Evaluation of Satisfaction of Adolescents Treated by Dental Students

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ABSTRACT

Objective: To evaluate the satisfaction of adolescents undergoing dental treatment between 2016 and 2018 at the Dental School of the Federal University of Minas Gerais (FAO UFMG). Material and Methods: A descriptive cross-sectional study using the Oral Health Services Satisfaction Assessment Questionnaire (QASSaB). The structured questionnaire has eleven questions divided among the dimensions: dentist / patient relationship, relationship with other professionals, effectiveness, accessibility/availability, technical-scientific quality, cleanliness and physical environment, acceptability, effectiveness/resolution, each with five response options. Descriptive data analysis was performed using absolute and relative frequencies. Results: A total of 145 adolescents participated in this study, 60 males and 85 females; 74.85% of adolescents rated dental treatment received as excellent, 76.7% reported having no symptoms after treatment, 46.2% considered it easy/very easy to get treatment, 65.6% reported that waiting time was short/very short, 90% considered dental equipment modern/very modern, 98% regarded the cleanliness of the waiting room and bathrooms as being excellent, 83.4% reported that they always received an explanation about the treatment, and 51.57% were totally satisfied with the appearance of the treated teeth and their chewing capacity. Conclusion: It was possible to observe that the adolescents, users of FAO UFMG, were satisfied with the service in the studied dimensions: human relations, effectiveness, accessibility/availability, technical-scientific quality, physical environment/cleanliness, acceptability and resolvability/effectiveness.

Keywords: Patient Satisfaction; Health Services Research; Adolescent Health Services.
Introduction

Adolescence is commonly known to be a phase in which changes occur, in both the physical and psychological aspects, and a period when individuals are faced with the following situation: they are no longer children, but they are not yet considered adults [1]. Adolescence may be conceived as being a period that "extends from approximately 12 to 20 years" [2], but for the Ministry of Health, it is situated between the ages of 10 and 19 years [3]. According to the Statute of the Child and Adolescent - SCA, adolescence spans from 12 years to 18 years [4].

In the epidemiological survey conducted by the Ministry of Health in the Oral Health Area, “SB Brasil” in 2010, the main problem that affected Brazilian children (12 years) and adolescents (15 to 19 years) was observed to be dental caries. Only 43.5% of the children and 23.9% of the adolescents were disease-free. Concerning the periodontal condition, in 23.7% of the children and 28.4% of adolescents, the most severe condition found was the presence of calculus, with the mandibular central sextant being the most affected in the two groups [5]. In Minas Gerais, the prevalence of periodontal disease among children (45.9%) and adolescents (27.9%) was close to the national rates [6].

Adolescents who have untreated dental problems that affect their image may develop a feeling of inferiority, and this will interfere in their interpersonal relationships. Some of the factors responsible for motivating adolescents to take care of their oral health are appearance, finding / and keeping a job, sexuality, and general health [7].

Different factors may influence adolescents in seeking and adhering to dental treatment. Adolescents‘ commitment depends on the degree of interest and urgency they attribute to treatment. It is important to give patients full explanations about the situation in which their oral health is found, including how the health-disease process occurs, prevent the appearance of diseases, and treat them. In this way, the conduct and procedures proposed as a way of treatment will be appreciated by adolescents [8].

Satisfaction with dental attendance, generally speaking, is a contributory factor to patients returning for consultations and is linked to the quality of the service provided. The degree of patient satisfaction is a way to verify this quality [9].

Mialhe et al. corroborated the importance of user satisfaction studies because they allow the limitations of the service to be detected and make it possible to plan measures to overcome them [10]. The literature affirms the need for studies to be conducted constantly to monitor the quality of health care, and that assessing the degree of user satisfaction is a good method to achieve this, as personal opinions are collected about positive and negative points of the service offered [9].

The School of Dentistry of Federal University of Minas Gerais, Brazil (FAO UFMG), makes available an undergraduate discipline and extension project exclusively to provide adolescents with oral health care. The discipline, part of the mandatory undergraduate curriculum in Dentistry, is offered to all students in the fourth semester. The extension project involves the voluntary participation of students and requires that they have successfully completed the discipline. The student volunteers of the project are divided between the fifth and last period of the Course in Dentistry.

