

Patients' Perceptions on Root Canal Treatment and Their Experiences with It: Questionnaire-based Survey

Pradeep N Varatharajan¹, Ashok Leburu², Madhuram Krishnamurthy³, V Naveen Kumar⁴

ABSTRACT

Both clinicians and patients care about pain and factors that influence pain perception. In the Chengalpattu population, there is a lack of data on patient's impressions on RCT. The goal of this pilot study is to look into adult patient's perceptions in the Chengalpattu area and see how they alter after therapy. The impact of demographic factors on anxiety and discomfort was also investigated. Two hundred and fifty patients were surveyed, with 270 (95%) completing both the pre- and posttreatment surveys. Patient anxieties, anxiousness, and anticipated or experienced pain were identified using modified Visual Analog Scales and multiple choice questions. The most common pretreatment concerns were future maintenance (46%) and pain (17%). Eighty-two percent of patients said they had anticipation of pain, whereas 7% said they had pain throughout therapy. Results suggest that anticipated pain is bigger than pain experienced during treatment, and that after the treatment, anxiety for future RCT was significantly reduced.

Keywords: Anticipated pain, Anxiety, Experienced pain, Pain, Pain perception.

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INTRODUCTION

Root canal therapy is one of the procedures that makes patients anxious.¹ Endodontic treatment is significant in this regard due to its substantial relationship with preoperative, operative, and postoperative pain. In endodontics, pain prevention is vital. One of the reasons why many authorities advise against completing root canal treatment in one visit, especially in cases of preoperative pain, is to avoid postoperative pain.²

Effective pain management during RCT avoids the stigma that patients believe the doctor is causing or increasing their pain. Patients may still experience intraoperative pain despite advances in modern endodontic technique and local analgesics.³

Postendodontic pain typically occurs within the first two days of treatment and subsides within a few hours. However, it can last for several days in some cases. According to a recent systematic review, 40% of people experience pain within the first 24 hours after root canal treatment, dropping to 11% after 7 days. As a result, pain control before and after root canal therapy is a significant issue for the doctor.⁴

Several causes can contribute to postendodontic discomfort. The most significant appears to be associated with the instrumentation procedure, which can cause an acute periapical inflammatory response as a result of mechanical, chemical, and/or microbial injury to the periradicular tissues.⁵

Extrusion of dentinal debris, pulp tissue, bacteria, and irrigants to the periapical tissues during chemomechanical preparation might cause inflammation. The severity of pain appears to be linked to the degree of tissue damage.⁶

According to several researches, having a high level of dental anxiety increases the amount of discomfort felt.⁷ Furthermore, it has been proposed that the presence of preoperative discomfort increases patient anxiety, with subsequent implications on perceived pain.⁸

Pathological dental phobia is defined by a high level of anxiety and aversion to dental treatment. According to a report, a significant number of people avoid going to the dentist because they are

¹⁻⁴Department of Conservative Dentistry and Endodontics, Karpaga Vinayaga Institute of Dental Sciences, Chennai, Tamil Nadu, India

Corresponding Author: Pradeep N Varatharajan, Department of Conservative Dentistry and Endodontics, Karpaga Vinayaga Institute of Dental Sciences, Chennai, Tamil Nadu, India, Phone: +91 7010769110, e-mail: pradeepnivas8@gmail.com

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afraid. Normal fear and dental phobia are both prevalent in dental offices and have a substantial impact on dental care.⁹

When it comes to getting early guidance about oral and dental disorders, dental anxiety is a huge roadblock. It is a typical observation that worried patients change from visit to visit with dentists until dental care is absolutely necessary. As a result, anxious patients have a lower quality of life or are held back as compared to nonanxious individuals.¹⁰

The overall goal of this questionnaire-based survey was to look into patients' perceptions of RCTs and, where possible, compare those perceptions to their actual experiences and comments after treatment.¹¹ The study also looked into the impact of key demographic factors on patients' pretreatment RCT perceptions. It is believed that by understanding patient's pretreatment concerns, clinicians will be able to tailor management of their patients and alleviate negative responses to treatment.¹²

MATERIALS AND METHODS

The study was based on a questionnaire and was approved by the Institutional Ethics Committee. The research took place for a year and ended in October 2021. Patients were asked to take two

