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Original Article

An Insight into Patient Preference of Choosing Extraction over Root Canal Treatment: A Cross-Sectional Study

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Abstract

Background: Dental caries is one of the most prevalent oral diseases. It causes irreversible damage to the tooth structure and if left untreated leads to severe pain and infection. In such cases of progressed caries, Root Canal Treatment (RCT) or Extraction are prescribed treatment options.
Objective: To explore the factors which influence the patients to choose extraction over RCT for restorable teeth using a researcher designed questionnaire.
Study type, settings & duration: This cross-sectional study was carried out at Islamabad Dental Hospital, Islamabad from November 2018 to February 2019.
Methodology: A non-probability, convenience sampling technique was used. A total of 280 patients who visited the Oral and Maxillofacial Surgery (OMFS) and Operative Department of Islamabad Dental Hospital were selected. The study included adult subjects above 18 years of age with restorable teeth who chose extraction. The questions were asked verbally by the principal investigators, and the responses were recorded on a questionnaire. Statistical Package for Social Statistics version 21.0 was used to enter, and analyse the collected data.
Results: Among the study participants, the majority (59.2%) chose rapid pain relief, followed by those citing lack of motivation (51.4%), lack of awareness (36.1%), monetary concerns (33.2%), and time constraints (24.6%).
Conclusion: Majority of patients chose extraction over root canal treatment for restorable teeth because they wanted rapid pain relief.
Key words: Dental caries, root canal treatment, extraction.

Introduction

Dental health, just like general health is inextricably linked to its social environment. Level of education, lifestyle of the patient, surroundings and socioeconomic standing are only few of the elements that influence the onset, development and resolution of poor dental health.[1]

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Authors Contribution

AT & NK conceptualized the project and did the data collection. AT, NK & TS did the literature search, performed the statistical analysis and drafting, revision & writing of manuscript.

Caries is one of the prevalent diseases of the oral cavity affecting 35% of the world population and 60% of Pakistani population.[2] Caries, if left untreated damages the tooth structure and eventually leads to tooth loss. However, it can be avoided if good oral hygiene is maintained along with routine dental check-ups and a low sugary diet.[3] Untreated caries leaves the patient with only two options: extraction or RCT. Dentists prefer RCT because it preserves the tooth thereby maintaining the occlusal harmony and is also cost effective, as replacement of the teeth after extraction is a relatively expensive procedure.[4,5]

Patients in underdeveloped countries typically visit dental clinics or hospitals in case of pain. When given the option between RCT and extraction, mostly choose extraction. Patients with low socio-economic status make this choice as they lack knowledge about this treatment modality and oral health.[6] In developed countries, the cost of treatment and previous experiences may influence

the decision.[7] Other reasons for this choice have been revealed in the literature, including dental anxiety and apprehension, the expectation of instant relief from pain after extraction, and patient's lack of awareness regarding tooth loss and its link with functional impairment.[6-8] Dental care is considered a beneficial service that is only used when necessary, rather than as an essential component of overall health.

Local and international researches have been done to explore the reasons separately, but limited research has been done to identify the reasons for patient's preference of extraction over RCT in this day and age. This research is conducted to determine the factors opted by the patients to choose extraction over RCT which will provide information to create informed community awareness programs and will be a useful tool to educate and counsel the patients about RCT making it widely acceptable.

Methodology

This cross-sectional study was carried out at Islamabad Dental Hospital, Islamabad from November 2018 to February 2019. The 280 patients visiting the Operative and OMFS Departments of Islamabad Dental Hospital were included using non-probability, convenience sampling technique. Since no previous study was conducted on the reasons for preferring tooth extraction over root canal treatment, a pilot study was done on 20 patients at the outset of the study. Pilot study revealed nine different reasons which led the patients to choose extraction. By using 90% confidence level, 5% absolute precision, and 50% anticipated proportion (conventional) of selecting a reason, the minimum required sample size came out to be 271 that was rounded up to 280. Additionally, the average number of patients visiting OPD was also considered to estimate the time required to complete the sample pool.

