

Original Article

The Awareness and patients concern about the Root Canal Treatment among Dental Patients at Military Dental Hospital, Omdurman-Sudan in 2019.

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Abstract:

Background

Root canal treatment (RCT) is the main way nowadays to save precious natural teeth in the oral cavity. The clinical decision-making process for root canal treatment depends on several factors. Some of these factors are related to the dentist's experience, and most are related to the patient, such as the patient's concerns.

Aim: The aim of this study was to assess the awareness and patients' concerns about root canal treatment among dental patients in a military dental hospital.

Methods: This descriptive cross-sectional hospital-based study was done by convenience methods from 300 dental patients. Data was collected using a self-administered questionnaire consisting of their awareness about endodontic treatment, previous experiences, possible concerns, and treatment cost. **Result:** When the patients' responses were analyzed regarding endodontic treatment, it was found that 58.7% had experience of root canal treatment in the past. Spontaneous toothache was considered the most common symptom that indicated root canal treatment, and 84.7% of the participants considered RCT as a painful procedure. Regarding the important thing that makes patients

concerned about root canal treatment, 48.7% were concerned about long treatment time, 33.6% about treatment cost, 10.1% about treatment after pain, and 7.7% about breaking the file during treatment. 77% got the information about RCT from their family and friends. **Conclusion:** The present study demonstrates that a high percentage of patients (48.7%) were concerned about long treatment time, followed by RCT cost and treatment after pain. 80% of patients prefer to save their tooth when RCT was indicated, while 57% extracted their tooth rather than do root canal treatment when the cost was high. 69% of the participants thought that antibiotics cannot resolve the endodontic infection without the need to visit the dentist, and 90.3% of the participants were aware of the complications that may occur during root canal treatment.

Keywords: Awareness, Root Canal Treatment, Dental Patients , patients concern .

Introduction:

Endodontics is the branch of dentistry that deals with diseases of the tooth root, dental pulp, and surrounding tissue in humans. It is a profession based on the coordination of other specialists, so several factors should be considered during the clinical decision-making process. The process of clinical decision-making is the essence of everyday clinical practice (1). If RCT is indicated, neither a simple filling nor taking antibiotics can resolve the tooth infection. Further, if the treatment is delayed, the tooth can undergo extensive destruction from decay and can get too compromised to be saved; then extraction is likely the only option (2). The clinician must determine whether the patient's oral health needs are best met by providing endodontic treatment and maintaining the tooth or by advising extraction (1). The clinical decision-making process for root canal treatment depends on several factors. Some of them are related to the dentist's experience and most are related to the patient, such as socioeconomic status, quality of life, patient's concerns, expectations, and wishes (1). As oral health-care negligence leads to the progression of dental caries to reach the

pulpal space, indicating root canal treatment (RCT), patients seem to have a major concern regarding RCTs in terms of the number of visits required to complete the treatment, the amount of pain anticipated during treatment, and the cost (2, 3). RCT is pricier than most routine dental procedures such as restorations. But it is justifiable as RCT is a more complex procedure, takes longer time, and requires more skill (2). Although RCT is highly prevalent, it is still perceived by many patients as a procedure to be feared. Studies have reported that fear and anxiety are major deterrents in seeking RCT in general, followed by the weakening of the tooth after root canal treatment (2). Providing information to patients in oral health-care settings can be helpful and can serve multiple functions if it is sensitively and appropriately presented, attended to, and processed by the patient, transforming it into patient knowledge. Information can assist patients in learning the importance of preventive health behaviors, in considering treatment options, and in deciding what interventions might be best and why. Information may increase knowledge about procedures, and this may reduce procedure-related distress such as fear and anxiety (4). Dental diseases are prevalent worldwide. The

with pulp pain and their knowledge about RCT.

