish standardized diagnostic criteria for examiners and refine data collection instruments. Professors from the disciplines of Pediatric Dentistry and Preventive Medicine took on the responsibility of guiding the examiners regarding the parameters under analysis. This guidance encompassed a theoretical explanation (to familiarize examiners with the evaluation criteria and conditions) and visual aids (images and models).

The pilot study involved 20 children who were receiving care at the FMD-UCP clinic but were not part of the main study. Following the completion of authorization and questionnaires by the guardians, a clinical examination was conducted. This entire process was then repeated after a 7-day interval. The data collected was used to improve the instruments and evaluate the uniformity of the intra-examiners and inter-examiners.

3.8 **Data collection procedures/Experimental procedure**

At the time of the intraoral examination, the child was actively involved in educational activities orchestrated by Catholic students under the supervision of accompanying educators. The structured activities involved the use of stickers representing healthy and less nutritious foods and participants had to stick the respective stickers on the representation of a tooth. Additionally, organizers provided soft toys, brushes, and toothpaste, allowing children to physically demonstrate their oral hygiene practices.

During the activities with the children, interviews were carried out with those responsible for them to collect sociodemographic information and quality of life. After completing parental data collection, the child underwent a clinical examination.

The intraoral assessment of children was carried out with the subjects in a supine position, using an adapted table or stretcher, provided by schools for this

purpose. Examiners employed a flashlight in conjunction with examination aids (wooden spatulas and gauze pads). Each examiner was accompanied by a student assistant responsible for recording the data.

The children were subjected to meticulous observation to discern potential caries lesions and assess their severity, alongside the identification of accompanying manifestations such as ulcers, fistulas, or abscesses in teeth affected by caries. Whether the children had lost any teeth due to tooth decay. Potential dental trauma was rigorously evaluated, encompassing the meticulous differentiation of its type. Furthermore, the examination extended to the identification of possible MIH lesions, characterized by an assessment of their severity and distribution within the oral cavity. The type of dentition and malocclusion were recorded. The examination covered both deciduous and mixed dentition. Specific malocclusions, such as anterior open bite, overbite, overjet, anterior crossbite, unilateral posterior crossbite (either right or left), and bilateral posterior crossbite, were assessed and recorded as either present or absent.

Concurrently, during the clinical examination of the oral cavity, instances of identified pathologies necessitating urgent intervention (pain or evident foci of infection) prompted the immediate referral of the child to the Curricular Unit of the integrated Pediatric Orthopedics and Pediatric Dentistry clinic at the Universidade Católica Portuguesa. In situations categorized as non-urgent, the responsibility for appointment scheduling rested with the university, even though some cases were not explicitly part of the study sample.

3.9 **Statistical procedures**

The obtained data were organized, tabulated, and subjected to statistical analysis using the SPSS program. Descriptive statistical analysis examined the absolute and relative frequency of the investigated variables.

The validity of the instruments assessing oral health-related quality of life was determined using the internal consistency method, by calculating the Cronbach's alpha coefficient. Inter-examiner and intra-examiner agreement in the pilot study was assessed using Cohen's Kappa coefficient.

In the inferential statistical analysis, the quality of life related to oral health using the ECOHIS-Pt and P-CPQ-Pt instruments was evaluated considering the average

scores of the instrument's subscales and the total score. The oral conditions assessed were dichotomized into present or absent.

To verify the association between the tested variables, the groups were compared using the Student's t test for equality of means. The effect size was measured by calculating Cohen's d coefficient. The significance level adopted was 5% ($P < 0.05$).

4. SCIENTIFIC ARTICLE

4. SCIENTIFIC ARTICLE

TITLE: ASSOCIATION BETWEEN ORAL CONDITION IN A POPULATION OF PORTUGUESE CHILDREN AND QUALITY OF LIFE

TÍTULO: ASSOCIAÇÃO ENTRE CONDIÇÃO ORAL EM UMA POPULAÇÃO DE CRIANÇAS PORTUGUESAS E QUALIDADE DE VIDA

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ABSTRACT:

Introduction: Studies show a high prevalence of oral problems in children, affecting the quality of life related to oral health. There is a lack of comprehensive epidemiological studies on the oral conditions of Portuguese children. **Objectives:** To evaluate the prevalence of caries, consequences of non-treatment, malocclusion, traumatic dental injuries and MIH in a population of Portuguese children, verifying their association and sociodemographic characteristics with quality of life related to oral health. **Methods:** After approval by the Health Ethics Committee (CES-UCP no. 30/2019), the study included children aged 3 to 12 years and their guardians. Sociodemographic information and quality of life assessed by the ECOHIS-Pt or P-CPQ-Pt instruments via interview. Clinical data were obtained by oral examination. Statistical analysis compared groups using Student's t test, adopting a significance level of 5% ($P < 0.05$). **Results:** 131 children participated in the study, 76 females, 73 with mixed dentition, most living in urban areas, with parents who had between 10 and 12 years of education and a family income of two or more local minimum wages. The prevalence of caries was 48.1% and 9.2% with consequences of non-treatment. More than 80% of children had malocclusion, 16.8% had a history of traumatic dental injuries, and 15.3% had MIH. The average scores showed good quality of life related to oral health. There was an association between quality of life and place of residence, parents' marital status, mother's professional status, monthly family income, tooth decay and traumatic dental injuries, with a greater impact among children under 6

years of age. **Conclusion:** Portuguese children have a high prevalence of oral diseases, and these have a negative impact on the quality of life of preschool children.

Keywords: Pediatric Dentistry; Epidemiology, Health Surveys; Oral Health; Quality of Life

RESUMO:

Introdução: Estudos mostram alta prevalência de problemas orais em crianças, afetando a qualidade de vida relacionada à saúde bucal. Faltam estudos epidemiológicos abrangentes sobre as condições orais de crianças portuguesas. **Objetivos:** Avaliar a prevalência de cárie, consequências do não tratamento, má oclusão, lesões dentárias traumáticas e MIH em uma população de crianças portuguesas, verificando a sua associação e de características sociodemográficas com a qualidade de vida relacionada à saúde oral. **Métodos:** Após aprovação pela Comissão de Ética para a Saúde (CES-UCP nº 30/2019), o estudo incluiu crianças de 3 a 12 anos e seus responsáveis. As informações sociodemográficas e qualidade de vida avaliadas pelos instrumentos ECOHIS-Pt ou P-CPQ-Pt via entrevista. Os dados clínicos foram obtidos pelo exame oral. A análise estatística comparou grupos pelo teste t de Student, adotando um nível de significância de 5% ($P < 0,05$). **Resultados:** Participaram do estudo 131 crianças, 76 do sexo feminino, 73 com dentição mista, maioria residente em região urbana, com os pais que tinham entre 10 e 12 anos de estudo e renda familiar de dois ou mais salários-mínimos locais. A prevalência de cárie foi 48,1% e 9,2% com consequências do não tratamento. Mais de 80% das crianças apresentavam má oclusão, 16,8% tinham histórico de lesões dentárias traumáticas e 15,3% MIH. Os escores médios mostraram boa qualidade de vida relacionada à saúde oral. Houve associação entre a qualidade de vida e local de residência, estado civil dos pais, situação profissional da mãe, renda familiar mensal, cárie dentária e lesões dentárias traumáticas, com maior impacto entre crianças com menos de 6 anos de idade. **Conclusão:** Crianças portuguesas apresentam elevada prevalência de doenças orais e estas repercutem de maneira negativa na qualidade de vida de crianças pré-escolares.

Palavras-chaves: Odontopediatria; Epidemiologia; Inquéritos epidemiológicos; Saúde Oral; Qualidade de vida.

INTRODUCTION:

Oral health, according to the World Health Organization (WHO), is defined as the state in which an individual is free from chronic pains in the mouth or face, oncological oral diseases, infections, or cavities, and does not experience tooth loss or other systemic conditions that affect their overall well-being. The quality of life-related to oral health (OHRQoL) is influenced by oral health, as defined by the WHO as the physical, mental, and social well-being in the absence of diseases. (1)

Oral disorders, encompassing malocclusions (with worldwide prevalence of 56%), dental trauma (with worldwide prevalence in permanent teeth is 11%) and MIH (with worldwide prevalence of 13.1% to 14.2%) are considered factors that affect the quality of life, according to the criteria. (2-5) Oral disorders can impact the ability to chew, leading to a decrease in appetite, potential weight loss, difficulties in sleeping, and changes in behavior. (6)

Considering that the oral condition affects the quality of life-related to oral health, evaluating these conditions only through clinical parameters does not reflect the totality of the consequences of oral problems for the individual's health and in this sense, the assessment of quality of life related to oral health (OHRQoL) has been used to determine these repercussions comprehensively.

Based on the above, recent studies demonstrate a high prevalence of oral disorders in children, however, there is a lack of epidemiological studies that comprehensively evaluate the oral conditions of Portuguese children. Thus, this study evaluated the oral condition of children considering caries, the consequences of not treating the disease, malocclusions, traumatic dental injuries, and incisor molar hypomineralization, as well as their impact on this important indicator, which is quality of life.

MATERIALS AND METHODS:

Ethical Aspects

The study was approved by the Ethics Committee for Health (CES) of the Universidade Católica Portuguesa (UCP) under number 30/2019. The CEP - UCP opinion was updated in

All children invited to participate were referred to FMD-UCP for the necessary procedures, regardless of whether they were included in the study or not.

Study population

The study included children aged 3 to 12, enrolled in the "Ser Criança" Project in 2023-2024 academic year in the pre-school and primary school (1st cycle), whose guardians and children agreed to participate in the study, and who were fluent in the Portuguese language. A total of 131 children were included, while 111 children were excluded.

