



EVALUATION OF THE IMPACT OF PAIN FROM DENTAL URGENCIES ON THE PATIENTS' ORAL HEALTH-RELATED QUALITY OF LIFE: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background. This cross-sectional study aimed to evaluate the impact of pain from dental urgencies on the oral health-related quality of life (OHRQoL).

Methods. A sample of sixty-eight patients seeking urgent attention to a primary health unit were included. Clinical diagnosis and sociodemographic data were assessed, dental pain measured by visual analog scale (VAS) and numerical pain rating scale (NPRS). The Oral Health Impact Profile-14 (OHIP-14) instrument was used to measure the OHRQoL. Associations were analyzed using the Student t-test, except for types of urgencies, that were evaluated with one-way analysis of variance (ANOVA) test.

Results. The most prevalent urgency type was of endodontic origin (81%). There was no difference between pain and other variables. The type of tooth showed significant differences in OHIP-14 scores.

Conclusion. Dental urgencies were associated with a high level of pain and impacted negatively on the patients' OHRQoL. The type of tooth had a positive association the OHRQoL measures.

KEYWORDS: Cross-sectional study. Dental urgency. Endodontics. Oral health-related quality of life. Pain.
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INTRODUCTION

The main cause of oral problems is related to dental pain.^{1,2} Dental pain can have a high prevalence, ranging from 7% to 66%,³ and presents itself as a public health problem, causing a negative impact on people's quality of life.⁴

The highest frequencies of odontogenic urgencies are associated with symptomatic pulpitis and apical periodontitis of infectious origin.⁵ Oral

impacts on daily performances are mainly induced by pain and discomfort, which can affect ordinary and essential activities, as oral hygiene and sleep.² Repercussions of dental pain may interfere in an individual's behavior, performance, intellectual and economic production and social relationship.^{6,7} Also, subjects who perceived their oral health as inferior tend to demonstrate lower self-esteem, higher stress, and less satisfaction with their lives.⁸

Access to dental services and social conditions severely influence the occurrence of pain.⁷ It has been reported that patients tend to seek dental care when conditions begin to exacerbate.⁴ Initially, patients tend to self-care and use nonprescription medications in order to deal with their pain as a palliative relief.⁹

Oral disabilities are associated with low quality of life perception.¹⁰ Patient-reported outcomes measures

(PROMs) are the instruments used to measure patients' perceptions of their general health, functional status, efficiency and effectiveness of services, the cost-effectiveness of interventions, personal experience of care, the efficacy of a clinical intervention from the patients' perspective, and OHRQoL.¹¹⁻¹³ Evaluating the psychosocial impacts produced by oral problems assumes a relevant role in planning public oral health programs.^{4,14} Therefore, this study aimed to investigate the impact that pain originated from dental urgencies presents on the patients OHRQoL.

MATERIALS AND METHODS

This cross-sectional study was conducted at the Primary Health Care Center (PHCC) of Lajeado, Rio Grande do Sul, Brazil. The local Research Ethics Committee approved this study (protocol number 2.922.246).

The sample size was defined based on previous studies.^{15,16} An OHIP-14 score of 6.3 (standard deviation = 5.8) was identified in an adult population. BioEstat 5.0 (Fundação Manirauá, Belém, Pará, Brazil) was used with the following input: 95% confidence interval, 80%

statistical power, and ratio 1. Sample size calculation results indicated the need for at least sixty-eight patients.

Patients who sought the Dental Urgency Service of the Basic Health Unit between June 2018 and June 2019 were recruited to participate. All study participants gave written informed consent before participating in the study.

The inclusion criteria were:

1. Patients seeking dental care due to pain.
2. Patients with 18 years or more, diagnosed with endodontic pain, periodontal pain or pericoronitis, reporting spontaneous pain higher than 40 mm as measured in the 0-100 mm Visual Analogue Scale (VAS) (moderate to severe pain) and by Numerical Pain Rating Scale (NPRS).¹⁷

The exclusion criteria applied were as follows:

1. Patients with communication difficulties noted on their records.

The endodontic diagnosis was determined based on clinical findings using the American Association of Endodontists Consensus Conference.¹⁸ Periodontal pain was diagnosed from

patients who had signals and symptoms of acute gingivitis or periodontitis. Pericoronitis was diagnosed when inflammation of the oral soft tissues surrounding the crown of an erupted or partially erupted tooth was presented.¹⁹

Data on sociodemographic characteristics, such as age (in years), gender and health status were collected. The habit of smoking was assessed with the following question: "Do you currently smoke cigarettes?". The answers were categorized as yes or no for smoking. The short version of the OHIP-14 was used to assess the impact of dental urgency on the patients' quality of life. The OHIP-14 instrument comprises fourteen issues that assess dysfunction, discomfort, and disability attributed to oral health conditions.²⁰ One examiner interviewed the participants, reading the OHIP-14 questionnaire at baseline and 6-month post-treatment. Responses were marked on a Likert scale of 0 through 4, with 0 being "never" and four being "very often".

A statistical package was used for all analyses (SPSS 20.0, IBM SPSS Statistics for Windows; IBM Corp., Armonk, NY, USA). A descriptive analysis was used to characterize the sample. Means were used for quantitative variables, and percentages were used for qualitative variables. The Kolmogorov-Smirnov test was used to check the normality of the data. Variables were analyzed by Student t-test, except types of urgencies, that were evaluated with one-way analysis of variance (one-way ANOVA) test. OHIP-14 reliability was tested using the Cronbach's alpha coefficient. The significance level was set at 5%.

