



Awareness and Knowledge about RCT Treatment among Keralites; A Cross -Sectional Questionare Based Study

Kannan PK¹ Karthika AB² Kavitha Krishnamoorthy³ Krishna Veni⁴ Dr Praveen D⁵ Dr Alakha Subodh⁶

1 FINAL YEAR STUDENT SRI SANKARA DENTALCOLLEGE

2 FINAL YEAR STUDENT SRI SANKARA DENTALCOLLEGE

3 FINAL YEAR STUDENT SRI SANKARA DENTALCOLLEGE

4 FINAL YEAR STUDENT SRI SANKARA DENTALCOLLEGE

5 ASSOSIATEPROFFESORPUBLICHEATHDENTISTRYSRISANKARADENTALCOLLEGE

6 ASSISTANTPROFFESORPUBLICHEATHDENTISTRYSRISANKARADENTALCOLLEGE

Submitted: 05-09-2022

Accepted: 13-09-2022

ABSTRACT

AIM

Root canal treatment involves removing the damaged and infected pulp, shaping the root canal spaces so that the entire root canal system can be cleaned and disinfected, and then filling the space so that no more infection can enter. This study was designed to understand the perceptions of Keralites towards Root canal treatment. These perceptions can be used to implement Awareness camps and thus enhance the awareness of the people towards advanced treatments to save the tooth.

METHODS

It was a cross-sectional survey conducted on the people of Kerala who are above 18 years of age and was willing to participate. The study used a validated 12-item e-questionnaire to measure the perceptions of Keralites towards Root canal treatment.

RESULTS

A total of 295 individuals submitted the e-questionnaire. Patients' understanding and awareness of root canal treatment varies among districts and age groups.

CONCLUSION

Our study showed that most people had adequate knowledge and awareness about root canal treatment, but they believed it would be expensive to have the procedure. The expense of endodontic treatment time and pain were significant obstacles to receiving care. Majority are unaware of capping procedures and its benefits.

KEYWORDS: Root canal treatment, expense, Awareness

I. INTRODUCTION

Endodontics is the branch of dentistry that deals with the normal pulp and the genesis,

diagnosis, prevention, morphology, physiology, and pathology of the human tooth pulp and periradicular tissues. Its study and practice include the basic and clinical sciences, as well as the biology of the treatment of pulp disorders and injuries, as well as associated periradicular ailments³

Endodontics is often known as root canal treatment, is a type of endodontic treatment. Root canal

treatment is a process that uses biologically acceptable chemical and mechanical therapies in the root canal system to prevent pulpal and periradicular disease and promote periradicular healing and repair⁴. The goal of root canal treatment is to keep teeth functional. The majority of root canal treatments can be performed by general dentists. Cases with complexity levels that exceed the practitioner's comfort zone may be referred to an endodontist.

Root canal treatment is performed in three steps and requires one to three sessions to finish.

1. Root canal cleaning

First, the dentist removes everything from the root canal.

Under local anesthesia, the dentist cuts a small access hole on the surface of the tooth and uses extremely small files to remove the damaged and dead pulp tissue.

2. Root canal filling

The dentist then uses microscopic files and irrigation to attempt to clean, shape, and disinfect the hollow area. The tooth is then filled with a rubber-likematerial and the canals are completely sealed with ahesive cement.

The tooth dies after root canal treatment. The patient will no longer experience pain in that tooth because the nerve tissue and infection have been removed.



3. Adding a crown or filling

The tooth, however, will be more fragile than previously. A tooth without pulp must get its nutrition from the ligament that connects the tooth to the bone. This supply is enough, but the tooth will grow more fragile with time, thus a crown or filling provides protection. The patient should not chew or bite on the tooth until the crown or filling is finished. After a crown or filling is placed, the person can resume normal usage of the tooth.

Treatment usually requires only one appointment, but curved canals, several canals, or big infections may necessitate one or two subsequent appointments⁶

Root canal treatment not only prevents the severance of periodontal fibres, which aid in proprioception for occlusal feedback and efficient chewing, but it also helps to keep damaged teeth from being pulled. When the tooth's pulp, the soft tissue core of the tooth containing the blood supply, nerves, and connective tissue required for the tooth's growth and health, is damaged in some way, root canal treatment is performed. This is usually caused by bacteria entering the pulp through a deep cavity or failed filling. Pain, temperature sensitivity, color changes, and swelling or tenderness in the gums are all symptoms of pulpal injury. Root canal treatment involves removing the damaged and infected pulp, shaping the root canal spaces so that the entire root canal system can be cleaned and disinfected, and then filling the space so that no more infection can enter. Without treatment, the tissue surrounding the tooth may get infected, and abscesses may form². Modern endodontics entails the use of a variety of equipment, materials, and techniques. It is currently rather typical for a doctor and a patient to be faced with the following treatment decision: should a tooth be salvaged by root canal treatment and restoration or pulled and replaced with a single implant-based supported prosthesis⁷. Endodontic treatments often have good success rates, in between 90% and 95% of patients who receive root canal treatment, a functional tooth is anticipated as a result of the procedure.