Methods:

A descriptive cross-sectional study hospital based was done by convenience methods, among 300 dental patients who were willing to participate in the study were over 18 years old in the Military dental hospital in Omdurman, Sudan. A designed pretesting and revised self administered questionnaires were used to collect data from study participants. The study collected demographic data such as age, gender, residence and another part which included awareness about endodontic treatment-, Source of information, their experiences regarding RCT, concern about root canal treatment, possible complications and treatment cost. Data was analyzed with the aid of Microsoft Excel software and SPSS version 25.0 Statistical Software Program (SPSS, Inc.,USA). The results were presented as frequencies and proportions in tables and figures.

problems have been reported to lead to tooth loss. Tooth loss due to dental caries can be prevented by root canal treatment. The level of patients' awareness regarding root canal treatment may influence their decision-making and choice; it may be an obstacle to getting the treatment (3). Root canal treatment (RCT) is the main way nowadays to save a precious natural tooth in the oral cavity. RCT is technically demanding and it fails when treatment falls short of acceptable standards. It is important to acknowledge that the outcome of RCT is very much influenced by less specific, more distinct factors such as the dentist's skills and attitudes that should be maintained either by a general dentist or an endodontist (2).

The aim of the study was to assess the awareness of root canal treatment and patients' concerns among dental patients in a Military Dental Hospital and to identify how dental patients can deal

Results:

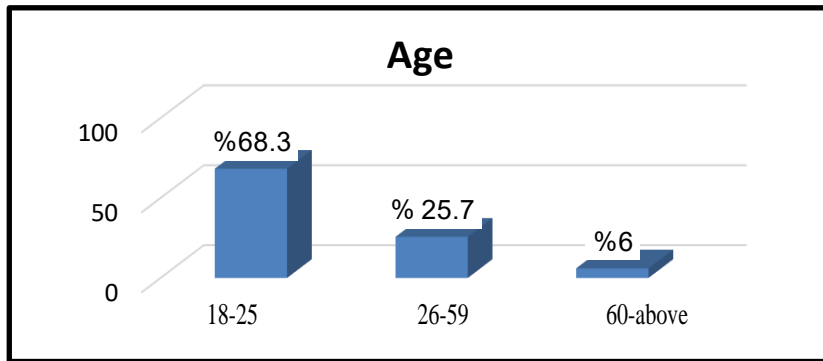


Figure 1: The age of dental patients

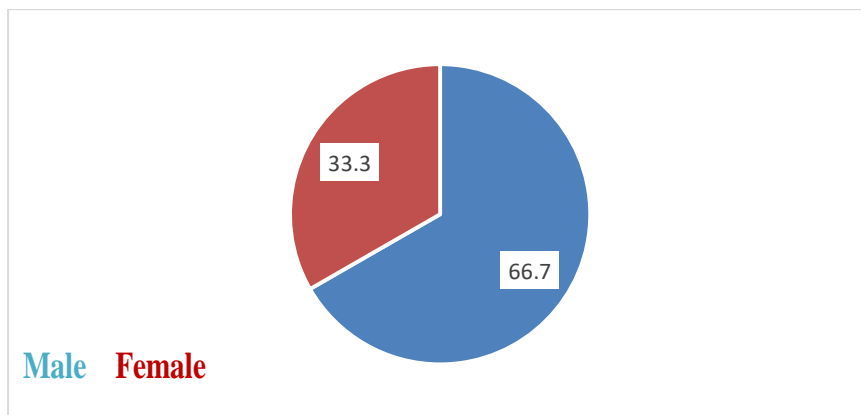


Figure 2: The Gender of dental patients

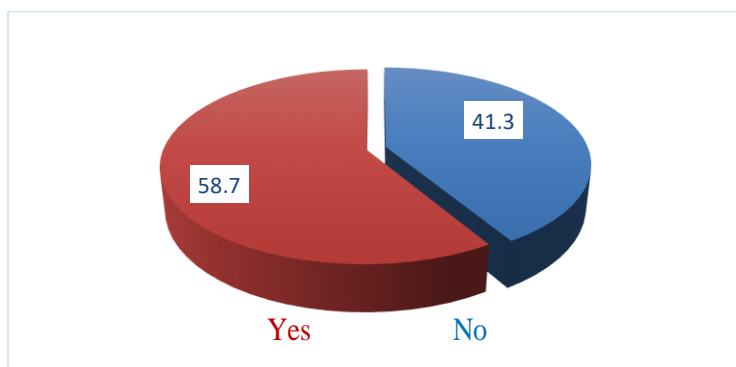


Figure 3: The Patient s experience about root canal treatment

The figure shows 58.7% of the patients had a previous experience of root canal treatment

