

An Orthodontist Day Out - Awareness & Desire for Orthodontic Treatment in School Children & Their Parents - A Household Survey

Abstract

Aim: The aim of this study was to determine awareness in children and parents about orthodontic treatment. **Material and methods:** This cross sectional study was conducted among 500 school children and their parents (mean age 12-15 year). A self-administered structure questionnaire proforma was used for children and their parents separately. Kappa (k) weighted kappa (kw) were used test-retest reliability were internal consistency were assessed by Cronbach's alpha (α) coefficients ($k=0.86$), ($kw=0.9$), ($\alpha=0.86$). **Results:** The overall awareness of orthodontic awareness of orthodontic treatment among the school children was 51% and a parent was 45.9%. The knowledge about aesthetic was significantly higher among girl as compare to boys. **Conclusion:** Awareness of children and their parents about orthodontic treatment was not sufficient and only 50% of subjects knew about the field.

Key Words

Orthodontic treatment; malocclusion; awareness; pre- adolescents

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INTRODUCTION

Awareness is the state or quality of being aware of something. Health is multi-factorial and multi-dimensional; Influenced by factors such as genetics, lifestyle, environment, socio-economic status and others.^[1] Facial appearance is one of the most important physical characteristics in the development of one's self-confidence. Tooth malalignment may cause a number of problems, including social discrimination due to different facial appearance, oral function problems.^[2] Malocclusion described a spectrum of deviation from the normal or ideal occlusion to very severe anomalies. The speciality of orthodontics relates to facial & occlusal development & involves the supervision, interception & correction of occlusal & dentofacial anomalies. Patients with malocclusion have no specific signs and symptoms, but may complain about esthetics, difficulty with speech & mastication. Prevalence of malocclusion has been

found to vary in different areas of India ranging from 20-43%. Globally there has been an increase in the awareness of orthodontics as a dental speciality among children as well as adults.^[3] This increased awareness could be attributed to several factors-particularly increase in the value placed on dental aesthetics & physical appearance. Aesthetic awareness has also been associated with increasing influence of the entertainment media. People are fascinated by the beautiful & confident smiles of models and public figures in popular media & are thus motivated to improve their appearance.^[6] Children & adolescents comprise the bulk of orthodontic patients. Consequently, their parents may have an important role in treatment commencement & compliance until the end of it. It has been shown that the most important factor of motivation for orthodontic treatment is parents.^[4] It has been recognised that individuals with malocclusion might develop feelings of shame, embarrassment, and

Table 1: Distribution of participated children

Age Group(yrs.)	Male	%	Female	%	Total	%
12.00	21	4.2	25	5	46	9.2
13.00	55	11	104	20.8	159	31.8
14.00	75	15	46	9.2	121	24.2
15.00	99	19.8	71	14.2	170	34
16.00	4	0.8	0	0	4	0.8
Total	254	50.8	246	49.2	500	100

Table 2: Distribution of Parents

Age Group(yrs)	Male	%	Female	%	Total	%
21-30	19	3.8	14	2.8	33	6.6
31-40	172	34.4	173	34.6	345	69
41-50	64	12.8	49	9.8	113	22.6
51-60	7	1.4	2	0.4	9	1.8
Total	262	52.4	238	47.6	500	100
Mean		38.29		37.55		37.94
SD		4.98		4.40		4.72

Table 3: Response of children

Question No	Yes	No	Don't Know	χ^2 -value	df	Significance
Q1	188	311	1	292.39	2	Significant
%	34	56.2	0.2			
Q2	124	282	94	122.41	2	Significant
%	22.4	51.0	17			
Q3	198	269	33	175.92	2	Significant
%	35.8	48.6	6.0			
Q4	179	221	100	45.29	2	Significant
%	32.4	40	18.1			
Q5	228	233	39	146.76	2	Significant
%	41.2	42.1	7.1			
Q6	165	278	57	146.54	2	Significant
%	29.8	50.3	10.3			
Q7	234	224	42	140.17	2	Significant
%	42.3	40.5	7.6			
Q8	328	119	53	247.32	2	Significant
%	59.3	21.5	9.6			