Although RCT is widely used, many patients still view it as a technique to be feared. Moreover the expense of endodontic treatment was a significant obstacle to receiving care. To effectively address the problem, it is vital to identify the causes of patient distress that prevent them from undertaking RCT. The main aim of this study was to assess Keralites understanding and awareness about RCT.

II. MATERIAL AND METHODS

Informed consent

The electronic informed consent was obtained from the participants before the start of the study. Detailed information about the purpose of the study was written in the Google Forms and those who consented to participate in the study after reading the consent form were allowed to proceed further with the questionnaire.

Study population and sample size

A standardized cross-sectional questionnaire-based study was distributed among 300 adults in Kerala. The questionnaire comprised of 12 multiple choice questions ranging from personal to specific questions relating knowledge and awareness of patients about RCT. The inclusion criteria for the study were, patients over the age of eighteen year, who agreed to participate in the study. The exclusion criteria are children below 18 years, and adults those not willing to participate.

Statistical analysis

Data entry was done using a Microsoft Excel spreadsheet and statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 22.0. Categorical variables were presented using frequency and percentage. To assess those who undergone root canal treatment and who didn't do RCT were compared using Chi-square test. The level of significance was set at $P \leq 0.05$.

QUESTIONNAIRE

1. Whom do you visit when there is pain in tooth?
a. General b. Dentist c. Physician
2. Do you know what is RCT?
a. Yes b. No
3. Do you know there is a specialist for RCT?
a. Aware b. Unaware
4. Have you undergone RCT?
a. Yes b. No
5. What is your knowledge regarding RCT?
a. I know a lot
b. I ask for details
c. I don't know anything
d. Knowledge from media
6. What is your fear associated with RCT?



- a. Highcost
b. Pain
c. Timeconsuming
d. All of theabove
7. Do you know the cost ofRCT?
a. Yes b.No
8. Did the cost influence your decision as about not takingRCT?
a. Yes b.No
9. Did the previous experience on RCT influence yourdecision?
a. Yes b.No
10. Would you take the decision for extraction orRCT?
a. Extraction b.RCT
11. Do you worry about taking X-rays forRCT?
a. Yes b.No
12. Have you done capping (crown placement) afterRCT?
a. Yes b.No c. Notapplicable

III. RESULTS

District wise Frequency table for Respondents

Frequency	Percent	Valid Percent	Cumulative Percent
Thrissur	9	3.1	3.1
Kannur	6	2.0	5.1
Palakkad	6	2.0	7.1
Kollam	31	10.5	17.6
Kozhikode	64	21.7	39.3
Thiruvananthapuram	45	15.3	54.6
Kottayam	12	4.1	58.6
Alappuzha	24	8.1	66.8
Malappuram	8	2.7	69.5
Pathanamthitta	13	4.4	73.9
Ernakulam	16	5.4	79.3
Idukki	31	10.5	89.8
Wayanad	9	3.1	92.9
Kasaragod	21	7.1	100.0
Total	295	100.0	

This table shows that highest respondents are from Kozhikode (21.7%) and least respondents are from

Kannur (2%) and Palakkad (2%)
The respondents of our study are people among 14



districts of Kerala.

Total of 295 responses were received which includes 64 responses from Kozhikode and 45 from Thiruvananthapuram whereas only 6 responses were received from Kannur and Palakkad.

The study included 295 individuals who completed

18 years, The results of the experiences of patients regarding root canal treatment shown that out of 295 subjects ,60.8% who undergone root canal treatment has a previous experience of endodontic treatment and 19% who didn't do RCT have no previous experience on endodontic treatment; the results are shown in Table 1

TABLE 1		Have you undergone Root Canal treatment?		p Value
		Yes	No	.000
Previous experience on Root canal treatment influences your decision	yes	60.8%	19.0%	
	no	39.2%	81.0%	

The results shown that 81.0% of respondents who previously underwent RCT treatment opted extraction next time, only 19.0% respondents who

taken treatment before opted RCT next time. The results are shown in table 2

TABLE 2		Have you undergone Root canal treatment?		p Value
Extraction/Rct		yes	no	.002
	extraction	81.0%	61.6%	
	rct	19.0%	38.4%	

