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THE ENDODONTIC (ROOT CANAL) TREATMENT VERSUS EXTRACTION OF TOOTH REPLACED WITH IMPLANTS IN JEDDAH, SAUDI ARABIA

Rowaida Mohammed Salem Al-Dgeel*

Alfarabi College for Dentistry and Nursing in Jeddah.

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***Corresponding Author**
Rowaida Mohammed Salem Al-Dgeel
Alfarabi College for Dentistry and Nursing in Jeddah.

ABSTRACT

Dental treatment selection and management policy are important aspects of endodontic treatment. The Dental doctors need to organize the treatment approach depending on the information, aptitudes, and services and further considerably the patient's high-quality selection and tooth arrangement. Definitely, the treatment plan for each and every patient is limited and not to be used for every patient. Dental physician's valuation of their capabilities unwraps the management choices; nevertheless, in simple or challenging circumstances it is recommended to mention to a professional. Currently, some of the best thought-provoking characteristics of dentistry is the selection amid withdrawals as an alternative of a complex root canal treatment. Emphasis on one behavior strategy while ignoring other decisions, not only misinformed the dentist but also execute pointless duties to the patients. This minute appraisal associates Root Canal Treatment to Extraction and replacement with implants from numerous features to aid doctors in unchanging choice.

KEYWORDS: Endodontic Treatment, Tooth Extraction, Implants, Dentistry, Dental therapy.

INTRODUCTION

Root canal treatment is an often straightforward procedure to relieve dental pain and save your teeth. Patients typically need a root canal when there is inflammation or infection in the roots of a tooth. During root canal treatment, an endodontists who specializes in such treatment carefully removes the pulp inside the tooth, cleans, disinfects and shapes the root

canals, and places a filling to seal the space. In recent years the number of people seeking endodontic treatment has dramatically increased because of conservative tendency towards root canal treatment over tooth extraction. The aim of root canal treatment is to clean and disinfect the root canal system in order to reduce the number of micro-organisms, remove necrotic tissue, and finally seal the system to prevent recontamination. Success rates up to 96% have been reported for endodontic initial treatment but failure may occur after treatment. When a tooth gets badly infected at the nerve, there are two options for addressing the issue: a root canal or tooth extraction. These procedures have various pros and cons, but general consensus from dental professionals is that it's best to save the tooth whenever possible.

After the RCT, clinical and radiographic follow ups at regular intervals for a minimum observation period of 1 year are desirable, but longer may be required where healing is incomplete or there is a history of trauma. If apical periodontitis do not heal after 4 years, root canal treatment is considered a failure. For vital teeth a successful outcome can be expected in up to 90-95% of the cases. The success rates for necrotic teeth with radiographic lesions are 10% to 25% lower compared to vital teeth. The success rates for vital and non-vital teeth without periapical lesion, on the contrary, are equal. This is important information when determining prognosis and outcome of endodontic treatment. When evaluating the outcome of RCT there is a need for a reliable, comparable and non- bias and non-subjective assessment of apical periodontitis.

Calibration of the observers is a requirement when reliable assessments are desired, particularly when multiple observers are employed. On this basis the periapical index, PAI, was introduced by Ørstavik et al in 1986. It is a scoring system for radiographic interpretation on a 5 point scale from 1-5 in order of healthy (score 1 and 2) and diseased (score 3 to 5) periapical tissue, using 5 pre-evaluated radiographic images. To avoid bias the examiner is calibrated until reaching a level of sufficient consistency (silver standard). There are several prognostic factors that are able to affect the prognosis of root canal treatment. All these factors can be divided as pretreatment, during and after treatment.

An assessment of the clinical outcomes of RCT performed by undergraduate students is important for a critical re-evaluation of teaching methods. There are some reports on quality and outcome of root canal treatments performed by undergraduate students. Brazilian Dental School reported a 5 combined percentage of successful and healing cases of 93.5% after one year for primary RCT, but 75.5% after three years. In retreatment cases the healed and

healing was 81% after one year. In Norway we were able to find one study from Oslo where the overall success rate of endodontic treatment performed by undergraduate students was 91%.

Of course, certain situations call for the tooth to be entirely extracted as well. From a consumer point of view, deciding between these two options can be rather complicated. A tooth extraction may appear to be cheaper at first, which encourages many people to opt for having the tooth pulled rather than undergoing a root canal. Yet an extraction comes with its own set of risks and requires follow-up procedures to implant a spacer or false tooth in the gap. While your dentist will be able to make a recommendation based on your specific situation, the final decision is ultimately yours. What is important is addressing an infected tooth, as ignoring this issue not only leads to oral health problems, but also larger medical issues if the infection spreads. When a large cavity or other factor causes a tooth's root to become infected and inflamed, a root canal is often done to remove the infected root without taking out the tooth.