Instruments and Measures

Data were collected and recorded on a form developed for the study (Attachment IV), which contained data relating to the sociodemographic characteristics of the sample (the child's name, age, sex, weight, height, place of residence, parents' marital status, parents' educational qualifications, parents' professional status, household composition, and family income).

The information regarding Oral Health-Related Quality of Life (OHRQoL) was obtained through the application of the Parental-Caregiver Perceptions Questionnaire, Portuguese version (P-CPQ-Pt), designed for preschool-aged children. For school-aged children, data collection on OHRQoL was conducted using the Early Childhood Oral Health Impact Scale, Portuguese version (ECOHIS-Pt), that were validated for the study population. (7)

Regarding the child's oral condition, during the examination, the following were recorded: caries; consequences of not treating the disease; malocclusion; traumatic dental injuries and incisor molar hypomineralization.

Dental caries were evaluated according to the criteria of the World Health Organization (8), using the dmft index (decayed (d), missing (m), and filled (f) teeth in deciduous teeth) and DMFT index (decayed (D), missing (M), and filled (F) teeth in permanent teeth), taking into account the oral characteristics of the child being evaluated.

The consequences of untreated dental caries were assessed using the pufa/PUFA index (5), for deciduous and permanent teeth, respectively. This index indicates the presence of pulpal involvement (p/P), ulceration of tissues due to fragments of deteriorated crown (u/U), fistula (f/F), and abscess (a/A). (9)

The assessment of occlusal parameters followed the references from the studies of Baume and Bjork et al.(10, 11) The investigated malocclusions were

recorded as present or absent and included: anterior open bite (lack of vertical contact between the incisor teeth of the upper and lower arches); overbite (greater than 4mm measured with a plastic ruler); overjet (maxillary overjet greater than 4mm measured with plastic rulers), anterior crossbite, unilateral posterior crossbite (right or left), and bilateral posterior crossbite.

Dental traumatic injuries were assessed according to the criteria of the modified classification by Andreasen et al. (12)., which describes and categorizes dental traumas as enamel fracture, enamel and dentin fracture, discoloration, intrusion, lateral luxation, extrusion, and avulsion.

The molar incisor hypomineralization (MIH) was classified according to the guidelines proposed by the European Academy of Pediatric Dentistry – EAPD (13), which considers demarcated opacity (score 1), post-eruptive breakdown (score 2), atypical restoration (score 3), extraction due to MIH (score 4), and unerupted (score 5). MIH is considered mild when the affected tooth presents only demarcated opacities, without fractures and occasional sensitivity, with mild concern about incisor discoloration. On the other hand, severe MIH, in addition to opacities, may involve post-eruptive enamel fracture, associated caries, persistent and spontaneous sensitivity, and strong concern about incisor discoloration.

Calibration of examiners and pilot study

The calibration was undertaken to establish standardized diagnostic criteria for examiners and refine data collection instruments. The pilot study involved 20 children who were receiving care at the FMDUCP clinic but were not part of the main study. Following the completion of authorization and questionnaires by the guardians, a clinical examination was conducted. This entire process was then repeated after a 7-day interval. The data collected was used to improve the instruments and evaluate the uniformity of the intra-examiners.

Data Collection

On the day of collection, an oral health promotion action was carried out at the Reencontro headquarters, by teachers and students from FMD-UCP to desensitize the child through playful educational actions.

During the playful activities, those responsible were interviewed to collect sociodemographics data (child's name, age, sex, parents' educational qualifications,

parents' professional status, type of family and monthly family income) and quality of life related to oral health.

After data collection with the parents was completed, the child underwent the examination. The intraoral assessment was carried out with the subjects in a supine position, using an adapted table or a stretcher, provided by the schools for this purpose. Data were collected by two previously trained and calibrated examiners.

Data Analysis

The obtained data were organized, tabulated, and subjected to statistical analysis using the SPSS program. The validity of the instruments assessing oral health-related quality of life was determined using the internal consistency method, by calculating the Cronbach's alpha coefficient. Inter-examiner and intra-examiner agreement in the pilot study was assessed using Cohen's Kappa coefficient. Descriptive statistical analysis examined the absolute and relative frequency of the investigated variables.

For the analyses, the oral conditions were dichotomized. Regarding caries, dmft/DMFT = 0 (without cavities) and dmft/DMFT ≠ 0 (with caries) were considered. Regarding the pufa/PUFA index, the child was classified as having no consequences of untreated caries (pufa/PUFA = 0) or with consequences of untreated caries (pufa/PUFA ≠ 0). In relation to malocclusion, traumatic dental injuries and MIH, the presence or absence of these conditions was considered.

The quality of life related to oral health using the ECOHIS-Pt and P-CPQ-Pt instruments was evaluated considering the average scores of the instrument's subscales and the total score.

To check the association between the tested variables the groups were compared using the Student's t-test for equality of means. The effect size was measured by calculating Cohen's d coefficient. The adopted significance level was 5% ($P < 0.05$).

RESULTS

The data described were obtained after evaluating inter-examiner and intra-examiner agreement. The values obtained for the Kappa coefficient ranged from 0.87 to 1.0 and from 0.92 to 1.0, respectively.

The evaluation of the internal consistency of the quality of life instruments resulted in the following Cronbach's alpha coefficients: ECOHIS-Pt (α = 0.83) and P-CPQ-Pt (α = 0.95).

In total, 242 children aged between 3 and 12 years and their legal guardians were invited to participate in the study. Of these, 35 were excluded because they were outside the intended age range, 55 did not authorize the child's participation and 21 did not have the entire questionnaire completed. The final sample was made up of 131 children, which corresponds to 30.53% of the 429 children enrolled in the region for the school year.

Table 1 describes the sociodemographic data of the sample. It is observed that this is made up mainly of female children, aged between 6 and 12 years old and living in urban areas. As for family structure, the majority belong to the nuclear family type, where most parents are married or live together, with father and mother having 12 or more years of schooling. Most parents are employed and have a monthly family income of two or more minimum wages.

Table 1. sociodemographic data of the sample (N = 131)

Data	N	%
Sex		
Masculine	55	42.0
Feminine	76	58.0
Age		
3 to 5 years	58	44.3
6 to 12 years	73	55.7
Place of residence		
Rural (Village)	56	42.7
Urban (Villa or City)	75	57.3

Type of family		
Nuclear	72	55.0
Non- nuclear/extended	52	39.7
Uninformed	7	5.3
Parents' marital status		
Married or together	104	79.4
Single, separated, widowed	26	19.8
Uninformed	1	0.8
Father's educational qualifications		
Up to 12 years of study	102	77.9
More than 12 years of study	23	17.6
Uninformed	6	4.6
Mother's educational qualifications		
Up to 12 years of study	90	68.7
More than 12 years of study	39	29.8
Uninformed	2	1.5
Father's employment status		
Employee/ retired	112	85.5
Unemployed	13	9.9
Uninformed	6	4.6
Mother's employment status		
Employee/ retired	101	77.1
Unemployed	25	19.1
Uninformed	5	3.8
Monthly family income (in euros - €)		
A minimum wage	21	16.0
Two or more minimum wages	46	35.1
Uninformed	64	48.9

Source: The authors

Table 2 presents the oral condition of the children within the sample (N=131). The prevalence of caries in the sample was 48.1%. In both age groups, the decay component (c/C) was what contributed most to the values found. The disease was more prevalent among children aged between 6-12 (with dmft= 34 and DMFT= 16) than among those between 3-5 (dmft= 22).

Table 2. Children's oral conditions regarding caries, pufa/PUFA, malocclusion, traumatic dental injury and MIH (N = 131)

Oral conditions	**N**	**%**
Tooth decay (dmft/DMFT)	**N = 131**	**100%**
No caries experience (dmft/DMFT = 0)	68	51.9
With experience of caries (dmft/DMFT ≠ 0)	63	48.1
Consequences of untreated caries - pufa/PUFA	**N = 131**	**100%**
No consequences of untreated caries (pufa/PUFA = 0)	119	90.8
With consequences of untreated caries (pufa/PUFA ≠ 0)	12	9.2
Malocclusion	**N = 131**	**100%**
No malocclusion	26	19.8
With malocclusion	105	80.2
Traumatic dental injury	**N = 131**	**100%**
No traumatic dental injury	109	83.2
With traumatic tooth injury	22	16.8
Incisor Molar Hypomineralization - MIH	**N = 131**	**100%**
Without MIH	111	84.7
With MIH	20	15.3

Source: The authors

In 9.2% of the sample there were consequences of untreated caries using the pufa/PUFA index (Table 2). Unproven data show that these consequences were more frequent among children with mixed dentition (N=7) than among children with primary dentition (N= 5) and that the p/P component, referring to the exposed pulp, was the most frequent.

The occlusion assessment demonstrated that the majority of children with primary dentition (N = 35) had a Baume type I arch and a flat molar terminal relationship or mesial step (N = 41). In the mixed dentition phase, Class I (N = 43) and Class II (N = 13) molar relationships were the most frequent. Considering the total sample (N = 131), malocclusion (Table 2) was observed in 105 children (80.2% of the sample). This most frequently affects children aged between 3-5 years (N=53). Overbite (N = 24) and unilateral posterior crossbite (N = 21) were the most frequent malocclusions.

Still in Table 2, the prevalence of traumatic dental injuries was 16.8% (N = 22). The most frequent were enamel fractures (11.5%) and enamel and dentin fractures (4.6%). MIH affected 15% of children and was equally distributed among children in the sample (N = 10 in each age group). (Table 2). The most prevalent manifestation

was marked opacities, affecting 13% of children. Regarding severity classification, of the 20 affected children, 3 presented severe MIH.

