

## Original Research

### Assessment of prevalence of malocclusion in primary dentition

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#### ABSTRACT:

**Background:** Dental arches can develop abnormally in both the primary and permanent dentition, a condition known as malocclusion. The present study was conducted to assess prevalence of malocclusion in primary dentition. **Materials & Methods:** 1280 school children aged 3-6 years of both genders were selected. Oral examination was done to record the parameters such as molar relation, canine relation, overjet, overbite, etc. **Results:** Out of 1280 children, 600 were males and 680 were females. Canine relation in males and females was class I seen in 60% and 62%, class II in 39% and 36.5% and class III in 1% and 1.5% respectively. Molar relation in males and females was FTP in 61% and 63%, MS in 36% and 35% and DS in 3% and 2% respectively. Overjet was ideal in males and females in 89% and 87%, increase in 10% and 11% and decrease in 1% and 2% respectively. Overbite in males and females was ideal in 79% and 78%, increase in 15% and 14% and decrease in 6% and 8% respectively. The difference was significant ( $P < 0.05$ ). **Conclusion:** The most prevalent occlusal traits in our study regardless of gender, were class I canine relation, flush terminal plane molar relation, ideal overjet, and overbite.

**Keywords:** Children, Dental arches, malocclusion

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#### INTRODUCTION

Dental arches can develop abnormally in both the primary and permanent dentition, a condition known as malocclusion.<sup>1</sup> It is well known that there is a significant likelihood of developing comparable occlusal issues in the permanent teeth that follow if differences in the occlusal characteristics of the deciduous dentition are discovered. Malocclusion is typically caused by a combination of acquired, congenital, and inherited causes.<sup>2</sup> The degree of malocclusion can lead to functional impairment, aesthetic discomfort, and disability. When treating malocclusion, the proverb "the early age is the golden age" is always applicable.<sup>3</sup> Preventive and interceptive techniques can be used to treat a growing malocclusion if it is discovered early on. Characteristics include minimal overjet, overbite, spaced dentition, and flush terminal plane molar relationship.<sup>4</sup>

The deciduous teeth fully erupt and form their occlusal relationship at the age of three years.<sup>5</sup> This

relationship lasts until the first permanent tooth erupts in the oral cavity at the age of six years. Understanding the connection between the primary and early permanent dentition is crucial for early interceptive treatment.<sup>6,7</sup> The present study was conducted to assess prevalence of malocclusion in primary dentition.

#### MATERIALS & METHODS

The present study was conducted on 1280 school children aged 3-6 years of both genders. All parents were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. Oral examination was done to record the parameters such as molar relation, canine relation, overjet, overbite, etc. Data thus obtained were subjected to statistical analysis. P value  $< 0.05$  was considered significant.

**RESULTS**

**Table I Distribution of patients**

Total- 1280		
Gender	Male	Female
Number	600	680

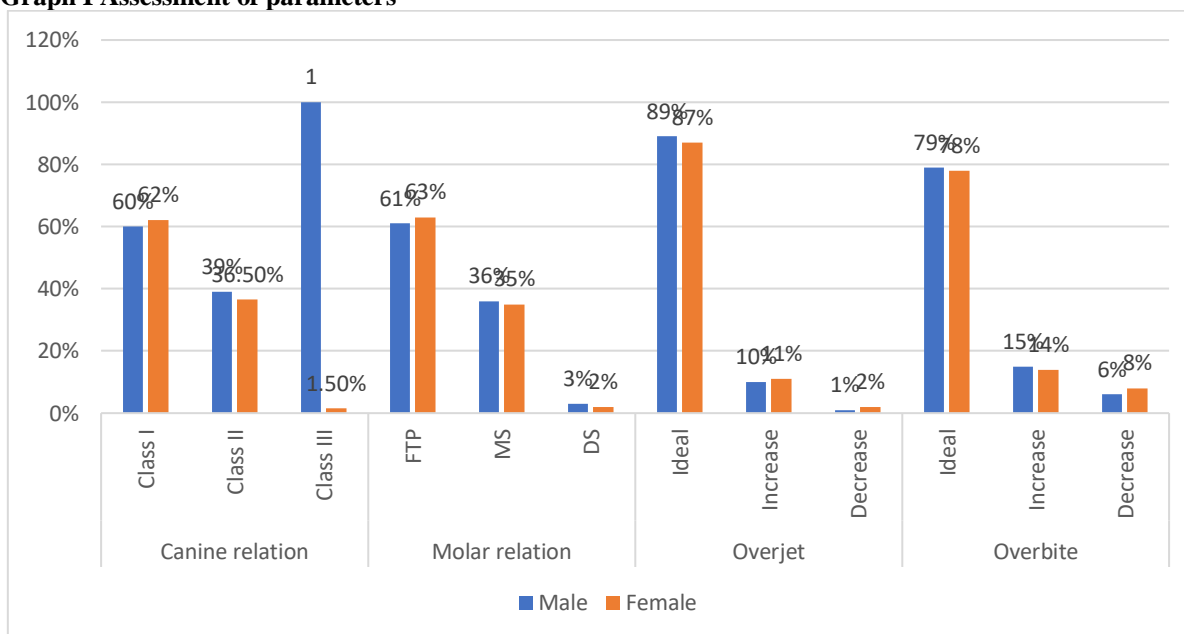
Table I shows that out of 1280 children, 600 were males and 680 were females.

