

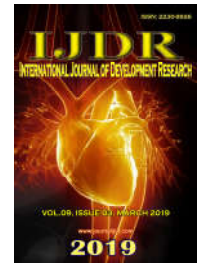


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## PROGRAM OF PROMOTION IN ORAL HEALTH WITH CHILDREN ATTENDED IN THE DENTAL COMPLEX OF UNICATOLICA

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### ABSTRACT

Active methodologies in pediatric dentistry are a very important tool, since cooperation during dental treatment will differ between patients. This study aimed to evaluate the impact of a motivational program of oral health promotion in children attending the São João Calábria Children's Clinic of UNICATÓLICA, evaluating life quality, anxiety, depression and oral conditions. It was performed in two moments, where the Child Perceptions Questionnaire 8-10 (CPQ 8-10), Children's Depression Inventory (CDI) and Revised Children's Manifest Anxiety Scale (OQPS) questionnaires were applied before/after the motivational program and dental care. The decayed, missing, and filled teeth (DMFT) index was then evaluated. The second time consisted of patient's reevaluation after 30 days. The results were submitted to the Shapiro-wilk test and the t-test of paired measures considering  $\alpha=5\%$ . Twenty children aged between 8 and 10 years participated in the study, the mean of the obtained DMFT index was 3.02. Results found previously the execution of the motivational program in relation to quality of life demonstrated an average of 18.8 after a reduction to 5.35 ( $p < 0.05$ ). In relation to depressive symptoms, in initial evaluation an average of 7.4 was found and after the motivational intervention a mean of 3.5 ( $p < 0.05$ ) was obtained. Children characterized with anxiety were gradually lessening these symptoms ( $p < 0.05$ ). It can be observed that the playful approach significantly reduced the aspects of anxiety, depression and consequently brought an improvement on participants life quality.

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### INTRODUCTION

Dental caries are considered the most prevalent chronic disease in childhood, constituting a major problem for global public health (MISRA et al., 2007).

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According to the SB Brasil Project 2010, there is a prevalence of carious lesions in 80.2% in 5-year-old children and 54.1% in 12-year-old children (BRASIL, 2010). The negative impacts of dental caries on the health of children include problems such as difficulty in chewing, reduced appetite, weight loss, insomnia, behavioral changes (irritability and low self-esteem) until drop in school performance, leading to loss in the quality of life (BARBOSA et al., 2010). According to the World

Health Organization (WHOQOL) (1997), quality of life is defined as "the individual's perception of their position in life, in the context of the culture and value system in which they live, and in relation to their goals, expectations, standards and concerns. "All the population must have an adequate oral condition, which allows them to perform basic functions such as: talking, chewing, distinguishing the taste of food, smiling without embarrassment, free of pain and discomfort. People understand the importance of oral health for maintaining a good quality of life in a variety of ways in the physical, social and psychological domains, and it is usually considered the ability to feed and the occurrence or absence of pain and discomfort as positive and negative aspects that are most relevant to the quality of life (TESCH and OLIVEIRA, 2007). The association between quality of life and oral health has been a prominent content in the literature. The World Health Organization (WHO) defines health as a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". In this context, oral health is not limited only in the absence of dental and oral diseases, taking into account both the physical, psychological and social function and well-being related to these structures (TESCH and OLIVEIRA, 2008).

Other conditions that influence the quality of life in relation to children's oral health are: fear and anxiety about dental care. The success in the dental care of children is related to the ability of the dental surgeon, in particular the pediatric dentist to know how to deal with patients' emotions (OLIVEIRA and MORAES, 2012). Anxiety before dental treatment is caused by conditions associated with care that cause apprehension and discomfort, generating an expectation that is often negative in the child. The most relevant aspects for the development of child fear and anxiety are previous negative attitudes and experiences reported by parents. The careful interpretation of the child's behavior helps the pediatric dentistry to use techniques that make possible the cooperation and the accomplishment of the dental procedure (Kanego *et al.*, 2006; OLIVEIRA and MORAES, 2012). Given that fear and anxiety about dental care can cause harmful damages to the quality of life of children's patients, it is necessary to include motivational programs to promote oral health with an emphasis on play activities. The recreational approach is presented through games and games, from this experience people, especially children, are able to develop their intellectual abilities, thus facilitating learning (LUCKESI, 2000). The playfulness in the sphere of public health, has been working intrinsically in the human being, through leisure that is indispensable to physical, emotional and intellectual health (BRASIL, 2008).

