

Demystifying Children's Perception of Oral Hygiene and Prevention of Periodontal Diseases: an Experience Report

Desmistificando a Percepção Infantil frente às Temáticas de Higiene Oral e Prevenção das Doenças Periodontais: Relato de Experiência

Desmitificando la Percepción de los Niños sobre la Higiene Bucal y Prevención de Enfermedades Periodontales: Relato de Experiencia

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Abstract

Recently, periodontics has been in the limelight when it comes to dentistry. Nonetheless, the population still shows a lack of basic knowledge regarding periodontal health. This shows the need to encourage oral hygiene education, in order to revert this paradigm. The goal of this study was to report the experience of activities to promote periodontal health in children, as well as the materials used, and the results obtained. The activity analyzed was carried out by dentistry students from the Universidade Federal de Campina Grande, participants of the Extension Project on Clinical and Surgical Periodontics (PROEPECC). Activities emphasized orientations regarding periodontal health based on the specific knowledge students needed the most, which was ascertained using a questionnaire that was applied in the first extension activity. It also addressed issues such as healthy eating, hygiene methods, and others. Two classrooms from the elementary school Nelita Nóbrega Queiroz (Patos - PB) were chosen, including a total of 60 children from 5 to 7 years old. Based on the early survey, it was necessary to teach periodontics basics, as only one child had any knowledge on the subject. At the end of the activity, the questionnaire was applied again, revealing that 100% of the sample had been well instructed regarding prevention, concepts, and characteristics of periodontal diseases and oral hygiene. The interaction of the students with the children out of the institutional boundaries enabled innovative experiences and collective practices. For the children involved, it measured their ability to improve their knowledge, especially when it comes to promoting periodontal health, goals reached in the current project.

Descriptors: Oral Health; Health Promotion; Periodontal Diseases.

Resumo

A periodontia é uma área da odontologia que está sendo fortemente ressaltada na atualidade, porém ainda se vê, na população, carência de conhecimento básico sobre a saúde periodontal, com isso observa-se a necessidade do incentivo à Educação de higiene oral para reverter este paradigma. Relatar a experiência das atividades de promoção de saúde periodontal para crianças, por estudantes de Odontologia da Universidade Federal de Campina Grande, sendo estes, extensionistas do Projeto de Extensão de Periodontia Clínica e Cirúrgica (PROEPECC), bem como materiais utilizados e resultados obtidos. As ações enfatizaram orientações de saúde periodontal com base no que os alunos tinham mais dificuldade, a partir de um questionário que foi aplicado na primeira atividade de extensão, também abordaram quesitos como boa alimentação, métodos de higiene e entre outros. Na Escola de Ensino Fundamental Nelita Nóbrega Queiroz (Patos-PB) escolheu-se duas turmas, 1º ano e 2º ano, totalizando 60 crianças, com faixa etária de 5 a 7 anos. Com base no levantamento inicial, observou-se a necessidade de aprendizagem sobre o básico da periodontia pois apenas 1 criança tinha ciência da pauta e ao fim da vigência houve a reaplicação do questionário, e alisou-se que 100% da amostra estava instruída no tocante a prevenção, conceito e característica das doenças periodontais e higiene oral. A interação dos alunos com as crianças fora do âmbito institucional proporcionou vivência inovadora e prática coletiva, e para o público infantil dimensionou a capacidade de aprimorar conhecimentos principalmente sobre promoção de saúde periodontal, sendo metas alcançadas no presente projeto.

Descritores: Saúde Bucal; Promoção da Saúde; Doenças Periodontais.

