

Evaluation of the Reasons Why Patients Prefer Extraction and Refuse Root Canal Treatment

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ABSTRACT

Objective: Root canal treatment (RCT) has been widely used to save teeth from extraction and restore them to their normal functionality by eliminating the pain factor and reconstructing their natural shape and size. This study aimed to assess the reasons for patients opting out of extraction and refusing root canal treatment.

Materials and Methods: A prospective study of 150 patients over a timeframe of 5 months was carried out in the Outpatient Department of one of a tertiary care hospital in Islamabad. Patients belonged to either gender, their ages ranged from 16 years to 79 years. The inclusion criteria were patients with fully erupted teeth having dental caries and symptoms of irreversible pulpitis but with a restorable prognosis.

Results: Most common reason for extraction was more appointments with pain (23.9%), followed by instant pain relief by extraction (19.6%) and high cost of root canal treatment (17.4%) and others (4.3%) which includes commute problems, travelling abroad, non-salvageable, orthodontic treatment, and severely mobile teeth.

Conclusion: The most common reason for choosing extraction over root canal treatment was pain during the procedure. Public awareness about the effectiveness of root canal treatment is needed, and the pain myth should be dispelled, to ensure that more people are inclined to save their natural teeth rather than preferring implants or artificial teeth.

Keywords: Extraction, Pain, Patient Counselling, Root Canal Therapy, Treatment Outcome

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INTRODUCTION

Dental caries is one of the most basic complaints in restorative dentistry that has a negative impact on society, if left untreated it frequently progresses to irreversible pulpitis, which causes discomfort and inflammation. Severely damaged or grossly infected teeth having irreversible pulpitis, if salvageable, should be restored with root canal treatment instead of being extracted. The American Association of Endodontists defines endodontic treatment (RCT) as a technique for the treatment of damaged teeth affected with pulpal pathosis that is irreversible.¹

RCT preserves the natural dentition and provides efficient chewing ability by preventing the disruption of PDL fibres. Although clinical trials show enhanced success, some patients choose extraction over RCT, resulting in tooth loss.² It is commonly believed that RCTs are the most painful dental procedures, whereas there are very few individuals who have reported RCTs as the most painful dental experience. Subsequent events result in a disrupted occlusion and prosthetic failure, increasing the financial burden and mortality of other teeth.³ During Root canal therapy patients are typically bothered by two main concerns: the duration of the procedure, which includes long and numerous appointments, and discomfort through pain. According to some surveys, stress and anxiety are the main impediments to pursuing RCT in general.⁴

Hence we must not only identify the elements that impede patients from undertaking RCT but also find a solution to cater for them. To accomplish this, population-based surveys used to be carried out. Thereby the main objective of our study is to determine why patients choose extraction as their treatment of choice rather than RCT.⁵ One of the clinical trials demonstrated that 14.97% of the population perceive that the RCT is a failed treatment, and 7.84% of them believed that the tooth should be extracted following RCT.⁶

The primary goal of such assessments is to evaluate the community and ascertain how to optimize their good oral health understanding so that patients know the significance of therapies, thereby increasing patient eagerness to access primary dental care, understanding of RCT and factors influencing the potential acknowledgement of endodontics.⁷

MATERIALS AND METHODS

A prospective study was carried out on 150 patients that were presented to the outpatient department of a tertiary care hospital in Islamabad for 5 months from April 2022-August 2022. Patients between the age range of 16-79 years, with fully erupted teeth having dental cavities and symptoms of irreversible pulpitis were included in the study. Whereas patients having trismus, unerupted third molars with grade II and III mobility or teeth having extensive radiographic bone loss, or poor prognosis for RCT or medically compromised were excluded from the study.

The research has received ethical approval from the hospital's Ethical Committee. On the consent form, patients provided informed written consent. We used non-probability, convenient sampling designs. A questionnaire was provided to the patients to assess the patient's reasons for opting for extraction. Overall, ten closed-ended questions had been used to recognize any further reason other than the asked one. All information filled by the patients was recorded through a questionnaire and subjected to statistical analysis. Data were analyzed using SPSS version 23.0. Frequency and percentage were used to describe qualitative variables like gender. p -value ≤ 0.05 was considered significant.

RESULTS

Out of the total 138 participants, there were 14 males (10.1%) and 124 (89.9%) females with a mean age of 43.78 ± 13.9 years (range 16 – 79). Among them, there were 94 (68.1%) housewives, 22 (15.9%) students and 22 (15.9%) employed personnel. Reasons for extraction and not opting for RCT included the high cost of a root canal 17.4% (24/138), more appointments with pain 23.9% (33/138), patients not worried about the tooth loss because they want to have instant pain relief 19.6% (27/138), previous bad experience with RCT 15.2% (21/138), RCT is a failure 12.3% (17/138), too old for an RCT and requesting to get rid of a tooth by extraction 7.2% (10/138) and others 4.3% (6/138). Other reasons included commute problems, travelling abroad, non-salvageable, orthodontic treatment, and severely mobile teeth. Patients are divided accordingly to undergo extraction depending on their specific reasons for not opting for RCT as shown in Figure 1.