χ^2 -tabulated value= 4.99, If Calculated value is more than tabulated value result will be significant

they may feel shy in social contacts, and that facial appearances –related body self-concept might be affected.^[5] Hence this study was undertaken with a purpose of to determine the awareness regarding malocclusion and desire for orthodontic treatment among a school children and their parents of Rajnandgaon city Chhattisgarh India. The purposes of the present study therefore determine the awareness regarding malocclusion & desire for orthodontic problem & treatment among school children & their parents.

MATERIALS & METHODS

The population of Chhattisgarh is very diverse & consists of all ethnic groups. The state of Chhattisgarh is located in the central part of India. Although Chhattisgarh state is a small state in India by land area comprising population of 25.6 million according to census 2011.^[7] A cross sectional structured questionnaire interview and household

survey was conducted among 500 school children and their parents (mean age: 12-15 years) during December-January 2013. Prior to the survey the ethical committee clearance is obtained from Ethical Committee of Chhattisgarh Dental College & Research Institute, Rajnandgaon, India. The sampling frame consisted of the list of schools which was obtained from DEO office Rajnandgaon city. The multistage and random sampling technique was followed. The Rajnandgaon city was divided into 5 zones viz. North, South, East, West and Central Zone. There were total 59 schools, and from each zone two schools were selected (one government and one private) at random. The school authorities were approached and nature of the study was explained and permission was obtained. The address of correspondence and interviewing of parents of school children was obtained from school register. Household survey was conducted to

Table 4: Response of parents

Question No	Yes	No	Don't Know	χ^2 -value	df	Significance
Q1	77	419	4	589.03	2	Significant
%	13.9	75.8	0.7			
Q2	254	216	30	172.43	2	Significant
%	45.9	39.1	5.4			
Q3	68	75	357	326.18	2	Significant
%	12.3	13.6	64.6			
Q4	358	80	62	330.44	2	Significant
%	64.7	14.5	11.3			
Q5	255	182	63	112.70	2	Significant
%	46.1	32.9	11.4			
Q6	457	17	26	758.88	2	Significant
%	82.6	3.1	4.7			
Q7	175	30	295	211.30	2	Significant
%	31.6	5.4	53.3			
Q8	75	34	391	457.97	2	Significant
%	13.6	6.1	70.7			

χ^2 -tabulated value= 4.99, If Calculated value is more than tabulated value result with be significant

Table 5: Result of Question 1

	Q1			Total
	Yes	No	Don't Know	
Male	85	168	1	254
Female	103	143	0	246
Total	188	311	1	500
χ^2 -value	4.60			
p-value	0.10, NS, p>0.05			

Table 6: Result of Question 2

	Q2			Total
	Yes	No	Don't Know	
Male	61	146	47	254
Female	63	136	47	246
Total	124	282	94	500
χ^2 -value	0.25			
p-value	0.87, NS, p>0.05			

interviewing of parents. Written informed consent was obtained from study population. The proforma consists of three parts - 1st part consists of demography profile of study participants, second part consists of 8 items questionnaire for children and 3rd part consists of 8 items questionnaire for parents thus total 16 items self-designed structured questioner were used to assess the awareness to malocclusion among children and their parents. Two set of questionnaire being prepared, one for the parent and one for the children. The answers should be given either in Yes, No, or Don't Know.

Set of Questionnaire for children:

1. Do you experience any dental pain?
2. Are you afraid of a dentist?
3. Are you satisfied with the arrangement of your teeth ?
4. Do you want to have your teeth straighten?
5. Have you seen any one with braces?
6. Do you want to have your teeth straighten?