Resumen

La periodoncia es un área de la odontología que está siendo fuertemente destacada en la actualidad, sin embargo, la población aún percibe un desconocimiento básico sobre la salud periodontal, por lo tanto existe la necesidad de fomentar la educación en higiene bucal para revertir este paradigma. Reportar la experiencia de actividades de promoción de la salud periodontal infantil, por parte de estudiantes de Odontología de la Universidad Federal de Campina Grande, extensionistas del Proyecto de Extensión de Periodoncia Clínica y Quirúrgica (PROEPECC), así como los materiales utilizados y los resultados obtenidos. Las acciones enfatizaron en lineamientos de salud periodontal basados en aquello que tenía más dificultad para los estudiantes, a partir de un cuestionario que se administró en la primera actividad de extensión, y también abordaron temas como buena alimentación, métodos de higiene, entre otros. En la Escuela Primaria Nelita Nóbrega Queiroz (Patos-PB) se eligieron dos grupos, 1º año y 2º año, totalizando 60 niños, de 5 a 7 años. Con base en la encuesta inicial se observó la necesidad de aprender sobre los conceptos básicos de periodoncia ya que solo 1 niño conocía el tema y al final del período se volvió a aplicar el cuestionario, confirmando que el 100% de la muestra estaba educados sobre prevención, concepto y características de las enfermedades periodontales e higiene bucal. La interacción de los estudiantes con niños fuera del ámbito institucional proporcionó una experiencia innovadora y una práctica colectiva, y para los niños incrementó la capacidad de mejorar conocimientos principalmente sobre la promoción de la salud periodontal, objetivos que se lograron en este proyecto.

Descripciones: Salud Bucal; Promoción de la Salud; Enfermedades Periodontales.

INTRODUCTION

Periodontics is the base of dentistry.

Accordingly, it has significantly advanced regarding studies, analyses, and treatments. Therefore, one

of its most carefully highlighted aspects is the prevention of periodontal disease. The topic is not often cited in popular health promotion events, showing that the role of the dental surgeon, in health education, is paramount, since their formation goes beyond individual diagnosis. Collective work and humanization should be prioritize so broader results can be achieved^{1,2}.

Therefore, still in graduation, through extension projects, extracurricular activities are made available to undergraduates, to encourage humanized practices and increase the contact of the student with society³⁻⁵.

Thus, education consists in the efficient technique of constructing knowledge, critical thought, and forming the individual. This is why the school is a place where large events to promote primary health take place. This is where, since childhood, oral hygiene practices and knowledge about periodontal health are taught, encouraging a future society with increasingly healthy behaviors⁶⁻¹⁰.

Furthermore, this experience goes both ways; while the team works to successfully teach basic knowledge to the children, they also become better professionals¹¹.

Considering the above, this study aimed to emphasize the extramural experience of eight undergraduates of the dentistry course at the Universidade Federal de Campina Grande, campus Patos, Paraíba - Brazil, at the elementary school Nelita Nóbrega Queiróz, in the same city. The target audience was made up of children from 5 to 7 years old, and the goal was to promote oral health, focusing on periodontal health.

EXPERIENCE REPORT

This work emerged from the Extension Project on Clinical and Surgical Periodontics (PROEPECC), from Universidade Federal de Campina Grande, campus Patos, Paraíba, associated to the offices of the Extension and Research Pro-Rector at UFCG, in effect during 2022. Its objective was to demystify oral hygiene topics and prevent against periodontal diseases, while establishing a bond between the undergraduate and the child public, training them to be professionals that prioritize education in health and empathy for society.

The project, named Promotion and Rehabilitation of Periodontal Health, counts on 8 members, from the 5th to the 9th semester of the dentistry course, and lasts for six months, from July to December 2022, with professors from the institution as advisors.

Firstly, there was a meeting between the members to choose the school, which led to the selection of the elementary school Nelita Nóbrega Queiroz, in the Jatobá neighborhood, city of Patos, Paraíba. After visiting the school, members of the

project selected the two classes to include in the project, 1st year B, and 2nd year A, with age groups from 5 to 7 years old, a total of 60 children. Activities were carried out on Fridays, in one class and then the other (1st and 2nd year), in the mornings, from 7:20 a.m. to 9:30 a.m., always before the break and before the children ate, as after the break they become much more agitated.

