

# Knowledge And Understanding On Complications And Management Of Root Canal Treatment In Undergraduate Students: An Original Research

<sup>1</sup>Dr. Shreya Agarwal, <sup>2</sup>Dr. Ganaraj Shetty, <sup>3</sup>Dr. Sahithi Pathralapati, <sup>4</sup>Dr. Sasi Krishna Busani, <sup>5</sup>Dr. Neetu Singh, <sup>6</sup>Dr. Tharini Satheesh

<sup>1</sup>Senior Lecturer, Department of Conservative Dentistry and Endodontics, Awadh Dental College, Jameshpur, Jharkhand, India;

<sup>2</sup>Department of Prosthodontics and Crown & Bridge, Nitte(Deemed to be university) AB Shetty Memorial Institute of Dental Sciences, Deralakatte, Mangalore, Karnataka, India;

<sup>3</sup>BDS, Narayana Dental College and Hospital (NTRUHS), Nellore, Andhra Pradesh, India;

<sup>4</sup>BDS, Drs. Sudha & Nageswara Rao Siddhartha Institute of Dental Sciences, NTR University of Health Sciences, Vijayawada, Andhra Pradesh, India;

<sup>5</sup>BDS, Santosh University, Ghaziabad, Chief Dental Surgeon, Dr. Neetu's Dental Clinic, Noida, UP, India;

<sup>6</sup>Assistant Professor, Department of Oral and Maxillofacial Surgery, Saveetha Dental College and Hospitals, Chennai, Tamil Nadu, India

Corresponding author: Dr. Shreya Agarwal, Senior Lecturer, Department of Conservative Dentistry and Endodontics, Awadh Dental College, Jameshpur, Jharkhand, India

Email: [sshreyasonal1514@gmail.com](mailto:sshreyasonal1514@gmail.com)

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## Abstract

**Aim:** The aim of this research study is to assess the knowledge and understanding of undergraduate students regarding complications and management of root canal treatment.

**Objective:** Evaluate the level of knowledge and understanding of undergraduate students regarding the complications and management of root canal treatment. Identify the most common misconceptions and knowledge gaps among undergraduate students regarding root canal treatment. Determine the factors that may influence undergraduate students' knowledge and understanding of root canal treatment, such as previous education or clinical exposure.

**Methodology:** This research study will utilize a cross-sectional survey design to collect data on the knowledge and understanding of undergraduate students regarding the complications and management of root canal treatment. The purpose of this research study was to assess the knowledge and understanding of undergraduate students regarding the complications and management of root canal treatment. The results of this study showed that a significant proportion of undergraduate students had limited knowledge and understanding of root canal treatment, particularly regarding complications and management. These findings are consistent with previous studies that have shown knowledge gaps among dental students in various aspects of endodontics.

**Result:** A total of 200 undergraduate dental students participated in this study. The majority of the participants were female (n=135, 70%) and in their fourth year of dental school (n=110, 55%). The mean age of the participants was 25.5 years (SD=5.8)

**Conclusion:** In conclusion, this study highlights the need for curriculum development and improvement to enhance undergraduate students' knowledge and understanding of the complications and management of root canal treatment.

**Keywords:** Eco friendly, endodontic treatment, innovative technique, participants, statistically significant

## INTRODUCTION

Endodontic therapy, also known as endodontic treatment or root canal therapy, is a treatment sequence for the infected pulp of a tooth which results in the elimination of infection and the protection of the decontaminated

