

## Awareness and Willingness towards Orthodontic Treatment among 11-14 Year Old Municipal School Children of Ahmadabad

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**ABSTRACT:-** Oral health is multi-factorial and is an inseparable part of general health. Facial appearance plays a major role in all the stages of human life, especially during the pre-adolescent and adolescent phases. This is because these children develop increased self-consciousness to their appearance which leads them to be more concerned about their overall health including physical and mental health. Oral health knowledge and awareness are considered to be essential pre-requisites for health-related behaviour.<sup>1</sup> Malocclusion can lead to various oral health issues along with social and psychological problems. Hence an investigation of the malocclusion status in growing children to intercept the same is required. Contemporary Orthodontics has now become a specialty that no longer is a rich man's privilege. Especially in a developing country like India, Orthodontics is reaching out to low-income / less privileged families too. Thus a short survey including 150 municipal school children of Ahmedabad was carried out by Department of Orthodontics and dentofacial Orthopaedics, AMC Dental College and Hospital, Ahmedabad, to assess awareness and willingness towards Orthodontic treatment in low income strata. Class II malocclusion with forwardly placed teeth (21.3%), followed by Class I malocclusion with crowding(20.7%) were found to be maximally aware of their malocclusion. Lack of time (36.9%) and parents' denial (16.7%) were the main obstacles that resulted in unwillingness to undergo Orthodontic treatment. There was a statistically significant correlation between the obstacles causing reluctance towards Orthodontic treatment and Education of the mother. ( $p < 0.005$ )

**Keywords:** Awareness, Education of parents, Low income strata, Obstacles, Orthodontics, Willingness

### I. INTRODUCTION

Awareness is the state or ability to perceive, to feel or to be conscious. Awareness forms the basis for planning oral health. The society has collective consciousness. Absence of scientifically supported background knowledge of a society can severely hinder any attempt of change. Thus, a complete understanding of social factors and fears are absolutely necessary before bringing any change by active intervention. Only a careful scientific analysis of factors pertaining to willingness and awareness towards Orthodontic treatment in the low income strata is the need of the hour for oral health-care programmers.

### II. AIMS AND OBJECTIVES:

The aim of this short epidemiological survey was to assess the awareness about malocclusion as well as orthodontic treatment and willingness to undergo orthodontic treatment among the middle school age children of 11-14 yrs of various municipal schools of Ahmedabad. It was aimed to reach out to the children of less privileged homes and have a significant influence on them, their peers, family members and thereby increasing awareness in the society by and large.

Objectives were:

1. To identify the prevalence of malocclusion in the sample population.
2. To assess awareness and willingness in sample population.
3. To correlate the awareness and willingness towards Orthodontic treatment with the parent's education.
4. To identify the most common reason for seeking Orthodontic treatment and Obstacles causing reluctance to Orthodontic treatment in sample population.

### III. MATERIAL AND METHODS

A cross-sectional epidemiological survey was planned in the municipal schools of Ahmedabad, Gujarat state. A camp was organized in these schools by A.M.C. Dental College and Hospital, Ahmedabad by the Department of Public Health Dentistry. Ethical clearance to conduct the survey was obtained from the AMC Dental College and Hospital Review and Ethical Committee. Prior permission to conduct the survey was taken from the concerned school authorities.

150 Children in the age group of 11-14 years were included in the study and constituted the study population. Children who obtained written informed consent from parents to participate in the study were included. Exclusion criteria were- history of previous orthodontic treatment, craniofacial anomalies like cleft lip and palate, facial hemiatrophy, cleidocranial dysplasia etc.

Clinical examination of these children was done by a single examiner to assess the type of malocclusion, skeletal pattern and soft tissue parameters. and A pre-structured self-administered questionnaire consisting of 7 questions with multiple answers was then filled by the same examiner to assess the awareness and willingness of these children towards Orthodontic treatment. The mode of communication was Gujarati language. Their responses were noted. (Figure 1)

After the survey, an oral health lecture was given to all the children in the school to create awareness about Dental health and Orthodontic treatment.