Table 1: Awareness about RCT in dental patients:

Awareness of the Root Canal Treatment	Yes %	NO%
Antibiotic can resolve the endodontic infection without need to visits the dentist	31%	69%
Any toothache indicate root canal treatment	82%	18%
A ware about the weaker of tooth after root canal treatment	63.4 %	36.6
RCT is considered as a painful treatment	84.7%	15.3%
Patient's prefer to save their tooth when RCT was indicated	80%	20% (extraction)
patients prefer to extract their tooth rather than do root canal treatment when the cost was high	43%	57%
Aware about the complication that may occur during the treatment.	9.7%	90.3%

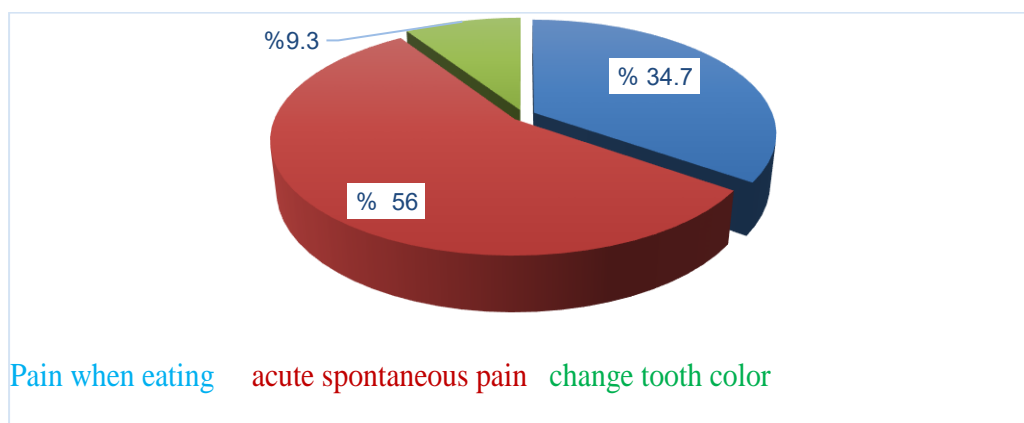


Figure 4: Symptoms that indicate root canal treatment

Table 2: Number of visits for the RCT:

Number of visit	Frequency	Percent
One visit	18	6.0%
Two visit	37	12.3%
more	187	62.3%
Don't know	58	19.3%
Total	300	100.0%

Table 3: Patient's concern toward RCT:

Concern about RCT	Frequency	Percent
Treatment after pain	30	10.1%
Breaking the file during treatment	23	7.7 %
Treatment cost	100	33.6 %
Long treatment time	145	48.7%
Total	298	100.0 %

Table 4: Patients prefer getting their root canal treatment done by:

	Frequency	Percent
Endodontic Specialist	238	79.6%
Dentist	20	6.7%
Dental student	8	2.7%
Not important	34	11.0%
Total	300	