After reviewing the literature,[4,6,7,9] a researcher filled questionnaire was developed, the validity of which was assessed by six senior faculty members from dentistry, before piloting it on patients. The suggested changes were incorporated by applying argumentative and cumulative techniques and were added in the final questionnaire. Adult subjects above 18 years of age with restorable teeth, who chose extraction over treatment of a diseased tooth were included in the study. Patients under 18 years of age or those who did not give consent for the study were excluded.

Demographics of the participants were recorded followed by close ended questions to explore the reasons, as to why they were choosing extraction over RCT of a salvageable tooth. The questionnaire was used by the researchers to ask questions from the study participants. The researchers entered the information on the questionnaire after verifying it with the participants. Nine reasons which consisted of immediate pain relief, financial issues, lack of knowledge, lack of motivation about RCT, time constraints, transport problems, multiple appointments, previous bad experience and endodontic fear/apprehension were asked from the patients for which the patient had to give a binary answer. Participants were allowed to choose more than one reason as their answer.

Statistical Package for Social Statistics version 21.0 was used to collect, enters, and analyse the data. The frequency and percentages were calculated for all nine possible answers.

The ethical approval was obtained from the Institutional Review Board of Islamabad Medical & Dental College, Islamabad through reference no. IMDC/DS/IRB/113.

Results

Descriptive statistics were applied to measure the frequency and percentage of each reason. From the 280 patients interviewed, majority, 116 (59.2%) chose immediate pain relief as a reason for the preference of extraction, followed by lack of motivation 141 (51.4%). 101 (36.1%) reported lack of knowledge about the treatment modality and 93 (33.2%) chose financial reasons. Time constraints were selected by 69 (24.6%).

Table: Reasons for patient's preference of choosing extraction over RCT.

Reasons	*Percentage (%)*
Immediate Pain Relief	59.2
Lack of Motivation	51.4
Lack of Knowledge	36.1
Financial Reasons	33.2
Time Constraints	24.6
Multiple Appointments	23.3
Previous Bad Experience	18.6
Endodontic Fear	13.6
Transport Problem	3.9

Multiple appointments for RCT was the reason for 65 (23.3%) and previous bad experience was reported by 52 (18.6%). Endodontic fear was chosen by 38 (13.6%) and transport problem by only 11 (3.9%).143 females (51%) and 137 males (48.9%) participated in the study. The mean age of the participants was 42.25 (SD 16.15) with 18 being the minimum while 90 being the maximum. Reasons

for preference are summarized and displayed in Table.

Discussion

This study explored the reasons which compel a patient to choose extraction instead of RCT for salvageable teeth. Like most developing countries, Pakistan ranks low in South Asia in terms of insufficient quality and lack of accessibility of health care being provided.[10] Dental health, although, an integral part of general health is greatly neglected by the population, as many patients only seek dental treatment when they experience severe dental pain.[6] A study reported most patients prefer extraction due to lack of knowledge about the treatment modality.[8]

In the current study 59.2% of patients stated that they preferred extraction due to immediate pain relief as compared to RCT. Extraction is viewed as a single visit procedure which helps relieve their pain in first appointment as opposed to RCT where patients may experience pain postoperatively. Any pain that begins after the start of root canal therapy is identified as post-operative pain.[8] Aetiology of this pain may be due to over-instrumentation and chemical or microbiological harm to peri radicular tissues initiated or exaggerated during the endodontic procedure. It has also been cited that endodontic postoperative pain is significantly more common and severe than any other dental procedure.[11] Hence, it is a fundamental concern related root canal therapy.[12] Therefore, patients do not want to risk having such an unpleasant experience and they opt for extraction.

