

Review

Quality of Life and Satisfaction Outcomes of Endodontic Treatment

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Received: 22 May 2022, Accepted: 24 May 2022, Published: 26 May

Abstract

Endodontic treatment entails the removal of pulpal tissue, the filing and contouring of root canals, the obturation of the root canal space, and the placement of a permanent replacement for the tooth. The extent to which a person appreciates the essential possibilities of life is defined as quality of life. Oral disorders, including disease-related symptoms, can have a substantial influence on people's daily life. As a result, there has been a significant interest in determining the degree to which individual oral disorders impose a weight of illness on afflicted communities and the usefulness of health services in alleviating that burden in recent years. Patient reports of oral health-related quality of life have only lately begun to supplement the limited professional assessment based solely on clinical data. This allows for the creation of treatment regimens that are more closely customized to the preferences and demands of the patients. The purpose of this research is to review the available information about the quality of life and satisfaction outcomes of endodontic treatment. The ability to compare endodontic treatment results to those of other dental and medical procedures, as well as undertake health economic studies, makes determining the impact of endodontic treatment on health-related quality of life appealing. Dental treatment has a substantial impact on overall happiness and quality of life. Treatment with endodontics increases one's quality of life. By stressing the broader personal and societal repercussions of oral diseases and disorders, quality of life instruments and dental satisfaction scores can be used to bring dentistry into line with contemporary ideas of health care.

Keywords: *endodontic, treatment, quality, life, satisfaction*

Introduction

Endodontic treatment entails the removal of pulpal tissue, the filing and contouring of root canals, the obturation of the root canal space, and the placement of a permanent replacement for the tooth. It may be reasonable for some patients to complete each stage in order, especially if no other issues have been detected. Simply eliminating the caries and pulpal tissue, coupled by rudimentary filing and shape, and placing a provisional, sedative repair, is suggested for individuals with multiple deep carious lesions or pulpal pain (1). The primary goal of conventional endodontic treatment is to prevent and eliminate apical periodontitis for both mature permanent teeth and immature teeth with an open apex. In addition to these goals, endodontic treatment of young teeth aims to preserve pulp life and, in some cases, root maturation (2). Root canal treatment is the most common type of endodontic treatment.

The extent to which a person appreciates the essential possibilities of life is defined as quality of life. Oral disorders, including disease-related symptoms, can have a substantial influence on people's daily life. As a result, there has been a significant interest in determining the degree to which individual oral disorders impose a weight of illness on afflicted communities and the usefulness of health services in alleviating that burden in recent years. This evaluation, as well as the analysis of the effectiveness of treatment modalities on the affected population's quality of life, has been made easier by contribution of the development of tools for dental health-related quality of life (3, 4).

In healthcare system, along with oral health care, there has been a paradigm change toward patient-centred treatment and services. Oral health-related quality of life indicators complements clinical indicators because health is defined as the presence of physical, psychological, and social well-being as well as the absence of disease. Social indicators, global self-ratings, and multiple item surveys to show patients' oral health are the three main factors used to assess oral health-related quality of life. The latter is the most often used, with instruments such as the Oral Health Impact Profile and Oral Impacts on Daily Performances being common examples. The dental profession will be better equipped to grasp pulpal disorders and therapies from the patients' perspective by analysing patients' perceptions of the influence of endodontic treatment on their well-being (5).

One of the most frequent reasons for people seeking dental care is endodontic difficulties. The purpose of endodontic treatment, also commonly known as root canal treatment, is to avoid tooth extraction by preventing or eliminating infection of the root canal space (6). Because tooth loss is associated with a reduction in quality of life, and because nothing functions, looks, or feels like a natural tooth, natural dentition should be preserved wherever possible. Endodontic therapy is frequently required when the pulp and periapical tissues are weakened. To date, documentation of endodontic treatment efficacy and success criteria has mostly been analysed in the light of clinical outcome, despite a paucity of data on therapeutic efficacy from the patient's point of view (7).

Patient reports of oral health-related quality of life have recently begun to supplement the limited expert evaluation that is only based on clinical data. This enables the formulation of treatment regimens that are better tailored to the patients' preferences and needs (8). As a result, it's critical to assess the quality of data presented in articles that claim to identify patterns in oral health-related quality of life following oral therapy. Instead of utilizing series of questions that differ in form, substance, and administration, this assessment must be performed on a multi-item scale with tools validated for quality of life (9). Patients having endodontic treatment have a positive and meaningful message, according to some authors, because the native dentition is saved whenever feasible, and endodontic treatment improves the quality of life (10).

