

## Dentophobia in Children During the Covid-19 Pandemic

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**Abstract:** *Dentophobia is a significant problem in oral health management. In the conditions of the COVID-19 pandemic, with the associated sanitary measures (quarantine, social distancing) at national level, the fear and dental anxiety are supposedly increased, especially in children. Pediatric patients are emotionally affected when they faced with the need for emergency dental intervention.*

*The current study seeks to assess the emotional state of children aged 8-12, who needed dental care during quarantine, at the regional level, as well as the degree of anxiety of their parents. Dental anxiety was assessed independently by the dentist, parents and children themselves. If in children, the level of dental anxiety increased insignificantly, compared to the pre-pandemic period, the levels of parental anxiety were higher. The boys in the pandemic group had a higher level of anxiety, especially in the parental assessment.*

*The results suggest that the reorganization of oral care in the pandemic scenario did not have a major effect on children's dental anxiety. However, the results of the assessment in boys show that they may be more vulnerable and need special care to alleviate their anxiety and reduce their risk of dentophobia in the future. These conclusions should be treated with caution, given the small sample size, which requires further confirmation. It is also important to convince parents of the safety of a visit to the dentist during a pandemic, to minimize their anxiety about their children's dental fears.*

**Keywords:** *pandemic COVID-19; dental fear, dental care in children; the dentist-patient relationship.*

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## 1. INTRODUCTION

The COVID-19 pandemic has created many challenges in the healthcare field, that are not directly related to the management of infectious diseases, including dentistry. Strict sanitary and social regimes, distance measures and quarantine have been implemented at national level to reduce transmission rates. The administrative measures taken have generated the reorganization and adaptation of the infrastructure and of the technical endowments, to the newly created epidemiological situation, for all the sanitary units (Silistraru et al., 2021). Healthcare resources have also been redistributed, to support the pandemic response. This has led to the limitation or postponement of non-emergency medical programs and treatment. Under these conditions, the mental stress induced in the population was not only related to the fear of not contracting the disease, but also significant and rapid changes in the lifestyle and work, with an impact on individuals with low psycho-affective status, including children and their parents (Lupu et al., 2017). Adults have already reported that the pandemic caused dental anxiety in 25% of cases (Peloso et al., 2020). But for children, we think that a specific research is helpful, in determining the levels of dental anxiety in the period dominated by COVID-19. In the COVID-19 pandemic, children actually suffer from not going to kindergartens and schools without socializing with their friends and colleagues, having to live at home, without being able to pursue some of their hobbies. Interaction with parents or other adults in the family can increase the level of general anxiety, when the situation of the pandemic theme was in the center of the discussions. Their emotional state becomes a reflection of that of caregivers.

The need for dental care in children during the COVID-19 pandemic, and especially during increased social restrictions, is becoming a challenge for the dentist. It is known that meetings with the doctor are often accompanied by fear and anxiety, triggered primarily by the perspective of painful maneuvers, but in pandemic isolation, these emotions and feelings can be further exacerbated by stress factors in the environment. as well as the psychological one induced by caregivers (Coulthard, 2020).

In a common setting, there is the possibility of effectively managing children's fear, anxiety and phobia with the support of caregivers and through various methods (desensitization, tell-show-do, positive charging and other behavioral techniques). Since in pandemics, the main route of transmission of SARS-CoV-2 is by Flugge drops, dental staff must use personal protective equipment (suits, goggles, visors and face masks), as well as space programming of patients and disinfectants with ozone. Thus, in

addition to white robe syndrome, the ambient atmosphere, tone of voice, communication with the child, the value of facial expression are affected, which are important to build confidence in the dentist (Bizzoca et al., 2020).

The present study aimed to explore the level of anxiety in children and their parents over time visit to the dentist, for a quarantine period of 3 months, at regional level, in Romania. Assessing the emotional state of young patients and their caregivers during pandemics and related national blockages, is important to understand whether additional safety measures can affect dental fear and to discuss strategies that could effectively reduce this.