Table 3 shows the minimum, maximum and average values for each subscale and the total value of the instruments that assessed quality of life. In both age groups evaluated, the average values obtained are very close to the minimum values, indicating good quality of life related to oral health in the sample, regardless of the age group.

Table 3. Quality of life related to oral health by ECOHIS-Pt and P-CPQ-Pt (N = 131)

Scale (Items – points)	Minimum	Maximum	Average	Standard deviation
ECOHIS-Pt - children aged 3 to 5 years (N = 58)				
Child subscale (Items 1 to 9 – 9 to 45 points)	9	19	10.84	± 2.64
Family subscale (Items 10 to 13 – 4 to 20 points)	6	16	6.79	± 2.16
Full Scale (Items 1 to 13 – from 13 to 65 points)	15	29	17.64	± 3.71
P-CPQ-Pt - children aged 6 to 12 years (N = 73)				
Oral symptoms subscale (Items 1 to 6 – 0 to 24 points)	0	11	3.81	± 2.41
Functional limitations subscale (Items 7 to 14 – 0 to 32 points)	0	13	3.42	± 3.45
Emotional well-being subscale (Items 15 to 22 – 0 to 32 points)	0	13	1.95	± 3.01
Social well-being subscale (Items 23 to 33 – 0 to 44 points)	0	18	1.55	± 3.19
Family impact subscale (Items 34 to 47 – 0 to 56 points)	0	24	2.23	± 4.32
Full scale (Items 1 to 47 – from 0 to 188 points)	0	66	12.96	± 12.53

Source: The authors

The association between quality of life related to oral health and demographic and sociodemographic data is detailed in Table 4. For children aged 3 to 5 years, assessed by ECOHIS-Pt, associations were observed between the parents' marital status and the child's subscale (P = 0.003) as well as the scale as a whole (P = 0.024). The mother's professional status (P = 0.007) and monthly family income (P = 0.009) were associated with the family subscale. Additionally, for children aged 6 to 12 years old, assessed by the P-CPQ-Pt, an association was found between the place of residence and the oral symptoms subscale (P = 0.041).

Children aged 3 to 5 years whose parents lived together had lower mean values on the child subscale (10.41 ± 2.34) and on the total scale (17.04 ± 3.35) than those children whose parents lived separately, whose average values were 13.22 ± 3.07 and 20.89 ± 4.10, respectively. Children whose mothers were employed had higher means (7.05 ± 2.44) than those with unemployed mothers (6.00 ± 0.00) on the family subscale. This subscale was also associated with monthly family income. Higher family income resulted in higher means (8.15 ± 3.31) than those with lower family income (6.00 ± 0.0). For children between 6 and 12 years old, living in an urban area resulted in higher means (4.32 ± 2.26) on the subscale related to oral symptoms than living in a rural area (3.16 ± 2.47).

Table 4. Association between sociodemographic characteristics and quality of life by ECOHIS-Pt and P-CPQ-Pt (N = 131)

Sociodemographic characteristics	Quality of life – P-value								
	ECOHIS – Pt* (N = 58)			P-CPQ-Pt** (N = 73)					
	S1	S2	T	S1	S2	S3	S4	S5	T
Sex	0.696	0.867	0.856	0.878	0.551	0.592	0.499	0.844	0.675
Place where you live	O.787	0.712	0.982	**0.041**	0.357	0.474	0.297	0.338	0.135
Family type	0.279	0.905	0.162	0.118	0.267	0.923	0.835	0.504	0.482
Parents' marital status	**0.003**	0.397	**0.024**	0.728	0.741	0.288	0.246	0.483	0.370
Father's educational qualifications	0.852	0.274	0.272	0.622	0.267	0.557	0.693	0.242	0.291
Mother's educational qualifications	0.846	0.080	0.224	0.609	0.245	0.220	0.338	0.388	0.210
Father professional status	0.170	0.338	0.682	0.786	0.873	0.857	0.676	0.640	0.561
Mother's professional status	0.675	**0.007**	0.497	0.948	0.493	0.678	0.301	0.270	0.343
Monthly family income	1.000	**0.009**	0.141	0.993	0.399	0.330	0.756	0.790	0.918

Source: The authors

* ECOHIS-Pt - S1: Child subscale; S2: Family subscale; T: Total score
** P-CPQ-Pt - S1: Oral symptoms subscale; S2: Functional limitations subscale; S3: Emotional well-being subscale; S4: Social well-being subscale; S5: Family impact subscale; T: Total score
Student's t-test for equality of means
Significance level adopted 5% (P < 0.05)

The association between the oral conditions assessed and the quality of life related to oral health is described in Table 5. For children aged 3 to 5 years, associations were observed between having carious lesions and the child's subscale (P = 0.001), as well as for the full scale (P = 0.002). Children without caries experience had lower mean values in both subscales (9.78 ± 1.4 and 16.28 ± 4.60) than those with

caries experience (12.59 ± 3.18 and 19.86 ± 4 ,60). Furthermore, an association was found between dental trauma and the family subscale, with higher mean values for children without experience of trauma (6.9 ± 2.29) than for those with experience of trauma (6.0 ± 0. 0). For children aged 6 to 12 years, no associations were identified between the oral conditions assessed and quality of life related to oral health.

Quantifying differences between groups to estimate the magnitude of effects resulted in Cohen's d values for the association between caries and the child subscale of 1.25 (large effect). For the association between caries and the ECOHIS-Pt total scale, the magnitude of the effect was considered medium (d = 0.78). The association between trauma history and the family subscale was small (d = 0.42).

Table 5. Association between Oral Condition and Oral Health-Related Quality of Life using ECOHIS-Pt and P-CPQ-Pt (N = 131)

Oral condition	Quality of life – P-value								
	ECOHIS-Pt* (N = 58)			P-CPQ-Pt** (N = 73)					
	S1	S2	T	S1	S2	S3	S4	S5	T
Caries	**0.001**	0.259	**0.002**	0.506	0.357	0.342	0.796	0.310	0.282
Consequences of untreated tooth decay	0.322	0.520	0.742	0.943	0.354	0.957	0.329	0.397	0.775
Malocclusion	0.361	0.397	0.251	0.459	0.829	0.313	0.602	0.445	0.400
Traumatic dental injuries	0.549	**0.005**	0.981	0.069	0.216	0.975	0.629	0.365	0.264
Incisor molar hypomineralization	0.394	0.260	0.205	0.667	0.826	0.619	0.494	0.603	0.797

Source: The authors

* ECOHIS-Pt - S1: Child subscale; S2: Family subscale; T: Total score
** P-CPQ-Pt - S1: Oral symptoms subscale; S2: Functional limitations subscale; S3: Emotional well-being subscale; S4: Social well-being subscale; S5: Family impact subscale; T: Total score
Student's t-test for equality of means
Significance level adopted 5% (P < 0.05)

DISCUSSION

The main result of this study is that the oral conditions of the population of Gouveia, Portugal, are similar to other populations of Portuguese children, except for the higher prevalence of malocclusion. Despite the high prevalence found for all conditions, only the experience of caries and trauma was associated with oral health-related quality of life, and this was limited to children aged 3 to 5 years. The impact of

caries on quality of life is already recognized in the literature; however, when considering other conditions, this association is not always confirmed. (14-22).

This study was the first to comprehensively assess the oral condition of Portuguese preschool and school-aged children and measure the impact of these conditions on quality of life using a validated instrument for this population. The Cronbach's alpha values obtained for both instruments demonstrate good internal consistency. (23) The inter- and intra-examiner agreement values contribute to the reliability of the results. (24)

The population of this study presented sociodemographic characteristics slightly different to those of other child populations among which quality of life was assessed. Higher levels of monthly family income and maternal education were found compared to previous studies. (15, 16, 25)

Regarding caries lesions, the prevalence in this study follows the trend found in other studies conducted on preschool children (15, 17, 20, 26, 27), while studies on school-aged children (16, 21) report higher values. A possible reason for this is the socioeconomic difference detected in the sample, as most of these families received minimum wage, which may hinder access to dental care (28). The consequences of untreated caries lesions show expected results in line with studies conducted on children (27, 29, 30).

Regarding malocclusion, it was found that the children in the sample had a higher percentage of malocclusion compared to children overall. (15, 16, 19 -21, 31 - 33) However, a study carried out in Lisbon with preschool children found values similar to those in the sample of this study (34), which was attributed to non-nutritive sucking habits. (35) This study, however, did not investigate harmful oral habits.

For traumatic dental injuries, it was observed that the study sample had a lower prevalence compared to children in other studies (15-18). The sociodemographic characteristics of each sample as well as the different parameters used to evaluate traumatic dental injuries may be the reason for the differences identified. The IHM values found in the sample corroborate previous studies (31, 36) demonstrating that this condition affects at least one in every 10 children.

The data presented show a high prevalence of diseases, especially among preschool-aged children, and provides additional evidence in favor of the need for early intervention as a way of identifying risk factors and intervention needs to be instituted to promote health in this population.

In an effort to comprehensively determine the repercussions of oral conditions, instruments designed to assess quality of life related to oral health have been frequently used in dentistry (37-39). The most used instruments to measure the quality of life of preschool and school children related to oral conditions are the CPQ (16, 17, 25) and the ECOHIS (15, 20, 21, 29,31), justifying the choice for these instruments in the present study. This study used parental reports to assess quality of life related to oral health through the Portuguese versions of the Parental-Caregiver Perceptions Questionnaire (P-CPQ-Pt) and the Early Childhood Oral Health Impact Scale (ECOHIS- Pt), which has been validated for this specific population.