RESULTS

Sixty-eight adults, age ranging from 18 to 64 years, were interviewed. 68% of the participants were men and 32% women. Forty-seven molars and twenty-one non-molars were

Table 1. Variables' frequencies and association with pain and OHIP scores.

| Variable | n(%) | Pain VAS Mean± SD | Pain Numeric Mean± SD | OHIP Mean± SD |
|----------------------|--------|-------------------|-----------------------|---------------|
| Gender | | | | |
| Male | 46(68) | 0.73±0.18 | 0.77±0.16 | 22.1±9.5 |
| Female | 22(32) | 0.69±0.16 | 0.76±0.14 | 20.2±8.2 |
| Smoking | | | | |
| Yes | 17(25) | 0.74±0.2 | 0.8±0.14 | 25.3±8.6 |
| No | 51(75) | 0.71±0.17 | 0.75±0.16 | 20.2±9 |
| Types of urgencies | | | | |
| Endodontic | 55(81) | 0.73±0.18 | 0.78±0.16 | 21.9±9.2 |
| Periodontal | 2(3) | 0.85±0.08 | 0.9±0 | 26±11.3 |
| Pericoronaritis | 11(16) | 0.63±0.12 | 0.69±0.11 | 18.7±8.3 |
| Endodontic urgencies | | | | |
| Pulpal | 29(53) | 0.72±0.16 | 0.77±0.15 | 20.3±7.7 |
| Periapical | 26(47) | 0.74±0.21 | 0.78±0.17 | 23.5±10.5 |
| Tooth | | | | |
| Molar | 47(76) | 0.7±0.17 | 0.76±0.16 | 22±10.3* |
| Non-molar | 21(24) | 0.78±0.15 | 0.79±0.15 | 20.4±5.9* |

*P=0.007.

recorded, and the most frequently urgency type was of endodontic origin (81%). Pain scores did not differ from pulpal and periapical origin ($P > 0.05$). Cronbach's alpha coefficient was 0.8. Association between variables and pain and OHIP-14 scores are shown in **Table 1**. There was no difference concerning pain and variables ($P > 0.05$). The type of tooth shows significant differences in OHIP-14 scores ($P < 0.05$).

DISCUSSION

Dental pain might include oral impairments from either carious lesions, periodontal diseases, or other conditions, which the patient often is not capable of differentiating.¹ This study observed higher frequencies of pain from endodontic origin as the cause to patients to seek dental care. Estrela et al⁵ found high frequencies of odontogenic pain associated with symptomatic pulpitis and symptomatic apical periodontitis of infectious origin. Pulp pain is associated with clinical factors as closed pulp chamber, caries and periapical pain to access the pulp chamber.⁵

Periodontal disease is highly prevalent among populations, although most cases develop and progress slowly from painless chronic nature. Acute and aggressive forms of periodontal diseases have a low prevalence in populations,²¹ and according to our results, show a low demand for urgent attention. In relation to pericoronitis, it tends to present a low prevalence and affect young adults commonly, but it still can compromise the patients' life quality.¹⁹

VAS was employed as a method of pain measurement. This scale is characterized by simplicity, reliability and validity. Moreover, VAS has a good relationship with repeated pain measurements, which creates an ideal mechanism to measure pain intensity.²² The perception of pain is subjective, individual and related to past experiences and expectations.

Acute oral pain tends to affect major role activities, even sleeping, with low frequency but high severity to whom experience pain.^{1,4} In the present study, a high score of pain was observed, independent of the type of urgency.

The OHIP instrument was used to measure the OHRQoL. This instrument is a valid tool for cross-sectional study designs.²³ Dental urgencies were associated with high OHIP-14 scores compared to the population of maintenance patients and young adults.^{11,24} A previous study¹⁴ found that visiting dentists because of pain increased dental impact on individuals' daily activities compared with those visits for routine or preventive care, showing the importance of seeking dental services routinely and its high impact on OHRQoL.

The seek for dental care tends to occur when the patients' pain exacerbates.⁴ This fact could be associated with difficult access to care on public service and economic reasons, contributing to the severity of problems. Also, it has been reported that providing adequate access to oral health care, in an opportune and timely form, was associated with better OHRQoL.¹³ The population included in this study represents a sample of low socioeconomic status.

This cross-sectional study is limited to causal interpretations, only providing association variables to pain and OHRQoL. According to other studies, no association was found among pain, gender, and OHRQoL.^{4,11} Unlike Zucoloto et al²⁵, chronic disease did not impact the OHRQoL. A higher impact on the OHRQoL was observed according to tooth position. Estrela et al⁵ observed a higher frequency of pulpal pain on posterior teeth, which could justify a significant impact on patients' well-being. However, no correlation was found between anterior or posterior teeth and periapical pain occurrence. In the present study, no difference was found

on pain status and tooth position. Higher OHIP scores linked to molars could be associated with functional limitation to daily activities as chewing.¹¹

Measuring the impact of dental urgencies contribute to the planning of public health strategies and prioritize clinical situations that could have a higher impact on the patients' OHRQoL. Further studies should continue to investigate pain management over time, measuring the impact of dental urgencies, in order to contribute on public health strategies and prioritize clinical situation that could have a higher impact on OHRQoL.

CONCLUSION

In conclusion, patient-centered measures combined with clinical factors can enrich our concepts of oral health and the comprehension of its impact on the patients' life. Dental urgencies were associated with a highly negative impact on the patients' oral health-related quality of life, and the type of tooth was significantly associated to this outcome.

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