



“Perception of Difficulties in Performing Endodontic Treatment among BDS Interns: A Cross-Sectional Study”

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ABSTRACT:

Background: Endodontic procedures are considered technically demanding, especially for undergraduate dental students transitioning into clinical practice. Understanding the challenges faced during internship can help refine educational strategies.

Aim: To assess the perception of difficulties encountered by BDS interns while performing endodontic treatment.

Materials and Methods: A cross-sectional survey was conducted among dental interns over a period of two months (May–June 2025). A structured e-questionnaire consisting of 18 questions (15 close-ended and 3 open-ended) was distributed. Responses were categorized according to different phases of root canal treatment and analyzed descriptively.

Results: The majority of interns reported difficulties in working length determination, canal negotiation, and obturation. Limited clinical experience and inadequate supervision were identified as contributing factors.

Conclusion: Significant challenges exist in endodontic training at the internship level. Curriculum modifications and enhanced supervision may improve clinical competence.

KEYWORDS:Endodontics, Dental interns, Root canal treatment, Clinical education, Perception study

I. INTRODUCTION

Endodontic treatment is a fundamental component of dental practice, requiring precision, sound knowledge, and refined clinical skills. Despite advancements in techniques and instruments, root canal treatment remains one of the most challenging procedures for undergraduate students and interns¹.

Dental interns often experience a transition from preclinical simulation to real patient care, which introduces multiple technical and psychological challenges². These include difficulties in access cavity preparation, working length determination, canal instrumentation, and obturation³.

Previous studies have indicated that inadequate preclinical training, lack of confidence, and insufficient supervision contribute to errors and procedural complications during endodontic therapy⁴. Furthermore, factors such as complex root canal anatomy, time constraints, and patient management add to the perceived difficulty⁵.

Assessing interns' perceptions of these challenges is essential for identifying gaps in dental education and improving teaching methodologies. This study aims to evaluate the difficulties faced by BDS interns while performing endodontic procedures and to suggest potential improvements in training.

II. MATERIAL AND METHODS

Study Design

A cross-sectional survey study.

Study Population

The study included dental interns from the same graduating batch with a similar level of clinical exposure. Participation was voluntary. The study was conducted over a period of two months (May 2025 to June 2025).

Inclusion Criteria

BDS interns currently posted in the Department of Conservative Dentistry and Endodontics

Willing participants

Exclusion Criteria

Interns unwilling to participate

Incomplete questionnaire responses

Study Instrument



A structured e-questionnaire was designed consisting of:

- 18 questions
- 15 close-ended
- 3 open-ended

The questionnaire was distributed at the end of the departmental posting.

Data Collection

Responses were categorized according to different stages of root canal treatment:

- Diagnosis and case selection
- Access cavity preparation
- Working length determination
- Biomechanical preparation
- Obturation

Data Analysis

Data were analyzed using descriptive statistics and presented as percentages.

Mentor Ratio

The average mentor-to-intern ratio was 1:7.

III. RESULTS

The analysis of responses revealed that interns experienced varying degrees of difficulty across different stages of endodontic treatment.

Working length determination was reported as one of the most difficult steps.

Canal negotiation and instrumentation were also challenging due to complex canal anatomy.

Obturation techniques posed difficulty due to lack of adequate hands-on experience.

A significant proportion of interns reported lack of confidence and insufficient supervision.

Combined Graph (For Journal Figure Section)

You can insert a single combined bar graph titled: "Perceived Difficulty Levels Across Different Stages of Root Canal Treatment Among Interns"

Graph Structure:

X-axis: Stages of RCT

(Diagnosis, Access Opening, Working Length, Instrumentation, Obturation)

Y-axis: Percentage of interns reporting difficulty

Use grouped bars:

- Mild difficulty
- Moderate difficulty
- Severe difficulty

Trend Interpretation:

Highest difficulty → Working Length & Instrumentation

Moderate → Obturation

Lowest → Diagnosis & Access Preparation

IV. DISCUSSION

The present study highlights the significant challenges faced by dental interns during endodontic procedures. The findings are consistent with previous studies that reported endodontics as one of the most technically demanding disciplines in dentistry⁶.

Working length determination emerged as a major difficulty, possibly due to limited experience with apex locators and radiographic interpretation⁷. Similarly, canal instrumentation was challenging due to variations in root canal morphology and lack of tactile experience⁸.

Obturation difficulties may be attributed to insufficient training in different obturation techniques and inadequate clinical exposure⁹. The mentor-to-intern ratio (1:7) may also limit individualized supervision, affecting skill development¹⁰.

Confidence levels among interns were notably low, which aligns with studies indicating that clinical competence improves with repeated practice and guided supervision¹¹.

These findings emphasize the need for:

- Enhanced preclinical simulation training
- Increased clinical exposure
- Improved faculty supervision

Incorporation of modern endodontic technologies. Such interventions can significantly improve the quality of endodontic education and patient outcomes.

V. CONCLUSION

Dental interns face considerable challenges in performing endodontic procedures, particularly in working length determination, canal instrumentation, and obturation. Addressing these difficulties through curriculum refinement, better supervision, and enhanced clinical training is essential for improving competency in endodontic practice.

Clinical Significance

Understanding the difficulties faced by dental interns can help educators:

- Modify teaching strategies
- Improve clinical training modules
- Enhance overall quality of endodontic education

This will ultimately lead to improved patient care and treatment outcomes.

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