7. Do you know about rearrangement?
8. Do you considered well aligned teeth important for overall facial appearances?

Set of Questionnaire for parents:

1. Are you afraid of a dentist?
2. Do you heard about orthodontist?
3. Do you think a tooth can move?
4. Do you know what orthodontic treatment is?
5. Do you think that your child needs orthodontic treatment?
6. Do you consider well aligned teeth important for overall facial appearance?
7. Is orthodontic treatment expensive?
8. Are you aware of the time required for treatment?

The single trained interviewer described the purpose and process of the survey. The participants those who were present and no previous history of orthodontic treatment were included, those who were absent on the day of survey were excluded.

Table 7: Result of Question 3

	Q3			Total
	Yes	No	Don't Know	
Male	111	127	16	254
Female	87	142	17	246
Total	198	269	33	500
χ^2 -value	3.64			
p-value	0.16, NS, $p > 0.05$			

Table 8: Result of Question 4

	Q4			Total
	Yes	No	Don't Know	
Male	82	108	64	254
Female	97	113	36	246
Total	179	221	100	500
χ^2 -value	9.08			
p-value	0.011, S, $p < 0.05$			

Table 9: Result of Question 5

	Q5			Total
	Yes	No	Don't Know	
Male	127	108	19	254
Female	101	125	20	246
Total	228	233	39	500
χ^2 -value	4.10			
p-value	0.12, NS, $p > 0.05$			

Table 10: Result of Question 6

	Q6			Total
	Yes	No	Don't Know	
Male	77	150	27	254
Female	88	128	30	246
Total	165	278	57	500
χ^2 -value	2.50			
p-value	0.28, NS, $p > 0.05$			

The questionnaires were pretested in pilot survey comprising of 100 (20%) participants. Kappa (k), weighted kappa (kw) were used to evaluate the test-retest reliability and internal consistency were assessed by Cronbach's alpha (α) coefficients ($k=0.86$), ($kw=0.9$), ($\alpha=0.86$). It took about 5-7 minutes for completing the questionnaire. The descriptive statistics, chi-square test were used. Statistical analysis was performed by SPSS V.16.0.

RESULTS

The total sample composed of 1000 subjects including 500 children and 500 their parents; they were selected from Chhattisgarh population at Rajnandgaon city. Distribution of children and parents according to their age and sex shows Table 1 & Table 2. The overall awareness of orthodontic among the school children was 49% but 45.95% parents had heard about orthodontic. When it ask to parents that straightening of teeth 82.6% parents reply positive to that well aligned teeth are important for overall good facial appearances and 46.1% of parents considered that their children need

to orthodontic treatment. Most of 41% of participant knew that they were satisfied with arrangement of teeth. 59.3% of participant considered that well aligned teeth important for facial appearance. There was a statically differences in perception of dental aesthetic between male and female ($p= 0.011$). 50% of children among attitude toward the straightened teeth. Majority of male and female children had responded that they did not have any knowledge about orthodontist. There statistically differences observed among male and female children and there was insignificant different seen between male and female children among attitude toward the straightening of teeth.

DISCUSSION

Age and gender wise distribution of children shows in table 1.

Majority of children belongs to 15 years of age 170 (34%); followed by 13 years 159 (31.8%). Only 4 (0.8) children were of 16 years of age. Regarding gender wise distribution of study participants, majority of male children 99 (19.8%) were

Table 11: Result of Question 7

	Yes	Q7 No	Don't Know	Total
Male	121	115	18	254
Female	113	109	24	246
Total	234	224	42	500
χ^2 -value	1.16			
p-value	0.55, NS, $p > 0.05$			

Tale 12: Result of Question 8

	Yes	Q8 No	Don't Know	Total
Male	158	64	32	254
Female	170	55	21	246
Total	328	119	53	500
χ^2 -value	3.27			
p-value	0.19, NS, $p > 0.05$			

belonged to 15 years of age followed by 14 years 75 (15%) and 13 years 55 (11%) respectively. Similarly majority of female children were of 15 years 71 (14.2%) and 14 years 46 (9.2%) respectively in Table 1.

