# PANORAMIC RADIOGRAPH EVALUATION OF THIRD MOLARS OF ADOLESCENTS AGED 14-19 YEARS USING MODIFIED DEMIRJIAN METHOD AND NOLLA'S METHOD

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## INTRODUCTION

This study aimed to validate the accuracy of dental age estimation by the Modified Demirjian method and Nolla's method among young adults seen in the Philippine Children's Medical Center- Pediatric Dentistry Division (PCMC-PDD) on developmental stages of the third molar.

## METHODS

A comparative cross-sectional study was conducted on 206 archived panoramic radiographs of individuals ages 14-19 years in the Philippine Children's Medical Center- Pediatric Dentistry Division from 2014 to 2020. Purposive sampling determined the subject pool. Dental age was calculated using two methods. Specific differences between dental age and chronological age was examined. Descriptive statistics (mean and standard deviation) was used. Intra-rater and inter-rater reliability of dental developmental stages were verified using Cohen's Kappa statistics. Test for coefficient of estimates determined which method was statistically significant in establishing the chronological age.

## RESULTS

The overall test of difference of Modified Demirjian and Nolla's method by comparative analysis between estimated dental age showed that Modified Demirjian method is significantly higher compared to Nolla's method (17.11 +1SD and 16.07 +1SD, respectively; p=0.00) in the examination of third molars. The test of coefficient of estimates showed Modified Demirjian method is statistically significant in chronological age determination. In the test of difference between dental and chronological age using Modified Demirjian method and Nolla's method, the maxillary left third molar, showed no significant difference.

## CONCLUSION AND RECOMMENDATION

Modified Demirjian appears to be better than Nolla's method in predicting the chronological age of Filipino subjects in the study. Moreover, it implies that maxillary left third molar is suitable in determining the chronological age of Filipinos.

Further research using CBCT imaging should be pursued to test the accuracy and reliability of Modified Demirjian and Nolla's method among the Filipino population.

KEYWORDS: Modified Demirjian method, Nolla's method, third molar, dental age, young adults