

I AM FAVOLAS: A HEALTH EDUCATION INSTRUMENT IN DENTISTRY

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Abstract

Introduction: a good oral health is essential to the existence of a good systemic health. Nevertheless, tooth decay is one of the major problems of public health of our days. Taking this into account, to combat this problem it is the duty of health professionals to promote patient education so that they can adopt habits that prevent the onset of the same disease or its recurrence. **Objectives:** to use pictograms and macro models in order to promote the cooperation and participation of the child, reinforcing the importance of non-verbal language in the dentistry setting. **Methods:** we created original health education instruments, mainly based on pictograms, for children between 5 and 7 years of age. **Results:** nonverbal communication allows a relational bond between therapist and child, enabling the continuity of work and active participation of the child. **Conclusion:** the application of pictograms in children in pediatric dentistry setting may be an asset in health education, promoting a more focused perspective on the patient as well as their active role in it.

Keywords: therapeutic setting, health education, pediatric dentistry, dental care for children.

INTRODUCTION

A good oral health is determinant for a good systemic health. Dental caries were established as a major problem of today's public health, since it affects much of the world's population, influencing life quality, general well-being and systemic health of individuals; namely 60% to 90% of children in school age¹. However, the perceived subjectivity of pain and fear associated with the discomfort pushes individuals away from Dental Offices. This fact works against the prevention of diseases and the promotion of oral health education².

In fact, today, the fear and anxiety experienced by children are fostered³ when the dentist is invoked by families as a mark of a *punitive-disciplinary resource*, causing the child to be afraid of the consultation and clinical instruments associated with it, being the responsibility of the Dentist to demystify *the cult of fear of the consultation setting*, thus gaining the child confidence³⁻⁶.

The child's pediatric dental experience is based on a relational communication and exchange of pedagogical information between the child and the Dentist; thus, a proper relational communication favors the therapeutic bond between the health professional and the patient, allowing for the establishment of a trustful relationship between them and to reduce the child's anxiety⁵. Thus, the

focal point for the creation of a good Odontopediatrician-Patient relationship relies on the Dentist ability to establish a relational communication⁷. Accordingly, to demonstrate the importance of humanistic dimension it is revealed to be indispensable in any Doctor-Child relationship², as stated by Osler "It is more important to know what kind of patient has a disease than to know what sort of disease the patient has"⁸.

Dental caries are known as the most common chronic disease in children^{9,10}, around 61% between 6 and 12 years old children lost a tooth or have a restored tooth due to dental caries, and this data indicates that dental caries are still a problem, despite the success that has been obtained in other restorative dentistry areas^{9,11}.

In Portugal, the National Program of Oral Health Promotion (PNPSO), in 2005, states that the Oral Health Promotion needs to begin during the pregnancy, develop along the childhood within the child and youth's Health, consolidating its position after kindergarten and basic school, through school's health programs, stipulating as a priority the children from 5 to 7 years because it is at this age that the eruption of the first molars occurs, being these teeth the ones who are responsible for a good masticatory function later on¹².

It is also considered crucial acting around this time in the dental caries prevention because it is in these age groups that children start attending

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primary school system as well as begin to acquire autonomy and ability to choose different levels of eating behaviors, revealing as an essential mechanism the active role played by education and pedagogy health, to define acting borders that help building healthy eating habits and an proper alimentation model^{10,13-17}.

The health education process should start with the perception of dental caries as a multifactorial disease, awakening in the patient the interest in promoting and maintaining his oral health.

But what can we possibly do to control this iatrogenesis behavioral disease? Some studies show close associations between the dental caries presence and the eating behavior. Thus, the feeding behaviors can be regarded as high control factors in dental caries. Gustafsson et al (1954) conducted a study on dental caries where they observed that in the control group, with patients that enjoyed a high-fat diet, low in carbon hydrates and practically sugar free, was found a low incidence of caries. Even that would add refined sugar to the diet, the cariogenic activity was little or none. However, when added sweets between meals, cariogenic injuries increased significantly, concluding that dental caries increase with sugar consumption, especially if sugar is retained on the tooth surface^{10,18}.

