

**ORIGINAL RESEARCH**

# Orthodontic Treatment Needs Of 12-Year-Old School-Going Children In A Known Population: A Cross-Sectional Study.

<sup>1</sup>Dr. Apurva Vaidya, <sup>2</sup>Dr. Abida Parveen, <sup>3</sup>Dr. Ankur Sharma, <sup>4</sup>Dr. Ridhima, <sup>5</sup>Dr. Hissey Lhamu Sherpa, <sup>6</sup>Dr. Vaishali Mangotra

<sup>1</sup>Director at Chamba Smile Dental Clinic H.P., India

<sup>2</sup>Senior Lecturer, Bhojia Dental College, Baddi, HP, India

<sup>3</sup>Senior Resident, Department of Dentistry, Pt. J.L.N.G.M.C & H Chamba, H.P., India

<sup>4,5</sup>MDS, Pediatric and Preventive Dentistry, India

<sup>6</sup>Dental Surgeon, Guru Nanak Mission Hospital, Nanak Nagar, Jammu, India

**Corresponding author**

Dr. Ankur Sharma

Senior Resident, Department of Dentistry, Pt. J.L.N.G.M.C & H Chamba, H.P., India

Received: 28 Sep, 2023

Accepted: 10 Oct, 2023

**Abstract**

**Background:** This study was conducted to assess the Orthodontic Treatment Needs of 12-year-old School-going Children in a known population.

**Material and methods:** A descriptive survey using a cross-sectional approach was going to be conducted among the schoolchildren of a known community. The sample size for the prevalence study was figured up with the help of a method for determining sample size. The prevalence rate was maintained at a constant level of 40%, while the relative precision was maintained at 0.12. The total number of subjects in the sample was one hundred.

**Results:** The greatest number of participants came from public schools as opposed to private schools, both those that receive and those that do not receive financial assistance. 11 out of 50 boys needed definite treatment, 9 needed moderate treatment and 5 needed mild treatment. Among girls, 8 needed definite treatment whereas 4 and 5 needed mild and moderate treatment.

**Conclusion:** It was concluded that 42% of the subjects were in need of orthodontic treatment.

**Keywords:** children, school, orthodontic, treatment.

---

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution- Non Commercial- Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

---

**Introduction**

Oral health connects with other health systems of the body. Good oral health is important for overall well-being of an individual. Oral health is a critical component of health and hence, must be included in the provision of health care and the design of community-based programs.<sup>1</sup> Improving the health and well-being of every individual will help in improving the public health of the country. Public health is nothing but a consolidation of interdisciplinary approaches of epidemiology, biostatistics, and health services. Malocclusion is a misalignment or incorrect relation between the teeth of the two dental arches when they approach each other as the jaws close. Malocclusion is the most common oral health problem along with dental caries, gingivitis, and dental fluorosis.<sup>2</sup>

Hence, this study was conducted to assess the Orthodontic Treatment Needs of 12-year-old School-going Children in a known population.

**Material and methods**

A descriptive survey using a cross-sectional approach was going to be conducted among the schoolchildren of a known community. The sample size for the prevalence study was figured up with the help of a method for determining sample size. The prevalence rate was maintained at a constant level of 40%, while the relative precision was maintained at 0.12. The total number of subjects in the sample was one hundred. Children aged 12 years old who attended schools that were sampled and who gave both informed consent from their parents and informed assent to take part in the study were considered eligible for inclusion in the research. Subjects having a history of previous orthodontic treatment, rampant caries or any other craniofacial anomalies and syndromes were excluded from the study. The data were imported into the Statistical Package for the Social Sciences for Windows version 16, where the statistician performed the tasks of cleaning, coding,

recoding, crosschecking, as well as processing and analysis.

## Results

Gender	Number of subjects	Percentage
Males	50	50%
Females	50	50%
Total	100	100%

Out of 100 subjects, 50 were males and 50 were females.

**Table 2: Number of subjects along with need of orthodontic treatment.**

Gender	Little need	Moderate need	Definite need
Boys	05	09	11
Girls	04	05	08

The greatest number of participants came from public schools as opposed to private schools, both those that receive and those that do not receive financial assistance. 11 out of 50 boys needed definite treatment, 9 needed moderate treatment and 5 needed mild treatment. Among girls, 8 needed definite treatment whereas 4 and 5 needed mild and moderate treatment.