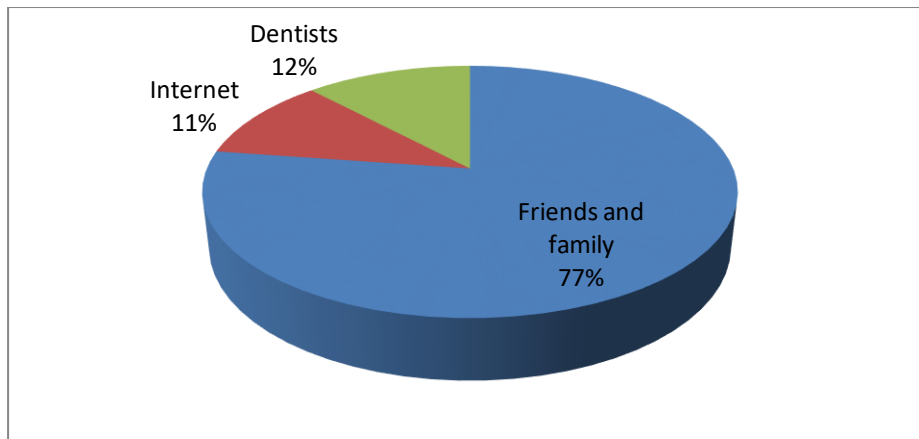


Figure 5: The source of information about root canal treatment

Results:

The study included 300 dental patients (33.3% females and 66.7% males). The age group showed that 68.3% were 18-25 years old, 25.7% were 26-59 years old and 6% were 60 years old and above, as seen in figure 1. The results showed that 58.7% of the patient had a previous experience of root canal treatment, as seen in figure 3. Regarding the awareness of the root canal treatment among dental patients, 69% of the participants thought that antibiotics cannot resolve the endodontic infection without the need to visit the dentist, 82% of dental patients thought that any toothache indicates root canal treatment, 63.4% of the patients were aware about the weaker tooth after root canal treatment, 84.7% of the patients

considered root canal treatment as a painful treatment. 80% of Patient's prefer to save their tooth when RCT was indicated while 57% extracted their tooth rather than do root canal treatment when the cost was high and 90.3% of the participants were aware about the complications that may occur during the root canal treatment, as seen in table 1. 56% of the patients thought that acute spontaneous pain was the symptom that indicated the root canal treatment, as seen in figure 4. 62.3% of the patients thought that more than two visits were needed for the RCT to be completed, as seen in table 2. Regarding the important things that cause patient's concern about root canal treatment, 48.7% were concerned about long treatment time, 33.6% about treatment cost, 10.1% about treatment after pain and 7.7% about breaking the file during treatment,

as shown in table 3. 79.6% of patients prefer to get their root canal treatment done by an endodontic specialist as seen in table 4.

The source of information about root canal treatment was family and friends in 77% of the patients, followed by 12% dentist and 11% from internet as found in figure 5.

Discussion:

Root canal treatment or therapy (RCT) refers to a procedure, where in the infected dental pulp is removed to allow healing of peri-apical tissues, thereby restoring form, function, and aesthetics (5). Lack of root canal treatment leads to excessive destruction of the tooth to a non-restorable state, and this leads to eventual loss of the tooth. Sequelae of tooth loss include drifting of teeth, collapsed occlusion, opening up of contacts, loss of masticatory efficiency, and loss of aesthetics (6). In the present study, 58.7% of the patients had a previous experience of root canal treatment, which was in agreement with Gautam et al. with 64.9% of the patients having root canal treatment done before (8). This is because RCT aids in the retention of infected teeth that otherwise might have been extracted. Although RCT is highly prevalent (9). In our study, regarding the awareness of root canal treatment among dental patients, 69% of the participants thought that antibiotics cannot resolve the endodontic infection without the need to visit the dentist, a similar finding was reported in a study

done by Manasa et al., who found that around 80% of the participants agreed that medicines alone cannot resolve endodontic infections without the need for RCT (10).

The patients should be educated that the key to successful management of endodontic infection is adequate debridement and drainage for both soft and hard tissue. Antibiotics in these circumstances are futile; expose the patients to undesirable side effects, in addition to contributing to the development of antimicrobial resistance (7). In this study, a majority of the patients thought that any toothache indicated root canal treatment. This finding was in line with another study done by Manasa et al., in which, regarding the complaint that brought them to an endodontist, the majority of the patients attributed it to a toothache (60%), followed by pain during biting (20%) (10). In the present study, more than half of our participants thought that acute spontaneous pain is the symptom that indicates root canal treatment. Our finding was in agreement with Gautam et al. who found that the majority of the participants go for RCT after strong spontaneous toothache (8). A toothache is the most common reason for patients to seek dental treatment, but a strong spontaneous toothache and a toothache