Parental reports have been highlighted as a viable alternative, especially for very young children or those who, due to physical or cognitive reasons, are unable to respond to the questionnaire themselves (40) s. Additionally, a child's oral condition can impose limitations that affect not only the child's well-being but also that of their families. Moreover, caregivers are the ones making health care decisions for children, so their perception of quality of life should be valued in planning strategies that facilitate communication between professionals, patients, and families. (41)

It was not the main objective of this study to evaluate the association between sociodemographic characteristics and quality of life; however, these were evaluated to characterize the sample. Children (aged 3 to 5 years) whose parents lived together had a better quality of life. Better quality of life was also found among children whose mothers did not work and in families with lower monthly income, which is contrary to expectations. A possible reason for these results is that the presence of the mother in the home improves the children's quality of life, even if this has repercussions on the family's monthly income. A previous study demonstrated with its results the positive impact of maternal presence in improving the quality of life of children. (42)

Among children aged 6 to 12 years, a better quality of life was found among those living in rural areas with regard to oral symptoms. This result was also not expected, since living in an urban area facilitates access to treatment. The level of education and income of the sample must be considered, which can contribute to oral health literacy and facilitate access to care. Low literacy related to oral health is associated with the oral condition. (43)

Among the oral conditions associated with the quality of life of preschool children in this sample, tooth decay was the one that had the greatest effect, significantly impacting the child's subscale and the scale as a whole. Recognized as

the most prevalent disease in the field of dentistry, it continues to affect children at a very early age and has a negative impact on their quality of life.

Surprisingly, the experience of traumatic dental injuries had a positive impact on quality of life considering the family subscale, despite having a small effect (d = 0.42). It is noteworthy that of the 58 children at this age, only 7 suffered trauma and the most common injuries were uncomplicated enamel fractures, which may have caused symptoms at the time of the incident but did not affect the children's quality of life after some time. A study demonstrated that depending on the severity of these injuries, the impact on quality of life related to oral health varies. (44)

Despite the limitations of this cross-sectional study, which utilized a convenience sample of children who receive healthcare assistance, the presented results provide important insights for planning necessary strategies for this population. Additionally, they offer further evidence regarding the importance of assessing children, especially at preschool ages, for the need for intervention aimed at improving their quality of life and that of their families.

CONCLUSIONS

Based on the results, it was possible to conclude that:

- The prevalence of caries in the sample was 48.1% and the carious component was mainly responsible for the rate found.
- Untreated caries had consequences for 9.2% of children, considering the pufa/PUFA index.
- In total, 105 (80.2%) children had some type of malocclusion.
- The prevalence of traumatic dental injuries was 16.8%, mainly affecting dental hard tissues.
- Molar-incisor hypomineralization (MIH) affected 15.3% of children, with 2% considered serious.
- Parents' marital status, mother's employment status and average family income had an impact on the quality of life of pre-school children. For school-age children, the place of residence impacted their quality of life.

- Among the oral conditions evaluated, only caries and traumatic dental injuries were associated with oral health-related quality of life and this occurred only for preschool-aged children. Only for dental caries was this effect considered large.
- The data presented provide evidence in favor of early intervention as a means of preventing disease, promoting health and improving the quality of life of children and families.

CORRESPONDENCE

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FUNDING

BPI Foundation Awards ("La Caixa" Childhood)

5. FINAL CONSIDERATIONS

5. **FINAL CONSIDERATIONS**

The results reported in the present study provide important data about the oral condition of Portuguese children. They demonstrate a high prevalence of oral diseases and reinforce the global trend of increasingly earlier onset. Furthermore, it provides additional evidence for the impact of caries on the quality of life of preschool children.

Based on these findings, it is suggested that measures to promote health, prevent and control oral diseases be instituted as early as possible, in order to contribute to the quality of life of children and their families.

Due to the scarcity of randomized and controlled clinical studies, new studies with representative samples of the Portuguese population should be encouraged to elucidate the multiple factors related to oral conditions and also to quality of life related to oral health.

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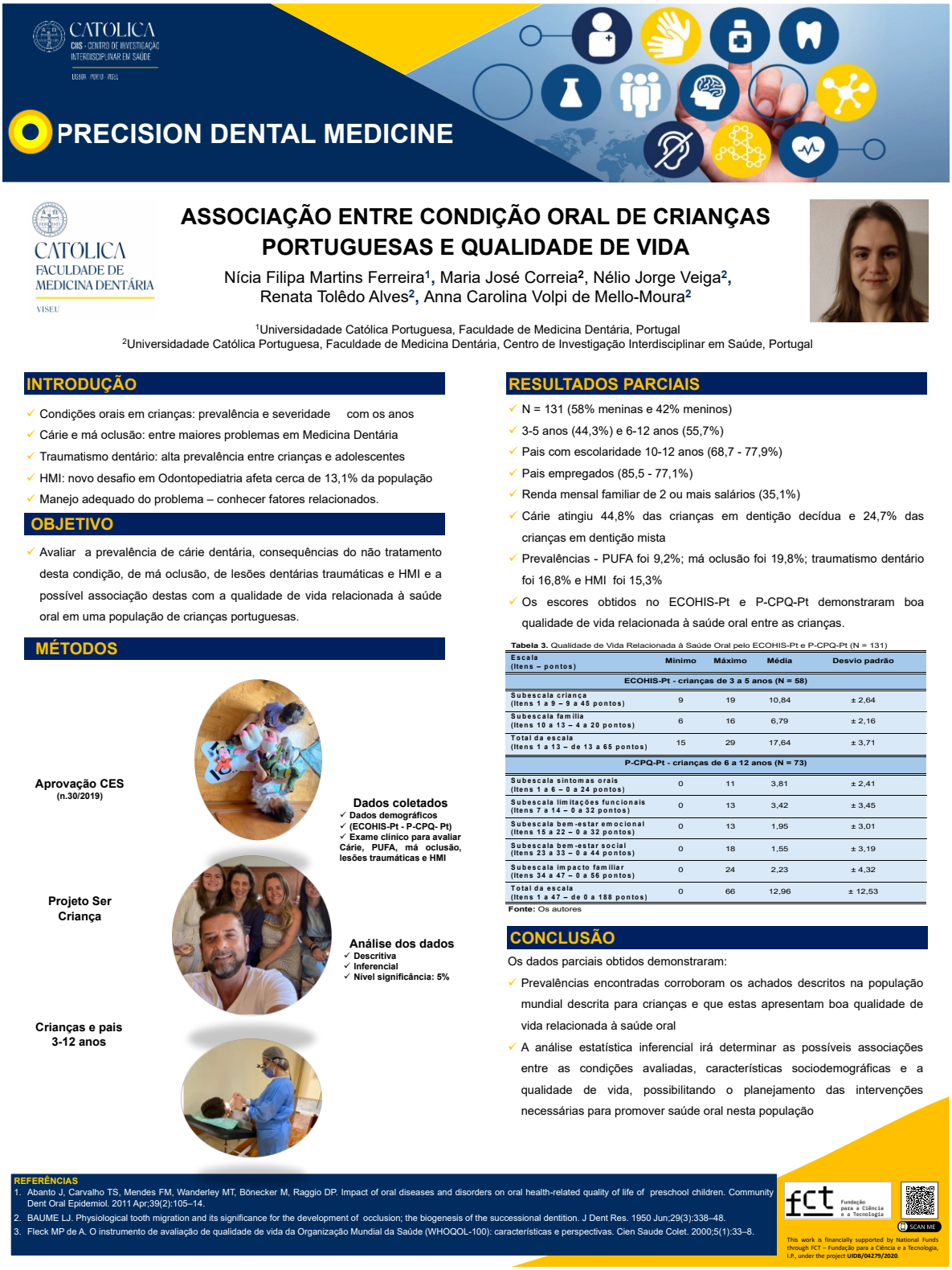
7 SCIENTIFIC PRODUCTIONS

7. **SCIENTIFIC PRODUCTIONS**

The partial results of this study were presented in the form of a Poster, in the XIX Jornadas Medicina Dentária FMD – UCP.



CATÓLICA
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FACULDADE DE MEDICINA DENTÁRIA
VISEU

ASSOCIAÇÃO ENTRE CONDIÇÃO ORAL DE CRIANÇAS PORTUGUESAS E QUALIDADE DE VIDA

Nícia Filipa Martins Ferreira[1], Maria José Correia[2], Nélio Jorge Veiga[2], Renata Tolêdo Alves[2], Anna Carolina Volpi de Mello-Moura[2]

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INTRODUÇÃO

- ✓ Condições orais em crianças: prevalência e severidade com os anos
- ✓ Cárie e má oclusão: entre maiores problemas em Medicina Dentária
- ✓ Traumatismo dentário: alta prevalência entre crianças e adolescentes
- ✓ HMI: novo desafio em Odontopediatria afeta cerca de 13,1% da população
- ✓ Manejo adequado do problema – conhecer fatores relacionados.

OBJETIVO

- ✓ Avaliar a prevalência de cárie dentária, consequências do não tratamento desta condição, de má oclusão, de lesões dentárias traumáticas e HMI e a possível associação destas com a qualidade de vida relacionada à saúde oral em uma população de crianças portuguesas.