At first, to carry out the educational activities, we carried out a questionnaire for 15 children, 7 from the 1st year, 8 from the 2nd, including the entire process of presentations on the topic. The activity officially began at this point. It contained the following questions: "Do you know what is a tooth?", "What are gums?", "what are this black spots on the teeth?", "What is gingivitis?", "Do you know why the gum is red and bleeding?", "Does anyone know what is a toothbrush?", "How do you brush your teeth?", "Who knows what is toothpaste?", "Do you know what is dental floss?", "How should you use dental floss?", "Why should you use dental floss?", "What are healthy foods?", "Do you know what foods make cavities appear on teeth?", "Do you know what a dental surgeon does?". At the end of the activity, the same questions were applied to a new sample of students, double the size of the first. They were compared to verify the success or lack thereof of the project.

The materials and methods used were gouache paint, large-sized models of mouth and brush, drawings to color, puppets for theater plays, a picture series for coloring, dances, and plays unwind, small lectures, and conversation. Each action respected the limits of the children.

The first activity, with the questionnaire at hand, was carried out in a reserved room. The team was divided in pairs and asked questions to the children (Figure 1), with accessible language. The results found are on Table 1.

Table 1: Sample space of the survey of data for the activity. The first column of answers is the initial evaluation, while the second shows the results of the learning education of the children.

Questions	Early evaluation (n = 15)		Final evaluation (n = 30)	
	Yes	No	Yes	o
Do you know what a tooth is?	100%	0%	00%	%
What are gums?	66,66%	33,34%	100%	0%
Have you ever heard of gingivitis?	6,66%	93,34%	100%	%
Do you know why the gum gets red and bleeds?.	6,66%	93,34%	100%	0%
Does anyone know what a toothbrush is?	100%	0%	100%	0%
Do you know the right way to brush your teeth?	100%	0%	100%	0%
Do you know what dental floss is?	100%	0%	100%	0%
Do you know how you should use dental floss?	53,33%	46,67%	100%	0%
Do you know what foods are healthy?	66,66%	33,34%	100%	0%
Do you know what a dental surgeon does?	53,33%	46,67%	100%	%

Source: PROEPECC, 2022.

Still regarding the questions, when we asked the kids about the black spots on the surface of a large tooth model, marked using styrofoam and

black ink, the students answered: "black stain", "the little tooth-eating monster", and "little hole", showing limitations regarding their understanding of the degree of tooth decay. In the same regard, concerning periodontal diseases, the understanding of the children was minimal. Only one of them recognized the word "gingivitis".

Therefore, considering the results of the first questionnaire, the team found that in basically all topics there was a certain degree of knowledge. However, when it comes to the periodontal disease, namely, gingivitis, we found a discrepancy of data and the topic was unknown. Thus, the sample was necessary to guide the remainder of the project and analyze the degree to which the children had difficulties with the basic topics of oral hygiene. Therefore, we worked with periodontal diseases and their prevention, while also emphasizing other topics.



Figure 1: Asking the questions to the children.

Therefore, in the meeting carried out to start the activities, we addressed dental cavities and brushing, told the story of Moot the tooth (made out of styrofoam), which is a happy and healthy tooth, who received efficient, correct, and frequent hygiene, in addition to eating healthy fruit, such as papaya and avocado (made of felt). However, one day, he ate ice cream, lollipops, and pizza (also made of felt) and slept without brushing. This happened again for a couple of days. Then, a little witch came to him (the tooth) and turned him dark (the little witch was made with small clothes, a hat, and black gouache paint). The black paint was placed on the surface, and when he found out that the surface was different and black, he brushed a lot, but could not remove the black spot, becoming very sad. Then, he went to the dentist, restored it, and got happy again (Figure 2).

To reiterate, the children were asked what the black spot was on the tooth and why it appeared. They rapidly answered: "cavities and bad hygiene". We also emphasized that tooth decay starts with a biofilm, bacteria accumulation, and deterioration of the tooth's enamel. Then, we presented a dynamic about dental extraction

(Figure 3). We divided the class into two teams and asked them to say if the sentences we told them were true or false. Then, they received two dental arches (fashioned out of EVA, with teeth made from empty egg cartons). If a team made a mistake, the other team would use toy pliers to remove a tooth from their mouth (referring to dental extraction). The statements should be judged as true or false, and included: "Dental floss is not so important"; "Popcorn, pelota, soda, and chocolate help the cavities"; "Tell me three foods that are enemies of tooth decay "; "I don't need to brush my teeth every day"; "What is the right movement to brush the teeth:"; "I should only worry with the teeth in my mouth"; "I should only search for the dentist if one of my teeth hurts", What does the dentist care for?; What items should we use for our dental hygiene?; Why should we care for our teeth?; "Losing a tooth is not so important".