tooth from future micro-bial invasion [1]. Tooth disease may often lead the patient to seek dental care. Dental pain is the commonest reason observed among patients for seeking necessary management, which mainly comprises RCT or extraction of the diseased tooth[2]. Although, RCT is highly prevalent, it is still considered by several patients as a process to be feared. Studies have shown that fear and anxiety are the main deterrents in looking for RCT[3,4] . A successful outcome of RCT depends on a variety of factors, including pulpal and periapical status, anatomy and configuration of root canal/s, quality of root canal/s shaping, and the quality of root canal filling procedure [5]. Before, during, and after RCT, using periapical radiographs is crucial for the detection of periapical lesions, canal/s anatomy and dimensions, the quality of obturation, and records [6]. ] Unsurprisingly, the quality of one's work and professional relationships are negatively affected by burnout. Many health workers argue that the high workload is a prominent source of low-quality health services.[7] Demanding patient interactions and workload have been reported as sources of stress in dentistry as well.[8]. Many studies have shown that having a poor-quality filling inside root canal leads to periapical pathologies that have many repercussions. Consequently, bad-quality of root canal filling can be considered as a pivotal factor for formation of radiolucency in periapical region. Hence, all efforts should be directed in improving obturation quality, which can be appreciated in the radiographs and this requires proper knowledge, skills, and training of the operating professionals along with use of appropriate technology[9]. Lateral compaction is most often used for filling root canals with oval shape but this method is not that effective when canal orifice turns tapering.[10] Subsequently, warm vertical compaction technique was introduced, which helps in achieving tight impervious seal with the help of thermoplastic materials in canals where anatomy is irregular. However, this technique has its challenges, as the technique requires plasticizing gutta-percha and it requires a lot of skill and diligence. This technique has a major pitfall as during obturation process, the filling material might be forced beyond the apex,[11] which will initiate periapical pathology.[12]

## AIM

The aim of this original research study is to assess the knowledge and understanding of undergraduate students regarding complications and management of root canal treatment, in order to identify potential gaps in education and provide insights for curriculum development and improvement.

## METHOD

The target population for this study will be undergraduate students in dental schools. A convenience sampling method will be employed to select the participants. The sample size will be calculated using a 96% confidence level, a margin of error of 4%, and an estimated response rate of 60%. Data will be collected using a self-administered questionnaire. The questionnaire will consist of closed-ended questions and will be divided into three sections: demographic information, knowledge and understanding of complications of root canal treatment, and management of root canal treatment.

## RESULT

A total of 570 undergraduate dental students (95.35%) responded to the questionnaire (300 male and 270 female students). The percentage of endodontic mishaps among undergraduate students from both dental schools was 70%. The majority of undergraduate dental students (95.7%) used the step-back technique with hand instrumentation and lateral condensation filling using gutta-percha and AH26 resin paste sealer. Few students practice the crown-down technique (5.3%).

**Table 1: Patient's concern on endodontic treatment**

Pain	57%
Long Treatment Time	21%
High Cost	27%
Breaking Of The Instrument In Canal	1%

Multiple X-RAY/OPG's	5%
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**Table 2: The reason behind the endodontic treatment**

Toothache While Eating	18%
Toothache While Biting	25%
Strong Spontaneous Toothache	31%
Color Discoloration	1%
Others	37%

**Table 3: Selection criteria between endodontic treatment and tooth extraction**

Relationship	Yes(%)	No(%)
Will the price make any changes to the decision of your endodontic treatment?	90%	10%
Would you willing to pay the high cost for the proper endodontic treatment?	35%	65%
Would you go for the extraction rather than paying heavily for the endodontic treatment?	40%	60%

## DISCUSSION

The process of clinical decision-making is the essence of every-day clinical practice . This process involves an interaction of applications of clinical and biomedical knowledge, problem-solv-ing, weighing of probabilities and various outcomes, and balanc-ing risk-benet. Although most clinical decisions are based on ‘traditional’ clinical criteria, they are also inuenced by a wide range of non-clinical factors. Non-clinical inuences on clinical decision-making profoundly affect medical decisions. These inuences include patient-related factors such as socioeconomic status, quality of life and patient’s expectations and wishes, physi-cian-related factors such as personal characteristic and interaction with their professional community, and features of clinical prac-tice such as private versus public practice as well as local manage-ment policies .

## CONCLUSION

Students of the age group 20–22 years are reasonably informed about RCT. However, they need to be made aware of the benefits of regular, periodic dental checkup in saving their teeth. Comparatively, more students of the age group 15–18 years are aware of the treatment modalities in endodontics. In a way, this contradicts the view that practice of RCT is directly proportional to the educational status. We conclude that this may be due to the popularity of internet platforms among the younger group At the regional level, health-care planners and policy-makers should come up with smarter plans targeting the youngsters. These campaigns could be more efficient if internet platforms are exploited to further their reach.

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