while eating or biting are the most common indications for root canal treatment (RCT) or tooth extractions of affected teeth, which is similar to previous studies (7). RCT should always be considered if restorability of the tooth is achievable, as it has excellent clinical outcomes and preserves the natural dentition (11). In the present study, 63.4% of the patients were aware of the weakening of the tooth after root canal treatment. Satpathy et al. agreed with our study; their results showed that the vast majority of patients (83%) believed that teeth that were treated became weaker and on suggestion may require crowns (12). Endodontically treated teeth are primarily weakened because of dental caries, trauma, or preexisting restorations. Also, the chemicals such as sodium hypochlorite (NaOCl) and ethylenediaminetetraacetic acid (EDTA) used during RCT predominantly result in collagen depletion; this affects the elasticity of dentin and predisposes the tooth to fracture during shearing forces. Thus, the definitive restoration should be placed as soon as possible after the completion of RCT (2). 84.7% of the participants were considering RCT as a painful treatment.

The majority of the patients, 80% preferred to save their tooth when RCT

was indicated. This result was in accordance with a study conducted by the American Association of Endodontics, which concluded that 76% of participants choose root canal treatment over extraction (13). When considering the cost of treatment, more than half of the patients refused to extract their tooth rather than do root canal treatment when the cost was high. A similar finding was reported in a study by Kavitha et al., in which 60% of participants replied yes and 40% said no when asked if they would be prepared to pay a high fee to ensure adequate care through RCT (14). Globally, the cost of dental treatment tends to be expensive, particularly when it involves conservative procedures such as RCT (15). RCT with a definitive prosthetic restoration as the first line of treatment for a painful tooth that is restorable (either posterior or anterior tooth) is more cost-effective than extraction followed by replacement of the extracted tooth (16). Most of our participants were not aware of the complications that may occur during root canal treatment.

In our study, regarding the number of visits that the RCT needs to be completed, most of the patients said more than two visits. This result was in agreement and in line with the result of

Shetty et al., in which the majority of the participants (51.2%) reported that the RCT procedure had scheduled two to three visits (9). With the introduction of high-tech automated tools in the field of endodontics, now RCT can be performed in a single visit. The increasing number of dentists is incorporating single-visit endodontics as the main component of contemporary practice. On the other hand, some dentists prefer the traditional multiple-visit protocol believing that it has a long history and a high clinical success rate (2).

In this study, the most common thing that makes patients concerned about root canal treatment was the long treatment time followed by treatment cost. Another study done by Gbadebo et al. concluded that the majority of patients who refused the treatment did so due to fear of drilling and the cost of treatment (17). The Wani et al. study demonstrated that the majority of respondents stated that their top worries before treatment included future maintenance (41%), time (28%), and discomfort associated with the therapy (23%) (18). The possible pain associated with RCT is a major source of fear and should be a concern to the dentist, as Chandraweera et al. mention in their study (19). In our study, most of the patients prefer getting their

root canal treatment done by endodontic specialists, which may increase patients' confidence in the treatment. This result is similar to the study conducted by Gbadebo et al., in which the majority of RCT is done by resident doctors specializing in endodontics (17). Most of the dental patients got the information about root canal treatment from their family and friends, followed by dentists. Therefore, patients' education, explanation of the benefits, and cost-effectiveness of RCT versus extraction and replacement of the tooth may improve patients' acceptance of the procedure.

Conclusion: The present study demonstrates that a high percentage of patients (48.7%) were concerned about long treatment time, followed by RCT cost and treatment after pain. 80% of patients prefer to save their tooth when RCT was indicated, while 57% extracted their tooth rather than do root canal treatment when the cost was high. 69% of the participants thought that antibiotics cannot resolve the endodontic infection without the need to visit the dentist, and 90.3% of the participants were aware of the complications that may occur during root canal treatment.

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