Figure 2: Moot the Tooth, happy with healthy foods and sad with tooth decay.



Figure 3: Dental extraction dynamic

In another meeting, we addressed healthy and harmful eating (Figure 4 - a, b, c), showing that the latter can deteriorate the enamel, lead to cavities, and even to the loss of the tooth. We started with two mouths made out of EVA and cardboard, one of which was healthy, while the other had dark spots and little creatures (bacteria and cavities). We also gave to the children foods (lollipop, pizza, ice cream, pineapple, papaya, corn, chocolate, and others) that they could put on the corresponding mouth. As they got the answers right or wrong, the team complemented the answer with short explanations. To evaluate the absorption of the knowledge, we used a surprise box (Figure 4-d), fashioned out of EVA and a shoebox. In it, we put images of fruits and candies. The class was divided into teams and each one had to answer if the fruit randomly taken out of the box was good or bad for the little teeth, meaning that, to augment the activity, we explained about brushing the teeth before sleeping and warned the kids that they can eat all the foods, but they cannot forget to clean their teeth before sleeping and after eating.



Figure 4 - a,b: Materials showing healthy and harmful eating; c: Participation of the audience in the practice; d: Surprise box to evaluate the content.

The prevention of periodontal diseases was addressed in a light manner, but in such a way that the basic content could be passed on quickly. Therefore, regarding gingivitis, which is a very common problem which affects all ages, we used two images (Figure 5).



Figure 5: Gingivitis and healthy gum

One of them was a dental arch with the disease on the clinical level, while the other had a healthy aspect. The team reported the differences between each of them. Then, we explained about the use of dental floss and brushing to prevent

gingivitis. To evaluate the information that was taught, we used coloring drawings (Figure 6), showing healthy foods, a dentist, oral hygiene objects, a mouth in which they should color in the characteristics of gingivitis, and another, where they should color in a healthy gum.



Figure 6: Coloring activity as an evaluation of the content taught.

The importance of the dental surgeon was explained in a more dynamic way, through the use of a quiz (Figure 7).



Figure 7: Team presentation and active participation of the children.

Classes were divided into two teams. One representative was selected (Figure 8), who had to slap the hand of the undergraduate who was asking the question in order to answer the question, as soon as the music playing on a speaker stopped. Each response led to a discussion and explanation of knowledge involving the role of the dentist. The questions included: The little tooth decay monsters are viruses or bacteria?; Does gingivitis affects teeth or gums?; What is the dental floss for?; Is it right to eat and not brush the teeth?; The black spot and the hole in the teeth come out by brushing?; Demonstrate, on the large model, how to use the dental floss.; Demonstrate, on the large model, how to brush teeth; Should you only go to the dentist when you have tooth decay?; Is it forbidden to brush your tongue?; What fruits can harm the teeth? But are they forbidden?; Does the dentist take care of feet, lips, teeth, and ears?; Does the dentist help with gingivitis?; Does the dentist care for tongue and cheeks?

One of the meetings took place on the week of Children's Day. As a result, in order to get out of the educational system for a little while, the team decided to prepare playful activities for the children, to prevent them from becoming monotonous and tiring. Therefore, they commemorated with a theater

(princess and prince) on the topic of cavities, gingivitis, and healthy eating (Figure 9). Then, they guided the children in stretching, danced the little crooked man, played alive or dead, hot potato with everyone in a circle. We finished the day with a face painting that showed what the kids wanted and giving them popcorn.



Figure 8: Representative for one of the teams participating in the educational quiz.



Figure 9: Theater play from the Realm of Oral Health, and face painting.

Regarding the topic of brushing, the same teaching method was used to teach how to remove biofilm, as a supporting tool to prevent periodontal disease, recalling previous exercises with content revisions and observing what they said about adequate brushing. Therefore, using a large model of brush and mouth, we demonstrated the right way of cleaning teeth, with short, continuous, circular brushing movements, as well as the adequate brush inclination, cheek, and tongue brushing, as well as the proper amount of toothpaste and its importance. We also explained what fluoride is for, what are bristles, showed the most efficient and right way to hold the brush, and more.

