

**ORIGINAL RESEARCH**

# Prevalence of orthodontic malocclusion among children of 10 to 15 years of age

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**ABSTRACT**

**Background:** This study was conducted to assess the Prevalence of orthodontic malocclusion among children of 10 to 15 years of age. **Material and methods:** A hundred individuals were enrolled in this research. On the day of the test, the experiment included all students from the chosen schools who were in the 10–15 age range. No student was included in the study if they were in any way impaired medically. No school-aged children were included in the study if they were receiving or had just finished orthodontic treatment. **Results:** The data collected was carefully processed and analyzed, and the outcomes are displayed according to the several criteria that were taken into account in the research. One hundred students in grades 9 through 12 took part in the research; girls made up 45% of the sample and boys 55%. A quarter of the participants were in the 10-year-old age bracket, 19% were in the 11-year-old bracket, 29% were in the 12-year-old bracket, 8% were in the 13-year-old bracket, 2% were in the 14-year-old bracket, and 17% were in the 15-year-old bracket. **Conclusion:** The present study indicates that the prevalence of malocclusion is relatively high. It is crucial to raise awareness at the school level, as primary prevention can be the most effective means of controlling this issue.

**Keywords:** malocclusion, adolescents, orthodontics, prevalence.

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**INTRODUCTION**

Orthodontics seeks to achieve esthetic and functional improvement via mechanical therapy that moves teeth into a more ideal position. Determining the ideal dental position for each patient depends on several factors, such as the facial profile, facial balance, and aesthetic concerns.[1]

In addition to facial problems, orthodontics looks to improve the relationship between the maxillary and mandibular teeth when they come together and function. The biological and functional coordination of how teeth come together is termed occlusion. Over the years, a consensus has been reached on what features are regarded as an ideal or normal occlusion.[2]

Growing demands of the global population has unleashed the new era of a better standard of living which is rising exponentially. By the virtue of this emerging trend, the inherent desire to draw social attention is mesmerising the globe.[3] The people of the world are concerned about the oral-facial region mostly because it draws the most attention from other

people in interpersonal interactions and it dictates the vocal, physical, and emotional communication.[4] Within that, the tooth component which is also concerned with appearance plays an important role in overall aesthetic value, psychological impact, and social consequences.[5]

Hence, this study was conducted to assess the Prevalence of orthodontic malocclusion among children of 10 to 15 years of age.

**MATERIAL AND METHODS**

A hundred individuals were enrolled in this research. On the day of the test, the experiment included all students from the chosen schools who were in the 10–15 age range. No student was included in the study if they were in any way impaired medically. No school-aged children were included in the study if they were receiving or had just finished orthodontic treatment. The examiner personally administered the tests to the chosen students on school grounds. The subjects were seated on a chair with a backrest and the examinations were carried out outside in the presence of natural

daylight. In order to document the results, the Type 3 inspection procedure was utilized. Natural light was maximized by positioning the individuals such that they would get it. When necessary, artificial illumination was also provided by means of torchlight. To ensure clear communication of instructions and codes and accurate recording of findings, a trained recorder sat near to the examiner while they dictated scores into the proforma.

## RESULTS

**Table 1: Gender-wise distribution of subjects.**

| Gender  | Number of subjects | Percentage |
|---------|--------------------|------------|
| Males   | 55                 | 55%        |
| Females | 45                 | 45%        |
| Total   | 100                | 100%       |

The data collected was carefully processed and analysed, and the outcomes were displayed according to the several criteria that were taken into account in the research. One hundred students in grades 9 through 12 took part in the research; girls made up 45% of the sample and boys 55%. A quarter of the participants were in the 10-year-old age bracket, 19% were in the 11-year-old bracket, 29% were in the 12-year-old bracket, 8% were in the 13-year-old bracket, 2% were in the 14-year-old bracket, and 17% were in the 15-year-old bracket.

The percentage of maxillary and mandibular arches that indicated "no" missing teeth was 97% and 95%, respectively. In the maxillary arch, just 1% of teeth were missing, while in the mandibular arch, that number dropped to 2%. Taking into account various age groups with a P value greater than 0.05 did not yield statistically significant findings.

Out of the total, 60% did not exhibit any crowding, while 23% had crowding in one segment, and the remaining 17% had crowding in two segments. Out of the total, 90% displayed no spacing, 7% displayed one segment spacing, and the remaining 3% displayed two-segment spacing. The results in both categories did not show statistical significance when analysing different age groups, with a P value greater than 0.05.

## DISCUSSION

Malocclusion has been shown to affect not only on aesthetic value but also hampers periodontal health, increase the prevalence of dental caries, and cause temporo-mandibular joint problems.[6] It is also associated with impaired masticatory efficiency, abnormalities in speech, pain, and diminished social interaction.[7] Early diagnosis and management of malocclusion form an integral part of primary health care. Occlusal indices are necessary for research, audit, practice management, and quality assurance in orthodontic treatment. Various indices have been tried for various facets of orthodontic provision but they failed to overcome international acceptance. Among them, the DAI which was introduced by Cons et al. (1986) that links clinical and esthetic components has

been adopted as a cross-cultural index by the World Health Organization for the assessment of orthodontic treatment need.[8,9] Hence, this study was conducted to assess the Prevalence of orthodontic malocclusion among children of 10 to 15 years of age.

In this study, the data collected was carefully processed and analysed, and the outcomes were displayed according to the several criteria that were taken into account in the research. One hundred students in grades 9 through 12 took part in the research; girls made up 45% of the sample and boys 55%. A quarter of the participants were in the 10-year-old age bracket, 19% were in the 11-year-old bracket, 29% were in the 12-year-old bracket, 8% were in the 13-year-old bracket, 2% were in the 14-year-old bracket, and 17% were in the 15-year-old bracket.

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LaganàG et al [10] conducted a study to determine the prevalence of malocclusions, oral habits and the need for orthodontic treatment in a sample of 7- to 15-year-old Albanese schoolchildren. The final sample comprised 2,617 subjects (1,257 males and 1,360 females), all orthodontically untreated. Occlusal relationship and the functional analysis were recorded for all subjects. The prevalence rates for the dental health component of the index of orthodontic treatment need (IOTN) were calculated. Comparisons between genders were performed for the prevalence of malocclusions, oral habits and IOTN grades (chi-square tests). Class I, class II and class III malocclusions and asymmetries were observed in 40.4%, 29.2%, 3.2% and 27.1% of the sample, respectively. There were 2,108 subjects (80.6%) that showed oral habits, with females (82.1%) presenting with a greater prevalence rate than males (78.9%). The objective need for orthodontic treatment (grades 4 and 5 of IOTN) was registered in 1,077 subjects (41.2%). This prevalence rate was higher than those reported for other European countries. No significant differences between genders were found for the IOTN grades.

## CONCLUSION

The present study indicated that the prevalence of malocclusion is relatively high. It is crucial to raise awareness at the school level, as primary prevention

can be the most effective means of controlling this issue.

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