The FAO UFMG has an agreement with the “Sistema Único de Saúde (SUS)” Brazilian national health system, of the municipality of Belo Horizonte, Brazil. According to the agreement, the undergraduate discipline offers primary and specialized care. The high prevalence of dental caries among Brazilian adolescents may lead to them needing treatment at both levels of care and planning the case in the discipline and the extension project requires their knowledge. The discipline and extension project have previously used the institutional
processes of evaluation of the treatment provided to adolescents. However, the evaluation processes still require incorporating data that show the satisfaction of this group of users.

Considering the particularities inherent to adolescence and the need to improve the assessment processes relative to oral health care, this study aimed to evaluate the satisfaction of adolescent patients who were attended at School of Dentistry of Federal University of Minas Gerais.

**Material and Methods**

**Research Design and Study Population**

This descriptive study was conducted to evaluate patients' satisfaction at School of Dentistry of Federal University of Minas Gerais. The study population were the adolescents attended in the second semester of 2016, first and second semesters of 2017, and first semester of 2018.

**Inclusion Criteria**

The participants of this study were only adolescents who were undergoing treatment as from the third consultation in the mandatory discipline “Comprehensive Care of the Adolescent”, and those who had made at least one dental consultation in the extensions project “Oral Health Promotion for Adolescents”.

**Data Collection**

The Questionnaire for Evaluation of Satisfaction with the Oral Health Services (QASSaB) (“Questionário de Avaliação da Satisfação dos Serviços de Saúde Bucal”) was used as instrument for data collection. Initially validated among individuals as from 18 years of age [11], the QASSaB has previously been used for evaluating the satisfaction of users of a Brazilian municipal oral health service [12]. The data are collected employing eleven questions distributed into eight dimensions (D1: Dentist/Patient Relationship, D2: Relations with Other Professionals, D3: Efficacy, D4: Accessibility/Availability, D5: Technical-Scientific Quality, D6: Physical Environment-Cleanliness, D7: Acceptability, and D8: Effectiveness/Resolutive Capacity). To each question, there are five response options provided on a Likert-type scale. Data were collected by a single researcher, undergraduate student, right after clinical attendance of the adolescent in the discipline and project.

**Data Analysis**

In the analysis, a database was first constructed in the Excel program, with dual digitization by two independent researchers to verify and validate the data. Data obtained were analyzed were utilizing the Statistical Package for the Social Sciences (SPSS) version 19. Quantitative descriptive analysis was performed, in which the data were consolidated and organized using tables.

**Ethical Aspects**

This study was approved by the Research Ethics Committee of UFMG (Report No. 1.748.347). At the time when the subjects were approached, the participants of up to 17 years of age and their parents/guardians made themselves available to answer the questionnaire. They were informed about the research objectives and received explanations by means of a Term of Free and Informed Agreement and Term of Free and Informed Consent, respectively. These terms were signed by the researcher and by the patient (Term of Agreement) or guardian (Term of Consent), and each party received a copy.

**Results**
In total, 145 adolescents participated in this study, of whom 60 were of the male and 85 of the female sex, aged between 12 and 19 years. There was no refusal to participate in the research (Table 1).

Table 1. Evaluation of satisfaction of adolescents attended at FAO UFMG.