In addition, every child in the teams performed the practice with the large models (Figure 10-a), so the undergraduates could correct them and clarify, to each individual child, any doubts

they may have had or questions they may have wanted to ask. Then, they went to Mr. Big Mouth (Figure 10-b) and repeated the teachings in a more fun and playful way, brushing each tooth of the toy.



Figure 10 - a: Child practicing oral hygiene in the large model; b: Playing with brushing as an evaluative method of learning.

In the final activity, the questionnaire that started the project was applied again. This time, however, it was applied to 30 students, 15 from each class, to analyze whether the subjects discussed had been internalized by the children, demystifying the paradigm imposed on oral health. The results were described in Table 1.

Regarding the black spots on the surface of the teeth, the children highlighted, as main words (Figure 11), the "Doença cárie" (Brazilian Portuguese for "Tooth decay"). Regarding gingivitis, most described it as "doença na gengiva" ("gum disease") and "gengiva vermelha e sangrante" ("red and bloody gums") (Figure 12). When asked about the profession of the dental surgeon (Figure 13), most reports included: "Cares for tongue, gum, cheeks, and teeth".

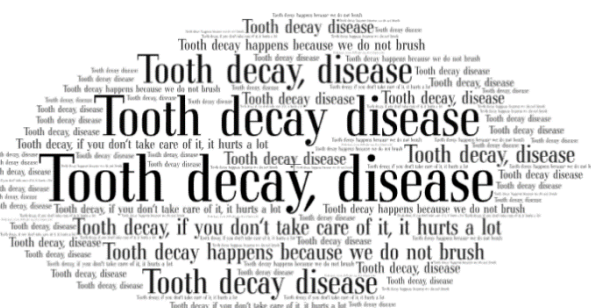


Figure 11: Description regarding black spots on the teeth



Figure 12: Gingivitis description

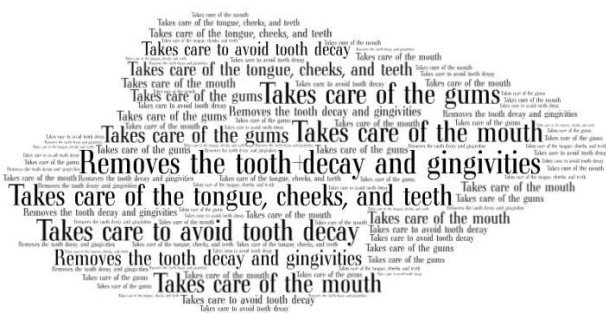


Figure 13: Reports on the care provided by dental surgeons.

Therefore, according with the final questionnaire, we can notice that the teaching methodology used by the team transformed concepts and showed level of knowledge and understanding of the groups regarding each topic – emphasizing, especially, the crucial issue of knowing that gingivitis is a disease that can be treated. As a result, teaching was successful for 100% of the sample.

To finish the activity, we carried out a topical application of fluoride (Figure 14), using disposable molds in the classes and emphasizing the importance of this substance for dental elements. Finally, the PROEPECC team distributed hygiene kits (Figure 15), including toothbrush, toothpaste, and, for each student, a medal of honor, as a prize for their effort, dedication, and commitment to the activity.



Figure 14: Meeting with the topical application of fluoride; a: disposable molds with gel fluoride; b: application.

FINAL CONSIDERATIONS

Throughout the time the extension project lasted and at the final reevaluation, when we compared the data obtained in the first application of the questionnaire and on the last, the results showed that the teaching activity was successful for 100% of children. The undergraduates were efficient in the experience, and the cooperation of the children for health promotion stands out, with their understanding of the topics addressed, especially periodontal health, coupled with the demystification of topics of basic dentistry. This

contributes to the formation of future healthy adults, with quality of life.



Figure 15: Delivery of hygienic kits and medals.

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CONFLICT OF INTERESTS

The authors declare no conflict of interest.

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