IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 16, Issue 12 Ver. II (Dec. 2017), PP 63-65
www.iosrjournals.org

Prevelance of Class Ii Malocclusion in Karaikal Population, India.

[1*] Dr. Senthilkumar. J, [2]Dr. Rajasigamani.K, [3] Dr. Kurinji Kumaran. N, Dr. Baskar. V[4]

[1]*Assistant Professor, Department of Dentistry, Vinayaka Missions Medical College, Karaikal.*
[2]*Professor and Head of the Department, Department of Orthodontics and Dentofacial Orthopedics, Rajah Muthiah Dental college, Annamalai University, Chidambaram.*
[3,4]*Professor, Department of Orthodontics and Dentofacial Orthopedics, Rajah Muthaiyah Dental college, Annamalai University, Chidambaram.*
*Corresponding Author: *Dr. Senthilkumar. J*

Abstract
Introduction: *Well-aligned teeth not only contributes to dental health but also equate to good acceptable physical appearance and personality of the person. Improper occlusion(Malocclusion) may affect the normal oral functions such as speech, swallowing, increased periodontal diseases leading to psychosocial problems and affecting the person's personality.*
Aims & Objectives:*1. To estimate the prevalence of Class II malocclusion in Karaikal population. 2.To find the gender association with Class II malocclusion in Karaikal population.*
Methodology: *Across-sectional study was done in Karaikal population. After getting informed consent, the patients were examined for Class II malocclusion according to Angle's classification*.
Result:*Among 1700 patients,209(12.3%) had class II malocclusion. Around 13.5% males and 10.9% females had class II malocclusion. No gender association was found.*
Conclusion: *Prevalence of Angle's class II division 1 malocclusion is high in this population. These findings are essential for thefurther plan in treatment facilities and to develop adequate training programs in the field of Orthodontics.*
Keywords: *Prevalence, Malocclusion, Angle's classification, Gender.*

Date of Submission:23-11-2017 Date of acceptance: 07-12-2017

I. Introduction

Well-aligned teeth not only contributes to dental health but also equate to good acceptable physical appearance and personality of the person. Improper occlusion(Malocclusion) may affect the normal oral functions such as speech, swallowing, increased periodontal diseases leading to psychosocial problems and affecting the person's personality.As there is increasing attention towards aesthetics in this modern world, there is anoteworthy increase in orthodontic treatment and perception of malocclusion.[1]Even though dental caries and periodontal diseases are considered as major dental diseases, malocclusion is recognized as third most common dental public health problem.[2.] Malocclusion can be defined as irregularity of teeth or a poor relationship of the dental arches.[3]In 1960, Fisk described Malocclusion as a condition in which dental structures are not in equilibrium with each other or with the cranium affecting the normal function.[4]Prevalence of malocclusion differs in thedifferent ethnic group throughout the world. In India the prevalence has been recorded as low as 19% and as high as 90%.[5]Information on malocclusion is essential for orthodontic treatment. In order to design a treatment plan and frame a public health policy in a particular population, it is necessary to know the trend of malocclusion in that population. In developed countries, such information has been established but in developing countries like India, data related to malocclusion are still lacking. Therefore, a community-based, cross-sectional study was proposed to determine the prevalence of malocclusion in Karaikal district.

II. Aims And Objectives

1) To estimate the prevalence of Class II malocclusion in Karaikal population
2) To find the gender association with Class II malocclusion in Karaikal population

III. Materials And Methods

A cross-sectional study was done among people in Karaikal (India). As the prevalence of malocclusion in India ranges from 19% to 90%, the sample size was calculated by assuming the prevalence to be 50% and relative precision of 5%. The sample size was found to be 1536. After considering 10% attrition, the sample size was finalized to be 1690. Ethical clearance was obtained from the Institutional Ethical Committee.

Inclusion criteria:

1. Age: 18 – 30 years
2. All permanent teeth present in each arch (excluding third molars).
3. No remaining deciduous teeth
4. No history of orthodontic treatment
5. No craniofacial developmental anomaly

The study was carried out for 6 months atVinayaka Mission Medical College and Hospital, Karaikal. Patients who attended the dental outpatient department were examined after getting informed consent. Even though there are many classifications for malocclusion, Angle's classification is most widely used as it is simple to classify.

IV. Angle's Classification

Class I Malocclusion:

The mandibular dental arch is in normal mesiodistal relation to the maxillary arch.

Class II Malocclusion:

Mandibular dental arch and body are in distal relation to the maxillary arch.

Class II- Division 1:

Along with class II malocclusion, the maxillary incisor teeth are in labioversion.

Class II- Division 2:

Along with class II malocclusion, the maxillary incisors are near normal anteroposteriorly or slightly in linguoversion whereas the maxillary lateral incisors are tipped labially and/or mesially.

4.1 Class III Malocclusion

The mandibular dental arch and body are in mesial relationship to the maxillary arch with the mesiobuccal cusp of the maxillary first molar occluding in the interdental space between the distal aspect of the distal cusps of the mandibular first molar and the mesial aspect of the mesial cusps of the mandibular second molar.[4] The patient's oral cavity was examined using autoclaved plane mouth mirrors inadequate lighting. Their cheeks were retracted fully to obtain the lateral view of dental occlusion. Patients were asked to bite their teeth to get a centric occlusion position and they are classified according to Angle's classification using first permanent molar. The examination was done by thesingle experienced orthodontist and the results were recorded by the assistant.