Age and gender wise distribution of parents shows in table 2

Majority of study participant were belonged to 31-40 years of age 172 (34.4%). Only 9 (1.8%) participant were of 51-60 years of age. similarly majority of male 172 (34.4%) and female 173 (34.6%) participant were belonged to 31-40 years of age. While least number of male 7 (1.4%) and female 2 (0.4%) participant were of 51-60 years of age respectively in Table 2.

Response of children shows in table 3

Majority of the children responded that they were not afraid of a dentist. 51% of children responded that they did not know about orthodontic. 48.6% of them responded that they had not experienced any dental pain. 40% of participants didn't know about aesthetics while 32.4% of participant knew. Only few (7.1%) participant didn't know whether they were satisfied with the arrangement of teeth. 50.3% of the children responded that they had never seen anyone with braces. 42.3% of the participants wanted their teeth to be aligned. Majority of 59.3% of the participant considered that well aligned teeth are important for facial appearances while 9.6% did not consider well aligned teeth is an important factors for facial appearance in table 3.

Response of parents shows in table 4

Majority of parents responded that they are not afraid of dentist. Majority of parents 254(45.95%) had heard about orthodontist. 64.6% of parents don't know about tooth movement during orthodontic treatment. But majority of parents knew

about orthodontic treatment. Majority of parents 46.1% considered that their children need to orthodontic treatment. In study done by Kaur B (2009) found 20% of the school children required orthodontic treatment.^[8] 82.6% of parents considered that well aligned teeth important for overall facial appearance. Majority of parents 53.3% responded that they don't know about orthodontic charges. While 31.6% parents responded that orthodontic treatment is expensive. Majority of 70.7% of parents know about orthodontic treatment time. They considered orthodontic treatment take more time in Table 4.

Comparison of attitude of malocclusion among male and female children

Q. 1 Are you afraid of a dentist?

Majority of female (103) that they were afraid of dentist. While 168 male disagree with it. There insignificant difference observed among male and female $X^2 = 4.60$ ($P = 0.1$) (Table 5).

Q. 2 Do you know about orthodontic?

Majority of male (146) and female (136) participant had responded that they did not have any knowledge about orthodontist. Statically differences observed among male and female. $X^2 0.25$ ($P = 0.87$) (Table 6).

Q. 3 Do you experienced any dental pain?

Majority of male (127) and female (142) subjects had not experienced any dental pain with insignificant difference ($P = 0.16$) (Table 7).

Q. 4 Do you know about aesthetic?

Majority of male and female did not have any knowledge about aesthetics. There significant differences observed among male and female $X^2 = 9.08$ ($P = 0.011$) (Table 8).

Q. 5 Are you satisfied with the arrangement of your teeth?

Majority of male 127 were satisfied with the arrangement of teeth. While 125 female disagreed of her teeth. There insignificant differences observed among male and female $X^2 = 4.10$ ($P=0.12$) (Table 9).

Q. 6 Have you seen any one with braces?

Majority of male and female are responded that they not seen other with braces. There was a statically insignificant $X^2 = 2.50$ ($P=0.28$) (Table 10).

Q. 7 Do you want to have your teeth straightens?

There was an insignificant difference seen between male and female children among attitude toward the straightened teeth. Majority of male and female children wanted to their teeth to be straightened (Table 11).

Q. 8 Do you considered well aligned teeth important for overall facial appearances?

Majority of female children considered well aligned teeth to be important for overall facial appearance. There was a statistical insignificant $X^2 = 3.27$ ($P=0.19$) (Table 12).

CONCLUSION

- Awareness of orthodontic treatment is considered it is low as more than 30% of subjects know about the field. Among these girls are more aware the boys.
- About half (50%) of the subjects needed an immediate orthodontic care. Among these boys were greater than girls.
- Nearly half (46.7%) of the subjects were found to be aware of the treatment need for their children as well as considered well aligned teeth essential for good facial appearances.

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