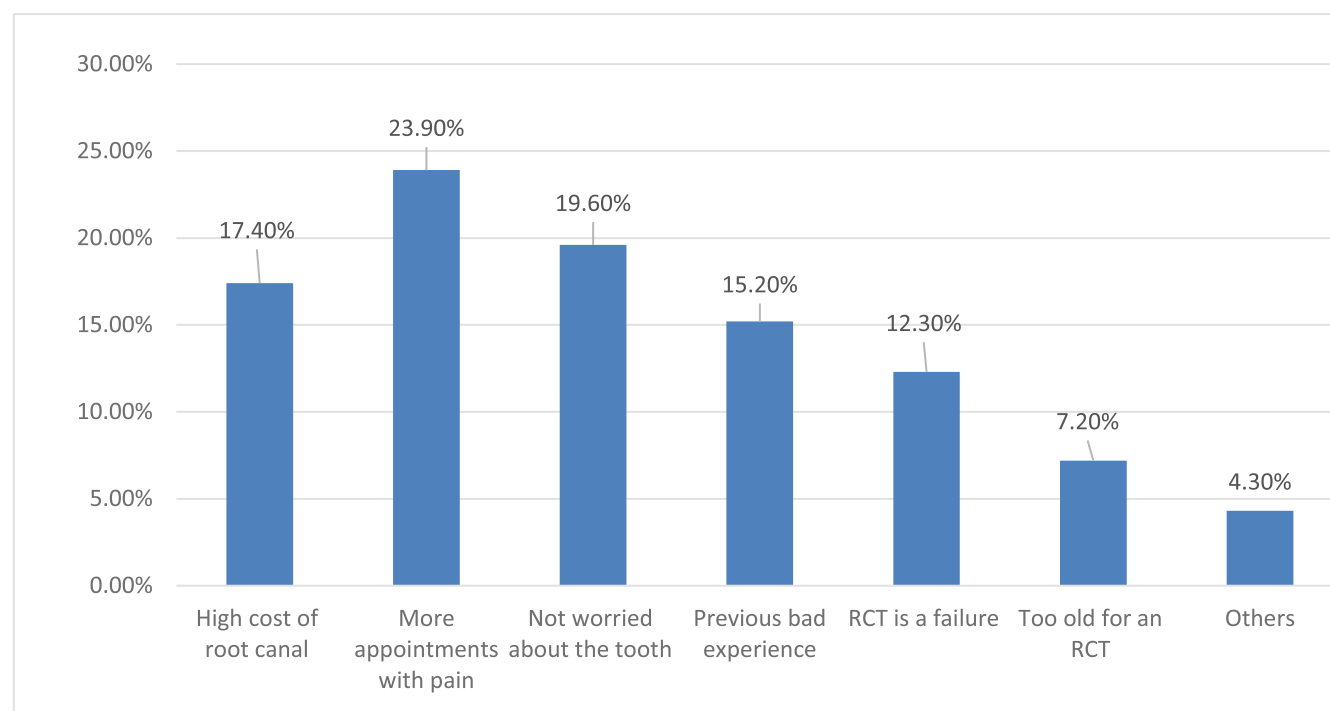


Figure 1: Patient's division according to reasons to withdraw from RCT

DISCUSSION

One of the most frequent dental procedures is root canal therapy (RCT), which is performed to relieve pain, which is the main reason why most people seek dental care.⁸ If the patient delays or ignores the therapy, the tooth may eventually suffer significant damage and may become too compromised to be saved, in which case extraction would be the only remaining alternative.⁹

In this study, out of the total 138 participants that made the study population, there were 14 males (10.1%) and 124 (89.9%) females with a mean age of 43.78 ± 13.9 years and with an age range of 16 – 79. Among them 94 (68.1%) were housewives, 22 (15.9%) were students and 22 (15.9%) employed personnel. In one of the studies carried out in Malaysia, the participants' ranged in age from 16 to 60 years, with 64.5% of women and 35.5% of men, respectively.¹⁰ Of the participants, 31% were students and 58% were employed, as opposed to 15.9% in our study.

Many patients still have fear of root canal treatment in their minds due to the perception of multiple lengthy appointments with persistent pain even between visits.¹¹ Pain and the need for multiple appointments for RCT were the most common reasons for extraction in this study, chosen by 23.9% of the patients. These findings

are similar but higher than one of the studies conducted in India¹ which suggested that 10.33% of the participants reported that multiple painful appointments would be required for RCT. This difference in response might be due to the fact of large sample size of this study which comprised 561 participants and different perceptions exist among people of the same region but different countries.¹¹ Another study conducted in Saudi Arabia found that 29.83% of participants were terrified of the pain element during and after RCT.¹² These results are in contrast to a studied by Muhammad et al¹⁰ and Habib et al¹³ where the biggest barrier to choosing RCT was a lack of information, possibly because the majority of study participants had poor socioeconomic status and little to no education and the subject's final decision and choice may be influenced by the patient's understanding and awareness of endodontic treatment. Many different studies have revealed that generally many patients are apprehensive and fear pain and anxiety which are the major concerns and restraints in the way of RCT.^{1, 14-16}

The myths among people regarding pain during appointments, illnesses associated with RCT plus lack of knowledge and awareness are the main factors which can be attributed to these fears.¹⁴ Psychological counselling in this regard is paramount.

