

EXPERIENCE AND AWARENESS OF DENTAL PATIENTS TOWARDS THE ROOT CANAL TREATMENT; A CROSS-SECTIONAL STUDY DONE IN SAUDI ARABIA

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ABSTRACT

Introduction: To manage an endodontic case, the patient must know enough regarding the treatment which they have to undergo. The patient must understand how important it is for him to respond to all the visits which are prescribed to him by the dentist.

Materials & Methods: This is a survey-based study done in Jeddah as well as Riyadh, Saudi Arabia. The survey was designed using Google forms. The link for the survey was distributed among the Saudi adults having at least 1 root canal treatment previously. This was kept as the inclusion criteria of the sample. A total of 528 Saudi citizens took part in this study.

Results: About 42% of the people in this survey were males and the rest of the 58% were females. The number of female participants was more. Moreover, the age group which was consulted more was that from 18 years to 30 years. The comparison of survey responses based on gender shows that majority of the differences were statistically significant.

Conclusion: Females tend to be more concerned about toothache and self-referral to the dentist. They recalled their RCT experience significantly well as compared with the males and believed that the cost can affect their decision whether to go for RCT or other alternatives.

Key words: Root canal treatment, dental patients, Saudi Arabia.

Introduction

In the field of dentistry, a root canal is considered one of the most difficult processes¹⁻⁴. Modern root canal procedure is a less painful technique since the pain can be relatively controlled. The most important drawback in this process is the fact that patients who seek root canal treatment do not have enough knowledge about it. They are not well aware of the steps usually it consists of and what benefits does it hold. Usually, people do not opt for this treatment because they assume that it is extremely painful. The root canal issues can come up with a patient if he has bad oral hygiene and also has poor motivation⁵.

To manage an endodontic case, the patient must know enough regarding the treatment which they have to undergo^{6,7}. The patient must understand how important it is for him to respond to all the visits which are prescribed to him by the dentist. Moreover, if the patient does not have stable health, or there is not enough debridement during the preparation, if the periapical tissue has some kind of injury or when the root canal is inaccessible, cases can become difficult to manage⁸.

Many types of research have shown that patients today have comparatively better knowledge about endodontic treatments. Several opportunities can be explored by the patient in this course, for example, the various kinds of anesthesia, the types of root canal treatment, etc.⁹.

There have been several difficulties which are associated with the root canal treatment such as the pain which is unbearable for the patients. All such issues can lead to activities such as canceling out the scheduled appointments. Many patients have accepted that they do undergo a lot of stress when they have planned a root canal treatment. There are very few publications that cater to issues related to the root canal. Although it is a famous treatment even then there are issues related to the procedures and the instruments which are used. The treatments which are used now are less painful and the procedures used today are more advanced¹⁰.

Most clinical decisions depend on 'conventional' clinical criteria, they are likewise influenced by an extensive variety of non-clinical components. These include patient-related factors, for example, financial status, personal satisfaction, and patient's desires and wishes, doctor-related factors, and

the type of clinical practice such as private versus government or teaching hospital. Studies have reported that there is a change of information and consciousness of patients about the endodontic treatment, which they may use throughout endodontic treatment such as present-day systems and treatment result expectation ¹¹.

It has been exhibited that dental nervousness and expectation of pain profoundly affected a patient's capacity to go through treatment. In reality, some studies have proposed that dental anxiety is a more justified indicator of poor oral wellbeing than auxiliary factors, for example, cost of treatment or number of visits ¹².

Aims of the study:

- To determine the awareness and experience of dental patients regarding their root canal treatment.
- To compare the findings based on gender and age.
- To list down factors associated with root canal treatment decision making.

Materials and Methods:

This is a survey-based study done in Jeddah as well as Riyadh, Saudi Arabia. The survey was designed using Google forms. The link for the survey was distributed among the Saudi adults having at least 1 root canal treatment previously. This was kept as the inclusion criteria of the sample. A total of 528 Saudi citizens took part in this study.

The survey included questions related to pre and post-operative experiences and attitudes of the public towards the root canal and possible alternatives desired. The data were then subjected to statistical analysis using SPSS v. 16. Chi-square test was conducted to achieve the comparison between study groups (gender and age groups). A value of 0.05 or below was kept significant.

Results:

In the survey, which was carried out here, there were both genders consulted. About 42% of the people in this survey were males and the rest of the 58% were females (Figure 1). The number of female participants was more. Moreover, the

age group which was consulted more was that from 18 years to 30 years (Figure 2). Then 31 years to 45 years was accounted for more. Table 1 shows the comparison of survey responses based on gender and it can be noted that the majority of the differences were statistically significant. Table 2 also exhibits a comparison of survey responses according to the age groups of study participants, and similar to the gender comparison it can be observed that the majority of the associations were statistically significant.