MÉTODOS

Aprovação CES (n.30/2019)

Projeto Ser Criança

Crianças e pais 3-12 anos

Dados coletados
- ✓ Dados demográficos
- ✓ (ECOHIS-Pt - P-CPQ- Pt)
- ✓ Exame clínico para avaliar Cárie, PUFA, má oclusão, lesões traumáticas e HMI

Análise dos dados
- ✓ Descritiva
- ✓ Inferencial
- ✓ Nível significância: 5%

RESULTADOS PARCIAIS

- ✓ N = 131 (58% meninas e 42% meninos)
- ✓ 3-5 anos (44,3%) e 6-12 anos (55,7%)
- ✓ Pais com escolaridade 10-12 anos (68,7 - 77,9%)
- ✓ Pais empregados (85,5 - 77,1%)
- ✓ Renda mensal familiar de 2 ou mais salários (35,1%)
- ✓ Cárie atingiu 44,8% das crianças em dentição decídua e 24,7% das crianças em dentição mista
- ✓ Prevalências - PUFA foi 9,2%; má oclusão foi 19,8%; traumatismo dentário foi 16,8% e HMI foi 15,3%
- ✓ Os escores obtidos no ECOHIS-Pt e P-CPQ-Pt demonstraram boa qualidade de vida relacionada à saúde oral entre as crianças.

Tabela 3. Qualidade de Vida Relacionada à Saúde Oral pelo ECOHIS-Pt e P-CPQ-Pt (N = 131)

Escala (Itens – pontos)	Mínimo	Máximo	Média	Desvio padrão
ECOHIS-Pt - crianças de 3 a 5 anos (N = 58)				
Subescala criança (Itens 1 a 9 – 9 a 45 pontos)	9	19	10,84	± 2,64
Subescala família (Itens 10 a 13 – 4 a 20 pontos)	6	16	6,79	± 2,16
Total da escala (Itens 1 a 13 – de 13 a 65 pontos)	15	29	17,64	± 3,71
P-CPQ-Pt - crianças de 6 a 12 anos (N = 73)				
Subescala sintomas orais (Itens 1 a 6 – 0 a 24 pontos)	0	11	3,81	± 2,41
Subescala limitações funcionais (Itens 7 a 14 – 0 a 32 pontos)	0	13	3,42	± 3,45
Subescala bem-estar emocional (Itens 15 a 22 – 0 a 32 pontos)	0	13	1,95	± 3,01
Subescala bem-estar social (Itens 23 a 33 – 0 a 44 pontos)	0	18	1,55	± 3,19
Subescala impacto familiar (Itens 34 a 47 – 0 a 56 pontos)	0	24	2,23	± 4,32
Total da escala (Itens 1 a 47 – de 0 a 188 pontos)	0	66	12,96	± 12,53

Fonte: Os autores

CONCLUSÃO

Os dados parciais obtidos demonstraram:

- ✓ Prevalências encontradas corroboram os achados descritos na população mundial descrita para crianças e que estas apresentam boa qualidade de vida relacionada à saúde oral
- ✓ A análise estatística inferencial irá determinar as possíveis associações entre as condições avaliadas, características sociodemográficas e a qualidade de vida, possibilitando o planejamento das intervenções necessárias para promover saúde oral nesta população

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fct Fundação para a Ciência e a Tecnologia

SCAN ME

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XIX JORNADAS
FMD-UCP

CERTIFICADO

Certifica-se que **NÍCIA FERREIRA, MARIA CORREIA, NÉLIO VEIGA, RENATA ALVES, ANNA MELLO-MOURA** apresentaram, sob a forma de poster, o trabalho intitulado **Associação entre condição oral de crianças portuguesas e qualidade de vida** nas XIX Jornadas de Medicina Dentária da FMD-UCP Viseu, que se realizaram na Faculdade de Medicina Dentária da Universidade Católica Portuguesa nos dias 16 e 17 de Maio de 2024.

Rita Noites

PROF. DOUTORA RITA NOITES
PRESIDENTE DAS JORNADAS

CATÓLICA
FACULDADE DE MEDICINA DENTÁRIA
VISEU

The study was submitted for presentation in remote format at the 41ª Reunião Anual da Sociedade Brasileira de Pesquisa Odontológica - SBPqO in the form of a Poster in the area of Pediatric Dentistry.

Envio de Resumo - Reunião Anual 2024

SBPQO <email@sbpqo.org.br>
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Para:niciafilipa88@hotmail.com <niciafilipa88@hotmail.com>

SBPqO®
SOCIEDADE BRASILEIRA DE PESQUISA ODONTOLÓGICA
DIVISÃO BRASILEIRA DA IADR

Olá **Nícia Filipa Martins Ferreira**,

A submissão do seu resumo para a 41ª Reunião foi efetuado com sucesso. Verifique se todas as informações contidas abaixo estão de acordo com o informado no sistema de submissão realizado na página da SBPqO. Confira,também, se todos os co-autores foram inseridos corretamente, com especial atenção ao orientador do trabalho. Caso necessite editar seu resumo, acesse sua área de associado até a data-limite, dia 07/05/2024.

Atenção: após a data-limite 07/05/2024 não será possível realizar nenhuma alteração em seu resumo.

Salve uma cópia do seu resumo para eventuais consultas. Qualquer solicitação posterior só será atendida na apresentação deste documento.

SBPqO

41ª Reunião Anual da SBPqO

04 a 07 Setembro 2024
10ª Reunião Anual da Região Latinoamericana da IADR

Tipo de A presentação	Formato Remoto
Apresentador:	Nícia Filipa Martins Ferreira
Modalidade:	Painel Latin America Region - LAR IADR
Categoria:	Sócio Aspirante
Área Relacionada:	4 - Odontopediatria
Orientador:	Não informado
Universidade:	UCP **E-mail:** niciafilipa88@hotmail.com
Conflito de interesse:	Não há conflitito de interesse
Comitê de Ética:	✓ Enviou arquivo de aprovação do comitê de ética / comitê de experimentação em animais ✓ Declarou que não necessitou de aprovação do CIBio ou registro SisGen ✓ Não anexou arquivo complementar para a Comissão de Ética da SBPqO

Associação entre condição bucal, características sociodemográficas e qualidade vida entre crianças portuguesas

Ferreira NFM*, Correia MJ, Veiga N, Alves RT, Mello-Moura ACV, Machado FC, Scalioni FAR

Estudos demonstram elevada prevalência de problemas bucais entre as crianças que impactam na qualidade de vida relacionada à saúde bucal. Dada a falta estudos epidemiológicos em crianças portuguesas, este estudo avaliou a prevalência de cárie, consequências do não tratamento, má oclusão, traumatismo dentário e HMI, e verificou a associação dest as condições e características sociodemográficas com qualidade de vida relacionada à saúde bucal. Após aprovação pela Comissão de Ética para a Saúde (CES-UCP no 30/2019), o estudo incluiu crianças de 3 a 12 anos e responsáveis. As informações sociodemográficas e qualidade de vida pelos instrumentos ECOHIS-Pt ou P-CPQ-Pt foram obtidas por entrevista com os responsáveis e os dados clínicos pelo exame das crianças. Os grupos foram comparados pelos testes Qui-quadrado de Pearson e teste t de igualdade entre médias com nível de significância de 5% (P < 0,05).
Participaram do estudo 131 crianças, 76 do sexo feminino, a maioria em dentição mista (N = 73), residente em região urbana com os pais que tinham entre 10 e 12 anos de estudo e renda familiar de dois ou mais salários mínimos. A prevalência de cárie foi 39,7% e em 9,2% houve consequências do não tratamento. Mais de 80% apresentavam má oclusão, 2,3% traumatismo e 15,3% tinham HMI. Os escores médios mostraram boa qualida de de vida pelo ECOHIS-Pt e P-CPQ-Pt e esta foi associada ao local onde reside, estado civil dos pais, situação profissional da mãe, renda familiar mensal, cárie e trauma, especialmente entre crianças com menos de 6 anos.

(Apoio: Prêmios BPI Fundação "La Caixa" Infância)

8 ATTACHMENTS

ATTACHMENT I – Protocolo de colaboração entre a FMDUCP e Associação Reencontro

PRÉMIOS BPI "LA CAIXA" INFÂNCIA 2019

Protocolo de colaboração

Este acordo de colaboração pretende especificar e clarificar os objetivos e os termos da parceria entre a Reencontro, associação social, educativa e cultural com sede na Rua das Escolas, n.º 4 e 6 sita Vila Nova de Tazem com número de contribuinte 509 444 466, representada por Laura Maria da Rocha Oliveira Pinto da Costa, Presidente da Direção com número de contribuinte 185 462 456 e a Clínica Dentária Universitária da Universidade Católica Portuguesa (UCP) – Centro Regional de Viseu com sede na Estrada da Circunvalação, 3504-505, Viseu com número de contribuinte 513 798 714, representada pelo Diretor Clínico, Nélio Jorge Veiga, no âmbito da candidatura da Reencontro aos prémios BPI "la Caixa" Infância 2019.

Considerando a complementaridade de finalidades e objetivos das duas entidades, nomeadamente, apoiar crianças e jovens em risco, contribuir para a promoção da saúde e bem-estar familiar e da comunidade em geral, atuando na prevenção precoce.

Considerando o trabalho desenvolvido pela Clínica Dentária Universitária da Universidade Católica Portuguesa (UCP) – Centro Regional de Viseu no apoio a crianças e jovens, a promoção da saúde oral das crianças.

É celebrado o presente Acordo de Colaboração entre as entidades

Resumo do projeto

O problema social que o Ser Criança pretende atender é o da exclusão social infantil, consequente da pobreza e outras formas de privação extrema enfrentadas pelas crianças e as suas famílias.