**Figure 1: Self- administered questionnaire**

**AWARENESS AND WILLINGNESS TOWARDS ORTHODONTIC TREATMENT AMONG 11-14 YEAR OLD MUNICIPAL SCHOOL CHILDREN OF AHMEDABAD**

**PERSONAL DETAILS:**

Name:

Age/Sex:

Address:

Date:

**DENTAL FINDINGS:**

Class I/ II/ III

Overbite:

Overjet:

Growth pattern:

Crossbite:

**CLINICAL FINDINGS:**

Lips: competent/ Potentially competent

Smile: Symmetric/ Asymmetric

Profile: Staright/Convex/ Concave

**QUESTIONNAIRE FORM:**

Q1. Qualification of parents: Father:

Mother:

Q2. Earning member of family: Father / Mother

Q3. Belong to : Joint/ Nuclear family

Q4. Do you have any problem with your teeth ? Yes/ No

Q5. If yes, what is it about?

- Correction of irregular teeth
- Replacement of missing teeth
- Gum problems
- Pain in teeth

Q6. Do you think you require braces? Yes/ No

If yes, Reason?

- Irregular teeth
- Spacing
- Forwardly placed teeth
- Smile correction

Q7. What are reasons for not availing Rx till now?

- Unawareness
- Esthetically unacceptable
- Lack of time
- Parent' denial
- Orthodontist asked to wait

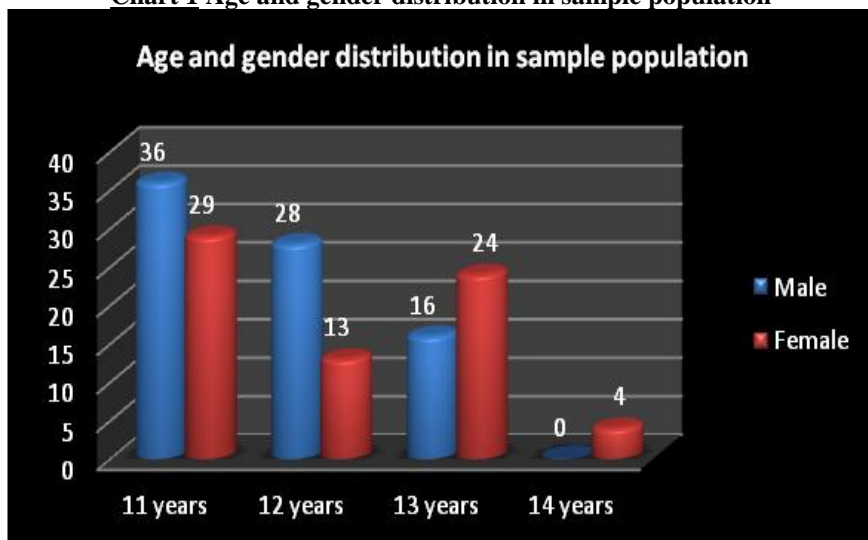
#### **IV. STATISTICAL ANALYSIS**

Frequency distribution and Chi Square tests were applied to the data and analyzed using Statistical Package for Social Sciences software (SPSS, Version 20.0).