For the children, the playful has a pedagogical relevance that allows them to understand about themselves, about the individuals who are in their conviviality and about the world around them. Therefore, the relationship between the pediatric dentist and the pediatric patient should be based mainly on dialogue and motivational activities to promote oral health. Given this, in the face of infantile sensibility to verbal and non-verbal communication, these motivational activities are presented as a useful and useful way to involve children in the process of learning about care. The use of active methodologies in Pediatric Dentistry shows a relevant influence on the target audience, since the cooperation during the dental treatment will differ from patient to patient.

This work aims to verify the impact of a motivational program of oral health promotion in a group with children attending the Children's Clinic of the São João Calábria Dental Complex of Quixadá Catholic University Center - UNICATÓLICA, evaluating the comparison between quality of life (Child Perceptions Questionnaire 8 (CDQ8-10), anxiety (Revised Children's Manifest Anxiety Scale or OQPS), depression (Children's Depression Inventory - CDI) and oral conditions (Ceo-d) prior to the motivational intervention and to dental treatment.

## MATERIALS AND METHODS

The present study was approved by the Ethics and Research Committee (CEP) of the Catholic University Center of Quixadá - UNICATÓLICA, through protocol # 2,334,904. This work is a descriptive approach, with data collection in a qualitative and longitudinal nature. A convenience sample consisted of children between the ages of 8 and 10 years, both boys and girls, who participated in the motivational program of oral health promotion and who were later attended at the Children's Clinic of the UNICATÓLICA Dental Complex, in the municipality of Quixadá - CE located 169 km from Fortaleza, capital of the state. The study included patients who were duly registered in the São João Calabria Dental Complex of UNICATÓLICA, who agreed and signed the agreement of the minor and that was with the contents exposed in the Term of Free and Informed Consent duly signed by their responsible. Patients who refused to respond to the questionnaires, who did not cooperate during the intra-oral examinations, refused to take the necessary photos for this study and those who presented some altered systemic condition, making it impossible to perform the clinical procedure. The research comprised a few phases, the first one being the application of the Child Perceptions Questionnaire 8-10 (CPQ 8-10), Children's Depression Inventory (CDI) and Revised Children's Manifest Anxiety Scale ("What I think and Feel" OQPS), in the waiting room, prior to the motivational program of oral health promotion of UNICATÓLICA, with an average duration of 30 minutes.

Afterwards, a duly calibrated evaluator performed the anamnesis through the questionnaire contained in the clinical record of pediatric dentistry at UNICATÓLICA, where the legal guardians were asked for their personal data, previous medical and nutritional history (breastfeeding time, birth weight, type of delivery), comorbidities (hypertension, diabetes mellitus, dyslipidemia), child care (treatments and routine use of health services) and history / presence of parafunctional habits (finger sucking, pacifiers and / or lips, onicofagia, grinding teeth and nocturnal enuresis). The same evaluator performed the intra-oral clinical examination in the selected patients, using clinical mirror, exploratory probe nº 5, oral retractors, gauze and individual protection equipment. The caries experience was evaluated according to WHO (1997) using the CEO-d form that was filled in and then the number of decayed, missing and filled teeth were determined for the deciduous teeth. The second phase consisted of a new application of the questionnaires after 30 days of the beginning of treatment and the participation of the motivational program of promotion in oral health, performed by the same calibrated evaluator, with the same duration. To evaluate the quality of life, the Child Perceptions Questionnaire 8-10 (CPQ8-10), developed by Jokovic *et al.* (2004). In Brazil, a preliminary study confirmed the validity and reliability of these

