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ORIGINAL ARTICLE/ARTICOLO ORIGINALE

# Attitudes of general practice dentists in private dental clinics in Almadinah Almunawarah toward novel endodontic technologies



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## KEYWORDS

Attitudes;  
Modern endodontics;  
General practitioner;  
Root canal;  
Survey.

## Abstract

**Objective:** The purpose of this study was to evaluate the current trends and the adoption of new technologies in endodontic treatment by general practitioners in private dental clinics in Almadinah Almunawarah.

**Methods:** A questionnaire was distributed randomly to 70 general practitioners working in private dental clinics in Almadinah Almunawarah, Saudi Arabia. After one week, the questionnaires were hand-collected. Sixty-three dentists (90%) returned the questionnaire. The study was conducted between February and May 2014.

**Results:** The results indicated that 100% of the general practitioners did not use any magnification device during root canal treatments; 11% of the respondents used digital X-ray equipment, 12.7% used an electronic apex locator, 38% used NiTi rotary instrumentation in root canal preparations, 100% did not use any adjunctive device for irrigant activation and 100% did not use new devices or techniques for root canal obturations.

**Conclusions:** This study provides data regarding the current trends and attitudes of general practitioners in private dental clinics in Al-Madinah Al-Munawwarah regarding novel technologies in endodontic treatment and reveals the gap between the new advances in endodontics and clinical practice, as well as the need to improve root canal treatment in private dental practices.

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## Introduction

Dentistry has rapidly developed during the last several decades, and innovative techniques have changed conventional treatment methods as applications of new dental materials yield better outcomes.<sup>1</sup> Endodontics has experienced major technological developments. Digital radiography, surgical microscopes, electronic apex locators, ultrasonic units with specific endodontic tips, rotary nickel titanium (NiTi) instruments and new obturation systems have advanced the technical steps of root canal treatment procedures.

These new advances affect endodontic clinical practice.<sup>2</sup>

Decreases in radiation exposure, computer archiving and immediate development are major advancements in digital radiography.<sup>3,4</sup> Operating microscopes (OM) have changed nonsurgical and surgical endodontics. In nonsurgical endodontics, management of the straight portion of the root canal system is performed appropriately and easily, even if it is located in the most apical section.<sup>5</sup>

Modern electronic apex locators could determine the working length of a root canal with high accuracy.<sup>6–8</sup> Ultrasonic units with specific endodontic tips are useful in the access cavity preparation, cleaning and shaping, obturation of the root canals, removal of the intracanal materials and obstructions, and endodontic surgery.<sup>9</sup> Rotary nickel titanium (NiTi) root canal instrumentation reduces time and procedural accidents and improves the quality of root canal preparations.<sup>10–12</sup> Novel obturation systems have enhanced the quality of root canal obturation, which could improve the outcome of root canal therapy.<sup>13</sup> Although the quality and efficiency of root canal treatments have been improved by the novel technologies, dental general practitioners remain hesitant to use them.<sup>14,15</sup>

The purpose of this study was to evaluate the current trends in endodontics by general practitioners in private dental clinics in Almadinah Almunawarah.

## Materials and methods

This study is based on a self-administered questionnaire survey. A questionnaire was distributed to general practitioners in private dental clinics in Almadinah Almunawarah, Saudi Arabia.

The questionnaire was distributed randomly to 70 dental general practitioners were hand collected after one week. A total of 63 (90%) questionnaires were collected. The study was conducted between February and May 2014.

This questionnaire consisted of 10 questions regarding the use of digital radiography, magnification, electronic apex locators, ultrasonic units with endodontic tips, rotary nickel titanium (NiTi) instruments and new obturation systems. The questionnaire is summarized in [Table 1](#).

The collected data were analyzed with SPSS 16 software (SPSS, Inc., Chicago, IL).

## Results

The results are summarized in [Table 2](#). In total, 63 (90%) respondents completed the questionnaires. Most of the respondents (50%) had had more than 13 years of postgraduate professional experience as a dentist. The average number of teeth treated endodontically per month was less than 10 teeth by 3% of the participants, 10–20 teeth by 30% of the participants, 21–30 teeth by 27% of the participants, 31–40 teeth by 30% of the participants, and more than 40 teeth by 10% of the participants. In this study, none (0%) of the participants used magnification devices during root canal treatments. Only 11% used digital X-ray equipment, 12.7% used an apex locator during the working length determination, and 38% used NiTi rotary instrumentation during everyday practice. Protaper NiTi rotary instruments were the most used (66.67%). Of the participants who used NiTi rotary instruments, 75% prepared<sup>6–10</sup> canals per NiTi rotary instrument,

**Table 1** The questionnaire form.

Question	Choices			
1. How long have you been working in this profession?				
2. What is the average number of teeth that you treat endodontically per month?				
3. Do you use digital X-Ray equipment?	Yes	No		
4. Do you use any device for magnification?	Yes	No		
5. Do you use an apex locator for the working length determination?	Yes	No		
6. Do you use NiTi rotary instruments?	Yes	No		
7. If you use rotary instruments, what system do you use?	a. Protaper	b. Revo S	c. Protaper and Revo S	c. Hero
8. If you use rotary instruments what is the maximum number of prepared canals per instrument?	a. 3–5 canals	b. 6–10 canals	c. More than 10 canals	
9. Do you activate the irrigant by any type of adjunctive activation device?	Yes (specify)	No		
10. Do you use any of the new obturation techniques?	Yes (specify)	No		

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