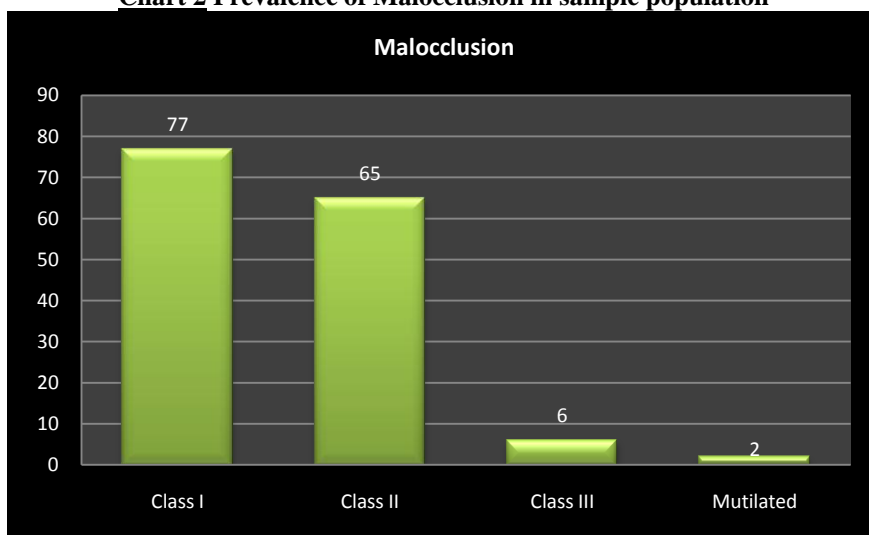
## V. RESULT

The age and gender distribution seen in sample population can be appreciated from Chart 1. Maximum prevalent malocclusion was Class I followed by Class II and Class III . 2 cases had mutilated dentition (missing permanent molars) (Chart 2)

**Chart 1 Age and gender distribution in sample population**

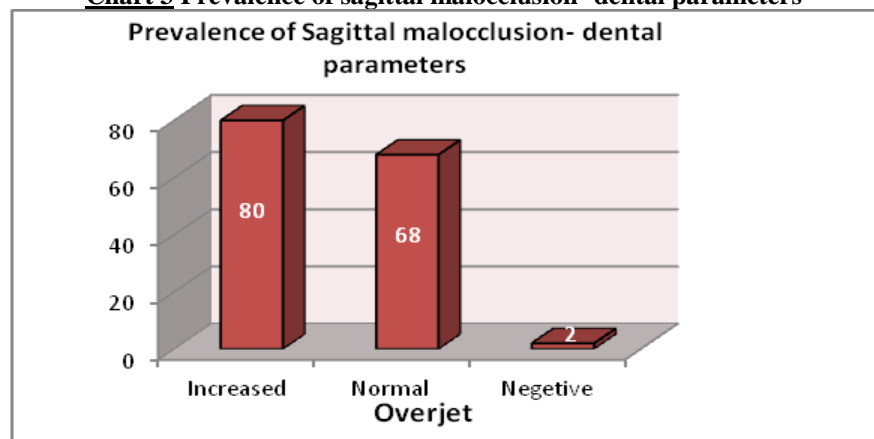


**Chart 2 Prevalence of Malocclusion in sample population**

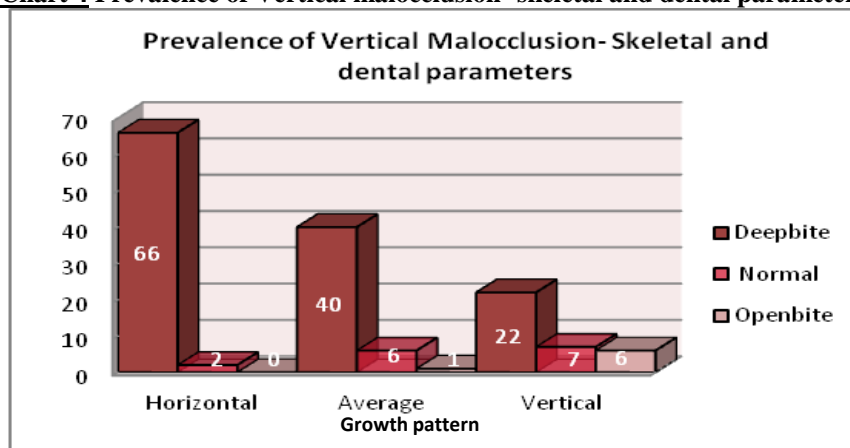


Prevalence of Sagittal and Vertical parameters of malocclusion (skeletal and dental) are represented in Chart 3 and 4 respectively. Soft tissue parameters are represented in Chart 5.