Table 1: Patient concerns prior to and following completion of RCT

Concerns associated with RCT	Pretreatment (% of total concerns) n = 285	Posttreatment (% of total concerns) n = 270
No concern	31	0
Pain associated with treatment	57	19
Time (e.g., time taken off work, number of required appointments)	82	119
Needing future treatment or maintenance	114	131
Treatment failure	0	0
Other	1	1

Table 2: Mean pre- and posttreatment anxiety scores for those patients who completed both the pre- and posttreatment surveys

Pretreatment anxiety (%)	Posttreatment anxiety (%)
37%	41%

p = 0.00054

Table 3: Anticipated and experienced pain severity as reported by the patients for those patients who completed both the pre- and posttreatment surveys

Anticipated pain (%)	Experienced pain (%)
42%	38%

p = 0.00038

surveys: one before their initial appointment with an endodontist about root canal treatment (pretreatment survey) and another after the endodontist had inserted the root canal filling to finish the procedure (posttreatment survey).

Only patients who had completed the pretreatment survey were given posttreatment surveys. Patients above the age of 18 who visited these practices for their initial consultation appointment were asked to participate. Postgraduate student were in charge of inviting patients to participate in the study and disseminating the pre- and posttreatment surveys. Patients found fit for the survey were selected to participate in this study. All participants were given an information leaflet and asked to sign a consent form indicating their informed consent. The participants were not given any assistance in filling out the surveys.

If a patient did not complete the RCT or the posttreatment survey, their responses were eliminated from the analysis. Only the pretreatment data were used for analysis in these cases. Pretreatment questions included demographics (age, gender, and degree of education) as well as whether the patient has previously undergone an RCT.

Patients' worries with RCT were identified using modified Visual Analog Scales (0–100%) and multiple choice questionnaires. Patients were questioned whether their treatment experience was better or worse than expected, if any discomfort was connected with or throughout the course of treatment, their view on the value of tooth retention, and how they would feel about having RCT again in the posttreatment survey.

Data were categorized and analyzed using Microsoft Excel and SPSS. Descriptive statistics, independent and paired t-tests, and ANOVA were used.

RESULTS

The cohort research included 285 patients who met the inclusion criteria based on their pretreatment survey replies. The post-treatment surveys were completed by 270 (95%) of these patients. Males made up 125% of the responders (44%), while females made up 160% (55%). The participants ranged in age from 19 to 60 years old. High school (60%), Bachelor's Degree (32%), Postgraduate Degree (3%), and unknown education (3%) were the highest degrees of education among the patient. Twenty-three percent of the

patients have previously participated in an RCT. Seventy-six percent of the patients had never undergone any previous treatment. Patients who had previously underwent RCT had a mean anxiety score of 37%, compared to 41% for those who had never underwent.

RCT was not a source of worry for 11% of the patients before to treatment. After therapy, this has increased to 100%. Table 1 displays information on the patients' concerns about RCT. Prior to treatment, the majority of respondents cited future maintenance (40%), time (29%), and treatment-related discomfort (20%) as some of their top concerns. Postoperatively, patients are concerned about future maintenance (46%) and time (42%). Surprisingly, only 7% of patients expressed unhappiness as a result of discomfort. Overall, all of the responders were pleased with the RCT results.

Table 2 shows the mean anxiety scores reported by respondents who completed the RCT before and after treatment. Gender, age, and educational level proved to have little bearing on pretreatment anxiety. Pretreatment dental pain was reported by 28% of patients who presented for RCT. The average pretreatment pain level for those who were in pain was (42%), which is just below "moderately painful." Sixty-eight percent of patients said they were not in pain prior to therapy and had a pretreatment anxiety level of 38%.

During the RCT, 43% of the patients expected to be in discomfort. When asked about discomfort after the therapy, 16% of patients said they had experienced pain during the procedure. Prior RCT experience lowered the amount of pain that was expected. Patients with past RCT experience expected 40% less procedural discomfort than those who had never had one, compared to 60% for those who had never had one. Gender, age, and educational level appeared to have little bearing on pain expectations or experiences. As demonstrated in Table 3, there was a substantial difference between predicted and experienced pain in individuals who completed the RCT.

