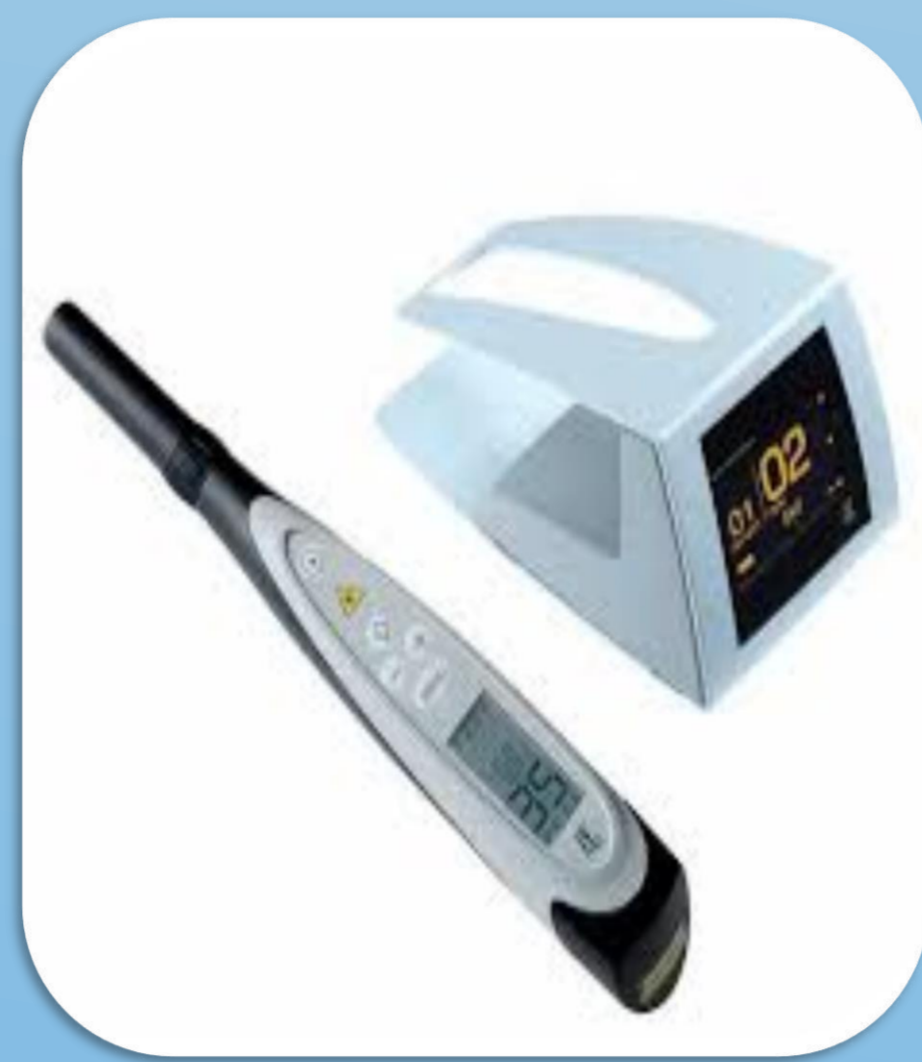


Vitalion and CBCT Use in Restorative Dental Practice

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This study evaluates the usage, perception, and effectiveness of classical and modern diagnostic methods in restorative dentistry in North Macedonia, focusing on the Vitalion electric pulp tester and CBCT technology.



A cross-sectional survey was conducted using an anonymous online questionnaire among 60 practicing dentists in Macedonia. The questionnaire assessed frequency of use, satisfaction, and challenges related to diagnostic tools such as visual examination, radiography, Vitalion, DIAGNOdent, and CBCT.

Visual examination and radiography were the most frequently used methods: 90.5% Vitalion was used by 52.4%, mostly occasionally (66.7%).

DIAGNOdent and CBCT were less commonly used, mainly due to cost and limited availability. Highest satisfaction scores were for visual exam and radiography;