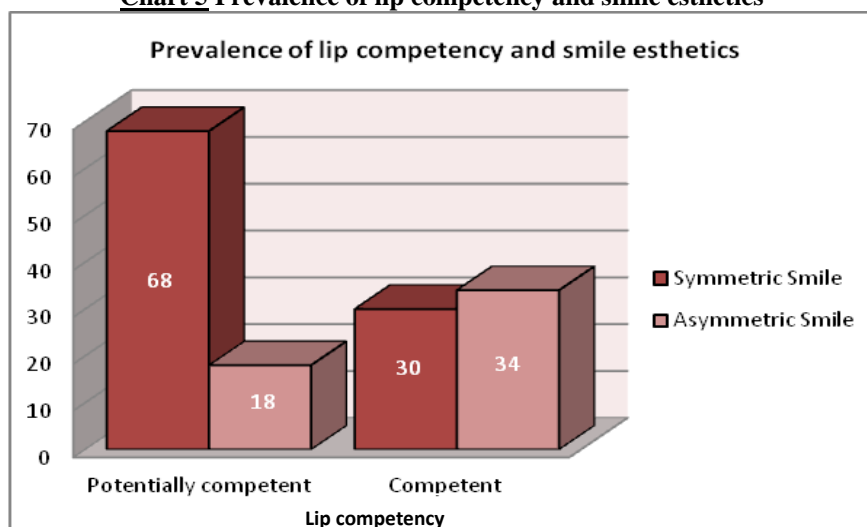
**Chart 3 Prevalence of sagittal malocclusion- dental parameters**



**Chart 4 Prevalence of Vertical malocclusion- skeletal and dental parameters**



**Chart 5 Prevalence of lip competency and smile esthetics**



Reasons for seeking Orthodontic treatment and obstacles causing reluctance in the same are represented in chart 6 and 7 respectively. Chart 6 represents that forwardly placed and irregular teeth were the most common reasons for children being aware of Orthodontic treatment. Also, the most common obstacle causing reluctance in undergoing Orthodontic treatment is lack of time and ignorance of parents. (Chart 7)