instruments for use in children and pre-adolescents with different oral diseases, such as caries lesions, malocclusion, gingivitis and fluorosis (BARBOSA *et al.*, 2011). items. These 25 items cover four subscales, five items of oral symptoms, five of functional limitations, five of emotional well-being, and ten of social well-being. The items address how often events occurred in the four weeks prior to instrument application. The response options follow the five-point Lickert scale, ranging from score 0 to score 4 for each item. In this way, the child can present values for the instrument that range from 0 (no impact of their oral condition on their quality of life) to score 100 (maximum impact of their oral condition on their quality of life). The instrument also has two items of patient identification (sex and age) and two general items about the child's oral health and about how much oral or orofacial change affects his general well-being. Among the various tools for assessing child anxiety, the Revised Children's Manifest Anxiety Scale (RCMAS) stands out for its good results of validity and reliability, even in intercultural adaptations. This scale is originally North American (Revised Children's Manifest Anxiety Scale or "What I think and Feel"), and has regulations in several countries (REYNOLDS and RICHMOND, 1978). It was translated, adapted and validated for the Brazilian population by Gorayeb, M. and Gorayeb, R. (2008), and it was composed of 37 self-enforcement items, where children indicated "yes" to situations that think or feel or "no" in situations they never felt or thought. Of these 37 items, nine are composed of a Lie Scale. The final result of the scale was obtained by summing "yes" responses (does not include responses to the Lie Scale) and ranges from zero to 28 points, indicating the gradation of anxiety (GORAYEB, M and GORAYEB, R., 2002; GORAYEB, M. and GORAYEB, R., 2008). The Children's Depression Inventory (CDI), developed by Kovacs (1983), is an instrument adapted from the Beck Depression Inventory (BDI) (BECK *et al.*, 1961) to evaluate depressive symptoms in children and adolescents. Kovacs (1983) found a division of the test into 5 factors: 1) Negative mood, 2) Interpersonal problems, 3) Inefficiency, 4) Anhedonia and 5) Negative self-esteem (KOVACS, 1992). The test was validated for Brazil by Gouveia *et al.* (1995). The ICD is a self-report scale that was developed to evaluate individuals aged 7 to 17 years. The instrument consists of 27 items, each item having three options for response. The responses vary from 0 to 2 points according to the severity of the symptom, being (0): absence of symptom, (1): mild symptom and (2): clear symptom. The children read the three options and chose the one that best described their thoughts and feelings over the past two weeks. The sum of the points provides a score. The cut-off point for signaling depressive symptoms in the Brazilian population according to the study by Gouveia *et al.* (1995), is 17. The data collected in the study were statistically evaluated using the BioEstat 5.3 statistical packages (Mamirauá, Belém, PA, Brazil). The Shapiro-Wilk normality test was used, it is possible to observe a normal distribution of the data used. Comparison before and after all variables was performed by the Student's t test of repeated measures, considering the level of significance of  $\alpha = 5\%$ . Then the data obtained were exposed through graphs and tables.

## RESULTS

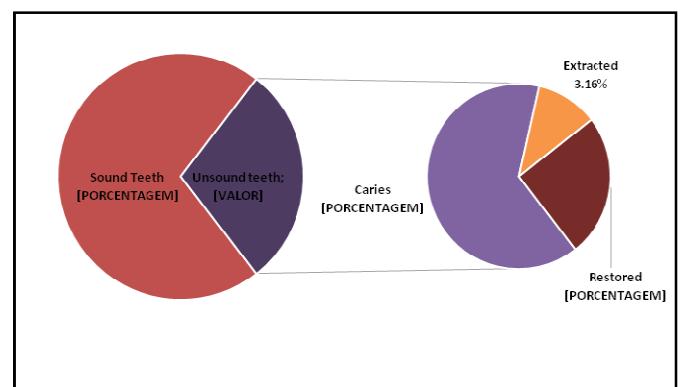
**Description of Participants:** Twenty-two children and their parents / guardians were excluded from the study, of which 2 were excluded because they refused to respond to the CDI questionnaire. Thus, the sample consisted of 20 children, 75%

(n = 15) males and 25% (n = 5) females. It can be observed that there were predominance of male children, with ages of 8, 9 and 10 years, corresponding to 35%, 45% and 20%, respectively, and schooling between the 2nd and 4th year of elementary school.