Previous research has examined the correlation between root canal therapy and patient quality of life and found that many patients regard it as a bad experience that is frequently accompanied with pain. There is an increasing interest in patients' opinions of their treatment, and postoperative quality of life might be used as a measure of total endodontic therapy quality. However, postoperative discomfort is a potential consequence that can negatively impact the patient's quality of life. Pain can be caused by a phlogistic reaction during root canal shaping, which is determined by operator skill, preoperative state, and shaping techniques. Extrusion of material including as dentinal chips, pulp debris, germs, and while root canal shaping irrigants around the apex is usually a reason of postoperative pain, and it has a major impact on patients' quality of life (11). The purpose of this research is to review the available information about

the quality of life and satisfaction outcomes of endodontic treatment.

Methodology

This study is based on a comprehensive literature search conducted on April 5, 2022, in the Medline and Cochrane databases, utilizing the medical topic headings (MeSH) and a combination of all available related terms, according to the database. To prevent missing any possible research, a manual search for publications was conducted through Google Scholar, using the reference lists of the previously listed papers as a starting point. We looked for valuable information in papers that discussed the information about the quality of life and satisfaction outcomes of endodontic treatment. There were no restrictions on date, language, participant age, or type of publication.

Discussion

With endodontic therapy becoming more popular, it's critical to evaluate the short- and long-term effects of root canal treatment on patients' quality of life and satisfaction. Because loss of tooth and poor oral health has such a negative influence on one's quality of life, every attempt should be done to save the tooth before it is extracted. The efficacy of endodontic treatment is determined by the clinical outcome as determined by radiographic criteria and the tooth's short-term survival. These indicators, however, are insufficient to adequately assess the therapy outcome. As the patient-centred concept is embraced, patient-reported outcomes and satisfaction are now becoming increasingly essential in modern dental practice. Furthermore, operator experience is thought to be the indicator of variation regarding patient satisfaction and quality of life (12).

A variety of methodologies can be used to evaluate the influence of treatment on quality of life, including a assessments of general health-related quality of life as well as oral health-related quality of life. There are certain challenges in determining the impact of endodontic treatment on health-related quality of life since the findings may indeed be contrasted to those of other dental and medical procedures, as well as health economic assessments. However, there are concerns that analysing the situation will be difficult. Using health-related quality of life evaluations to detect subtle and specific changes in quality of life that occur as a result of dental and endodontic therapies can be difficult, leading to an increasing use of oral health-related quality of life measures. Most extensively used is the Oral Health

Impact Profile, as it is a well-standardized assessment that has been designed for use in variety of languages and used in many different countries (13).

Another essential factor to evaluate is if treatment can reduce the burden of oral illnesses on patients' lives and improve their quality of life (14). In diverse areas from complete maxillary denture treatments, implant-supported mandibular overdentures and dental implant rehabilitation, outcomes from systematic reviews of other endodontic treatments also provided evidence of positive outcomes and continuum of care from the perspective of patients (15-17). Assessment of quality of life is a sort of objective clinical trial in which the efficacy of treatment measures is evaluated in real-world settings. As a result, the treatment's benefits in everyday clinical practice are obvious. Explanatory clinical trials produce outcomes that are less meaningful to patients, whereas experiments such as these objective clinical trials deliver results that are more meaningful to patients (18, 19).

Findings of a cross-sectional study conducted in Saudi Arabia in 2021 depicted that the overall result of the oral health-related quality of life assessment was moderate (Mean = 2.72 out of 5, Relative Importance Index (RII) = 54.4%, Standard Deviation (SD) = 0.67), with patients experiencing intense pain in the mouth being the most affected (Mean = 3.37 out of 5, RII = 67.4%, SD = 0.77), and being irritable around others due to mouth was the least affected (Mean = 2.32 out of 5, RII = 46.4%, SD = 1.35). However, high personal satisfaction was observed (Mean = 3.78 out of 5, RII = 75.6%, SD = 0.67). Postoperative pleasantness was of utmost satisfaction among patients (Mean = 3.86 out of 5, RII = 77.3%, SD = 0.87). The participants in this study had a moderate degree of oral health-related quality of life following endodontic therapy and a higher level of satisfaction with the endodontic treatment (20).