**Chart 6 Reasons for seeking Orthodontic treatment**

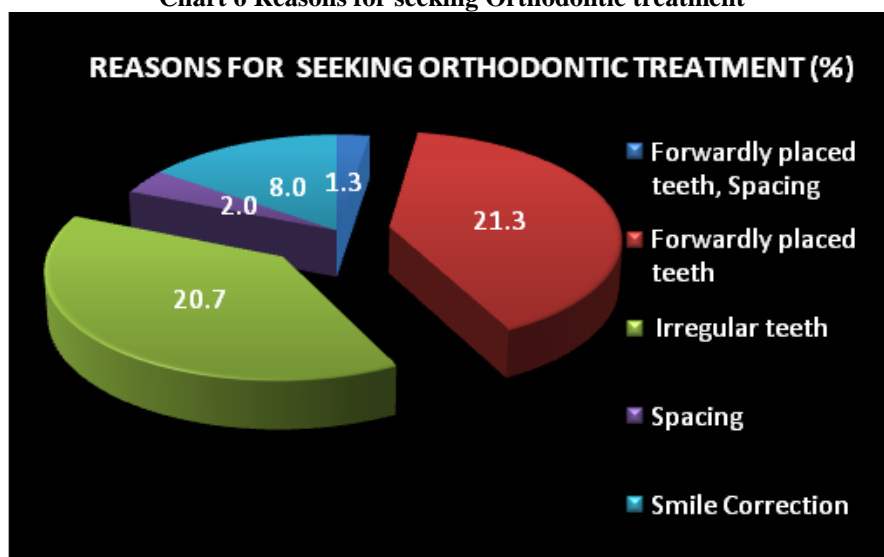


Chart 7 Obstacles causing reluctance in Orthodontic Rx

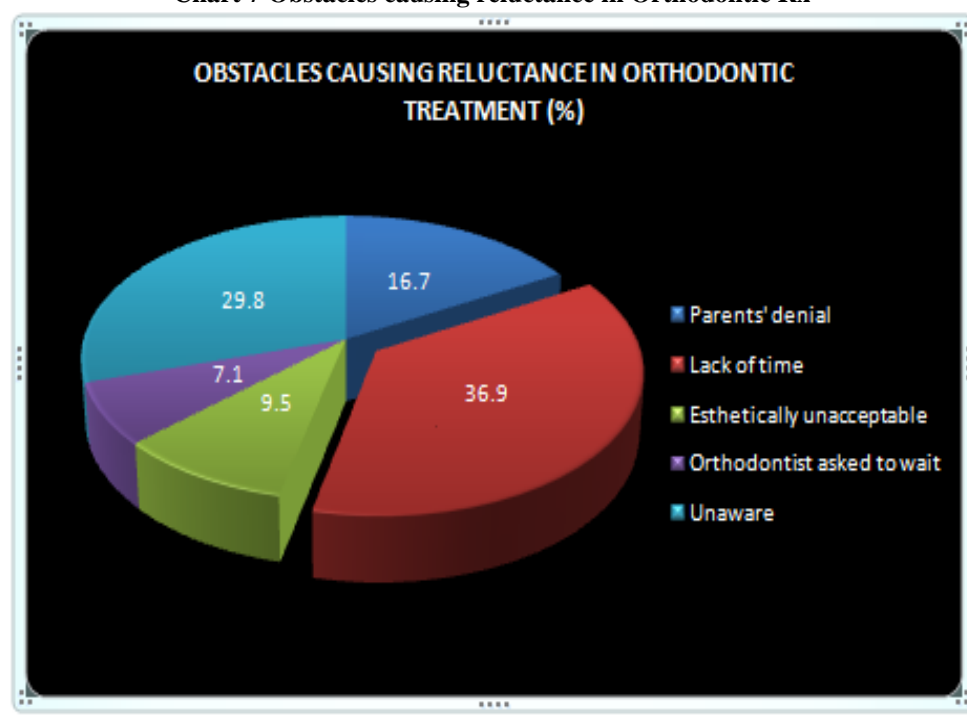


Table 1 Chi-square test for association between Willingness and Gender

		Females	Males	p value
Willingness	Yes	33	14	<0.001
	No	37	66	

Table 2 Chi-square test for association between Willingness and Lip competency

		Potentially competent lips	Competent lips	p value
Willingness	Yes	19	28	0.005
	No	67	36	

Table 3 Chi-square test for association between Willingness and Profile

Willingness	Profile	Convex	Straight	Concave	p value
	Yes	28	17	2	0.012
	No	83	19	0	

Table 4 Chi-square test for association between Obstacles and education of mother

		Education of mother				p value
		College Graduate	Higher education	Secondary education	Uneducated	
Obstacles	Parents' denial	2	2	4	6	0.004
	Lack of time	1	5	3	22	
	Esthetically unacceptable	3	3	0	2	
	Orthodontist asked to wait	1	3	1	1	
	Unaware	3	2	11	9	

## **VI. DISCUSSION**

Attitudes and perceptions towards dental appearance differ among populations and individuals. The level of dental health knowledge and positive dental health attitude are associated with the level of education and income as demonstrated by studies in the past.<sup>2,4</sup> There have been few studies done in India in different states assessing the awareness regarding Orthodontic treatment which were based on general knowledge of children regarding Orthodontic treatment.<sup>5,6,7</sup> However this study was done to assess the awareness among children with respect to their own malocclusion, followed by assessment of willingness for the same.