## 2. MATERIAL AND METHODS

The present study was designed to explore the emotional state of 20 children aged 8-12 years, who needed dental treatments in a dental clinic, during quarantine 20.05-20.08.2020 (pandemic group), compared to another group, with the same characteristics, from the pre-pandemic period (May-August 2019). The level of anxiety related to the visit to the dentist was also assessed in the parents of both groups, as they are in a close two-way emotional relationship. The pathology discussed was: tooth extractions, abscesses, dental traumas (traumatic injury of the orofacial tissues), the need for pulpal treatment. All children enrolled in the study had a dental history of no more than three appointments, with no history of chronic illness and no mental disorders.

The general parameters taken into account were: age, sex and medical indication for dental intervention.

It should be noted that during this period, there were made some changes to the dental health care procedures:

- in order to limit the direct time of the visit, the medical history was taken by phone or online call;
- the children's parents have been informed of the new regulations of safety additional applied measures in the dental clinic;
- before scheduling, all caregivers were advised to explain the safety measures to the children, including pictures of the mandatory protective equipment of the medical staff, to better familiarize them with the situation;
- the body temperature of each child and caregiver was measured at the entrance to the waiting room;
- each child and caregiver was instructed on how to disinfect their hands in the waiting room;
- only one adult was allowed to accompany the child during the medical treatment, in which the doctor participated and at most one nurse;

- the adult companions have previously confirmed, in writing, their acceptance of submission to this regulation.

The physician, children, and caregivers independently assessed patients' emotional state using the facial mood scale (Fig. 1). The drawings were numbered as follows: 1 — calm; 2 - uncertain; 3 — reserved, closed and uncooperative; 4— hesitant; 5 - very scared; 6 - crying. Pediatric patients, with the blank in front of them, were asked to complete the drawing by adding the facial elements: eyes, nose and lips. Before that, all the children were instructed that in drawing they should express their own emotions, before a scheduled dental treatment. This method of assessment is approved by both children and adult companions. The dentist then classified the children's drawings with the corresponding faces 1-6, according to the facial expression, making a numerical score on the Likert scale, where 1 and 6 indicated the lowest and, respectively, the highest level of anxiety. The caregivers assessed their own level of anxiety related to the visit to the dentist, using the Likert scale 0-10, where 0 corresponds to the lack of fear, 5 indicates medium anxiety, and 10 a high level of anxiety (Satter, 2002; Goodenough et al., 2005).

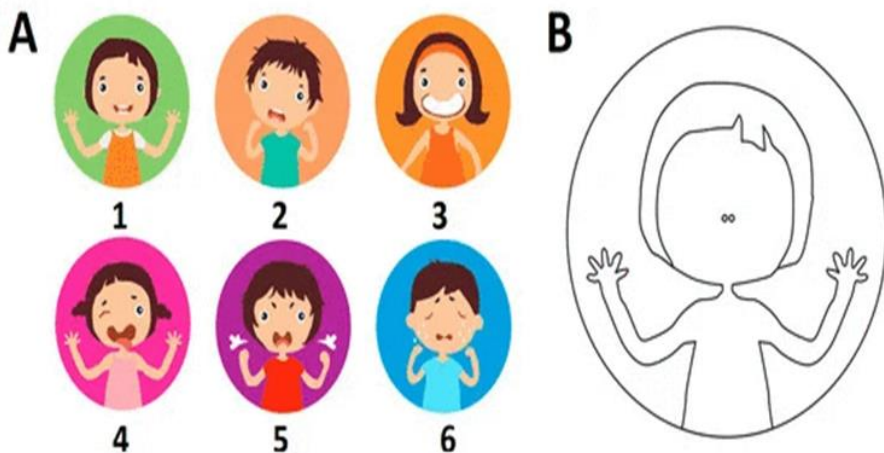


Fig.1  
(Source: Olszewska & Rzymiski, 2020)

### 3. RESULTS

The pandemic group consisted of 20 children: 10 boys (average age 9.5 +/- 1 year) and 10 girls (average age 9.3 +/- 1 year). The pre-pandemic group also consisted of 10 boys (average age 10 +/- 1 year) and 10 girls (average age 10.5 +/- 1 year). The anxiety level coefficient for a dental consultation, in both groups, is summarized in Table 1. Tooth extraction was the most common procedure (Table 2).