It is then necessary to sensitize the child to a healthy eating, not only to ensure the normal development of dental structures, but also to ensure a good systemic health^{10,13,15,16}.

Thus, dental caries is constituted as a public health problem because it affects the majority of the Portuguese population, especially children and youth, mitigating the oral health levels of the same, consequently affecting the individuals' life quality. These diseases are likely to be controlled by implementation of measures to promote health, as well as through the inclusion of intervention strategies that were proved as effective¹⁹⁻²¹.

At the Second Health Revolution (1979), in developed countries, symbolically emerges a new epidemic, the behavioral epidemic. Thus, the "biomedical model germ" shall be replaced implicitly by behavioral epidemic and the "vaccine" by behavior change, showing the importance of creating health education instruments with the educational objective to educate/teach the patient to adopt salutogenic behaviors on his daily tasks. It emerges also the enabling concept, in the sense to train the patients, using ill-health strategies, to adopt salutogenic behaviors.

Thus, the creation of teaching-educational tools for health purposes becomes fundamental; whichever one educational model involves biopsychosocial knowledge transfers from experts to lay^{20,22}.

The Odontopediatrician also takes the health educator role since he participates in an active exchange with a still immature and growing human being. The use of teaching-educational tools and the establishment of a relational communication between Doctor-Patient allows at the same time to promote the child's adaptation to the dental treatment and the clinical tools used

during the consultation, promoting a collaborative behavior²³.

We intend, with our instruments, to promote an active child participation and cooperation in the therapeutic *setting* of Pediatric Dentistry.

Through the use of playful instruments, we also intend to extend the child symbolic thinking, running as a relational support for excellence in the therapeutic relationship context. Thus, using the "symbolic nature of play," the child can practice learning of coping strategies of intimidating and stressful realities, which she encountered during the treatments²⁴.

With this project we aim to describe a new method that requires the use of pictograms and macro models to promote cooperation and participation in Odontopediatric consultations.

METHODS

In this article, we present tools for Educational Health to be applied in the context of an Odontopediatric consultation in order to familiarize the child with the clinical dental procedures. The child goes through different stages of psychological development, which should be studied to determine their learning and reasoning²⁵. According to the Piagetian conceptual assumptions of child development, between 2 and 6 years of age, it passes through a stage called Figurative Intelligence, symbolic or pre-operative. Four features that invade all child thoughts, namely, animism, the finality, realism and artificiality dominate this phase. These features are always present in the children intellectual functioning whatever their language level^{26,27}.

It is clear that the symbolic function of the thought is not from a purely verbal nature and, although studies are less advanced in this field, there are a number of symbolic pre language or extra linguistic systems (mental images, deferred imitation, design, symbolic games and social symbolism) that are always present as child's thinking readers²⁸.

The use of the symbolic can then be designed as an intrapsychic process that aims to release the subject from ghosts, serving as a projection mechanism that provides, in a second moment, a relationship with the Other, partially released from this phantasmagoric pressure²⁹.



Figure 1: Happy "Favolas"

Considering undeniable that the direct motivation in the consultation setting, under recreational and pictorial material, is a "major feature" for Oral Health Education^{1,20}, it was prepared, in an initial phase, one macro model, plush, enabling a tooth representation we named "Favolas" (Figure 1), in order to elucidate the child on the caryology basic concepts allowing, simultaneously, promoting the patient interest and attention while the cariogenic concepts are explained by the Dentist in a consultation context. The macro model allows coping and peeling off additional pictograms enabling "telling a story" to children in a simple, dynamic and a proactive way (Figure 2). The different smiles and eyes expressive pictograms personalize the "Favolas" figure; a tooth that feels happy when is healthy and sad when has dental caries.

The representation of a "Happy" tooth designed as clean, seems to project the psychic representation of the subject itself, as a happy tooth symbolizes a happy "self", which will manifest both in the general welfare state, either by pain and suffering absence or aesthetic constraints likely to occur in terms of child self-image^{1,9}.

This instrument should be applied by the Dentist, before the therapy intervention and after clinical observation of the child oral cavity³⁰.