## Discussion

Children at the age of 12 have a good capacity to recall, retrieve, as well as apply information connected to certain experiences and events in their lives. According to some schools of thought in psychology, victims of bullying are frequently socially isolated and suffer from a variety of psychological conditions, including anxiety and depression.<sup>3</sup> During childhood, taunting and name calling can leave effects on a person that might persist well into adulthood. People who are content with their facial look and, presumably, their dental appearance, appear to have better levels of self-confidence and self-esteem than those who are unsatisfied with their facial appearance. This may be because dental appearance is closely related to facial appearance.<sup>4</sup> The presence of severe malocclusions was linked to sentiments of worthlessness, shame, and inferiority.<sup>5</sup> Hence, this study was conducted to assess the Orthodontic Treatment Needs of 12-year-old School-going Children in a known population. In this study, out of 100 subjects, 50 were males and 50 were females. The greatest number of participants came from public schools as opposed to private schools, both those that receive and those that do not receive financial assistance. 11 out of 50 boys needed definite treatment, 9 needed moderate treatment and 5 needed mild treatment. Among girls, 8 needed definite treatment whereas 4 and 5 needed mild and moderate treatment. In the present study, 42% of the subjects were in need of orthodontic treatment. A similar study in Travancore population<sup>6</sup> reported 53.3% in need of orthodontic treatment. However, studies done by Singh et al,<sup>7</sup> Amado et al<sup>8</sup> showed 68.4 and 83.8% in need of orthodontic therapy. This difference could be because the latter studies were done on the higher age-range subjects. Also, since the latter studies are done

on subjects in Himachal Pradesh and Kerala, there might be racial differences. Yadav S et al<sup>9</sup> assessed the need for orthodontic treatment using the Index of Orthodontic Treatment Need (IOTN) between the 12–14-year-old students of Kanpur schools and to evaluate the difference in orthodontic treatment need and demand in terms of genders in Dental Health Component (DHC) and Aesthetic Component (AC). Materials and Methods: A cross-sectional descriptive study was accomplished on 305 subjects (120 male and 185 female) students aged 12–14 years, were clinically examined. DHC was evaluated by a calibrated examiner. AC was determined using 10 standard photographs shown to students. Data were analyzed using chi-squared test to determine differences in treatment needs between subgroups of the subjects. Results: There was a definite need for orthodontic treatment amongst the females (42.7%) than the males (35%). The results of the present study unveil that 72.3% subjects demanded orthodontic treatment from the study sample (51.8% using the DHC-IOTN component and 92.3% using the AC-IOTN) component which means that demand exceeds need. Conclusion: According to DHC of the IOTN, approximately one-third of the population had a definite need for orthodontic treatment, and crowding was the most prevalent malocclusion.

## Conclusion

It was concluded that 42% of the subjects were in need of orthodontic treatment.

## References

1. National Institute of Dental and Craniofacial Research. Chapter 1: the meaning of oral health. Rockville (MD): NIH; 2000.
2. Winslow CE. The untilled field of public health. Mod Med. 1920;2:183–191.
3. Kok YV, Mageson P, Harradine NW, Sprod AJ. Comparing a quality of life measure and the Aesthetic component of the index of orthodontic treatment need (IOTN) in assessing orthodontic treatment need and concern. J Orthod. 2004 Dec;31(4):312–318.
4. Reddy S, John J, Sarvanan S, Arumugham IM. Normative and perceived orthodontic needs among 12 year old school children in Chennai, India—a

- comparative study. *Appl Tech Innov.* 2010 Nov;3(3):40–47.
5. Premkumar S. Graber: incidence and recognition of malocclusion. In: Premkumar S., editor; *Graber's textbook of orthodontics: basic principles and practice.* India: Elsevier; 2009. pp. 155–200.
  6. Roopesh R, Manoj KM, Sidharthan B, Manjusha KK. Evaluation of prevalence and severity of malocclusion in South Travancore population. *J Int Oral Health.* 2015 Jul;7(7):94–97.
  7. Singh S, Sharma A, Sandhu N, Mehta K. The prevalence of malocclusion and orthodontic treatment needs in school going children of Nalagarh, Himachal Pradesh, India. *Indian J Dent Res.* 2016 May-Jun;27(3):317–322.
  8. Amado JN, Sierraa AM, Gallon A, Alvarez C, Baccettic T. Relationship between personality traits and cooperation of adolescent orthodontic patients. *Angle Orthod.* 2008 Jul;78(4):688–691.
  9. Yadav S, Panda S, Priya K, Verma P, Srivastava N, Kour S. *Journal of Applied Dental and Medical Sciences.* NLM ID: 101671413 ISSN:2454-2288.