The second most common reason given by the patients participating in this study was lack of motivation to save the teeth (51.4%). According to a study in Turkey around 15% of patients favour extraction and are willing to undergo it.[13] A major part of the population is not familiar with the importance of retaining a natural tooth and the consequence that follows tooth loss[9] – such factors lead the patient to make an uninformed decision to extract the teeth rather than getting RCT.

Another reason (36%) for extraction is lack of knowledge about root canal treatment modality; patients were unaware and had no previous knowledge of root canal treatment and did not want to try a new procedure. In their opinion the treatment for dental pain was only extraction. This lack of knowledge about RCT is also reported in other studies, one study reported 52.22% of the patients were unaware of RCT however they were familiar with the term through indirect information from their friends and relatives or the internet while 24.44% stated that they were hearing it for the first time.[7] A study conducted in Brazil revealed that there is lack of emphasis and importance of endodontics in secondary health care, they concluded that this might be a reason which is persuading the patients towards extraction.[14] These studies highlight the lack of knowledge of RCT and emphasize the importance of spreading awareness among the population to increase its acceptance as a reliable treatment option.[7, 14]

Financial reasons were chosen by 33.2% of the participants. Since majority of patients reporting to public hospitals cannot afford to get the endodontic treatment they opt for a cheaper option; extraction. As a first-line intervention, RCT has been shown to be quite cost-effective.[4] Although, RCT is a relatively expensive procedure as compared to extraction, but the replacement of missing teeth is far more expensive as compared to RCT.

Time constraints were selected by 24.6% and multiple appointments for RCT (23.3%) were both reasons which motivated the patients to choose extraction over RCT. According to one study, people preferred single visit appointments over several visits regardless of treatment to avoid making changes to their busy lifestyle.[15] Although the efficacy of one visit and multiple visit RCT is equivalent, majority of the dentist perform multiple visit RCT.[16] However, with the introduction of automated instrument, better techniques and protocols single visit RCTs can also be performed in one appointment to accommodate individuals who have a busy lifestyle as this will promote saving the tooth rather than extraction. A Cochrane Review done on single vs multiple visits for endodontic treatment highlight that neither option is better than the other in radiologic success or preventing short- and long-term complication however from evidence available single visit treatment is beneficial to patients in terms of time and convenience.[17]

Previous bad experience was reported by 18.6% patients and because of this reason many patients were fearful of getting RCT again. Another study reported “a substantial correlation between fear and frequency of dental hospital visits among subjects with prior dental experiences".[18] These findings are supported by various studies done in the past that dental fear can arise from prior bad experience ultimately withholding the patient from visiting the dental clinic again or getting the same procedure.[19-21] While dealing with patients who have had a bad first experience patient education and counselling become even more pertinent coupled with following all protocols of the procedures.

Lastly, 13.6% of the participants chose extraction over RCT because of endodontic fear.

Endodontic fear and anxiety have long been associated together, one of the major reasons why patients were apprehensive initially but with so many advancements in the field of endodontics these two should no longer be a reason big enough for the patient to abandon treatment.[19] Increased fear and anxiety are linked to increased anticipated pain, which starts a vicious cycle that can be effectively broken by providing the patient with reassuring information not just during the treatment but also beforehand so that they are well-informed.[22] A study also concluded that patient education is necessary in order to increase the acceptance of RCT and to remove the fears associated with it.[9]

While patients might perceive that extraction of a salvageable tooth for pain relief is an acceptable option, it is imperative for every practicing dentist to inform and educate the patient about the adverse consequences this choice may have on their future oral health. Dental partitioners and oral public health specialist should join hands to educate patients on RCT, significance of saving a natural tooth thereby enabling patients to make better, informed decisions about their oral health.

A limitation of this study is its restriction to a single teaching hospital, which may impact the generalisation of findings. A more comprehensive understanding could be achieved through a multi-centred approach, encompassing various teaching hospitals and private clinics to capture a broader spectrum of patient experiences and preferences.

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