O facto de na infância uma criança se encontrar inserida num agregado familiar cujas vulnerabilidades estejam muito marcadas, dificulta significativamente o seu desenvolvimento integral. É extremamente importante começar a intervir nas crianças desde a sua primeira infância, de modo a potenciar a igualdade de oportunidades na sociedade e a estancar o processo de reprodução da exclusão social.

Segundo dados do Eurostat de 2017, o grupo etário onde se verifica uma maior incidência do risco de pobreza ou de exclusão social é o das crianças e jovens com menos de 18 anos (24,2%), pelo que se torna importantíssimo proporcionar e facilitar o livre acesso das crianças e das suas famílias a serviços de saúde e de educação não-formal de qualidade que potenciem o seu desenvolvimento pleno em todas as vertentes.

Neste sentido pretende-se:

1. Promover a construção de uma solução-modelo para o problema da exclusão social infantil, passível de fácil escalabilidade e institucionalização, que atua nas suas causas, através da prevenção, do diagnóstico e da intervenção precoce nas condições das crianças que potenciam situações de pobreza e outras formas de privação.

2. Dinamizar colaborações estratégicas, que possibilitam a redução de custos e o aumento da eficiência da solução, pela afetação, livre de encargos, e rentabilização máxima dos recursos internos e externos a Reencontro. Além de garantir a sustentabilidade da solução proposta, isto também aumentará a visibilidade e a capacidade de atração de novos stakeholders e/ou colaboradores, aumentando a probabilidade de alocação de novos recursos.

3. Construir um guia teórico-prático, para posterior envio a entidades (públicas e privadas) que atuam no mesmo âmbito, com o objetivo de aumentar a facilidade e probabilidade de replicação da solução noutros locais.

4. Realizar uma abordagem sistémica e multidisciplinar, envolvendo vários parceiros das áreas da saúde, educação e social, capacitando pais e outros técnicos no que diz respeito ao desenvolvimento infantil saudável e harmonioso.

A razão desta candidatura da Reencontro aos prémios BPI "la Caixa" Infância, prende-se com a intenção de obter o financiamento necessário para desenvolver e implementar um trabalho em rede entre vários parceiros que:

1. Promover uma maior articulação entre os serviços de saúde e os serviços de apoio social, nomeadamente IPSS's.
2. Promover e valorizar a educação formal e não formal, criando respostas sociais qualificantes.

Assim, com intuito de dinamizar o Ser Criança em todo o concelho de Gouveia, a Reencontro pretende concretizar um Plano de Investimento de quarenta quatro mil trezentos e oitenta e um euros (44.381,00€). Pretende-se:

1. Desenvolver competências nas crianças para assegurar a sua inclusão social.
2. Desenvolver competências parentais, capacitando as famílias para a promoção do desenvolvimento infantil.
3. Apresentar uma solução inovadora e replicável para a exclusão social infantil focada nas suas causas, através da prevenção, diagnóstico e intervenção precoce nas crianças.
4. Maximizar a rentabilização das parcerias e dos recursos humanos e materiais, para reduzir custos e garantir a sustentabilidade.

O Plano de Investimentos acima apresentada irá ser coberto na sua totalidade com recurso ao financiamento obtido no âmbito dos Prémios BPI "la Caixa" Infância no valor trinta e nove mil

Operacionalização

No que se refere ao Instituto de Ciências da Saúde- Viseu, a UCP

- promoção de saúde oral, através da plataforma PROHealth
- motivação das crianças para aprendizagens em áreas científicas, potenciando assim o seu desempenho nestas áreas, através da plataforma SalivaTec

Plataforma PROHealth

A necessidade de cuidados de saúde oral e persistência das doenças orais nas nossas populações ainda é uma realidade importante e é, cada vez mais, considerado como sendo um relevante problema de saúde pública. A maioria dos tratamentos médico-dentários prestados continua a ser ao nível do setor privado, não havendo ainda uma resposta eficiente às necessidades das comunidades mais desfavoráveis a nível sócio-económico por parte do sistema nacional de saúde de Portugal.

A plataforma PRO Health do ICS-Viseu, propõe-se a colaborar neste projeto através de três valências:

1. Avaliação intra-oral e recolha de dados referentes ao estado de saúde oral dos participantes, bem como, dos fatores de risco relacionados com as doenças orais;
2. Promoção e educação de saúde oral, tendo como foco principal a realização de uma correta higiene oral diária pelos participantes;
3. Realização de tratamentos médico-dentários aos participantes na Clínica Dentária Universitária da UCP (mediante financiamento), tendo como base tratamentos de prevenção primária e secundária (restaurações dentárias, endodontias e extrações, mediante os planos de tratamento definidos).

Pretendemos com a realização destas atividades conhecer a prevalência de doenças orais e outras variáveis que podem influenciar o estado de saúde e a qualidade-de-vida dos participantes. Paralelamente a esta componente, um dos principais objetivos do presente projeto/colaboração passa pela realização de intervenções médico-dentárias na comunidade por médicos dentistas docentes e discentes do Instituto de Ciências da Saúde da Universidade Católica Portuguesa, contribuindo para a melhoria deste grupo de risco específico.

Plataforma SalivaTec

A aprendizagem e literacia nas ciências experimentais é fundamental não apenas para o desempenho académico das crianças para também para um exercício de cidadania esclarecida e responsável. O SalivaTec inclui na sua missão a comunicação de ciência para públicos diversos bem como o desenvolvimento de estratégias e instrumentos para a aprendizagem das ciências experimentais que visam motivar crianças e adolescentes para a aprendizagem e desenvolvimento de trabalho nestas áreas do saber. O SalivaTec pode desenvolver com as crianças envolvidas neste projeto, atividades promotoras de aprendizagens nas ciências experimentais e junto de outros intervenientes (como cuidadores por exemplo) promover a literacia em várias áreas científicas.

ATTACHMENT II – Termo de Consentimento Livre e Esclarecido (TCLE)

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DECLARAÇÃO DE CONSENTIMENTO INFORMADO, LIVRE E ESCLARECIDO PARA PARTICIPAÇÃO EM INVESTIGAÇÃO

De acordo com a Declaração de Helsínquia e a Convenção de Oviedo.
Por favor, leia com atenção a seguinte informação. Se achar que algo está incorreto ou que não está claro, não hesite em solicitar mais informações.
Se concorda com a proposta que lhe é feita, queira assinar este documento.

Título do estudo: "Avaliação do efeito de uma intervenção de educação para a saúde oral numa amostra de crianças"

Enquadramento: A necessidade de cuidados com a saúde oral e a persistência das doenças, como a cárie dentária, é considerada um problema relevante de saúde pública, sobretudo em crianças em idade pré-escolar e escolar. Em Portugal, existem estudos que confirmam esses dados, mas ainda são necessárias outras pesquisas para entender como se encontra o nível de saúde oral da população e delinear ações que promovam melhorias significativas.

Condições: Este estudo visa avaliar o efeito de uma intervenção de educação e promoção para a saúde geral e oral para um grupo de crianças com idades até aos 8 anos que frequentam a associação Reencontro: Associação Social, Educativa e Cultural e que estão inseridas no Projeto "Ser Criança". O presente estudo será realizado no Concelho de Gouveia onde a Associação Reencontro tem a sua atuação. Serão convidadas a participar todas as crianças da rede pré-escolar e escolar (1º ciclo), cujos responsáveis consentirem para participação na pesquisa. O estudo será composto por três momentos distintos: I) aplicação de um 1º questionário pré-intervenção aos pais das crianças (para aferir conhecimentos prévios); II) realização de uma ação de sensibilização para a educação e promoção da saúde oral a realizar em sala de aula para as crianças e pais que queiram participar; III) aplicação de um 2º questionário pós-intervenção aos pais para avaliar o impacto das ações de sensibilização. Os questionários aplicados terão informação relativamente a aspetos sócio-demográficos da criança e do seu agregado familiar e questões referentes a conhecimento e comportamentos (e consequências) relacionados com a saúde oral e qualidade de vida. A criança, participante no estudo, também irá estar sujeito a uma observação intra-oral para avaliação do status dentário e determinação do índice de dentes permanentes e decíduos cariados, perdidos e obturados (CPOD/cpod); índice de dentes permanentes e decíduos com envolvimento pulpar, ulceração, fístula e abcesso (PUFA/pufa) e traumatismos dentários (duração de 15 minutos). Esta observação intra-oral permitirá a possível identificação de problemas orais e desenvolvimento de estratégias de promoção de saúde oral para a criança e comunidade em que se encontra inserida.
Este estudo não envolve procedimentos que não se enquadrem na prática clínica normal, nem pretende testar novos produtos ou medicamentos.
A participação neste estudo é totalmente voluntária, não acarretando quaisquer custos, podendo retirar o seu consentimento em qualquer etapa do estudo, sem necessidade de facultar explicações aos seus responsáveis, e com a total ausência de prejuízos, assistenciais ou outros. Caso mude de ideias e não queira participar, pode em qualquer altura ter acesso aos dados recolhidos e pedir a sua eliminação.
Ao decidir participar pode colocar todas as questões que considerar necessárias para o seu esclarecimento.

ESTE DOCUMENTO É COMPOSTO POR DUAS PÁGINAS E FEITO EM DUPLICADO: UMA VIA PARA O INVESTIGADOR, OUTRA PARA A PESSOA QUE CONSENTE

Confidencialidade e anonimato: Os dados recolhidos são de uso exclusivo dos responsáveis envolvidos no estudo e serão tratados de modo a garantir a sua confidencialidade. O período de recolha de dados será de 4 meses, sendo o período de tempo para a guarda da informação recolhida de 5 anos. A análise dos dados será efetuada em ambiente que garanta a total privacidade dos mesmos.

