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A retrospective three dimensional assessment of the prevalence of apical periodontitis and quality of root canal treatment in Mid West Indian population

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Background:

Introduction: This study aims to report a retrospective observation of the prevalence of apical periodontitis (AP) and quality of root canal treatment in cone beam computed tomography (CBCT) scans among the Mid West Indian population.

Material and Methods: A total of 1229 CBCT scans were obtained across different CBCT centers in western India. After the exclusion criteria, those that were included were divided into broadly two groups – those that were filled and those that were unfilled. Various parameters were considered such as AP, length of the root canal filled, and coronal filling.

Results: There were a significantly higher percentage of non-filled canals. Poor filling quality, inadequate coronal restoration, and missed extra canal were significantly associated with AP. Both males and females showed higher presence of AP in the non-filled teeth than filled ones (X² Chi square value M = 612.156, P < 0.00001, X² F = 1032.9092, P < 0.00001).

Conclusion: The inadequacy of the filling of the root length was a contributory factor to the higher prevalence of AP among the study population. The density of the filling and the quality of the coronal filling also significantly affected the successful outcome of the root canal treatment.