

## ORIGINAL RESEARCH

# Oral Health-related Quality of Life among Patients Undergoing Endodontic Treatment

Ahmed Obeed Alrouji<sup>1</sup>, Moayed Awad Aldalbi<sup>2</sup>

## ABSTRACT

**Background:** Oral health-related quality of life (OHRQoL) has important implications for the clinical practice of dentistry and dental research.

**Aim:** The present study was conducted to assess the impact of endodontic disease and treatment on the OHRQoL of patients attending King Fahad Specialist Hospital, Buraydah - Al Qassim, Saudi Arabia.

**Methodology:** A structured questionnaire including demographic data, socioeconomic condition, general health behavior, health record, and oral health self-perception was applied. The validated version of the OHIP-14 instrument was used to assess the quality of life.

**Results:** Dental caries is the main cause of tooth loss in adolescents, which does not seem to have great importance for most of them. This may suggest that neither oral health affects the quality of life nor it is a priority in their lives. The present study addressed specific questions on appearance and esthetics including teeth appearance, teeth alignment, and teeth color.

**Conclusion:** The results found in the present study are instigating and challenging. If on the one hand, the impacts of oral health in adolescence are relatively low, on the other hand, it should be remembered that oral health problems are mostly cumulative.

**Keywords:** Clinical practice, Endodontic treatment, General health, Oral health, Quality of life.

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**Conflicts of interest:** None

## INTRODUCTION

Endodontics is the branch of dentistry that deals with diseases of the root of the tooth, dental pulp, and also

the surrounding tissues in human. Over the years, it has been demonstrated that expectation of pain and dental anxiety had a profound effect on a patient's ability to understand the information provided. Oral health-related quality of life (OHRQoL) has important implications for the clinical practice of dentistry and dental research. OHRQoL is an integral part of general health and well-being and is recognized by the WHO as an important segment of the Global Oral Health Program (WHO, 2003).<sup>[1]</sup> Endodontics is the branch of dentistry based on the work with other people, so several factors should be considered during clinical decision-making process. The process of clinical decision-making is the essence of everyday clinical practice. This process involves an interaction of application of clinical and biomedical knowledge, problem-solving, weighing of probabilities and various outcomes, and balancing risk-benefit.<sup>[2]</sup> Quality of life instruments is valuable because they measure the population's perception of the impact of oral disorders on well-being. There has been limited study of patient-reported outcomes aside from pain.<sup>[3]</sup> There are seven conceptual dimensions of oral health: Functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap.<sup>[4]</sup> The present study was conducted to assess the impact of endodontic disease and treatment on the OHRQoL of patients attending King Fahad Specialist Hospital, Saudi Arabia-Al-Qassim-Buraydah.

## METHODOLOGY

The King Fahad Specialist Hospital, Buraydah, Al Qassim, Saudi Arabia. The Buraydah Private Colleges Institutional research committee approved our study and all participants signed an informed consent. From June 2017 to July 2017, adolescent's patients who had received endodontic dental treatments under we re enrolled. They were asked to complete a structured questionnaire including demographic data, socioeconomic condition, general health behavior, health record, and oral health self-perception was applied. Information about oral hygiene habits and halitosis were included in the study. Halitosis was assessed by the question: "Do you have bad breath?" and answered with a Likert scale response card. The validated Brazilian version of

<sup>1,2</sup>Dental Intern

<sup>1</sup>King Fahad Specialist Hospital, Buraydah - Al Qassim, Saudi Arabia

<sup>2</sup>College of Pharmacy and Dentistry, Buraydah Private Colleges, Buraydah - Al Qassim, Saudi Arabia

**Corresponding Author:** Ahmed Obeed Alrouji, King Fahad Specialist Hospital, College of Pharmacy and Dentistry, Buraydah Private Colleges, Buraydah -Al Qassim, Saudi Arabia. E-mail: ahmedalrouji@gmail.com

the OHIP-14 instrument<sup>[5]</sup> was used to assess the quality of life. The answers to each question were obtained by choosing one option in the Likert scale (never = 0 point, rarely = 1 point, sometimes = 2 points, often = 3 points, and always = 4 points). The questionnaire was applied in duplicate with a 1-week interval between the applications to 10 non-participants, with perfect agreement in this subject. Except for the third molar, all teeth were counted after the interview with the help of a wooden spatula. Teeth that could somehow be restored were considered in the counting. Teeth or roots requiring extraction were not counted. The adolescents were examined and interviewed between June 2017 and July 2017. The training consisted of theoretical lectures on the subject, as well as reading and explanation of each question from the questionnaire. The training was performed with the research members, after that, with the high school students who were not chosen to participate in the study, and included duplicate assessment by the study coordinator. Clinical examination reproducibility was verified in 10% of the examinees chosen by draw, revealing an agreement rate of 98% ( $\kappa = 0.96$ ), considered a proper reproducibility.

