Periodontitis and oral health

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Abstract

To enjoy from an effective and efficient oral health care and its required guidelines, a modern population should have an in-depth understanding of the disease impact. Periodontitis is one the most significant causes of bone loss and its relationship with some systematic conditions has been approved. The aim of the present article was to evaluate extensively the effect of health status and oral abnormalities on life quality. Scant attention, however, has been paid to the periodontitis impact on life quality. The study is a summary of researches conducted on the effect of periodontitis on oral health-related quality of life (OHRQoL). Related studies were gathered after searches made in Medline and PubMed electronic databases. Then, topic, abstracts, and data extraction were investigated. Most related studies reported the negative effect of periodontitis on OHRQoL. However, the reported standards were not similar in various studies. Moreover, most studies were conducted in developed countries.

Keywords: Oral health impact profile, oral health-related quality of life, periodontitis

Introduction

Periodontitis is one the inflammatory diseases caused by a certain bacterial complex in dental plaque biofilm. The disease could result in loss of periodontal ligament and alveoli bone. Clinically, this situation is determined by the formation of plaque and/or gingival recession. Mild to moderate forms of chronic periodontitis are mostly seen and the rate of prevalence, based on sample and case characteristics, is estimated to be 13-57%.[¹-³] Severe periodontitis involved 5-15% of the population and considered as one of the most important oral health issues.[⁴,⁵]

Some decades ago, studies that assessed periodontitis, other diseases, and oral status were merely conducted clinically. There were no project that taken social parameters of oral diseases consequences into consideration. Since then, Cohen and Jago suggested the socio-oral indexes, which encompass functional, physiological, and social consequences of oral status in individuals to indicate more than complications of various diseases.[⁶] Therefore, this conceptual change shed light on topical experiences and clarifications than just looking at symptoms and complications. To date, no general consensus has been reached over the definition of oral health-related quality of life (OHRQoL). Most people believe, however, that OHRQoL is a subjective structure, which could be reported from patient’s viewpoint in the best way possible. Furthermore, it is a multi-dimensional topic in various areas. During the recent years, we witnessed an increase in development and reliability of OHRQoL tools to satisfy the non-clinical aspects of oral diseases. Multi-dimensional tools, which measure the effect of disease on social well-being and life quality comprises of physical, social, and physiological fields.[⁷] They are comparable in that they are based on individual reports, but they are different in terms of themes, way of response, and topical content.[⁶]

Little attention is paid to the effect of periodontitis on life quality. This could be due to mild complications of the disease in its initial stages than other status and oral diseases.[⁸] Various reports were published of clinical studies on periodontitis impact on OHRQoL. Comparison and combination of these findings are cumbersome due to the use of various applied methods for defining periodontal status and OHRQoL measurement.[⁹-¹⁷] There are a relationship and correlation in most reports of observational studies on the effect of
periodontitis on OHRQoL.\textsuperscript{[18-24]} However, it is probable that this observed dependence was due to the simultaneous effect of other oral diseases on OHRQoL. Hence, this kind of research are required to be done meticulously to determine whether the observed effect has been due to the periodontitis or as a result of other related conditions such as decay or gradual tooth loss.

The aim of the present study was to explore whether periodontist has a negative effect on OHRQoL in various communities. Studies that evaluated in this project were all from observational epidemiology studies with sectional and futuristic approach. The research was conducted based on review method. Articles were gathered by keywords including periodontitis, periodontal disease, and health impact assessment via the internet in related websites of dentistry magazines in PubMed and Medline from 1990 to 2000. These reports contain the following issues necessarily: (1) How to measure periodontitis-related tooth loss, (2) clinical measured periodontitis symptoms (namely pocket depth and/or loss of related clinical level), (3) how to determine related cases of periodontitis. This article was also used a validated multi-item OHRQoL instrument. From all evaluated articles, seven have had the concluding criteria. Each of these seven papers used a salient sample. In fact, two articles from Australia,\textsuperscript{[20,24]} one from any countries from Hong Kong,\textsuperscript{[18]} Chile,\textsuperscript{[20]} News land,\textsuperscript{[20]} and one form England.\textsuperscript{[25]} An article also indicated an analysis from three sectional articles.

**The Effect of Periodontitis on OHRQoL**

Six out of seven articles reported the negative effect of periodontitis on OHRQoL.\textsuperscript{[18-21,23,24]} Each of these studies was unique in its findings, the report of prevalent effects, and other reports. The amount of dependence was reported in five of these seven articles (with an odds ratio [OR] equal to 1.5 (95% confidence interval [CI] = 1.02-2.19) to 2.0 (95% CI = 1.5-2.5), or RR = 1.3 (95% CI = 1.2-1.4). However, due to variation in the threshold used in determining the level of periodontitis or affected OHRQoL, these estimations were simply made of thresholds used in the various investigations. Accordingly, we cannot say that the reported dependence was not existed. Marino et al. study was the only case that did not show a direct dependence between periodontitis and average score oral health impact profile (OHIP).\textsuperscript{[23]} By investigating the areas, which affected most by OHRQoL, it can be seen that the nature of dependence between periodontitis and OHRQoL is basically physical and physiological. This is an uncontroversial pattern among various OHRQoL instruments.