Another study conducted in 2018 in Saudi Arabia revealed that the percentage of patients that were satisfied with the various processes in endodontic treatment varied, but it was clear that higher satisfaction was linked to a more qualitative and proper treatment method, albeit the relationship between satisfaction and pain score was negative. Patients' satisfaction with endodontic treatment is influenced by a variety of elements, some of which are related to the patient's personal circumstances, such as his health, and others which are dependent on the endodontic procedure's nature (21). Findings of a systematic review conducted in 2020 showed that after endodontic therapy, patients'

quality of life improved. These findings, however, are limited to patients seeking endodontic treatment and thus cannot be applied to the general population. Quantitative synthesis was impossible due to a paucity of well-designed epidemiological studies with uniform evaluation methodologies, as well as the heterogeneity of research design and interventions (13).

Hamedy et al. state that several researchers used shorter versions of the Oral Health Impact Profile to look into the social effects, or quality of life impact, of root canal therapy, in various studies. Functional limits, physical pain, psychological discomfort, physical disability, psychological impairment, and social disability are all assessed by Oral Health Impact Profile at a global and detailed level. The Oral Health Impact Profile was utilized in two separate short versions; several authors used it before therapy, while others used it at different intervals following treatment. There was a lot of overlap in the findings of these different research. The use of root canal treatment improved people's quality of life in a variety of ways, including physical pain, psychological discomfort, psychological impairment, and social handicap (22).

Results of a comparative study conducted in 2021 depicted that when compared to young patients, older patients requiring root canal treatment had much better oral health-related quality of life. Female patients, those who needed anterior or premolar therapy, and those who had endodontically linked pain had significantly lower oral health-related quality of life. However, during canal localisation, the elderly had treatment difficulties but the use of magnification equipment during canal localisation helps solve this difficulty (23). Results of a cross-sectional study conducted in 2017 revealed that participants quality of life was affected by preoperative variables such as pain, sleep difficulties, which however improved after endodontic treatment. Changes in the Oral Health Impact Profile -14 were linked to changes in patient self-reported oral health status (P-value .001), which were linked to changes in periapical index scores (P-value .05). There is a notable improvement in all subscales, with endodontists leading the way, followed by postgraduates and general dentists. Treatment with endodontics increases one's quality of life. Endodontic therapy offered by endodontists, followed by postgraduate students and general dentists, resulted in much higher satisfaction (24).

From the standpoint of doctors, much is already known about the repercussions of endodontic illness in terms of clinical aspects, microbiological factors, and

radiographic characteristics. The paucity of information from patients' viewpoints on the effects of endodontic disease is a serious gap in endodontic research. It is well known that a clinician's perspective on oral health provides a relatively limited grasp of oral health in and of itself. As a result, there has been a surge in interest in patients' opinions on their oral health, particularly how oral health affects oral health-related quality of life. Aside from symptoms like as pain reports, examination of patients' opinions has been fairly restricted in endodontics. In order to assess treatment needs and, ultimately, treatment success, it is arguable that detecting the presence of signs and symptoms is less significant than determining how these signs and symptoms impair a patient's physical, social, and psychological well-being and thus influencing their quality of life (25). However, further epidemiological research, such as population-based surveys examining the influence of endodontic therapy on quality of life, will be required in the future for generalizability of results and to improve patient satisfaction and healthcare services.

Conclusion

Dental care has a significant impact on quality of life and satisfaction of patients. Treatment with endodontics increases one's quality of life. By stressing the broader personal and societal repercussions of oral diseases and disorders, quality of life instruments and dental satisfaction scores can be used to bring dentistry into line with contemporary ideas of health care. Patients' anxiety, dread, and experienced pain must all be addressed by dentists. More research is needed to understand the basic types of changes that occur after endodontic therapy, as well as essential clinical parameters such pain, diagnosis, treatment procedure, operator, and improvements in oral health-related quality of life.

Disclosure

Statement:

The authors declare no conflict of interest.

Funding:

No fund.

Ethical consideration:

Non applicable.

Data availability

Data that support the findings of this study are embedded within the manuscript.

Authors' contribution:

All authors contributed equally to the drafting, writing, sourcing, article screening and final proofreading of the manuscript.

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