**Table 1. Socio-demographic variables of the children participating in the study**

Variable	Study Population	
	N	%
Sex		
Female	15	75
Male	5	25
Total	20	100
Age		
8	7	35
9	9	45
10	4	20
Total	20	100

Fonte: autor, 2019.



Source: author, 2019.

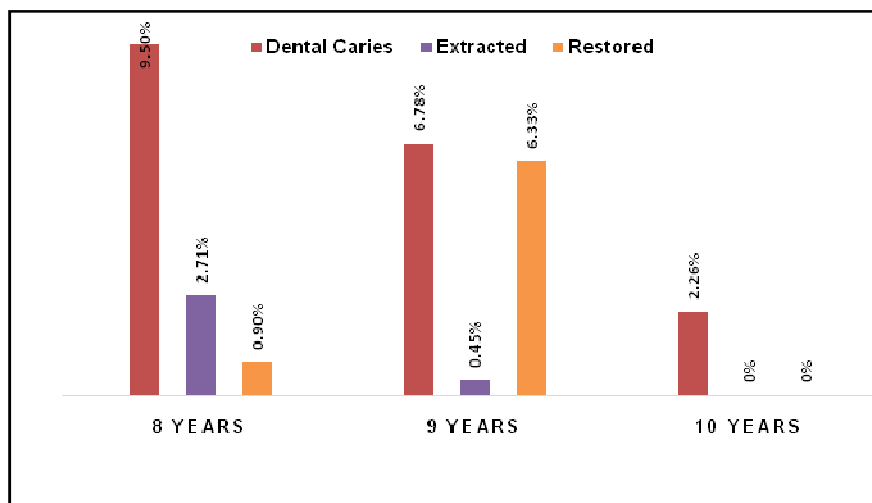
**Graph 1. Percentage obtained from the sample**

**Table 2. Mean obtained from the participants in the Child Perceptions Questionnaire 8-10 (CPQ8-10) in the two moments of evaluation**

Reviews CPQ8-10	Participants		
	N	Mean / Standard Deviation	P value
Before Motivation	20	18,8 ± 3,60 A	p<0,001
After Motivation	20	5,3 ± 3,55 B	

Source: author, 2019 - Capital letters present a statistically significant difference between columns by the student t test (p < 0.05).

**Index Ceo-d:** With the results obtained from the analysis of Ceo-d (index of deciduous teeth that are decayed, with indicated extraction and obturated), it was observed that the 20 children analyzed contained 221 deciduous teeth in the dental arch, of which 71.06% = 157) of the teeth were healthy, while 28.94% (n = 64) of the teeth were not healthy. Based on the data found, it is possible to verify the presence of caries in n = 41 teeth corresponding to 18.55% of the sample, in n = 7 teeth, the need for indication of exodontia was observed, conferring 3.16% in n = 16 presented with sealed teeth, representing 7.23% of the research participants. The Ceo-d index was used to evaluate the caries experience of the participants. In order to facilitate data analysis, children were divided into age groups, where n = 7 8-year-old children had caries in n = 21 teeth (9.5%), n = 6 teeth (2.71%) were indicated for exodontia and only n = 2 (0.90%) had some type of obturation. On the other hand, n = 9 9-year-old children presented n = 15 (6.78%) of decayed teeth, while n = 1 tooth (0.45%) was indicated for exodontia. E n = 4 children of 10 years old had only n = 5 (2.26%) of the teeth with caries.



Fonte: autor, 2019.

Source: author, 2019.

**Graph 2. Description of the Ceo-d Index in children aged 8 to 10 years**

**Table 3. Mean obtained from the participants in the Children's Depression Inventory - CDI, in the two moments of evaluation**

Participants			
Reviews CDI	N	Mean / Standard Deviation	Value p
Before Motivation	20	7,4 ± 6,05 A	p<0,02
After Motivation	20	3,5 ± 2,99 B	

Source: author, 2019 - Capital letters present a statistically significant difference between columns by the student t test ( $p < 0.05$ ).