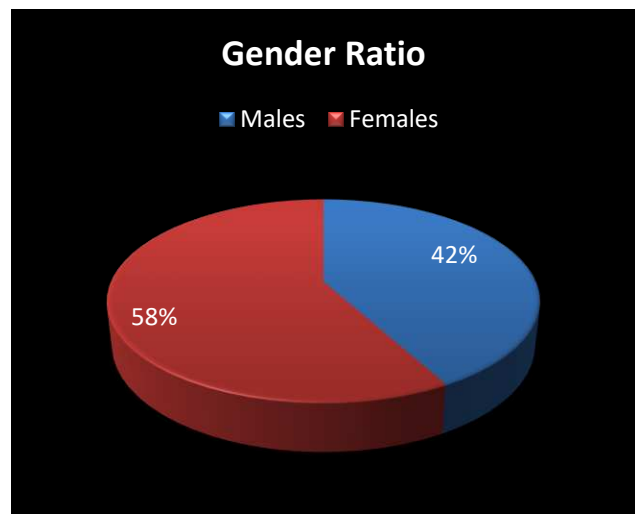


Figure 1: Gender ratio of the participants of this study

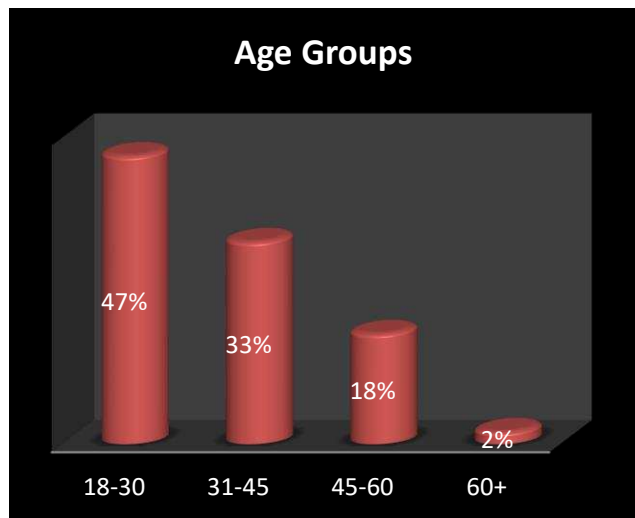


Figure 2: Age group distribution of study participants

Item	Males	Females	Total	p-value
Recall RCT experience?	Well: 63% Badly: 37%	Well: 71% Badly: 29%	Well: 68% Badly: 32%	0.047
RCT experience was painful?	Yes: 45% No: 46%	Yes: 54% No: 34%	Yes: 50% No: 40%	0.015

	Don't remember: 9%	Don't remember: 12%	Don't remember: 10%	
Who performed the RCT?	Dental student: 13% Experienced dentist: 69% Don't remember: 17%	Dental student: 8% Experienced dentist: 83% Don't remember: 9%	Dental student: 10% Experienced dentist: 76% Don't remember: 14%	0.001
What was the need for RCT?	Pain on eating: 41% Spontaneous pain: 50% Tooth discoloration: 8%	Pain on eating: 29% Spontaneous pain: 63% Tooth discoloration: 7%	Pain on eating: 35% Spontaneous pain: 56% Tooth discoloration: 7.5%	0.012
Patient's response to pain?	Use home remedies: 25% Visit a dentist: 75%	Use home remedies: 12% Visit a dentist: 88%	Use home remedies: 18% Visit a dentist: 82%	0.000
Level of knowledge regarding RCT?	Excellent: 11% Average: 55% Poor: 34%	Excellent: 10% Average: 54% Poor: 36%	Excellent: 10.5% Average: 54.5% Poor: 35%	0.911
Patient's concern about RCT?	Pain: 43% Mishap: 13% High cost: 15% Long Tx time: 28%	Pain: 47% Mishap: 7% High cost: 17% Long Tx time: 30%	Pain: 45% Mishap: 10% High cost: 16% Long Tx time: 29%	0.120
The cost can influence patients' decisions?	Yes: 35% No: 65%	Yes: 44% No: 56%	Yes: 39% No: 61%	0.025
Would you prefer extraction over RCT?	Yes: 24% No: 76%	Yes: 23% No: 77%	Yes: 23.5% No: 76.5%	0.836
Who would you prefer to perform RCT?	Dental student: 9% Family dentist: 19% Specialist: 58% Not important: 14%	Dental student: 3% Family dentist: 24% Specialist: 63% Not important: 9%	Dental student: 6% Family dentist: 22% Specialist: 60% Not important: 12%	0.007