V. Statistical Analysis

Collected data wereentered into Microsoft Excel and frequencies were calculated using SPSS software version 21 and chi-square test was used to find the association between gender and malocclusion.

VI. Results

In our study, 1700 patients were examined for malocclusion, among them 912 were females and 788 were males. Patients were classified based on Angle's classification and the prevalence of class II malocclusion was found to be 12.3%(209). Around 123(13.5%) females and 86(10.9%) males had class II malocclusion. Table 1 shows the association between class II malocclusion and gender. As the p-value is > 0.05, there is no gender difference in Class II malocclusion.

Table 1: Association between class II malocclusion and Gender

Gender	**Class II Malocclusion**		**Total**
	Present	**Absent**	
Male	86(10.9%)	702(89.1%)	788
Female	123(13.5%)	789(86.5%)	912
Total	**209(12.3%)**	**1491(87.7%)**	**1700**

Chi-square value: 2.5958 p-value: 0.1(> 0.05)

Out of 209(12.3%) Class II malocclusion patients, Division 1was seen in 153(9%) patients and Division II in 56 (3.3%) patients(Table 2). Table 3 shows the distribution of division 1 and 2 class II malocclusion among gender. Among 86 males with Class II malocclusion 52(60.5%) had division 1 and

34(39.5%) had division 2. Out of 56 females with Class II malocclusion 101(82.1%) had division 1 and 22(17.9%) had division 2.

Table 2: Distribution of Division 1 and 2 Class II malocclusion

Malocclusion	Number	Percentage
Class II	209	12.3%
Class II Division 1	153	9%
Class II Division 2	56	3.3%

Table 3: Gender wise distribution of class II malocclusion

Gender	Class II Malocclusion		Total
	Division 1	Division 2	
Male	52(60.5%)	34(39.5%)	86
Female	101(82.1%)	22(17.9%)	123
Total	153(73.2%)	56(26.7%)	209

VII. Discussion

This study was carried out to discover the prevalence of class II malocclusion in Karaikal Population and to compare the findings with the world population. The present study was done among the age group of 18-30 years as the people will have permanent dentition and complete cessation of craniofacial development at this age group.Totally 1700 patients were examined and the prevalence of class II malocclusion was found to be 12.3% in this study.A studywas done in Bangalore[4] and Tumkur[6] population shows the prevalence was 22% and 10% respectively. But astudy done by Kharbanda OP in Delhi reported only 6% of Class II malocclusion.[4]A study done in Karnataka reported that females had ahigher prevalence of Class II malocclusion than males.[6]In our study, no gender association was found. It is clearly noted in table 1 that the prevalence of Class II malocclusion in female (13.5%) is similar to that of males(10.9%).Out of 12.3% of class II malocclusion, 9% had division 1 and 3.3% had division 2 class II malocclusion. A study done in Karnataka shows 8.8% division 1 and 1.2% division 2 Class II malocclusion, which is similar to our study.[6]A study done in Jaipur reported 7% division 1 and 1.9% division 2 class II malocclusion and the result is supporting our findings.[7]However, findings in our study don't differ from other population. As other studies also reported the prevalence of division 1 class II malocclusion is higher than division 2 class II malocclusion. Further, the prevalence of overall class II malocclusion is also similar to other studies.

VIII. Conclusion

Prevalence of Angle's class II division 1 malocclusion is high in this population. As Malocclusion can be treated in the developing stage with the help of Orthodontic treatment, these findings are essential for thefurther plan in treatment facilities and to develop adequate training programs in the field of Orthodontics under School dental health Programme.

References

[1]. Perillo L, Masucci C, Ferro F, Apicella D, Baccetti T. Prevalence of orthodontic treatment need in southern Italian schoolchildren. Eur J Orthod. 2010;32(1):49–53.
[2]. Brito D. I., Dias P. F., Gleiser R. Prevalence of malocclusion in children aged 9 to 12 years old in the city of Novafriburgo, Rio de Janeiro State, Brazil. Revista Dental Press de Ortodontia e Ortopedia Facial.2009;14(6):118–124.
[3]. Tak M, Nagarajappa R, Sharda AJ, Asawa K, Tak A, Jalihal S. Prevalence of malocclusion and orthodontic treatment needs among 12 15 years old school children of Udaipur, India. European Journal of Dentistry. 2013;7:45–53.
[4]. Marya CM. Epidemiology and Etiology of Malocclusion. In A Textbook of Public Health Dentistry. 1st Ed. New Delhi: Jaypee Publishers 2011.p.144-151.
[5]. Sidhu SS. Incidence of varieties of malocclusion. J IndOrthod Soc. 1968;1:17–20.
[6]. Sridharan K et al. Prevalence of Class II Malocclusion in Tumkur Population. Journal of Dental Sciences and Research.2011;2(2):14-7.
[7]. MridulaTrehan,Vinay K Chugh, Sunil Sharma.Prevalence of Malocclusion in Jaipur, India.Int J ClinPediatr Dent. 2009 Jan-Apr; 2(1): 23–25.