**Table II Assessment of parameters**

Parameters	Variables	Male	Female	P value
Canine relation	Class I	60%	62%	0.02
	Class II	39%	36.5%	
	Class III	1%	1.5%	
Molar relation	FTP	61%	63%	0.03
	MS	36%	35%	
	DS	3%	2%	
Overjet	Ideal	89%	87%	0.05
	Increase	10%	11%	
	Decrease	1%	2%	
Overbite	Ideal	79%	78%	0.04
	Increase	15%	14%	
	Decrease	6%	8%	

Table II shows that canine relation in males and females was class I seen in 60% and 62%, class II in 39% and 36.5% and class III in 1% and 1.5% respectively. Molar relation in males and females was FTP in 61% and 63%, MS in 36% and 35% and DS in 3% and 2% respectively. Overjet was ideal in males and females in 89% and 87%, increase in 10% and 11% and decrease in 1% and 2% respectively. Overbite in males and females was ideal in 79% and 78%, increase in 15% and 14% and decrease in 6% and 8% respectively. The difference was significant ( $P < 0.05$ ).

**Graph I Assessment of parameters**



**DISCUSSION**

Malocclusion is linked to significant subjectivity and distortion in the perception of treatment need. Numerous studies demonstrate the connection between poor health-related quality of life and malocclusion or the necessity for orthodontic treatment.<sup>8</sup> India is one of several developing nations that is having difficulty eradicating dental and medical illnesses.<sup>9</sup> The primary cause of this is the poor

execution of preventive dental healthcare initiatives, which require a solid foundation of epidemiological data.<sup>10</sup> The present study was conducted to assess prevalence of malocclusion in primary dentition. We found that out of 1280 children, 600 were males and 680 were females. Ravichandra KS et al<sup>11</sup> assessed the prevalence of malocclusion in primary dentition of children. About 1,540 children of age 3–5 years from 10 nursery and 10 primary schools were selected

across Rohtak city. The children were selected by stratified random technique and examined at their respective schools. Class I canine relations was seen in 66.2%, flush terminal plane, mesial step, and distal step were observed in 60%, 30.8%, 9.2%, respectively. Midline shift was observed in 1.8% in maxilla and 4% cases in mandible. Rotations were more prevalent in mandibular dentition (26%). Supernumerary teeth were found to be 0.4% in maxillary arch. Spacing was reported in 81.9% in maxillary dentition and 69% in mandibular dentition. Increased overjet and overbite was present in 10.3% and 30.9%, respectively. Anterior crossbite and anterior open bite were seen in only 1% and 1.9% children, respectively with statistically significant higher prevalence in males. Prevalence of attritional facets were reported 13% in enamel and 8% in dentin. We found that canine relation in males and females was class I seen in 60% and 62%, class II in 39% and 36.5% and class III in 1% and 1.5% respectively. Molar relation in males and females was FTP in 61% and 63%, MS in 36% and 35% and DS in 3% and 2% respectively. Overjet was ideal in males and females in 89% and 87%, increase in 10% and 11% and decrease in 1% and 2% respectively. Overbite in males and females was ideal in 79% and 78%, increase in 15% and 14% and decrease in 6% and 8% respectively. Singh et al<sup>12</sup> recorded prevalence of malocclusion and orthodontic treatment need in children. Baby-ROMA Index and Index of Orthodontic Treatment Needs (IOTN) were tested on 400 children, which were divided into two groups of 200 in each group, referred from the Out Patient Department and school camps. Intra-reliability test showed higher reproducibility of the index. It is shown that around 70% of the patient presented malocclusion from both indices.

Abdellatif HM et al<sup>13</sup> determined the prevalence of primary dentition malocclusion and its linked risk indicators among a group of Saudi preschool children. The prevalence of malocclusion was 59.1% among the study participants. A deep overbite and increased overjet were found in 26.23% and 25.11%, respectively. Arch space problems were reported, including missing primate spaces in 24.12%, missing developmental spacing in 27.93%, and crowding in 14.1%. An association between mothers aged 25 years and younger at childbirth was linked with their child's malocclusion in the primary dentition

The shortcoming of the study is small sample size.

## CONCLUSION

Authors found that the most prevalent occlusal traits in our study regardless of gender, were class I canine relation, flush terminal plane molar relation, ideal overjet, and overbite.

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