**Table 4. Distribution of the participants according to the means obtained in the O Que Pensão e Sinto Scale (OQPS), in the two moments of the evaluation**

		Anxiety Levels							
Reviews OQPS	N	Absence (0-9)		Mild (10-15)		Moderate (16-21)		Severe (22-28)	
		N	%	N	%	n	%	N	%
Before Motivation	20	0	0	8	40	8	40	4	20
After Motivation	20	5	25	11	55	4	20	0	0
Value p		p<0,009							

Source: author, 2019 - Capital letters present a statistically significant difference between columns by the student t test ( $p < 0.05$ ).

There was no need for dental extraction, nor was there a presence of fillings for this age group.

**Child Perceptions Questionnaire 8-10 – (CPQ<sub>8-10</sub>):** The results obtained previously the execution of the motivational program in relation to the quality of life of the participants showed an average of 18.8 while after a reduction can be observed to 5.35 showing that there was a statistically significant difference  $p < 0.001$  by the student t test of measures repeated. The improvement in the quality of life of the children studied after starting the dental treatment and participating in the motivational program is noted.

**Children's Depression Inventory – CDI:** In relation to depressive symptoms there was a statistically significant difference between the two moments of the evaluation. In the initial evaluation, before the motivational program, it was superior to the presence of depressive symptoms, presenting an average of 7.4 when compared after the motivational intervention with an average of 3.5. Following the precepts and guidelines of the formulations indicated by Gouveia *et al.* (1995), who standardized the instrument with a cutoff point of 17, thus children with scores equal to or above that value are considered as depressive symptoms.

It can be observed that previously the motivational program of health promotion  $n = 3$  patients of  $n = 20$  patients evaluated in the Children's Clinic of the São João Calabria Dental Complex of Unicatólica presented a depressive behavior after participation in the motivational program of promotion. The mean values presented in health were before 7.4 to 3.5. When a comparative analysis was performed between the results found through the student t test, we observed that there was a statistically significant difference before and after the motivation, thus demonstrating that the motivational program reduced the participants' depressive symptoms. Patients who presented a cut grade of 17 or higher were referred to the Applied Psychology Service (SPA) of Unicatólica, where they received psychological counseling.

**Revised Children's Manifest anxiety scale ou “what i think and feel” o que penso e sinto (oqps):** The results obtained demonstrate a gradual reduction in the participants' anxiety levels after the motivational health promotion program. The research reveals that prior to the intervention the entire sample had some level of anxiety, whether mild, moderate or severe. After the experiment, 1/4 of the children analyzed no longer showed any of the anxiety levels. Children with severe anxiety initially represented 20% ( $n = 4$ ) of the sample and after the

motivational program there was a dilution to the level of moderate anxiety, which initially determined 40% (n = 8) of the participants and, after motivation, to determine only 20% (n = 4) with a dilution of this to the level of mild anxiety. Subjects in this category were, in turn, 40% (n = 8) of the children, and after that, this percentage increased to 55% (n = 11), showing that there was a reduction of the most serious levels. Based on the data collected by the research, it can be seen that the motivation offered by the motivational health promotion program was crucial in reducing, even eliminating, the aspects of anxiety and depression that the patients surveyed indicated in the study. Beginning of this study, thus reflecting direct improvements to their quality of life.