An opening is made through the crown of the tooth and then special files are used to remove the infected pulp. Next, the canals are shaped and thoroughly cleaned before they are filled with a permanent material and sometimes a support known as a post. A filling is then placed over the canal to seal off the tooth, and a crown is added on top. A root canal has several advantages over a tooth extraction. Each tooth in the mouth supports the teeth around it, so when a tooth is extracted the neighboring teeth will start to push into the gap.

A dental implant is an excellent treatment option for people in good oral and general health who have lost a tooth. The physiological basis for implant dentistry is the role of Osseo integration, which is a phenomenon of direct apposition of bone substance on the implant surface followed by structural adaptation in response to mechanical load, and its implementation started in mid-1960s as a result of work of Brånemark. Although initial implant stability following surgical placement is simply derived from mechanical stabilization, a submerged healing period of 3 to 6 months was originally considered by Brånemark as prerequisite for achieving Osseo integration of titanium implants. When Osseo integration occurs, the implant is tightly held in its site by the bone and can be served as an abutment for a crown to rehabilitate the esthetic and function of the lost tooth.

AIM AND OBJECTIVE OF STUDY

AIM: The aim of the present study is the comparison between endodontic (root canal) treatment versus the extraction of tooth and replacing with implants in Jeddah, Saudi Arabia.

MATERIALS AND METHODS

Design and Distribution

A twenty-five questionnaire based survey and knowledgeable agreement was established and circulated to dentists in Jeddah, Saudi Arabia. Questionnaire was evaluated to understand the perception of the dental specialists to opt for endodontic (root canal) treatment versus the extraction of tooth and replaced with the implants. The treatment costs of extraction and replacing with implants are significantly more than Root canal treatment and a full coverage permanent restoration. Considering the cost-benefit ratio, Root canal treatment and endodontic retreatment are both significantly more appropriate, compared to implant. However, this does not imply to retreatment cases accompanied by periapical surgery.

Also the sources of information upon which these opinions are based were evaluated. Phone calls were made to each dentist to obtain their preferred form of communication: fax, email or postal mail. The final number of dentists surveyed was thus: 150. The web interface www.surveymonkey.com was the central form of distribution with 125 dentists choosing to be emailed; the other 25 were faxed.

COLLECTION OF SURVEY DATA

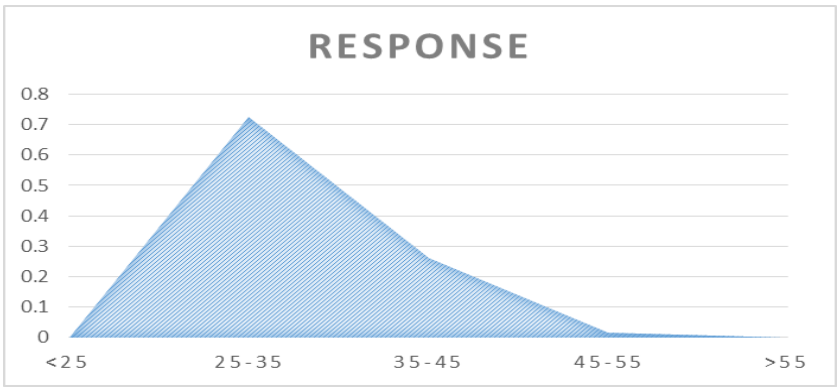
The data was collected during a 3 month period. A questionnaire was prepared with four parts including questions that aid us to determine the choice of the dental doctors between the root canal treatment or extraction with replacement of implants in Jeddah, in Saudi Arabia. The questionnaire was circulated online and the answers to all the questions by the dental specialists can be recorded and analyzed.