About 19.6% of the participants in this study are not

bothered at all regarding extraction because they wanted to have immediate pain relief by getting rid of the offending tooth. This is consistent with but more so than a study done in India¹, where the rapid pain relief option was chosen by about 13.19% of patients, who were unconcerned about tooth loss, and was the third most prevalent cause for extraction. These are the patients who need counselling regarding the importance of having natural dentition concerning function and aesthetics.

The expense of RCT in comparison to extraction is one of the key concerns for patients. In this study, about 17.4% of patients reported that RCT is a costly procedure that the majority of middle and low-socioeconomic status patients cannot afford. This is following but higher than the study conducted by Sadasiva et al¹ in which 13.90% of patients felt that RCT followed by crown is an expensive treatment option. However, this is in contradiction to one of the studies where only 10% of the patients thought that RCT is a costly treatment.¹¹ This might be due to the difference that participants involved in that study were undergoing treatment in a public university hospital where the majority of treatment is without charge as provided by dental students whereas, this study was conducted in a private sector hospital where charges were comparatively higher as compared to other public sector hospitals.

In this study, 15.20% of respondents had a previous unsatisfactory or bad experience with RCT. This finding is consistent with one of the study conducted in India where 13.33% of patients reported having persistent pain in RCT-treated teeth.¹⁷ This study highlighted that 7.20% of people thought that they are too old to have root canal treatment, and some have comorbid situations like ischemic heart disease, diabetes, hypertension and neurologic disorders such as parkinsonism and are not capable of tolerating stress and multiple visits for an RCT. Also, the slower healing process with advanced age and longer duration of treatment which would be tiring and uncomfortable for the geriatric population makes them opt for extraction straightforwardly. The use of rotary instruments and advancements in endodontic techniques with the use of a support system for these old patient population with shorter appointments and preferably single visit RCT if possible, by a specialist in such cases, can provide

reassurance to this age group for the success of the treatment.¹⁵ Nearly 12.3% of the patients who participated think that RCT is a useless and failed treatment and ultimately they have to undergo the extraction of the tooth. This is seen in one of the studies where 79.11% of patients felt that tooth structure gets weaker and ultimately become fragile with RCT.¹⁷ This is because of a misconception among patients that it weakens the tooth structure and makes it brittle but there is no valid scientific description that root-treated teeth have questionable prognosis due to affected mechanical properties and are weaker than vital teeth. Tooth stiffness is only decreased by 5% by conservative access cavity preparation.¹⁶

Other reasons mentioned by the patients for opting for extraction rather than RCT includes commute problems, travelling abroad, non-salvageable tooth, orthodontic treatment, and severely mobile tooth. It might be the cost factor for those patients who are travelling or moving to foreign countries because dental treatment including RCT has a higher cost in those countries and they cannot afford to finish treatment there.¹ Patient management and treatment outcomes can be modified by understanding the patient's previous experiences and perceptions about RCT and can have a favourable effect on treatment.¹⁸ One of the limitations of this study is its small sample size and it cannot be generalized on a large scale as it represents the views of the patient in one of the tertiary care hospitals in Punjab. Patients in different parts of Pakistan might have different points of view. Several factors like gender, level of education, monthly income and grade of oral hygiene practice that affect patient's knowledge understanding and awareness level regarding RCT were not assessed in this study.

This study provides a clear understanding of the patients' psychological responses to root canal therapy. There are very few local studies available in this regard. To help dentists and other professionals create better treatment plans that are tailored to the needs of patients, the article sheds light on the acceptability and disapproval of RCT by patients.

CONCLUSION

The study concluded that the most usual cause for undergoing extraction instead of a root canal was multiple appointments with pain during their root canal treatment sessions and this was the most common

concern for the patients. The results can be used for patient education as there appears to be a misinterpretation regarding the RCT and public awareness is required in this regard. Recognizing the root cause that results in concerns and complaints of the patients and thus impeding them from opting for RCT is necessary to address the issue.

DISCLAIMER

None to declare.

CONFLICT OF INTEREST

There is no conflict of interest among the authors.

ETHICAL STATEMENT

The ethical approval is provided by the Ethical Review Board at Foundation University College of Dentistry (Ref. No. FF/FUCD/632/ERC/044).

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AUTHORS CONTRIBUTION

Conception and design of the study: S. Khan, F. Khattak, S. Paiker

Acquisition of data: S. Khan

Analysis and interpretation of data: F. Khattak

Drafting of the manuscript: F. Khattak, S. Paiker

Critical review of the manuscript: F. Khattak, S. Paiker

Approval of the final version of the manuscript to be published: F. Khattak, S. Paiker, S. Khan

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