<table>
<thead>
<tr>
<th>Dimensions of Quality</th>
<th>Criteria (N/%)</th>
<th>Criteria (N/%)</th>
<th>Criteria (N/%)</th>
<th>Criteria (N/%)</th>
<th>Criteria (N/%)</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Treatment Received</td>
<td>Excellent (127/87.6)</td>
<td>Good (18/12.4)</td>
<td>Regular (0/0.0)</td>
<td>Poor (0/0.0)</td>
<td>Extremely Poor (0/0.0)</td>
</tr>
<tr>
<td>D2</td>
<td>Treatment Received</td>
<td>Excellent (90/62.1)</td>
<td>Good (34/37.2)</td>
<td>Regular (1/0.7)</td>
<td>Poor (0/0.0)</td>
<td>Extremely Poor (0/0.0)</td>
</tr>
<tr>
<td>D3</td>
<td>Discomfort after Treatment</td>
<td>Didn't Feel (111/76.7)</td>
<td>Little Discomfort (28/19.3)</td>
<td>Discomfort (3/2.1)</td>
<td>Much Discomfort (3/2.1)</td>
<td>Complete Discomfort (0/0.0)</td>
</tr>
<tr>
<td>D4</td>
<td>Obtaining a Vacancy</td>
<td>Very Easy (22/15.2)</td>
<td>Easy (45/31.0)</td>
<td>Neither Difficult/Easy (64/44.1)</td>
<td>Difficult (10/6.9)</td>
<td>Very Difficult (4/2.8)</td>
</tr>
<tr>
<td>D5</td>
<td>Waiting time in Reception</td>
<td>Very Short (42/29.0)</td>
<td>Short (53/36.6)</td>
<td>Neither Long or Short (45/31.0)</td>
<td>Long (5/3.4)</td>
<td>Very Long (0/0.0)</td>
</tr>
<tr>
<td>D6</td>
<td>Technological Up-to-Dateness</td>
<td>Super Modern (35/25.2)</td>
<td>Modern (90/64.8)</td>
<td>Neither One or Other (12/8.6)</td>
<td>Out of Date (2/1.4)</td>
<td>Obsolete (0/0.0)</td>
</tr>
<tr>
<td>D7</td>
<td>Cleanliness of Waiting Room</td>
<td>Excellent (92/63.4)</td>
<td>Good (51/35.2)</td>
<td>Regular (2/1.4)</td>
<td>Poor (0/0.0)</td>
<td>Extremely Poor (0/0.0)</td>
</tr>
<tr>
<td>D8</td>
<td>Explanation of Treatment</td>
<td>Always Explained (121/83.4)</td>
<td>Majority of Times (19/13.1)</td>
<td>I Don’t Remember (4/2.8)</td>
<td>Rarely Explained (0/0.0)</td>
<td>Never Explained (1/0.7)</td>
</tr>
<tr>
<td>D9</td>
<td>Appearance of Treated Teeth</td>
<td>Completely Satisfied (82/56.6)</td>
<td>Very Satisfied (39/26.9)</td>
<td>Satisfied (22/15.2)</td>
<td>Not Very Satisfied (2/1.4)</td>
<td>Dissatisfied (0/0.0)</td>
</tr>
<tr>
<td>D10</td>
<td>Masticatory Capacity</td>
<td>Completely Satisfied (68/46.9)</td>
<td>Very Satisfied (48/33.1)</td>
<td>Satisfied (23/15.9)</td>
<td>Not Very Satisfied (5/3.4)</td>
<td>Dissatisfied (0/0.0)</td>
</tr>
</tbody>
</table>

D1: Dentist/Patient Relationship; D2: Relations with Other Professionals; D3: Efficacy; D4: Accessibility/Availability; D5: Technical-Scientific Quality; D6: Physical Environment-Cleanliness; D7: Acceptability, and D8: Effectiveness/Resolutive Capacity, *Six adolescents did not know how to answer; **Three adolescents reported they did not use the bathroom.
All the adolescents considered the human relationship between the dentist and patient “excellent” or “good”, while 93.3% considered the relationship with other professionals “excellent” or “good”. In the dimension efficacy of the treatment, 76.7% reported that they felt no discomfort after the treatment. Relative to accessibility and availability of the service, 46.2% of the adolescents reported that it was easy or very easy to obtain a vacancy for treatment. A slightly lower proportion (44.1%) considered it was neither easy nor difficult to obtain a vacancy. Once they had obtained a vacancy, the time spent in the waiting room before treatment was considered very short or short by 65.6% of the participants. As regards the technical and scientific quality of the treatment, dental equipment of FAO UFMG were considered “modern” or “super modern” by 90% of the adolescents. In the dimension physical environment and its cleanliness, the reception and waiting room were considered "excellent" by 64.3% of the interviewees. For 81.1% of them, the bathrooms' cleanliness was good or excellent. The proportion of 83.4% of the interviewees said that they had always received explanations about the most adequate treatment for their health problems (acceptability) and 56.6% reported that they were "completely satisfied" with the appearance of the teeth treated (resolutive capacity/effectiveness).