DATA ANALYSIS

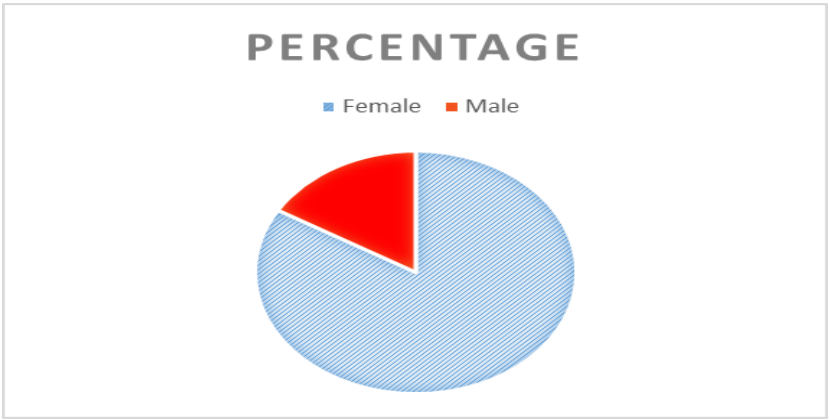
Data were statistically described in terms of mean ± standard deviation (± SD), or frequencies (number of cases) and percentages when appropriate. Comparison between the study groups was done using Chi-square (γ^2) test. Exact test was used instead when the expected frequency is less than 5. P values less than 0.05 was considered statistically significant. All statistical calculations can be done using computer program IBM SPSS (Statistical Package for the Social Science; IBM Corp, Armonk, NY, USA) release 22 for Microsoft Windows.

RESULTS

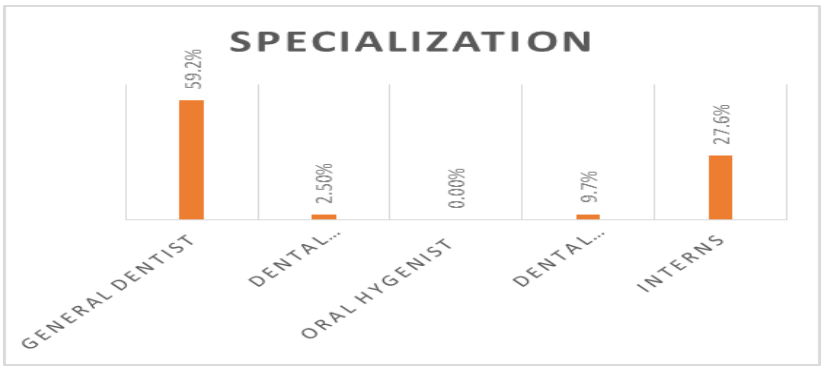
About 82.5% of the response rate was recorded from the Dental doctors. From this, 60.10% responders were general dentists and 36.90% were interns and 3.0% specialists. Many of the orthodontists and pediatric dentists responded that they were not going to complete the survey since it was not in their realm of dentistry. 89.1% responders were in private practice. 72.4% responders were in the age group between 25-35 years, and 26.10% responder's were below 25 years and 1.50% were above 35 years of age as show in the figure below.



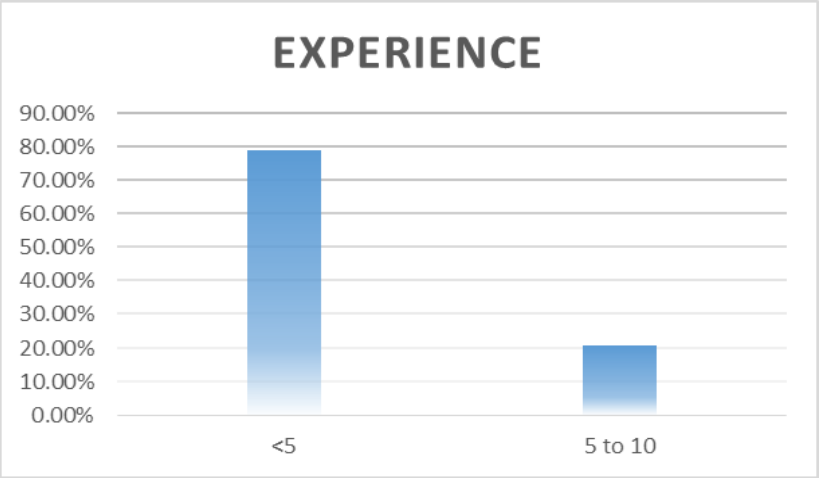
The survey showed a maximum responder's as Females (83.6%) and Males (16.4%) as shown below.



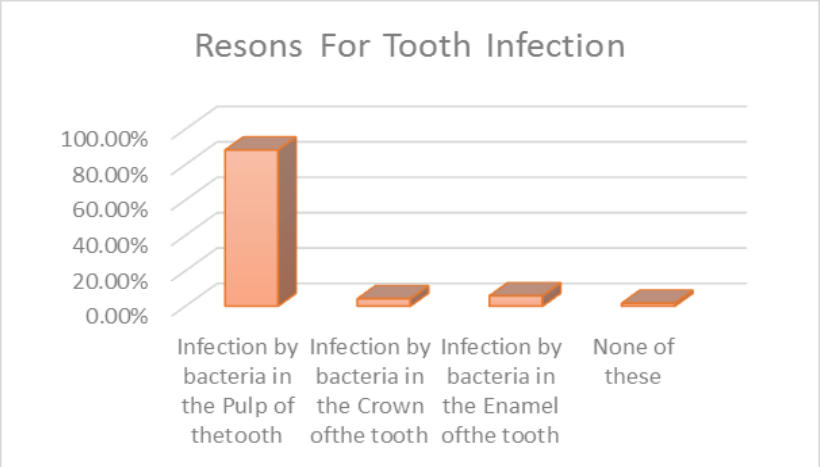
The survey showed that 59.2% were General Dentist and 27.6% were interns.