PATIENT PRETREATMENT QUESTIONNAIRE

AGE- GENDER- M/F

Highest Level of Education

- High school
- Bachelor degree
- Postgraduate degree
- Other

1. Have you ever had a root canal treatment?
 - Yes
 - No
2. How do you feel about having a root canal treatment?
 - Not nervous
 - Nervous
 - Extremely nervous
3. What concern, if any, do you have about having a root canal treatment?
 - No concern
 - Pain associated with treatment
 - Time
 - Future treatment maintenance
 - Treatment failure
 - Other
4. Are you expecting root canal treatment to be painful?
 - Not painful
 - Painful
 - Extremely painful
5. Are you currently experiencing any pain with your tooth/teeth? Yes/No. If so, how much?
 - Slightly painful
 - Moderately painful
 - Extremely painful
6. How important is keeping your tooth?
 - Not important
 - Important
 - Extremely important
5. Would you have root canal treatment again if it was needed?
 - Yes
 - No
6. If you had to have root canal treatment again, how would you feel about it?
 - Not nervous
 - Nervous
 - Extremely nervous
7. Overall, are you satisfied with the outcome of your root canal treatment?
 - Yes
 - No

DISCUSSION

The purpose of this study was to determine the level of anxiety among patients between the ages of 19 and 60 who were undergoing endodontic treatment and expected and experienced discomfort. A total of 285 patients who presented to the Department of Conservative Dentistry and Endodontics, Karpaga Vinayaga Institute of Dental Sciences, Chengalpattu, Tamil Nadu, requiring endodontic treatment following diagnosis were included in the study.¹³

Because the sample size was small in this pilot investigation, the conclusions had some restricted validity. Despite this, the findings imply that pain is a major concern for patients, and that patient anxiety is widespread in the Chengalpattu population.¹⁴

Only patients who had completed the pretreatment survey and had their RCT completed within the research period were eligible to participate in posttreatment surveys. Some patients may have only shown up for their first session at the conclusion of the study period, leaving them with insufficient time to finish therapy before the survey period ended. There are a variety of reasons why patients do not complete treatment, including the tooth not being suitable for RCT and thus requiring extraction (e.g., a vertical crack or fracture in the root), the patient being unable to afford treatment, the patient opting for extraction, or the patient failing to return within the study period because they wanted to postpone treatment for a while.¹²

Patients without prior RCT experience reported more anticipated discomfort in this research. Patients may interpret each therapy as a distinct experience, according to one study, which found no link between anticipated and experienced pain independent of prior experience.¹⁵ Other research has found that patients with prior pain experience have lower pain expectations and anxiety.¹⁶

The percentage of patients who had any pain during their treatment was 7%. This was lower than the percentages reported in other research, which ranged from 12 to 60%. The severity of pain described during RCT is generally low, ranging from 4 to 8%, while there have been reports of more severe pain. Pretreatment pain was found to be 28% in the current investigation. It has previously been demonstrated that pretreatment anxiety is linked to both predicted and experienced pain. Fearful patients are more likely to experience and remember more pain, according to these researches.¹⁶ These findings revealed that women had much higher predicted pain levels than men, yet there was no difference in pain reported following endodontic treatment between men and women.

POSTTREATMENT QUESTIONNAIRE

1. Having had root canal treatment, was the experience better or worse than you expected?
 - Worse than expected
 - As expected
 - Better than expected
2. What dissatisfaction, if any, do you have following root canal treatment?
 - No concern
 - Pain associated with treatment
 - Time
 - Future treatment maintenance
 - Treatment failure
 - Other
3. Did you experience any pain with your root canal treatment? Yes/No. If so, how much?
 - Not painful
 - Painful
 - Extremely painful
4. After having root canal treatment, how happy are you to have kept your tooth?
 - Very happy
 - Indifferent
 - Rather have had tooth removed

In this study, 51% of patients were dissatisfied with certain parts of their treatment following the RCT. Despite some patients' reservations, all patients who responded to the posttreatment survey said they would undergo RCT again if necessary. The literature shows that RCT has a high level of patient satisfaction, with the majority of patients (80–85%) opting for future treatment if necessary.¹⁶

CONCLUSION

According to the findings of this study, pain experienced during endodontic treatment is frequently less than anticipated pain. Women are more prone than men to anticipate pain, but they do not feel higher degrees of discomfort. The majority of patients were concerned about future maintenance when it came to root canal therapy.

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