Discussion

In institutions that teach dentistry, students and users may have different perceptions about the indicators of satisfaction with the attendance offered. In a research with 57 users and 39 students of the integrated clinic of the course in Dentistry of the “Fundação Universidade Regional de Blumenau”, the main expectations of patients with regard to attendance provided was observed to be related to being well attended by the student, and conclusion/resolution of the dental problem. For the students, the expectations were related to having the opportunity to gain technical learning and establish a patient/professional relationship in accordance with the principles of humanization and the possibility of solving the patients’ problems to satisfy them [13]. The FAO UFMG already has institutional instruments for monitoring students' expectations and evaluations about the attendance provided in the dental school clinics. However, there is still no regular and active monitoring of the evaluations of treatments by patients. This study was able to fill the gap and make it possible to conduct future comparative studies about the institutional evaluation among professors and student service providers, and technical administrative service providers and patients.

The data collected about the dimensions relationships between dentist/patient and other professionals predominantly expressed the interviewees’ satisfaction. Similar results were observed by other authors [12,14], in which the evaluation of human relations was positive for the patients attended at the clinics of the Dental School of Pernambuco and for the users of the Emergency Dental Services of Pernambuco. However, it is necessary to ponder whether factors not detected by the questionnaire could have influenced the positivity of the results expressed in this study. The data collected in the environment of FAO UFMG, performed by an undergraduate student, and an approach to adolescents' satisfaction with the free service provided could have favored the interviewees' satisfaction.

The high proportion of patients who reported feeling no discomfort after treatment was similar to previous findings [14]. Although positive, the absence of post-operative discomfort cannot be seen as a synthesis of treatment effectiveness. However, it expresses an important dimension of effectiveness from the user's perspective, which perceived resolution of the oral problems by means of absence of signs and symptoms.

Access to and accessibility of the oral health services were related to the obstacles imposed by the services and to the power of the users to overcome them. Among the service factors that affect its use are the offer of procedures suited to the needs of the population, geographical and organizational accessibility, the
unfavorable economic condition of persons, and the free-of-charge services provided [15]. Among the respondents of this study, the obtainment of a vacancy was predominantly considered “easy/very easy” or neither “easy/or difficult”. An equivalent result was found by Magalhães et al. [16] when the majority of the users (45.5%) of the Dental Specialty Center (“Centro de Especialidades Odontológicas” – CEOs) in Pernambuco considered the obtainment of a vacancy as being easy. Whereas Oliveira et al. [9] found that for the majority of the users of dental services in the Primary Health Units (“Unidades Básicas de Saúde”) of Olinda, the obtainment of a vacancy for treatment was difficult or very difficult (61.3%).

The service evaluated in this study had characteristics peculiar to those of a teaching clinic and differed from those of the service provided by SUS. Both the discipline and the extension project intentionally work during the patients’ school shift, making it easy for patients to use them. The patients are referred to the extension project by means of participating in the Young Learner Program (“Programa Jovem Aprendiz”) of Federal University of Minas Gerais. Many enroll in the program without knowing that they will receive dental treatment and are informed of its availability when they are called for their first consultation. This may have influenced the high frequency of those that thought obtainment of a vacancy with neither easy/or difficult; in the undergraduate discipline, the patients are referred by a system of regulation of SUS Belo Horizonte, Brazil. Therefore, it is possible that the perception of the interviewees about the difficulties in obtaining treatment are directed towards the municipal SUS and not to the teaching institution.