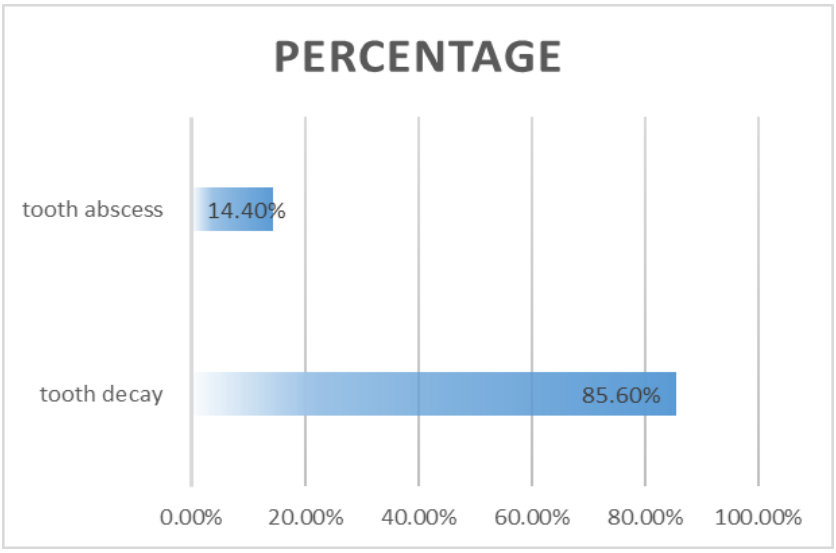
Almost 79.11% of the responders were experienced below 5 years and 20.8% responders were experienced in the range between 5-10 years of experienced. 54.2% of the responders said that Severe toothache pain upon chewing or application of pressure is a sign for tooth infection followed by 49.2% responders saying that Swelling and tenderness in nearby gums.



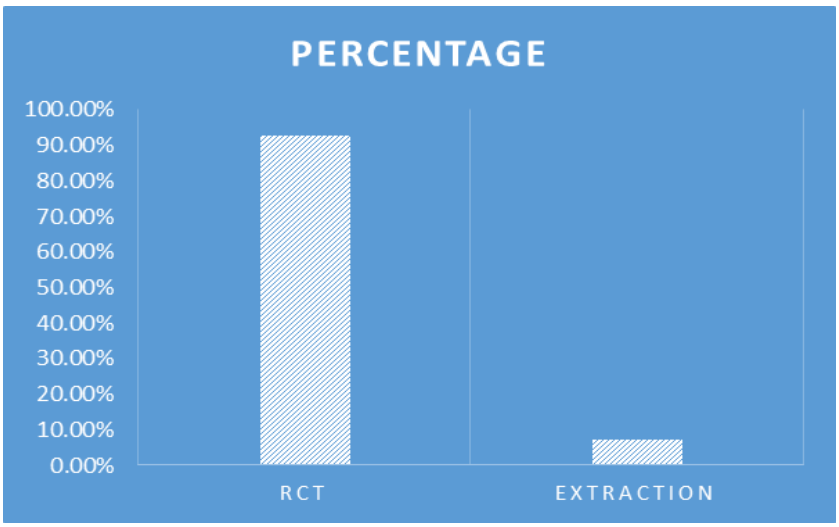
About 86.3% responders feel that Infection by bacteria in the Pulp of the tooth causes the tooth infection whereas 6.1% responders feel that infection by bacteria in the Enamel of the tooth causes the tooth infection among the patients in Jeddah, Saudi Arabia.



85.6% responders confirm that tooth decay is the most common cause for the infection of the tooth with tooth abscess been the next most common cause of tooth infection with 14.4% responders confirming it.



For about 92.8% the choice of treatment of the tooth which could not be treated by medication is Root canal Treatment, and for 7.2% responder's extraction is the choice of treatment.