Table 1: Gender comparison of the survey questions

Item	18-30 yrs	31-45 yrs	46-60 yrs	60+ yrs	p-value
Recall RCT experience?	Well: 75% Badly: 25%	Well: 61% Badly: 39%	Well: 63% Badly: 37%	Well: 62% Badly: 38%	0.008
RCT experience was painful?	Yes: 47% No: 40% Don't remember: 13%	Yes: 51% No: 41% Don't remember: 8%	Yes: 56% No: 35% Don't remember: 9%	Yes: 62% No: 1% Don't remember: 37%	0.046
Who performed the RCT?	Dental student: 15% Experienced dentist: 72% Don't remember: 13%	Dental student: 7% Experienced dentist: 82% Don't remember: 11%	Dental student: 5% Experienced dentist: 83% Don't remember: 12%	Dental student: 0% Experienced dentist: 69% Don't remember: 31%	0.006
What was the need for RCT?	Pain on eating: 35% Spontaneous pain: 57% Tooth discoloration: 8%	Pain on eating: 35% Spontaneous pain: 59% Tooth discoloration: 6%	Pain on eating: 34% Spontaneous pain: 57% Tooth discoloration: 9%	Pain on eating: 15% Spontaneous pain: 77% Tooth discoloration: 8%	0.800
Patient's response to pain?	Use home remedies: 14% Visit a dentist: 86%	Use home remedies: 23% Visit a dentist: 77%	Use home remedies: 18% Visit a dentist: 82%	Use home remedies: 17% Visit a dentist: 83%	0.131

Level of knowledge regarding RCT?	Excellent: 13% Average: 53% Poor: 34%	Excellent: 7% Average: 57% Poor: 36%	Excellent: 9% Average: 58% Poor: 33%	Excellent: 15% Average: 15% Poor: 70%	0.060
Patient's concern about RCT?	Pain: 44% Mishap: 10% High cost: 11% Long Tx time: 35%	Pain: 45% Mishap: 12% High cost: 17% Long Tx time: 26%	Pain: 49% Mishap: 6% High cost: 26% Long Tx time: 19%	Pain: 62% Mishap: 0% High cost: 23% Long Tx time: 15%	0.008
The cost can influence patients' decisions?	Yes: 35% No: 65%	Yes: 44% No: 56%	Yes: 48% No: 52%	Yes: 23% No: 77%	0.055
Would you prefer extraction over RCT?	Yes: 78% No: 22%	Yes: 66% No: 34%	Yes: 73% No: 27%	Yes: 54% No: 46%	0.023
Who would you prefer to perform RCT?	Dental student: 1% Family dentist: 21% Specialist: 58% Not important: 14%	Dental student: 5% Family dentist: 28% Specialist: 61% Not important: 6%	Dental student: 2% Family dentist: 12% Specialist: 73% Not important: 12%	Dental student: 0% Family dentist: 38% Specialist: 38% Not important: 23%	0.002

Table 2: Comparison of survey questions based on the age group of participants

Discussion:

This study aimed to determine the experience of dental patients regarding their root canal treatment. We selected participants based on their dental history with at least one root canal treatment done previously. When inquired about the factors related to root canal treatment that the patients were concerned about, they reported pain (45%) to be the most common one followed by long treatment time (29%) and high cost (16%). A similar study conducted by Chandraweera et al., (2019) assessed the Australian dental patients' endodontic experiences and reported cost to be the highest of concern (55%) followed by pain (51%)¹³. Therefore, the differences in perceptions can be observed significantly between the two study findings.

We inquired our study participants about their memory of the root canal treatment experience, and they reported that 68% remembered the procedure well, while 32% did not. Moreover, only 10% revealed that they underwent an endodontic procedure done by a university study/intern. Thirdly, 50% of the participants disclosed their exposure to root canal treatment to be painful. When compared these findings with a similar study conducted by Janczarek et al., (2014) among Polish dental patients, it was revealed that 52% remembered their experience well, which is lower than what we observed¹⁴. Regarding the performing professional, 28% of their study participants disclosed to have been treated by university students, which is higher than our

results. Finally, 45% of them reported their procedure to be painful, which is slightly lower than what we observed among Saudis.

When compared the findings based on gender and age of study participants, it was observed that female patients show higher concern regarding pain and therefore were more anxious as compared to males. As far as age was concerned, younger patients were significantly less anxious or concerned about pain as compared to older age groups. These findings were then matched with a Nigeria based study conducted by Akhigbe & Koleoso (2014) among their general public¹⁵. They reported through their findings that females were significantly more anxious about root canal treatment as compared to males, which is similar to what we observed. However, they did not find a significant difference in anxiety levels or fear of pain when compared based on age groups. This is the major difference in findings as far as our study is concerned.

We also inquired our study participants regarding the major reason behind opting for root canal treatment, to which they reported spontaneous pain (56%), followed by pain on eating (35%). Moreover, merely 10.5% of patients revealed that they had excellent knowledge about the endodontic procedure. When compared these findings with another Saudi-based investigation by Doumani et al. (2017), it was observed that 53% of participants felt the need of undergoing root canal treatment which is almost similar to what we

found¹⁶. Furthermore, 23% exhibited an excellent level of knowledge about root canal treatment, which is significantly higher than what we observed. Finally, they reported a high percentage of patients undergoing treatment by an experienced dentist (75%), which is similar to what we observed (76%).

Conclusions:

Females tend to be more concerned about toothache and self-referral to the dentist. They recalled their RCT experience significantly well as compared with the males and believed that the cost can affect their decision whether to go for RCT or other alternatives.

An overall assessment of age group comparison suggested that younger participants (18-30 yrs) showed better knowledge about RCT. Their major concern of endodontic treatment was the prolonged treatment time in some cases.

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