The time spent by users in the waiting room is a relevant factor for the evaluation of treatment. At FAO UFMG almost all the interviewees were shown to be satisfied with the time waited for attendance. Previous studies about the quality of attendance have shown that the work process needed to be improved, mainly due to (causing?) the delay in the waiting room [16,17]. Another study (using the QASSaB) reported in the literature informed that 1.7% of the interviewees reported a short waiting time for attendance [12]. Similar data were related by Mialhe et al. [10] with patients of the Integrated Clinic of the Piracicaba School of Dentistry, Brazil, in which only a small portion of the patients reported that they would like the waiting time for attendance to be reduced.

The good technical-scientific evaluation of FAO UFMG among treated adolescents is important. However, these findings must be pondered, considering the low level of technical knowledge of this public with regard to technology in the field of dentistry. From this perspective, it is relevant that similar results have been obtained by Magalhães et al. [16], when 67.9% of the users evaluated the equipment of the CEOs in Pernambuco as being “modern”. Other authors also reported that the users were shown to be satisfied with regard to the modernity of the equipment [12].

The cleanliness of the environments of which the physical infrastructure available for clinical attendance is composed is important for evaluating the users about the quality of attendance. The cleanliness of the waiting rooms at FAO UFMG was evaluated as "excellent" or "good" by most patients. However, as regards the cleanliness of the bathrooms, the need for improvement was observed, considering that there was a greater concentration of responses between “good” and “regular”. It is important to point out that this study’s results refer to the period before the prior to the cuts in funding of public universities, which led to a reduction in the personnel responsible for cleaning services and to greater difficulty in improving the cleaning services.

At FAO UFMG, the students are encouraged to provide patients with explanations, in an endeavor to base the patient/professional relationships on the principles of humanization and dialog that favor the resolution of problems and satisfaction of patients. This is reflected in the high frequency of the options "always explains to me" and "in the majority of times, explains to me" among the interviewees' responses.
Reflecting on the resolutive capacity of the service provided, the was predominance of the interviewees who were “very satisfied” or “completely satisfied” with the appearance of their treated teeth and their chewing capacity. The meaning of satisfaction refers to the act or effect of satisfying, promoting explanations, compensations, happiness, contentment and pleasure. Therefore, it is relevant to listen to the user to provide and implement services that are suited to every social reality [17]. This imposes a challenge on FAO UFMG to understand why proportions close to 1/5 of the adolescents reported that they were “a little satisfied” or “satisfied”.

The number of studies about satisfaction of patients attended at dental services reflects the importance of measuring it to evaluate the service provided [9,11,12,17-20]. This type of research allows complaints and deficiencies of the attendance to be identified and encourages the permanence of positive points found. In Brazil, with the implementation of SUS and the increase in social participation in planning and evaluation processes, studies related to user satisfaction began to be developed as from the 1990s. This type of study supports the managers of health services and their teams so that possible limitations can be found and overcome [21,22]. The FAO UFMG does not yet make spaces available to patients for social participation, which resemble those that SUS has. The institution needs to implement an active drive to evaluate its users and incorporate the findings into its evaluation and planning processes. The first step in this direction has been given by discussing this study's findings with the professors, undergraduate students, and other professionals at the institution involved in the discipline and extension project to make them aware of the improvements required. As affirmed by Pisco [23], the major intention of evaluation is to produce changes, and not merely detect problems.

The results of this study must be analyzed considering its limitations. This was a cross-sectional study of a descriptive nature that does not establish a cause and effect relationship. Moreover, the functional structure of the service provided by FAO UFMG differs from that of other public services and changes the evaluations about attendance.

Conclusion

It was possible to observe that the adolescents, users of the Dental School of UFMG were satisfied with the attendance in the dimensions of human relations, efficacy, accessibility/availability, technical-scientific quality, physical environment - cleanliness, acceptability, and resolutive capacity/effectiveness.

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All authors declare that they contributed to critical review of intellectual content and approval of the final version to be published.

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Conflict of Interest

The authors declare no conflicts of interest.
Data Availability

The data used to support the findings of this study can be made available upon request to the corresponding author.

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