

Proceeding Paper

X-ray Vision: Self-Prevention of Oral Health Knowledge among Adolescents Undergoing Orthodontic Treatment [†]

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Abstract: Oral health is particularly important in adolescents undergoing orthodontic treatment. However, studies have shown that, in this period, behaviors that are favorable toward oral health appear to decrease. Measures such as self-prevention and self-promotion do not seem to be as effective as they should be. This study has assessed dental hygiene habits and knowledge regarding oral health using a questionnaire that was given to the participants. The sample consisted of 200 subjects aged between 10 and 24 years old. The results suggest that there is a lack of knowledge surrounding oral-self-care and prove the need to invest in oral health education.

Keywords: oral health education; adolescents; self-prevention; health promotion

1. Introduction

Oral health is crucial, particularly in adolescent patients because of the physical and mental transformations that happen in this phase. Therefore, the habits acquired in this phase tend to have future repercussions on the self-esteem and health behavior of the individual. However, studies have shown that, in this period, behaviors that are favorable toward oral health appear to decrease since oral health is considered to be less important from their perspective. Measures such as self-prevention and self-promotion do not seem to be as effective as they should be [1–4]. This line of study aims to identify the mental representation of a part of the body, namely, the inner oral cavity. In the present study, we seek the perception of adolescents on this topic with the mere objective of contributing to the creation of innovative oral health strategies and health instruments.

2. Materials and Methods

This study assessed the dental hygiene habits and knowledge regarding oral health using a questionnaire that was given to the participants. The sample consisted of 200 subjects aged between 10 and 24 years old in consultations at the Egas Moniz University Clinic [5]. They were first asked to draw the interior of their oral cavity before and after undergoing orthodontic treatment. Then, they were invited to answer a questionnaire concerning oral health behaviors and knowledge. Finally, the patients were given information to help them maintain and improve their self-care. The data were then analyzed using various tools; among them was a content analysis grid, created especially for this study, that was made of analytical categories and subcategories [6]. The data obtained were also analyzed using the statistical software IBM SPSS 28.

3. Results

While adolescents are at risk of developing dental health problems due to their oral health habits but also their knowledge and motivation, the results showed that there is a



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significant lack of knowledge in adolescents, especially in terms of frequency of brushing, duration, and technique of brushing. Only 67 patients (33.5%) revealed that they brush the inside surface of the tooth, and most of the sample (62%) admitted brushing their teeth for approximately 2 min. Although 78.5% of the adolescents, through the orthodontic consultations, reported that they had access to information regarding their health, the results showed that they did not use it properly. Regarding the results obtained from the drawings, they indicate that there is a low area of knowledge surrounding the interior of the oral cavity. Although the subjects were asked to draw the interior of the oral cavity, 55.5% of drawings represented a *broad smile* in M1 (before) and 60.5% represented that in M2 (after the orthodontic treatment), supported by an *extra-oral view*.

4. Discussion

Firstly, the results showed that most of the subjects demonstrated a lack of oral health knowledge. When asked *how do you brush your teeth?*, most of the patients admitted brushing the occlusal and facial face, whereas 67 subjects (33.5%) stated that they brushed the lingual face. Then, when asked *are you using any additional tools to clean your teeth?*, 85 patients (42.5%) responded that they were not. Nevertheless, not only this, but in most cases they revealed to have already received some information about oral hygiene, and they also disclosed that they perceived this information well (Tables 1 and 2).

Table 1. Descriptive analysis regarding the information about oral hygiene received by the patients.

Have You Already Received Some Information about Oral Hygiene since You Started Orthodontic Treatment?	N	%
Yes	157	78.5
More or less	40	20
No	3	1
Total	200	100

Table 2. Descriptive analysis regarding the perception of the received information.

If So, Did You Understand the Received Information Well?	N	%
Yes	196	99.5
No	1	0.5
Yes, but I still have some doubts	0	0.0
Total	197	100

Furthermore, it is surprising that most of the adolescents in the study self-evaluated their oral health as being good (64%) or reasonable (25.5%) when asked.

In relation to the inner oral cavity knowledge, the patients were asked if they knew the number of teeth in their mouth. The results showed that only 26.5% were assumed to know it, and 58.5% responded incorrectly (Table 3).

Table 3. Descriptive analysis regarding the self-perception of the number of teeth.

Do You Know How Many Teeth You Have in Your Mouth?	N	%
Yes	53	26.5
More or less	107	53.5
No	40	20
Total	200	100

Secondly, concerning the results of the content analysis of the drawings obtained, the data indicate that the self-perception of the inner oral cavity was perceived as a *smile* by the subjects. In fact, the adolescents' drawings represented a *broad smile* from an *extra-oral view*,

which was in contradiction with what they were assigned to do—draw the interior of your oral cavity (Table 4, Figure 1).

Table 4. Descriptive analysis regarding the *view* category.

View Category	M1		M2	
	N	%	N	%
Extra-oral view	111	55.5	122	61
Intra-oral view	89	44.5	77	38.5
Total	200	100	200	100

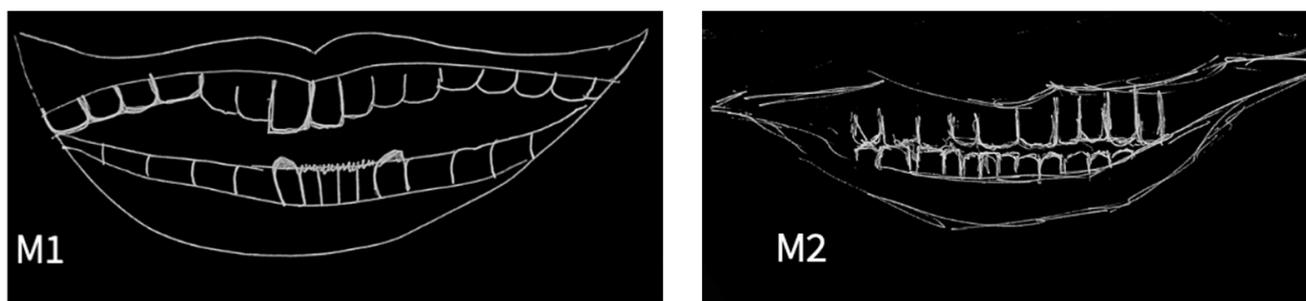


Figure 1. Drawings from a patient representing a *broad smile* from an *extra-oral view*.

5. Conclusions

To conclude, adolescents need to receive better education on oral hygiene care in order to enable self-prevention and self-promotion and hence facilitate this. Information should be given regularly as it showed efficacy in the short term and adolescents should be continually reminded of it. To this end, the shortage of knowledge proves the need to invest in oral health education.

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