When analyzing the level of patients' knowledge and awareness on the endodontic treatment it was found that out of subjects who underwent RCT 28.8% have prior knowledge about RCT through media. 19.5% of subjects knows a lot about the procedure, majority subjects who taken

the treatment 46.7% claimed that they ask for details and only 5.4% who underwent treatment don't know anything about RCT; The results are shown in table3

TABLE 3		Do you know what is Root canal treatment?		p Value
		Yes	No	.000
Knowledge regarding Root canal treatment	I ask for details	46.7%	23.7%	
	I don't know anything	5.4%	39.5%	
	I know a lot	19.5%	5.3%	
	Knowledge from media	28.4%	31.6%	

The results shown that the price of root canal treatment was not only the barrier to undergo endodontic procedure, 34.2% of respondents

claimed high cost, pain, time all together made their fear in taking the procedure ,42.2 % subjects who didn't took treatment was fear to pain .the results are shown on table 4



Table 4		Have you undergone Root canal treatment?		p Value
		Yes	No	.003
Fear	High cost	25.3%	10.6%	
	Pain	27.8%	41.2%	
	Time	12.7%	6.9%	
	All the above	34.2%	41.2%	

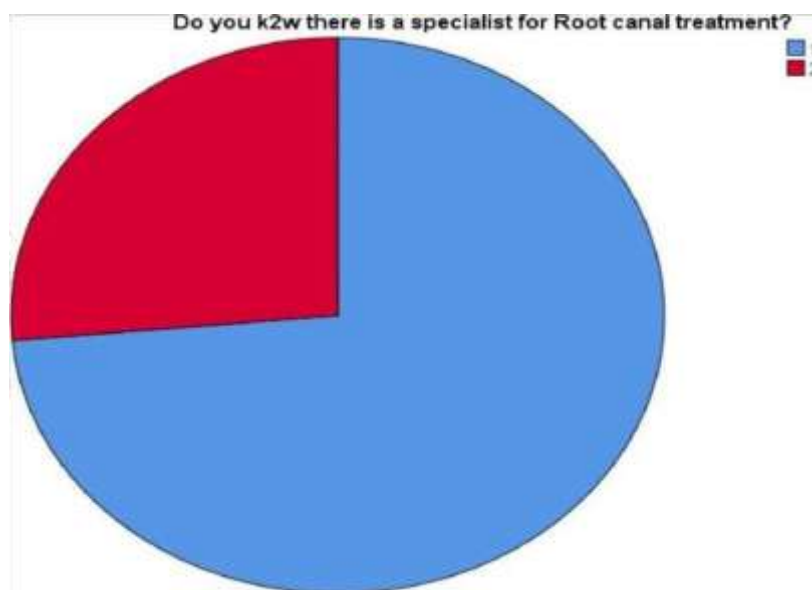
Have you done capping (crown placement) after Root canal treatment?

Frequency		Percent	Valid Percent	Cumulative Percent
Crown Placement	Yes	68	23.1	23.1
	No	208	70.5	93.6
	Not applicable	19	6.4	100.0
	Total	295	100.0	100.0

The outcomes shows that 23.1% of respondents done covering after the RCT and 73% were not done. 6.4% answered respondents did not underwent RCT

The results shown that there has been increased knowledge and concern of patients about specialist in endodontic treatment.

- 1 aware
- 2 unaware





IV. DISCUSSIONS

There have been many ideas, plans, and methods for performing painless and affordable root canal procedures since the advent of contemporary endodontics. Endodontics has been one of the fastest expanding specialties of dentistry in recent years³. The employment of modern equipment, such as rubber dams and microscopes, in daily practice has a substantial impact on the quality and longevity of treatment results. Furthermore, patients can benefit from various types of local anesthesia, as well as the use of nitrous oxide, which according to recent findings, increases the effectiveness of their actions. Preoperative intravenous sedatives and analgesics are another type of premedication. In extreme circumstances, general anesthesia is an option¹¹. Patient's level of knowledge and awareness of root canal treatment may have an impact on their decision-making and choice; it may also provide a barrier to receiving the procedure¹.

According to the findings of this study, 60.8 percent of those who underwent root canal treatment had prior experience, while 19 percent of those who did not have RCT had no prior experience with endodontic treatment. This reflects increased knowledge and concern of patients.

However, 81 percent of respondents who had RCT chose extraction for these conditions, whereas just 19 percent chose RCT for the third time. When the level of patients' knowledge and awareness on endodontic treatment was examined, it was discovered that 28.8 percent of subjects who had RCT had prior knowledge about RCT through media. 19.5 percent of participants are well-versed in the technique, with the majority having received treatment. 46.7 percent stated that they inquire about information, while just 5.4 percent of those who received treatment were unaware of RCT.