Table 1

Evaluator	Group	Parents	Child
Dentist	Pre-pandemic	0,89	0,60
	Pandemic	0,85	0,75
Parents	Pre-pandemic	-	0,80
	Pandemic	-	0,83

Table 2

Medical indication	Pandemic group	Pre-pandemic group
Tooth extraction	12 (60%)	8 (40%)
Abscess	4 (20%)	1 (5%)
Dental trauma	3 (15%)	2 (10%)
Pulp treatment	2 (10%)	4 (20%)
Mucosal lesions	1 (5%)	2 (10%)

*Authors' own conception*

The emotional state and anxiety level of the children in the pandemic group was not different from that in the pre-pandemic group, assessed by the dentist, parents or children themselves ( $p > 0.05$ ). Also, the comparison of each gender in the two groups did not generate differences in terms of anxiety level ( $p > 0.05$ ). The only exception was the assessment of children's anxiety by parents in the pandemic group, with a higher score for boys than for girls ( $p < 0.05$ ) - table 3.

Table 3

Evaluation	Score	Boys		Fete	
		Prepandemic group	Pandemic group	Prepandemic group	Pandemic group
Dentist (%)	minim	20	4,5	40	30
	maxim	10	9	10	10
Parent (%)	minim	10	4,5	20	20
	maxim	10	13,33	10	10
Child (%)	minim	40	9	40	40
	maxim	10	9	10	10

*Authors' own conception*

#### 4. DISCUSSIONS

This study reports, on a modest scale, the emotional state of 8-12 year old children, during the socio-medical restrictions, imposed by the COVID-19 pandemic. Children's emotional state is often influenced by that of their parents. Dental fear and anxiety in children are an important problem of dental management and fears about the epidemiological situation and changes in the organization of dental services can increase them. On the other hand, additional measures taken to shorten dental appointments (telemedicine for medical history and treatment proposal), as well as efforts to familiarize children with the new regime, as much as possible, during the visit to the dentist, can alleviate fear and anxiety in children. .

Our observations show that pediatric patients, who required dental intervention during the restrictions imposed by the pandemic, did not show significant changes in emotional state, compared to the pre-pandemic group, according to age and indications (Raj et al., 2013).

The emotional state of pediatric patients was assessed, in the present study, by the dentist, parents and children themselves, which allowed, by comparison, a broader assessment of the child's psycho-affective feelings.

Dental anxiety in children depends on several factors: personality, character traits, general pre-existing fears, history of painful dental experiences, dental fears of parents, and other family-related factors. It has also been reported that dental anxiety tends to be higher in girls than in boys, and decreases with age (Olszewska & Rzymiski, 2020). These age and gender differences were not confirmed by our study. Only a higher level of anxiety was observed in boys, and only on the assessment performed by the parent. In contrast, the levels of parental anxiety recorded seem to be correlated with the emotional state of the children and this association was stronger during the pandemic. Parents play a key role in inducing and

developing children's anxiety, and it is therefore important, especially during the pandemic, that pediatric caregivers be aware of these connections and educate their children to ensure a comfortable visit to the child. Dentist (Majstorovic et al., 2014; Boynes et al., 2014, Themessl-Huber et al., 2010).

## 5. INSTEAD OF CONCLUSIONS

The present study, which reports the important issue of dental care in the context of a pandemic, is limited by the modest sample, coming from a single center, given that dental anxiety in children has a multifactorial etiology. The personal and family traits of the patients, the socio-economic status and the parents' level of education were not taken into account. However, comparative analysis and the use of the Likert scale allow for some interesting observations.

- the level of dental anxiety of children 8-12 years old, assessed by the dentist, caregivers and by themselves, was not different from the pre-pandemic period, contrary to expectations;

- levels of parental anxiety were strongly emotionally associated with the condition of the children, especially during the pandemic;

- boys are potentially more vulnerable to developing dental anxiety;

- parents have an important role in ensuring the psycho-affective comfort of their children, in the perspective of a visit to the dentist.

- the reported aspects are required to be confirmed or refuted, through further studies, on a larger scale.

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