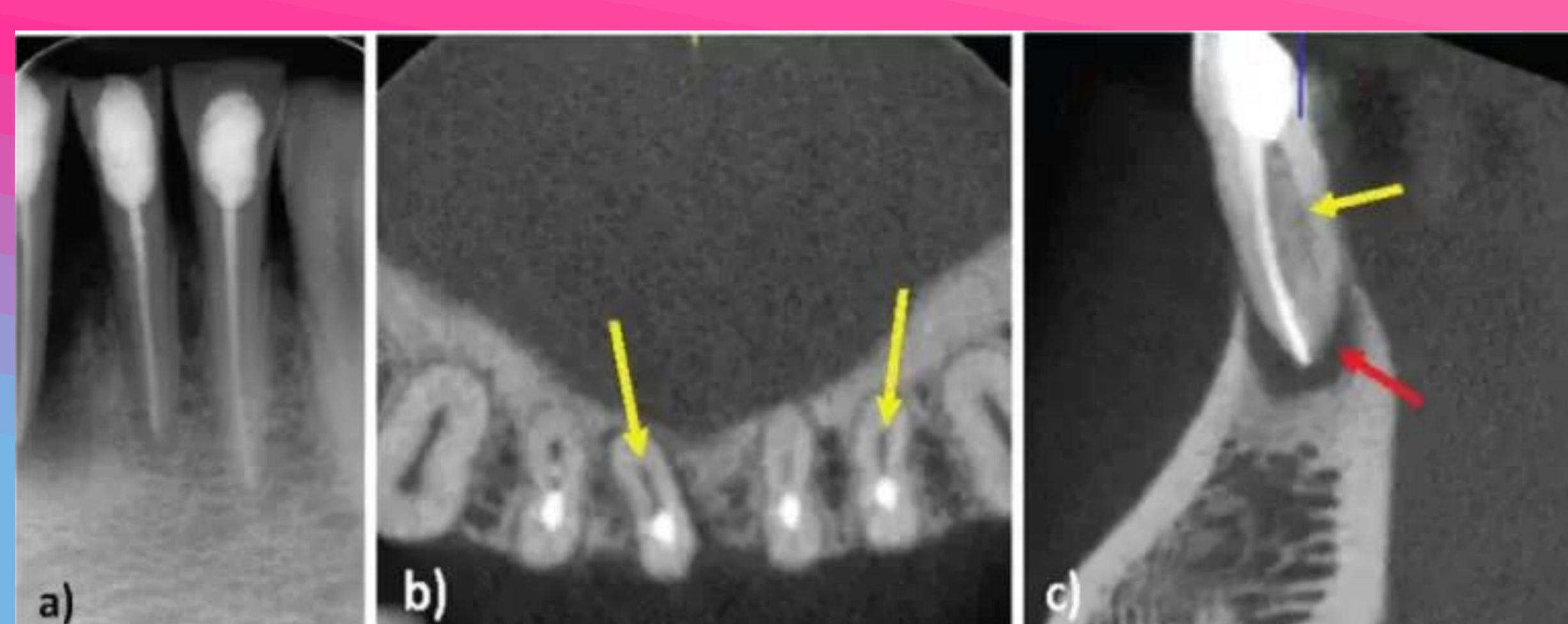
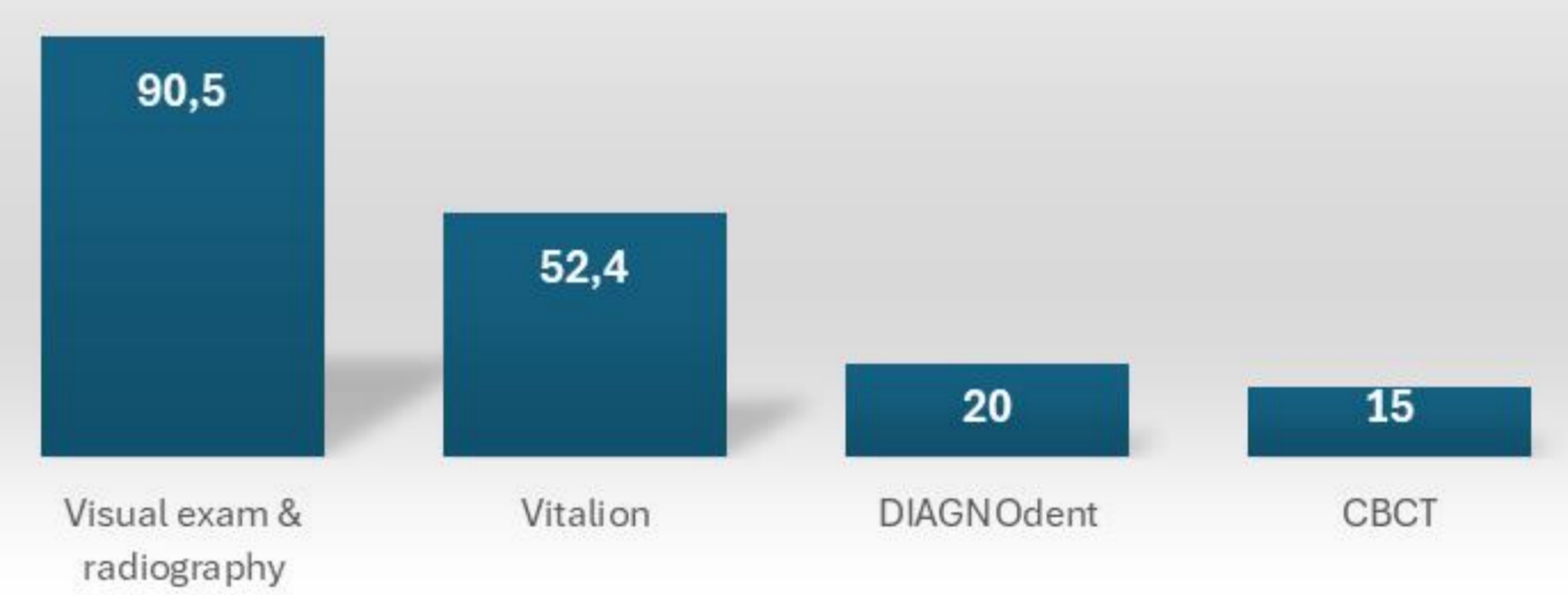
Vitalion and DIAGNOdent scored lower, indicating need for additional training.

Vitalion was primarily used for pre-endodontic assessment and suspected pulp necrosis or trauma. Dentists reported occasional false positives/negatives, especially in restored teeth, young patients, and impacted teeth.

71.4% of participants expressed need for further education and use of digital technologies. Main diagnostic challenges included limited visibility (66.7%) and restricted equipment access (33.3%)



Use of Diagnostic Methods Among Dentists in North Macedonia



According to the dentists included in this study, three-dimensional visualization allows a more precise assessment of anatomical variations and the complexity of the root canal system, contributing to more accurate treatment planning and execution of endodontic procedures. Furthermore, some participants emphasized that the use of CBCT may reduce the risk of missed canals and increase the overall success rate of endodontic therapy.

Integrating classical and modern diagnostic methods, including CBCT, enhances accuracy in restorative dental diagnostics. Digital tools like CBCT and digital radiography improve decision-making while reducing radiation exposure. Continued professional development and improved access to advanced diagnostic technologies are crucial for advancing dental care quality in Macedonia.