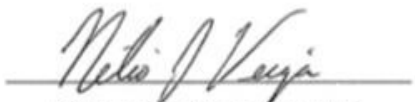
Para qualquer esclarecimento adicional deve contactar:

Nélio Jorge Veiga

Contacto telefónico: +351 966454933

Contato e-mail: nelioveiga@gmail.com

Viseu, 30 de Dezembro de 2019



Nélio Jorge Veiga (Investigador Principal)

ESTE DOCUMENTO É COMPOSTO POR DUAS PÁGINAS E FEITO EM DUPLICADO: UMA VIA PARA O INVESTIGADOR, OUTRA PARA A PESSOA QUE CONSENTE

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PORTUGUESA

Data Protection Officer – UCP:

Dra. Frederica Campos de Carvalho

Contacto telefónico: +351 217214179

E-mail: compliance.rgpd@ucp.pt

Consentimento informado

Declaro ter lido e compreendido este documento, bem como as informações verbais que me foram fornecidas pela pessoa que acima assina. Foi-me garantida a possibilidade de, em qualquer altura, recusar participar neste estudo sem qualquer tipo de consequências. Desta forma, aceito participar neste estudo e permito que os dados recolhidos sejam divulgados sob forma de publicação científica, desde que a minha identidade e do meu filho / minha filha / educando(a) seja mantida confidencial.

SE NÃO FOR O PRÓPRIO A ASSINAR POR INCAPACIDADE

NOME: _____

BI/CC Nº: _____ DATA OU VALIDADE: ___ /___ /_____

GRAU DE PARENTESCO OU TIPO DE REPRESENTAÇÃO: _____

ASSINATURA _____

Nome do participante no estudo.

Assinatura: _____. Data: _____/_____/_____

Nome do investigador responsável.

Assinatura: _____. Data: _____/_____/_____

ESTE DOCUMENTO É COMPOSTO POR DUAS PÁGINAS E FEITO EM DUPLICADO: UMA VIA PARA O INVESTIGADOR, OUTRA PARA A PESSOA QUE CONSENTE

ATTACHMENT III – Parecer da Comissão de Ética para a Saúde da Universidade Católica Portuguesa

Parecer sobre o projeto nº 30/2019

Comissão de Ética para a Saúde da Universidade Católica Portuguesa

Mandato 2018/2021

Projeto de Investigação

Na reunião do dia 06 de fevereiro de 2020 a CES-UCP esteve reunida e apreciou do ponto de vista ético os elementos submetidos pela investigadora. Sobre a apreciação redige o parecer que agora se apresenta.

Título: "Avaliação do efeito de uma intervenção de educação para a saúde oral numa amostra de crianças"

Investigadora principal: Beatriz Gonçalves Dias
Orientador: Profª. Dr. Nélio Veiga e coorientado pela Prof. Dra. Ana Sofia Duarte e Prof. Dra. Anna Mello – Moura.

Resumo: Trata-se de um estudo realizado com fim de obtenção do grau de Mestre em Medicina Dentária, na Universidade Católica Portuguesa.

Estiveram presentes na reunião n.º 13.ª da CES-UCP

Presidente: Doutora Mara de Sousa Freitas
Vice-Presidente: Doutora Maria Teresa Marques
Mestre António Faria Vaz
Doutor Jerónimo Santos Trigo
Dr Eugénio da Cruz Fonseca
Doutora Marta Brites
Mestre Ivone gaspar

Conclusão
Ouvido o Relator, e o plenário da reunião do dia 06 de fevereiro de 2020, realizada no 5º piso da UCP, esta CES delibera, por unanimidade, em face dos esclarecimentos submetidos, a emissão de **Parecer Favorável.**

Esta CES solicita ao Investigador Principal que, aquando da conclusão do estudo, lhe seja enviada uma síntese dos resultados obtidos e respetivas conclusões, via eletrónica, para o correio eletrónico da CES UCP.

A Presidente,

Mara de Sousa Freitas

Mara de Sousa Freitas

06/02/2020

ATTACHMENT IV: Atualização da equipa de pesquisa

Parecer sobre o projeto nº 30 (pedido de alteração)
Comissão de Ética para a Saúde da Universidade Católica Portuguesa
Mandato 2019/2023

Projeto de Investigação
Na reunião do dia 09 de fevereiro de 2023, a CES-UCP apreciou, do ponto de vista ético, os elementos submetidos, que configuram um pedido de alteração.

Título: Avaliação do efeito de uma intervenção de educação para a saúde oral numa amostra de crianças

Investigador principal: Prof. Doutor Nélio Veiga
Equipa de investigação: Prof. Doutora Maria José Correia; Prof. Doutora Ana Sofia Duarte; Prof. Doutora Anna Mello–Moura; Dr. Adriano Moreira
Novos elementos da Equipa: alunos do 5º ano de MIMD, Marcelo Loureiro e Marta Figueiredo (Cvs anexados e alteração no formulário)
Trata-se de um estudo realizado com fim de obtenção do grau de Mestre em Medicina Dentária, na Universidade Católica Portuguesa.

Resumo: Trata-se de um pedido de alteração à equipa de investigação, traduzido na entrada de mais dois investigadores. Mantém-se o investigador principal e proponente do projeto, assim como todas as características do projeto.
Tendo merecido parecer favorável da Comissão a 6/2/2020, mantém-se o sentido da proposta em relação a este pedido de alteração.

Estiveram presentes na reunião nº 46 da CES-UCP
Presidente: Doutora Mara de Sousa Freitas
Vice-Presidente: Doutora Teresa Marques
Doutor Jerónimo Santos Trigo
Doutor Pedro Garcia Marques
Dr. Eugénio Fonseca
Doutora Ana Mineiro
Doutora Marta Brites
Mestre Ivone Gaspar

Conclusão
Ouvido o Relator, e o plenário da reunião do dia 09 de fevereiro de 2023, realizada por videoconferência, esta CES delibera, por unanimidade, a emissão de **Parecer Favorável.**

Esta CES solicita ao Investigador Principal que, aquando da conclusão do estudo, lhe seja enviada uma síntese dos resultados obtidos e respetivas conclusões, via eletrónica, para o correio eletrónico da CES UCP.

A Presidente,

Mara de Sousa Freitas

Mara de Sousa Freitas
09/02/2023

ATTACHMENT V: Formulários de coleta de dados

Características sociodemográficas

Escola:	Nome do responsável:	Nome da Criança:

1 - Sexo

- □ Masculino
- □ Feminino

2 - Idade: _____Anos

3 - Atualmente, quanto pesa o seu filho(a)?_____ kg Não informado

4 - Atualmente, quanto mede o seu filho(a)?_____ cm Não informado

5 - Onde reside a criança?

- □ Aldeia;
- □ Vila;
- □ Cidade.

6 - Qual o estado civil dos pais?

- □ Solteiros;
- □ Casados;
- □ Juntos;
- □ Divorciados;
- □ Viúvos(as).

7 - Quais as habilitações literárias dos pais? (*Assinale a mais elevada.*)

	Pai	Mãe
Não informado		
< 4 anos		
4 – 6 anos		
7 – 9 anos		
10 – 12 anos		
Bacharelato		
Licenciatura		
Mestrado		
Doutoramento		

9 - Qual a situação profissional dos pais?

	Pai	Mãe
Empregado	□	□
Desempregado	□	□
Aposentado	□	□

10 - Com quem mora a criança? *(Pode assinalar várias opções.)*

- □ Pai;
- □ Mãe;
- □ Irmãos;
- □ Tios;
- □ Avós;
- □ Primos;
- □ Outros. Quem? _____.

Núcleo familiar (pai e mãe)

Núcleo familiar extendido (além de pai e mãe, outros irmãos ou parentes)

11 - Qual dos seguintes valores melhor representa o total de rendimentos em sua casa nos últimos 12 meses?

Não informado	
Até um salário mínimo €	
Duas vezes o salário mínimo	
Três vezes o salário mínimo	
Quatro vezes o salário mínimo	
Cinco vezes o salário mínimo	
Seis vezes o salário mínimo	
Sete vezes o salário mínimo	
Oito vezes o salário mínimo	
Nove vezes salário mínimo	
Dez vezes ou mais o salário mínimo	

Avaliação Condições orais

Tipo de dentição	Decídua		Mista			
Decídua	Tipo I		Tipo II			
Relação molar decíduo	Degrau M		Degrau D		Plana	
Mista	Classe I		Classe II		Classe III	
Mordida Aberta Anterior	Presente		Ausente			
Sobremordida (Overbite)	Presente		Ausente			
Sobressaliência (Overjet)	Presente		Ausente			
Mordida Cruzada Anterior	Presente		Ausente			
Mordida Cruzada Posterior Unilateral	Presente		Ausente			
Mordida Cruzada Posterior Bilateral	Presente		Ausente			

Índice ceo-d/CPO-D

c/C Cariado	
e/P Extraído/Perdido	
o/O Obrturado	
ceo-d/CPO-D	
Experiência de cárie (marcar sempre que ≠ de zero)	

Avaliação Clínica da Condição Pulpar - PUFA

Condição	**Com**	**Sem**
P Polpa visível		
U Ulceração		
F Fístula		
A Abcesso		
PUFAIndex (número dentes)		
PUFA (com ou sem)		

Avaliação Clínica de HMI (EAPD)

Condição	Com	Sem
HMI (número de dentes)		
HMI leve		
HMI grave		
HMI (com ou sem)		

Avaliação Clínica de traumatismo dentário

Condição	Com	Sem
História de trauma		
Fratura de esmalte		
Fratura de esmalte e dentina		
Alteração de cor		
Intrusão		
Luxação lateral		
Extrusão		
Avulsão		

QUALIDADE DE VIDA RELACIONADA A SAÚDE BUCAL

P – CPQ PT

Escola:	**Nome do responsável:**	**Nome da Criança:**

Secção 1 - Saúde Oral e Bem - estar da criança

Perguntas	Sugestões				
	Muito Boa	Boa	Normal	Má	Muito má
1. Como classificaria a saúde dos dentes, lábios, maxilares e boca do seu filho(a)?					
	Não é afetado	Apenas um pouco afetado	Nem muito nem pouco afetado	É afetado	É muito afetado
2. Até que ponto o bem-estar geral de seu filho(a) é afetado pelo estado dos dentes, lábios, maxilares ou boca?					