According to a study, in 2013, by Dias, Simões, Carreira & Ventura, comprising a sample of 880 children between 4 and 9 years of age, a pictorial representation of a *Healthy Tooth* in child's imagination suggests a clean teeth with no signs of soiling/dirt, or any stain traces, holes or fractures referring to the fact that children cognitively perceived/associate a clean tooth to a *Healthy Tooth*¹.

Although being a reduced number the subjects/children who, in terms of symbolic representation, customize their design (9,77% of subjects), the Healthy Teeth figure design is portrayed with a happy look, with an anatomy of a humanized face – eyes, nose and mouth – highlighting the anthropomorphization was more evident in the drawings prepared by children who already consulted effectively one Dentist¹.

On the other hand, the pictorial representation of a Sick Teeth refers to a figure tainted by the presence of holes and scratches/blemishes with fill, fractures, associating also in this profile, a pictorial representation of bacteria, figured in "bug"/dental caries subcategory and, curiously, when the Sick Tooth is anthropomorphized, it appears portrayed as an emotionally "Sad" Teeth^{1,4}.



Figure 2: Sick and sad "Favolas"

In the "Favolas" figure the problem of dental caries is represented by a dark colored bug, on extent on empirical studies made previously, most children to draw dental caries, represent it as a bug or garbage, or as something disgusting (Figure 3)⁹



Figure 3: Pictogram: Bacteria and dental caries

We have also created a pictogram that seeks to represent the vulgar "plasters", symbolizing the treatment and restorative material (Figure 4).



Figure 4: Pictogram: Dental treatment

Additionally and associated with the macro model itself, was developed a pictogram that represents a turbine and a toothbrush that, used in conjunction with "Favolas", allow us to explain, in a simple and pedagogical way, the importance of oral hygiene on oral health (Figure 5).

In Dias, Simões, Carreira & Ventura¹ study, 3.41% of all children draw, associated with the Healthy Teeth, brushes and/or toothpastes, being these elements, especially in children as young as 6 years of age, the most prevalent accessories in terms of added components. Thus, the surveyed children report having basic knowledge that their oral health depends, invariably, on preventive hygiene procedures¹.

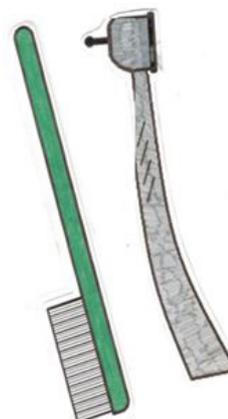


Figure 5: Pictogram: Toothbrush and turbine

We developed, in a second stage, an interactive game which consists of several drawn cards using colored pictograms, which are representations of cariogenic and non-cariogenic foods (Figure 6), where the child, according to experienced knowledge has to put the respective card in one of three boxes available: i) cariogenic food box (symbolized with a red cross), ii) non-cariogenic food box (symbolized with a green "right") and a third box for the cards that the children do not know whether if it corresponds to cariogenic or non-cariogenic foods (symbolized with a yellow question mark), this last box being implicit doubts that will be answered in the context of a Pediatric Dentist consultation (Figure 7).



Figure 6: Food cards/pictograms



Figure : Food game boxes

This game should be presented to the child at the end of the consultation, in order to test/evaluate her knowledge about the food cariogenicity, and its implementation is overseen by the Dentist as an educational act to the patient after the game final outcome.

RESULTS AND DISCUSSION

The waiting time is an important aspect to focus on, because waiting times greater than 30 minutes cause lower rates of adherence to therapy^{25,26}.

The first contact between the doctor and the patient is vital to their future relationship, with the dentist hostile image directly related with the realized procedures. Therefore, a need for the

Odontopediatrician to understand the patient in a development context given that, during childhood, are more vulnerable and sensitive to the environment that surrounds it, is of extreme importance. What most influences this contact is the nonverbal language^{9,26,31}.