This study showed those who didn't take the treatment their main concern was high cost, pain, and time-consuming process. Majority of people have knowledge about root canal treatment, most of them acquired knowledge by self-initiated enquires.

People who took the treatment had a concern about pain, cost and time, so the second time of chance they preferred Extraction rather than RCT and among them those who did root canal second time had a pure influence on previous experience with endodontic procedures.

The results showed that the cost of root canal treatment was not the only barrier to undergoing endodontic procedure, 34.2 percent of

respondents claimed high cost, pain, and time all contributed to their fear of undergoing the procedure, and 42.2 percent of subjects who did not take treatment were afraid of pain.

It is always recommended to place a crown on a tooth after receiving root canal treatment. The molar and premolar teeth carry the majority of the load when chewing. The tooth may fracture or break as a result of the masticatory stresses in this scenario. This can be avoided by installing a well-contoured and well-fitting crown on the tooth⁹.

If the tooth requiring a root canal is in the back, such as the molars or premolars, the probability of requiring a dental crown is higher. Because these teeth must resist the full force of eating and grinding, they may require the added strength that a crown can give¹⁰.

People with high dental fear have more probability to delay or avoid dental visiting, and a number of fearful people regularly cancel or fail to show for appointment. It has been noted that trying to manage patients with dental fear is a source of considerable stress for many dentists⁸.

V. CONCLUSIONS

- 1) Majority people have Knowledge and awareness regarding root canal treatment.
- 2) Most of them acquired knowledge on endodontic procedures by self-initiated enquires
- 3) There has been increased knowledge and concern of patients about specialist in endodontic treatment.
- 4) People who took the treatment had a concern about pain, cost and time
- 5) The second time of chance they preferred Extraction rather than RCT because of their concern on cost, pain and time.
- 6) Both pain and anxiety were interconnected and can be considered essential elements that may make patients hesitant to undertake root canal treatment.
- 7) The majority of people preferred to have root canal treatment performed by a skilled Endodontist.

REFERENCES

- [1] Doumani, M., Habib, A., Qaid, N. and Abdulrab, S., 2017. Patients' awareness and knowledge of the root canal treatment in Saudi population: survey-based research. *Pain*, 44(52), p.47.
- [2] Ditty J Mary , Anjaneyulu K , M.P.



- Santhosh Kumar., 20121.“Knowledge and Awareness Regarding Root Canal Treatment Among the General Population-International Journal of Dentistry and OralScience” (IJDOS) ISSN:2377-8075
- [3] Purra, A.R., Sajad, M., Ahangar, F.A. and Farooq, R., 2018. Patient's awareness and knowledge of the root canal treatment in Kashmiri population: A survey-based original research. *Int J Contemp Med Res*, 5(7),pp.G12-5.
- [4] Adnan Assad
Habib,MazenDeibDoumen,Tyser Al
Saysd,EnassShamsy ,Mohammed
HeskulSalumAbdulrab,Ahmed Reda
Bashnakli and Almthana Ali
Alaskar(2017)Dental
patientknowledgeandawarenessaboutRCTin
Syrianpopulation-surveybasedresearch.
- [5] Lim, K.C. and Sum, C.P., 2004. Guidelines for root canal treatment. *Singapore dental journal*, 26(1),pp.60-2.
- [6] Article 'what to expect from root canal treatment' -Medically reviewed by Christine Frank,DDS- written by Yvette Brazier on July 26,2017
- [7] Ahamed, Z.H., Alwakeel, A., Alrshedan, A. and Altimsah, F., 2018. Knowledge and Awareness of root canal therapy for population in Saudi Arabia: A questionnaire-based study. *Int J Med Sci Clin Invent*, 5(2),pp.3560-4.
- [8] Armfield, J.M., Stewart, J.F. and Spencer, A.J., 2007. The vicious cycle of dental fear: exploring the interplay between oral health, service utilization and dental fear. *BMC oral health*, 7(1),pp.1-15.
- [9] Capping isn't done after RCT-
Dr.JyotiSankarAcharya,
- [10] <https://www.practo.com/consult/capping-isn-t-done-after-my-rct-i-had-my-rct-donein-2017-of-my-2-lower-insicors-teeth-but-my-doctor-had-not-put-any/q>
- [11] When is a root canal without crownprotection wise-
<https://www.colgate.com/en-us/oral-health/root-canals/when-is-a-root-canal-without-crown-protection-wise>.
- [12] Bajawi, A.M., Mobarki, Y.M., Alanazi, F.G., Almasrahi, M.Y., Malhan, S.M. andAlrashdi, A.F., 2018. Knowledge and awareness of root canal treatment among general public of Arar, Saudi Arabia. *J Int Med Dent*, 5,pp.56-62.