Estimation Dental Age In Rajasthani Population Using The Method Of 7 And 8 Teeth Of Demerigine

[1]Dr DN Sethi, Department of Periodontics and Oral Implantology, PMS College of Dental Science and Research Centre, Trivandrum, India.

[2]Dr Kavita Gupta, Department of Periodontics and Oral Implantology, PMS College of Dental Science and Research Centre, Trivandrum, India.

Citation Of This Article: Dr DN Sethi, Dr Kavita Gupta, "Estimation Dental Age In Rajasthani Population Using The Method Of 7 And 8 Teeth Of Demerigine", IJDSCR March - April - 2020, Vo2. – 2, Issue -2, P. No. 34-36.

Corresponding Author: Dr DN Sethi, Department of Periodontics and Oral Implantology, PMS College of Dental Science and Research Centre, Trivandrum, India .

Type of Publication: Original Research Article

Conflicts Of Interest: Nil

Abstract

Introduction

Accurate age estimation is required in the field of health sciences, as it is relevant to the timing of various treatment procedures. Differences in the development among children of the same chronological age have led to the concept of physiologic age as a means to define progress toward completeness of development or maturity in the individual child.

Aim and Objective

To evaluate the Dental age estimation using Demirijan's 8 teeth method and 7 teeth method.

Materials and methods

The sample for the study consisted of 431 individuals aged between 6-18 years. The chronological age of the patient will be obtained by official birth certificate.

Results

The estimation of dental age estimation using Demirijan's 7 teeth method showed overestimation compare with Demirjian' 8 teeth method.

Conclusion

Dental age estimation using Demiijan's 8 teeth method reduces the margin of error in correctly estimating age

Keywords

Demirijan's method .chronological age, dental maturity.

Introduction

The evolution of dentistry has taken the dentist as an expert in legal proceedings and in the field of forensic sciences. The estimation of age is important for forensic, legal and clinical work (Gupta et al., 2014). Age estimation plays a significant role in paediatric endocrinology, clinical dentistry, and archeology.

Materials and Method

Sample Description The study sample consisted of panoramic radiographs of 431 subject (219 males and

212 females) from Kota region of Rajasthan, India visiting the department of Oral and Maxillofacial Radiology for radiologic examination between the age group of 6-18 years.

Inclusion Criteria

Inclusion criteria of panoramic radiographs of subjects included were:

- Who had authentic official birth certificate.
- Free of obvious developmental, nutritional, endocrinal and mental disorder.
- Complete mandibular permanent dentition (erupted/unerupted) included 3rd molar.
- Pre – treatment radiographs

Exclusion Criteria

• Crowding of teeth where the root structure of the teeth were not clearly discernible

• Distorted or unclear panoramic radiographs

• Parents and grandparent not from Kota region.

The study was explained to the subjects and to the guardian in case of minors and written

Analytical Method

All the 431 digital panoramic radiographs were analyzed to determine dental age by 2

methods

In Demirjian's system weight scored assigned to each of the 7 left mandibular teeth

depending on 8 stage of development from calcification of the tip of the cusp to the closure of

For the 219 males the comparison of chronological age and Demirjin's 7 teeth method done using z test gave a p and r value of 0.021 (mildly signification) and 0.87 (highly significant) respectively. For the 212 female the comparison of chronological age and Demirjin's 7 teeth method done using z test gave a p and r value of 0.038 (mildly signification) and 0.69 (moderately significant)

respectively. A comparison of chronological age and Demirjin's 8

Discussion

The study of morphological parameters of teeth on dental radiographs is more reliable than most other methods for age estimation.The most commonly used radiographic method for age estimation is Demirjian's method which has been widely applied for many populations for estimating age of children and adolescents. This is because of its simplicity as well as radiographic and schematic illustrations of tooth development with descriptions provided in all works (Demirjian's et al., 1973; Levesque et al., 1980; Koshy et al., 1998). According to study conducted by Galc I et al. (Hegde et al., 2002) Demirjian's method in BH Children showed an over estimation of age which ranged from 0.60 to 2.17 years in girls and from 0.63 to 2.60 years in boys depending on the age group from a sample of 1106 OPGs. Ages compared with Demirjian's standers international maturity standards showed a lower overestimation of dental age in BH children.In another study conducted by Cruz L et al.

Many of the studies in the past decades have focused on original Demirjian's method by rating seven teeth and eight calcification stages by the authors like Hegde and Sood.(Hegde et al., 2002), Pechnikova et al. (Pechnikova et al., 2011), Farah et al. (Farah et al., 1999). As the reason of certain demerits, Chaillet and Demirjian modified the original method by including third molar tooth and by adding two extra stages, which became most popular since 2004 for age estimation in different ethnic groups. Orhan et al.(Orahan et al., 2007), Shahrzad et al. (Shahrzad et al., 2010) and Sang

Conclusion

In the present study 431 radiographs used for age estimation using Demerijian's 7 and 8 teeth method

among Kota population and it is concluded that Demerjian's 8 teeth method was found to be more reliable in estimating age of subjects aged between 6 – 18 year when compared to Demerjin's 7 teeth method. Though Demerijin's 8 teeth method is widely used for estimating age, other methods should also be tried.

References

1. of the Indian Society of Pedodontics and Preventive Dentistry 20,132-138.

2. Koshy S, Tandon S. (1998) Dental age assessment: The applicability of Demirjian's method in south Indian children.Forensic Science International 94, 73-85.

3. Levesque GY, Demirjian A.(1980) The inter-examiner variation in rating dental formation from radiographs.The Journal of Dental Research 59, 1123-1126.

4. Lee SS, Kim D, Lee S, Lee UY, Seo JS, Ahn YW, et al. (2011) Validity of Demirjian's and modified Demirjian's methods in age estimation for Korean juveniles and adolescents. Forensic Science International 211, 41-46.

5. Orhan K, Ozer L, Orhan AI, Dogan S, Paksoy CS. (2007) Radiographic evaluation of third molar development in relation to chronological age among turkish children and youth.Forensic Science International 165, 46-51.

6. Pechnikova M, Gibelli D, De Angelis D, de Santis F, Cattaneo C. (2011) The "blind ageassessment": Applicability of Greulich and Pyle, Demirjian and Mincer aging methods to a population of unknown ethnic origin.radiol med journal 116, 1105-1114.

7. Rizig OH, Elamin F, Zeidan AZ, Mohamed KKZ.(2013) Age estimation and dental maturity for Sudanese children using Demirjan's system. Journals of Medicine and Medical Science 4, 123-127.

8. Smith, B.(1991) Holly Standards of human tooth formation and dental age assessment.143-168. Shahrzad JN, Maryam K, NajmeH. (2010) Association between body mass index and dental development in 7-15 year oldchildren in the city of Isfahan. IranJournal of Mashhad Dental School 34