The data thus collected for assessing all the soft tissue, hard tissue and dento-alveolar parameters in all 3 planes were subjected to statistical analysis to find their association with awareness and willingness of these children. Tests were also done to find out association between the awareness and willingness and education status of father and mother.

All the age groups revealed no difference in Willingness towards Orthodontic treatment with  $p > 0.5$ . While associating Willingness with gender, it was found that Females were more willing to undergo the treatment as compared to males with a statistically significant difference with  $p < 0.001$ . (Table 1) This is in accordance with the results as illustrated by Pandey et al.<sup>7</sup> This can be explained with high esthetic concerns in Females as compared to Males.

This study has a unique feature of associating the malocclusion of the sample population with their own awareness towards their malocclusion and willingness to undergo the Orthodontic treatment for the same. Also, we took the soft tissue parameters into consideration in addition to dental and skeletal parameters. There was a statistically significant association between willingness and Soft tissue parameters- lip competency and profile with  $p < 0.005$  and  $p < 0.05$ , respectively. (Table 2,3) This draws more attention towards the soft tissue paradigm shift in the management of Orthodontic patients.

There was no correlation between the awareness and willingness with education of father ( $p > 0.05$ ). However, there was a statistically significant association between the the obstacles causing reluctance towards Orthodontic treatment and education of mother with  $p$  value  $< 0.005$ . (Table 4) Thus, the quote, "When you educates a mother, you educate a family" stands true in our study.

The study was carried out as there is a paucity of data in the Indian context about the awareness of orthodontic treatment among school children especially those coming from the low-income strata. Pandey et al.<sup>7</sup> included the low income strata as one of their groups and found a positive correlation of income of parents and awareness towards Orthodontic treatment. Thus, the study was performed to assess awareness and willingness in less privileged social group. School children are considered important target group for various health education activities with the underlying objective of inculcating healthy lifestyle practices to last a lifetime. Keeping this in mind, a oral health lecture was delivered to children in all the schools to raise awareness about Dental health and Orthodontic treatment to influence their peers, family members, and thereby increasing the awareness in the society.

## **VII. CONCLUSION**

Self-awareness is a dynamic process, not a static phenomenon.<sup>8</sup> Proper dental education of growing children and their parents is the need of the hour as interceptive Orthodontics when carried out in this age group can lessen the severity of developing malocclusion and thus reduce the total Orthodontic treatment time and cost.

## **REFERENCES**

- [1]. Wright FA. Children's perception of vulnerability to illness and dental disease. Community dentistry and oral epidemiology. 1982 Feb 1;10(1):29-32.
- [2]. Chen MS. Children's preventive dental behavior in relation to their mothers' socioeconomic status, health beliefs and dental behaviors. ASDC journal of dentistry for children. 1986;53(2):105-9.
- [3]. Kawamura M, Iwamoto Y, Wright FA. A comparison of self-reported dental health attitudes and behavior between selected Japanese and Australian students. Journal of dental education. 1997 Apr 1;61(4):354-60.4. Hamilton ME, Coulby WM (1991) Oral health knowledge and habits of senior elementary school students. J Public Health Dent 51: 212-219.
- [4]. Siddegowda R. An Epidemiological Survey on the Awareness towards Orthodontic Treatment among Middle School and High School Children of Karnataka State. Journal of Cell Science & Therapy. 2015 Jan 1;6(4):1.

- [5]. Baheti MJ, Toshniwal NG. Awareness towards Orthodontic Treatment in Children of Age Group 12 to 15 years along with their Parents in the High-Schools in Maharashtra.
- [6]. Pandey M, Singh J, Mangal G, Yadav P. Evaluation of awareness regarding orthodontic procedures among a group of preadolescents in a cross-sectional study. *Journal of International Society of Preventive & Community Dentistry*. 2014 Jan;4(1):44.
- [7]. Rochat P. Five levels of self-awareness as they unfold early in life. *Consciousness and cognition*. 2003 Dec 1;12(4):717-31.

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