## RESULTS

Among the 500 patients for the study, the mean OHIP-14 was  $7.25 \pm 6.78$ . Age, ethnicity, type of school, and self-reported halitosis did not present statistically significant association with the OHIP score, although they presented p-values lower than the limits for inclusion in posterior models. Tooth loss and questions related to appearance were not associated to impact on the quality of life. When the univariate model was analyzed, adolescents from public schools and with self-reported halitosis presented higher association to the quality of life outcome. Adolescents with halitosis had 2 times higher chances to be in the third tertile of the OHIP-14 score. Tooth loss, questions related to oral health self-perception, and questions related to appearance were not associated to the quality of life outcome in the univariate analysis. When the multivariate model was analyzed, statistically significant associations between the type of school and self-reported halitosis were obtained.

## DISCUSSION

The present study evaluated the impact of factors related to oral health on quality of life among adolescent patients. Additionally it had assessed the impact of halitosis on the quality of life of adolescents. The influence of sociodemographic and behavioral factors on quality of life was also assessed. It was shown that age, ethnicity, and studying in a public school were associated

to the OHIP-14.<sup>[6-9]</sup> On the other hand, tooth loss and teeth appearance were not significantly associated with oral health-related quality of life. The response rate in the present study may represent its own limitation. However, the difficulties associated with the age group, including the logistics of signing the informed consent form by the responsible persons, may account for the attrition. Efforts were made to decrease the study biases, especially regarding measurements. The OHIP-14 instrument was thoroughly explained, and all doubts were settled by the study coordinator. These results infer a relatively higher impact on quality of life when compared to some published studies among adolescents. Most adolescents considered their oral health as good, possibly explaining the low scores showed in these studies. Furthermore, negative impact of quality of life measured by the OHIP-14 is usually increased by higher DMFT. Tooth loss, oral health self-perception, and questions related to appearance and esthetics were not associated to OHIP-14 scores in this study. The two most prevalent chronic oral diseases - dental caries and periodontal disease - do not seem strongly associated to the decrease in oral health-related quality of life in adolescents. This seems to happen with tooth loss as well. Regarding tooth loss in adolescents, the few studies with representative samples discussing the subject in adolescents<sup>[10-12]</sup> hinder comparisons. In addition, most studies addressing tooth loss in adolescents do not include the assessment of its impact on quality of life. One systematic review showed that the lower the number of the present teeth, the higher the impact on the quality of life, especially when the number of remaining teeth is  $<20$ .<sup>[5]</sup> The results of the present study suggest that one or two lost teeth do not seem to interfere in the quality of life of adolescents. In this age, most of the lost teeth are posterior<sup>[12]</sup> explaining the low impact on quality of life. However, dental caries is the main cause of tooth loss in adolescents, which does not seem to have great importance for most of them. This may suggest that neither oral health affects the quality of life nor it is a priority in their lives. The present study addressed specific questions on appearance and esthetics including teeth appearance, teeth alignment, and teeth color. However, none of the questions seem to have impacted the quality of life. Nonetheless, the difficulty to smile is already a problem in some studies with adolescents<sup>[13]</sup> showing that this is a concern for this age group. Regarding this, it should be noted that many adolescents might feel embarrassed to admit problems with their appearance,<sup>[14]</sup> and it may be a risk indicator for chronic oral diseases, especially concerning dental caries.

## CONCLUSION

The results found in the present study are instigating and challenging. If on the one hand, the impacts of oral health in adolescence are relatively low, on the other hand, it should be remembered that oral health problems are mostly cumulative. Surprisingly, tooth loss and questions related to appearance and esthetics were not associated to worse quality of life.

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