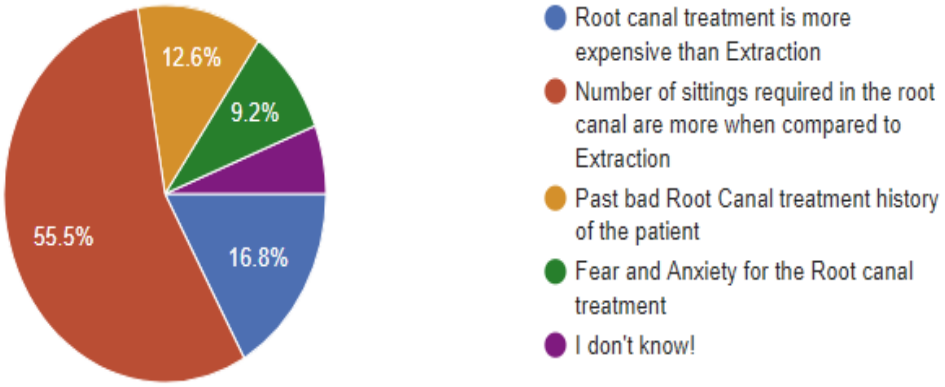


About 97.2% responders feel that Root canal treatment is better compared to extraction to treat the patients in Jeddah, Saudi Arabia. 93.3% responders say that Root canal treatment is much more expensive than Extraction.

According to 56.7% responders Extraction causes much less pain in the patients compared to 43.3% choosing Extraction to be less painful.

The most common reason (55.5%) because of which the patients opt for Extraction over Root canal treatment is the Number of sittings required in the root canal treatment are more

compared to extraction and 16.8% responders feel that the reason is Root canal been expensive over extraction.



Dentists were asked to strongly agree, agree, undecided, disagree or strongly disagree with the following statement: Does endodontic treatment of a salvageable or restorable tooth provide a better outcome than extraction. For statistical analysis the 5 groupings were combined to three: agree, undecided, and disagree. Frequency analysis revealed that 69% of respondents agreed with this statement. When asked, "Is endodontic retreatment of a failing root canal in a restorable tooth preferable to extraction", 35% were undecided. When asked, "In published studies criteria used to determine a successful root canal treatment are the same as criteria used to determine a successful extraction", 26.5% were again undecided.

This is a frequency analysis asking the responders to choose agree, disagree or undecided with the following questions. The most common answer is in bold.

DISCUSSION

It is important to determine what assumptions can be made about respondent's knowledge base. After reviewing the results of our focus group design changes were made to the lay out to decrease the number of questions per page. The literature also suggests that photo reduction (putting many questions on a page) reduces the response rate compared to when the questions are spaced more esthetically over more pages. We chose to keep the survey at 25 questions. Most of our respondents chose the electronic form of their preferred method of communication. A number of researchers have suggested that e-mail surveys cost less than mail surveys.

Many studies have reported that most of their email responses arrive within two to three days following the initial e-mail contact. Although we found email to be a fast and cost effective method of distributing our survey. Individuals surveyed were contacted two weeks after the initial mailing of the survey as a first reminder and then a second reminder was emailed two weeks after the first reminder. It has been shown that the most important difference between a good survey and a poor survey is the amount of repeated contact made with the non-respondents. A response rate of 82.5% was obtained by this method of survey.

The survey results showed 72.4% in the age of 25-35 years. Most of the responders were females about 83.6%. The majority (79.11%) of them showed an experience of less than 5 years. For most of them (85.6%) the cause of infection was tooth decay. Many of the Dental doctors chose Root canal as the treatment of infection (92.8%) and only 7.2% opted for extraction of the tooth and replacement with the implants.

Over half of the survey respondents did not appreciate the difference in criteria for measuring outcome between endodontic and extraction prognosis studies. In addition, dentists reported receiving less information on endodontics compared to extraction and tooth replacement with implants. Future studies can be carried out to help the dental specialists understand more about the root canal treatment and also about extraction of tooth and its replacement with the implants.

CONCLUSION

The results of this study can help target future educational efforts among referring dentists, especially older dentists. Increasing awareness of the differences in criteria for success in the extraction and endodontic literature appears necessary. Additionally there is a need to educate dentists on endodontic prognosis. As we can see from the results, the respondents are receiving quite a bit more literature on extraction than endodontics. Without getting knowledge on both treatment modalities they will not be able to make the best educated treatment decisions. Other possibilities for the future could be a national study or a meta-analysis combining the results of several past studies. It has been said that extraction is not a threat to endodontics as a specialty, but what is a threat is not educating the general dentists on the good of endodontics and how it can benefit their patients.

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