In pediatric psychology, early on it recognizes the importance of access to the "cognitive mediation" processes, that is, to value the patient thoughts, ideas and psychoaffective experience. It is recognized that children's beliefs about health and disease influence health-promoting attitudes and the disease confrontation, specifically at diagnosis. It is necessary to take into account that the disease produces unusual internal sensations, and the experience of illness and treatment creates in the child her need for understanding, that is, in order to adapt to situations and events that she is living, the child builds ideas and theories^{26,32}. Therefore, recreational and relational instruments such as "Favolas" constitute a symbolic representative of a clinical-therapeutic reality experienced by the child within a consultation setting.

Currently, Dentistry is quite evolved, having at its disposal technicians and diagnostic tools that improve performance, however the Doctor-Patient relationship is faulty verifying a failure at the interaction level (despite Dentistry being more advanced, at the same time the Dentist and the patient are increasingly distant, creating a lack of confidence which can lead to treatment failure). How can we solve this problem? Through communication, not forgetting that the patient is the center of attention with feelings, emotions, fears and anxieties, not just a set of signs and symptoms that represent a medical challenge. That is, in most cases, "the doctor became hemiplegic, just walking with his technical and scientific "leg", with shrinking or growing paralysis of the other, the humanized relationship with his patient and his therapeutic value". It is important to note that Dentistry remains the specialty that most people are afraid of due the endless invasion of their intimate space^{4,31}.

The game held at the end of the consultation aims to test the child knowledge in a playful and relaxed way.

The choice of the game proved to be right because the act of playing is essential to the child's life, it is the art of living³³, grow, expand her imagination and fantasy; it is voluntary, spontaneous, natural and exploratory, employing, thus, the reflection necessary for the use and acquisition of playful objects in health settings and the toy provides and promotes the acquisition of new conceptions, develops self-esteem, imagination, confidence, creativity, perception and intra and interpsychic relationship^{27,30}.

We consider this instrument extremely important, not only for the pedagogic character that represents, but also because it presents a "silent language" through which meanings of the inner world of children are transmitted, impossible otherwise to be communicated clearly through spoken language³⁴.

In this sense, it is not only important to inform about the risks in order to prevent diseases and promote health, but also how far this informational content can be perceived and internalized by children.

In fact, we know that, in the Pediatric Dentistry consultation context, some of the disruptive behaviors expressed by children during the consultations result from a misfit communicative act by the Dentist^{26,30}.

Previously conducted investigations also expose the need for health professionals to consider

using pictograms as a complementary source of essential information for the patient's literacy⁴.

CONCLUSION

We believe that the implementation of Health Education tools to children, using pictograms and macro models, in Pediatric Dentistry consultation, is constituted as an asset in the practice of health education, promoting a Medical-Centric perspective angle, awarding the patient active role in the therapeutic course.

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Resumo

Introdução: uma boa saúde oral torna-se fundamental para a existência de um estado de boa saúde sistémica. Apesar disso, a cárie dentária constitui-se como um dos maiores problemas de saúde pública dos nossos dias. Nesse sentido, combater a cárie evoca o dever dos profissionais de saúde em *promover o ensino ao doente* para que possam capacitar os doentes-saudáveis de hábitos de higiene oral que previnam o aparecimento desta mesma doença ou a sua recidiva. **Objetivos:** utilização de pictogramas e de macro modelos de modo a promover a cooperação e a participação da criança, reforçando a importância da linguagem não-verbal no *setting* de consulta em Odontopediatria. **Métodos:** foram criados instrumentos originais de Educação para a Saúde (EPS), maioritariamente baseados em pictogramas, destinados a crianças na faixa etária dos 5 aos 7 anos de idade. **Resultados:** a comunicação não-verbal permite a sedimentação de um vínculo relacional entre o Médico Dentista-criança, possibilitando a continuidade do trabalho clínico e a participação ativa da criança. **Conclusão:** a aplicação de pictogramas lúdicos em crianças, na consulta de Odontopediatria, constitui-se como uma mais-valia no âmbito da Educação para a Saúde Oral, promovendo uma perspectiva doentocêntrica, bem como o incremento do papel ativo e participativo do doente no *setting* terapêutico.

Palavras-chave: *setting* terapêutico, educação em odontologia, odontopediatria, assistência odontológica para crianças.