Four out of seven articles controlled the supplementary variables in reports on the effect of periodontitis on OHRQoL.\textsuperscript{[19,21,24]} According to Slade et al. losing a tooth and number of decayed surfaces of root have more effect on OHRQoL than maximum pocket depth.\textsuperscript{[24]} Similarly, Dunedin showed the dependence between periodontitis and OHRQoL (with an OR equal to 1.5 (95% CI = 1.2-1.9). However, this dependence was more for decayed surfaces with an OR equal to 1.95 (95% CI = 1.35-2.81). This illustrated that although two oral diseases have had a negative effect on OHRQoL, they were in various measures. Other factors were also reported the effect of OHRQoL, one of which is the relationship between tooth loss and age.\textsuperscript{[19,21]}

There were some limitations in these studies, as well as in our ability, for their clinical assessment. The reported OHRQoL mean scores were not that much to indicate discrepancies in the amount of the effect among groups. By assessing and reporting discrepancies in prevalence effect, the extent and intensity of findings reliability are escalade. Prevalence based on percentage is the reports of individuals with “often” and “most of the times” items and span are actually the number of these items. Disease intensity is realized by the mean score of OHIP-14. Lawrence et al. was the only study reported the prevalence, span, and intensity of OHRQoL effect.\textsuperscript{[20]} They found that periodontitis had a significant effect on prevalence and intensity of OHRQoL, but not on the span.

In addition, it is important to evaluate the patients with periodontitis in such studies explicitly and correctly. A case with 3+ mm CAL\textsubscript{o} for instance, may not show an appropriate sample of periodontitis in that people with only an inflammation or gingival recession may be considered the same as healthy periodontal. Therefore, a significant factor to consider in time of assessing periodontitis-OHRQoL relation is to use spectrum measurements and their definitions to test a range of dependence. Using different definitions, Brennan et al. reported the prevalence of effect of various areas of Euro-QoL.\textsuperscript{[22]} They concluded that there is less prevalence in swelling and gingival recession, while more prevalence of effect observed in pocket depth and loss of connections. The papers studied used different methods of data collection, case definitions, as well as a wide scope of OHRQoL instruments. Moreover, different report criteria were also employed for explaining periodontitis dependence and OHRQoL. All of these factors hinder any effort for classified comparison of findings within the project.

**Conclusion**

According to the World Health Organization (WHO 1948), estimating the health rate in any case does not confirm that no disease is existed, and further physical, mental, and emotional investigation is required. General well-being and oral health are one of the most significant issues in every individuals’ quality of life (QoL).\textsuperscript{[26]} Hence, measuring the effect of oral status on QoL is the matter of the utmost importance in the individual health needs assessment.

In dentistry, understanding a patient regarding health-related QoL is one of the significant outcomes of the health care.\textsuperscript{[27,28]} In periodontitis treatments, case measurements including the amount of gingivitis and fittings improvement provide useful information about disease condition or treatment results. However, traditionally alternative measurements uncover little information about the effect on the disease. Evaluations on patients are specifically important for periodontitis since the focus on them is different from the final traditionally clinical point.\textsuperscript{[14,18]}
Recently, more attention is paid on the effect of periodontitis on the daily life of patients including Quality of Life (QoL). This interest is in line with the designed research privilege for patient-oriented measurements in global workshops of emerging sciences in periodontontology during recent years. Moreover, it is shown that oral health-related QoL measurements should have appropriate final clinical points to be able to investigate the periodontitis treatment effect.\(^{33}\)

To treat the mild or advanced periodontitis, operations are mostly performed after the initial treatments. In deep pocket treatments, open flap debridement would lead to more decrease in pocket probe the depth and more improvement in clinical connections.\(^{34}\) However, periodontitis operation could affect post-operation complications such as pain, swelling or tooth sensitivity. In other fields of dentistry, the significance of assessing changes on patient awareness during operation has been illustrated.\(^{35-38}\) In orthognathic operation, it is assumed that the patient will accept short-term post-operational risks and discomfort in return for long-term interests in terms of more life time or better quality.\(^{39,40}\)

The problem of the present study is that method and report heterogeneity made it hard to express a certain result in the amount of dependence between periodontitis and OHRQoL. Most studies indicated a negative effect of periodontitis on OHRQoL, but other studies had no control over other oral interfering conditions and the rest did not mention in their reports that why they have used little number of variables for controlling their multi-functional analyses. Since OHRQoL is a subjective phenomenon and might be affected by many factors, having sufficient awareness of interfering factors is the matter of the utmost importance in order to prevent mistake in data interpretation and the rate of existing dependence (especially other clinical conditions affect individuals’ daily life).

The obtained results emphasized the need for standardization of periodontitis effects on OHRQoL. Terms and concepts of standard periodontitis epidemiology (such as prevalence, span, and intensity) should be used along with specified and acceptable definitions, as well as data analysis methods. Further research should consider clinical issues in their report on periodontitis effect on OHRQoL.

References