Secção 2 - As questões a seguir são sobre <u>sintomas e desconfortos</u> que as crianças podem sentir devido ao <u>estado dos seus dentes, lábios, boca e maxilares</u>

	Nunca	Uma ou duas vezes	Algumas vezes	Frequente - - mente	Todos os dias ou quase todos os dias
3. O seu filho(a) já teve dor nos dentes, lábios, maxilares ou boca?					
4. O seu filho(a) já teve sangramentos na gengiva?					
5. O seu filho(a) já teve aftas,feridas ou outro tipo de lesões na boca?					
6. O seu filho(a) costuma ter mau hálito?					
7. O seu filho(a) costuma ficar com comida acumulada no céu da boca?					
8. O seu filho(a) já ficou com alimentos presos nos dentes?					
9. O seu filho(a) alguma vez teve dificuldade em morder ou mastigar alimentos? Por exemplo frutas duras ou carne.					
Nos últimos 3 meses, por queixas dos dentes, lábios, boca ou maxilares, com que frequência:					
10. O seu filho(a) respirou pela boca?					
11. O seu filho(a) teve perturbações durante o sono?					
12. O seu filho(a) teve dificuldades a dizer alguma palavra?					
13. O seu filho(a) demorou mais do que os outros elementos do agregado familiar a comer uma refeição?					
14. O seu filho(a) teve dificuldade a beber ou comer alimentos quentes ou frios?					
15. O seu filho(a) teve dificuldade a comer alimentos de que ele/ela gosta?					

16. O seu filho(a) fez uma dieta restrita a certos tipos de alimentos (ex. alimentos moles)?					
Secção 3 - As questões a seguir relacionam a saúde oral (dentes, lábios, boca ou maxilares) do seu filho (a) com o seu bem-estar e as suas atividades diárias					
Nos últimos 3 meses, por queixas dos dentes, lábios, boca ou maxilares, com que frequência:					
	Nunca	Uma ou duas vezes	Algumas vezes	Frequente - - mente	Todos os dias ou quase todos os dias
17. O seu filho(a) se sentiu incomodado (a)?					
18. O seu filho(a) se sentiu irritado(a) ou frustrado(a)?					
19. O seu filho(a) se sentiu ansioso (a) ou com medo?					
20. O seu filho(a) faltou à escola (ex. dor, consultas, cirurgias)?					
21. O seu filho(a) teve dificuldades em estar atento nas aulas?					
22. O seu filho(a) não quis falar ou ler em voz alta durante as aulas?					
23. O seu filho(a) não quis falar com outras as crianças?					
24. O seu filho(a) evitou sorrir ou rir quando estava perto de outras crianças?					
25. O seu filho(a) se preocupou com o facto de ser menos saudável que outras pessoas?					
26. O seu filho(a) se preocupou com o facto de ser diferente das outras pessoas?					
27. O seu filho(a) se preocupou com o facto de ser menos bonito(a) que as outras pessoas?					
28. O seu filho(a) agiu timidamente ou com vergonha?					
29. O seu filho(a) foi insultado (a) ou ofendido (a) por outras crianças?					
30. O seu filho(a) foi excluído(a) por outras crianças?					
31. O seu filho(a) não quis ou não conseguiu relacionar-se com as outras crianças?					
32. O seu filho(a) não quis ou não conseguiu participar de atividades como desportos atividades de grupo, teatro, música, viagens de estudo?					
33. O seu filho(a) se preocupou com o facto de ter menos (ou poucos) amigos?					
34. O seu filho(a) se sentiu preocupado(a) com o que outras pessoas pensam sobre os seus dentes, lábios, boca ou maxilares?					
35. O seu filho(a) foi questionado por outras crianças sobre os seus dentes, lábios, boca ou maxilares?					
Secção 4 - As perguntas a seguir relacionam as consequências da saúde oral (dentes, lábios, boca ou maxilares) do seu filho (a) com a qualidade de vida do agregado familiar					
36. Alguma vez se sentiram incomodados?					
37. Alguma vez sofreram de perturbações/interrupções de sono?					
38. Alguma vez se sentiu culpado?					
39. Alguma vez precisou de faltar ao trabalho?					

	Nunca	Uma ou duas vezes	Algumas vezes	Frequente - - mente	Todos os dias ou quase todos os dias
40. Alguma vez teve menos tempo para si ou para o resto da família?					
41. Questionou se o seu filho(a) terá menos oportunidades na vida (ex. arranjar emprego)?					
42. Alguma vez se sentiu desconfortável em lugares públicos (ex. lojas, restaurantes) com o seu filho(a)?					
Nos últimos 3 meses, por queixas dos dentes, lábios, boca ou maxilares, com que frequência:					
43. O seu filho(a) ficou com ciúmes de si ou de outros membros da família?					
44. O seu filho(a) o culpou ou a outra pessoa do agregado familiar?					
45. O seu filho(a) discutiu consigo ou outro membro da família?					
46. O seu filho(a) pediu mais sua a atenção ou de outros da família?					
47. Interferiu nas atividades da família em casa ou noutro lugar?					
48. Causou discordância ou conflito no seu agregado familiar?					
49. Causou dificuldades financeiras ao seu agregado familiar?					
Secção 5 - Género e idade da criança					
Género: M ( ) F ( )					
Idade:					
Questionário prenchido por: Mãe ( ) Pai ( ) Outro ( )					
Cálculos de pontos e soma (NÃO PREENCHER PELOS PAIS)					
NÚMERO DE ASSINALADOS					
TOTAL DE CADA PARCELA					
TOTAL GERAL					
Legenda:					
Sintomas Orais – Questões 3 a 8					
Limitações funcionais – Questões 9 a 16					
Bem-estar emocional – Questões 17 a 24					
Bem-estar social – Questões 25 a 35					
Escala de Impacto Familiar - Questões 36 a 49					
Escala de pontuação de 0 a 188 (quanto maior a pontuação maior o impacto na qualidade de vida)					

Questionário ECOHIS PT		
Escola:	**Nome do responsável:**	**Nome da Criança:**

Por favor, indique no quadro de respostas a opção que melhor descreve as experiências do seu filho(a) ou a sua própria experiência. Considere toda vida do seu filho (a) desde o nascimento até ao momento:

Perguntas	Alternativas				
	Nunca	Raramente	Ocasionalmente	Frequentemente	Muita frequência
1. O seu filho(a) já sentiu dores/ disconforto nos dentes, na boca ou nos maxilares (ossos da boca)?					
2. O seu filho(a) já teve dificuldades em beber bebidas quentes ou frias devido a problemas nos dentes ou tratamentos dentários?					
3. O seu filho(a) já teve dificuldade em comer certos alimentos devido a problemas nos dentes ou tratamentos dentários?					
4. O seu filho(a) já teve dificuldade em pronunciar alguma palavra devido a problemas nos dentes ou tratamentos dentários?					
5a. O seu filho(a) já faltou à creche, jardim de infância ou escola devido a problemas nos dentes ou tratamentos dentários?					
5b. O seu filho(a) já deixou de fazer alguma atividade diária (ex.: brincar, saltar, correr, ir à creche ou escola etc.) devido a problemas nos dentes ou tratamentos dentários?					
6. O seu filho(a) já teve dificuldade em dormir devido a problemas nos dentes ou tratamentos dentários?					
7. O seu filho(a) já ficou irritado(a) devido a problemas nos dentes ou tratamentos dentários?					
8. O seu filho(a) já evitou sorrir ou rir devido a problemas nos dentes ou tratamentos dentários?					
9. O seu filho(a) já evitou falar devido a problemas nos dentes ou tratamentos dentários?					
10. Alguem da sua família já ficou aborrecida devido a problemas nos dentes ou tratamentos dentários do seu filho(a)?					
11. Alguem da sua família já se sentiu responsável devido a problemas nos dentes ou tratamentos dentários do seu filho(a)?					
12. Alguem da sua família já faltou ao trabalho devido a problemas nos dentes ou tratamentos dentários do seu filho(a)?					
13. O seu filho(a) já teve problemas nos dentes ou fez tratamentos dentários que causaram impacto financeiro no seu agregado familiar?					
Cálculos de pontos e soma (NÃO PREENCHER PELOS PAIS)					
Números de assinalados					
Total Parcela					
Total Geral (0 A 65)					

Membros do Júri das Provas Públicas

Presidente: Maria José brito Correia. Professor Associado

(Categoria profissional e Filiação académica)

Arguente: Patrícia Nunes Correia, Professor Auxiliar Convidada da Faculdade Fernando Pessoa

(Categoria profissional e Filiação académica)

Orientador: Anna Mello Moura. Professor Associado

(Categoria profissional e Filiação académica)

Data das provas públicas: 15 / 07 / 24

Validação e confirmação pelos serviços escolares:

___ / ___ / ___