## DISCUSSION

With regard to Ceo-d, the results of the present study indicate a certain concern, because if acquired habits throughout life are not changed, oral hygiene is not performed correctly and periodic control is neglected, this oral condition may remain and even reach the permanent successors who are in the eruption period. The mean ceo-d obtained was 3.02 and the standard deviation was 1.70. Corroborating with our study Moraes and Arsenian (2014), they conducted a survey with a sample of 9 children, with the same age group, where they obtained the mean of the d-ceo of 3.11 and standard deviation of 3.01. We found that the situation found is more worrisome than the one found in the present study and both are worrisome because the result is higher than the value found in SB Brazil in 2010 (2.43), evidencing the need to expand access to public health policies in this age group. In the present study, the use of dental caries has a negative influence on the quality of life of preschoolers and their families (ABANTO *et al.*, 2011; WONG *et al.*, And other factors that may be involved in the development of the disease,. Most of these studies have been conducted in Brazil (LEAL *et al.*, 2012, KRAMER *et al.*, 2013, RAMOS-JORGE *et al.*, 2014), where the prevalence of untreated dental caries is quite high, reaching about 80% of children at 5 years of age (BRAZIL, 2010). In relation to the Children's Depression Inventory (CDI), Luiz (2011) conducted a survey using the CDI questionnaire in a sample of 60 children, in which they were divided into experimental groups containing n = 33 children and control group with n = 27 children, an initial mean score of 15.66 was obtained for the experimental group and 14.62 for the control group. In the re-evaluation, there was a reduction of the mean in the two groups, where the experimental group was 8.48 and the control group with a mean of 14. The mean follow-up was 6.66 and 13.18 for the experimental and respectively. The results obtained ratified those found in the research regarding depressive symptoms, showing that there was a difference between the experimental group and the control group in the three moments of evaluation. When comparing the two groups (Student t test (t = 5.99), p <0.001), the experimental group presented lower values of depressive symptoms in relation to the control group. Eremis *et al.* (2004) carried out a study to evaluate psychiatric disorders in overweight children and adolescents, using the Children's Depression Inventory (CDI), where it was found that the majority of participants presented a diagnosis of Major Depressive Disorder. In a study of 56 children and their families, in which they were divided into groups and were submitted to 16 sessions of cognitive behavioral therapy, the results showed that in both groups there was a significant reduction of the symptoms of anxiety and depression (MUNSCH *et al.*, 2008). In what concerns

OQPS, Luiz (2011), carried out a research using the OQPS questionnaire, in which he divided his sample into an experimental group n = 33 children and control group n = 27 children. Where the experimental group obtained a mean of 12, 90 in its initial evaluation, of 7.81 in the re-evaluation and 6.09 in the follow-up, while the control group had a mean of 12.25 in its initial evaluation, a reassessment of 11.48 and 13, 00 in its follow-up. It was observed that there was not a significant difference between the groups, but there was a reduction in the anxious symptoms, corroborating with the results of the study carried out.

Studies conducted by Wilhelm and Lima (2007) evaluated psychiatric disorders in obese children and adolescents, the result showed that 16.22% of participants had at least one anxiety disorder, and 8.04% had at least one mood disorder.

Fear and anxiety in children come from negative experiences previously experienced in the dental office or even from unpleasant moments reported by their caregivers and friends. Anxiety is a factor that directly interferes with the child's going to the dentist and is considered an inhibitory factor for dental procedures. The symptoms commonly found in anxious children are autonomic symptoms, palpitations, excessive sweating, tremor, abdominal discomfort, headache, shortness of breath, dizziness and urinary urgency (MARQUES and GRADVOHL 2010). The Motivational Program for Oral Health Promotion at Quixadá Catholic University Center (UNICATÓLICA) made use of recreational activities to promote health, such as: theatrical presentations, games, educational lectures, posters, songs, dances, among others. Considering a better relationship between professionals, students and patients, resulting in a more humanized care and reducing the levels of anxiety and depression of the participants, which indirectly brought an improvement in the quality of life of participants. The playful has been commonly used in pediatric dentistry, especially after the knowledge that dental treatment in an adult is completely different from the treatment in children, in which these have more pronounced psychological manifestations. The understanding of the phases of the child's life is essential for the understanding of their behavior in relation to different situations and for the proper management of the professional (CORREIRA, 2013). According to Oliveira (2014), some dental surgeons do not believe in the effectiveness of play activities due to the lack of knowledge of the tool and its importance. However, when this instrument is tried in the child care, it has been observed a better cooperation on the part of the child. Oral health education aims to motivate children's patients, creating a link between the professional and them, taking into account the psychological factors of this relationship (DIAS, 2004). In the present study the motivational program of health promotion improved the variables studied in the study. The use of active methodologies in dentistry shows a very important influence on the target audience, since child development is continuous and dynamic, with manifestations inherent in the age group itself, requiring professionals to understand this behavior. Despite the limitations of the present study, further studies are needed to evaluate the studied variables with the objective of elaborating a more effective action plan against these manifestations of anxiety, depression or any other means that negatively influences children's quality of life.

## Conclusion

It can be observed that the playful approach proposed by the motivational program of oral health promotion carried out at

UNICATÓLICA's children's clinic significantly reduced aspects related to anxiety, depression and consequently brought an improvement in the participants' quality of life.

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