

# Assessment of Awareness and Social Perceptions of Orthodontic Treatment Needs in Adult Age Group: A Questionnaire Study

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## Abstract

**Aim:** The scope of orthodontics has widened to include not only children and adolescents but also adults, thereby abolishing the upper age limit. The aim of this study was to assess awareness and social perceptions of orthodontic treatment in adults.

**Material and methodology:** A cross sectional questionnaire study was conducted on parents of school children who were randomly selected from Private schools of Belgaum city. Questionnaire forms were distributed both in Hindi and English to a sample of 800 school students.

**Results:** Majority of the subjects in the study knew about orthodontic treatment and took treatment in their early age group with more percentage of males. Out of which only 46% subjects stated that their treatment was completed with proper retention and stability. Near about half of the subjects reported that they need orthodontic treatment in adult age.

**Conclusion:** adult population is aware about orthodontic treatment needs and to improve smile and to straighten their teeth were the prime motivating factors for seeking treatment.

**Keywords:** adult orthodontics, orthodontic treatment needs, awareness.

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J Oral Health Comm Dent 2014;8(2)95-100

## Introduction

Adult orthodontics is becoming a larger proportion of many dental practices (1). There has been a rising influx of adult patients seeking orthodontic treatment in the recent era. 20-25% of orthodontic patients were reported to be adults and this trend is likely to rise by leaps and bounds in the near future in view of society becoming more aesthetic and health conscious (2).

In the past three decades, a major reorientation of orthodontic thinking has occurred regarding adult patients.

Changed lifestyles and patient awareness have increased the demands for adult orthodontic treatment and multidisciplinary dental therapy has allowed better management of the more complicated patient population, thereby greatly improving the quality of care and treatment prognosis (1).

In 1880, Kingsley initiated an awareness of the orthodontic potential for adult patients. Kingsley also pointed out that some differences existed between tooth movement in adolescent patients and tooth movement in older patients (3). Similarly, According to Robert C.

**APPENDIX 1**  
*Questionnaire Form:*

AGE	SEX	
MOTHER	HOUSEWIFE/ WORKING	
FATHER	PRIVATE JOB/ BUSINESS	
Q.1	Do you know what orthodontic treatment is?	YES/NO
Q.2	IF YES, What it is all about?	
	<ul style="list-style-type: none"> <li>● Correction of irregular teeth</li> <li>● Replacement of missing teeth</li> <li>● Gum problems</li> </ul> IF NO, it is correction of irregular and forwardly placed teeth and improving smile and looks of a person.	
Q.3	Have you ever undergone orthodontic treatment?	YES/NO
Q.4	At what age?	
Q.5	If yes, was your treatment completed?	YES/NO
Q.6	Did you wear removable plates after your treatment was complete?	YES/NO
Q.7	Were your teeth maintained in the same position after completion of treatment?	YES/NO
Q.8	Did you discontinue the treatment in between?	YES/NO
Q.9	IF YES, what was the reason for it?	
	<ul style="list-style-type: none"> <li>● Pain/discomfort</li> <li>● Cost factor</li> <li>● Any other reason</li> </ul>	
Q.10	Do you think you require orthodontic treatment now?	YES/NO
Q.11	IF YES, what are the reasons for it?	
	<ul style="list-style-type: none"> <li>● Irregular teeth</li> <li>● Forwardly placed teeth</li> <li>● To correct your smile</li> <li>● Difficulty while speaking/eating</li> <li>● Pain/clicking around ears</li> </ul>	
Q.12	What are the reasons for not availing treatment so far?	
	<ul style="list-style-type: none"> <li>● Awareness- you were not aware that such a treatment is available</li> <li>● Social acceptance-wearing braces at this age will be awkward</li> <li>● Difficult to manage time for visits with daily job</li> <li>● Cost factor</li> </ul>	

Chiappone in 1976, also stated that the only limitation found in adult treatment is in initiating tooth movement. This may take a few more weeks than in an adolescent, but once treatment has begun, progress can be as fast or faster in the adult patient due to the excellent cooperation received from the adult patients (4). There are many reasons why adult orthodontic therapy should be encouraged, including the improvement of function and occlusion, and improvement of aesthetics',

as well as the psychological aspects (1). Thus the aim of the present study was to assess the awareness of orthodontic treatment needs in adult age group and their perceptions regarding orthodontic treatment.

**MATERIAL AND METHODOLOGY**

A cross sectional questionnaire survey was conducted in the Belgaum city (part of north Karnataka, India). Out of 80 Private schools in the Belgaum

city. 10 schools were selected using cluster random sampling technique. Informed consent was taken from school authorities and students. A sample size of 800 School students selected from the schools. It was not possible to perform a sample size calculation for this part of the study, because there were no previous comparative studies on which to base this. Therefore, as many adult patients as possible were recruited within the time constraints of this study.

**Table 1: Demographic features of the participants**

<b>Sex</b>	
Mother	51% (373)
Father	48.9% (357)
<b>Age</b>	
Mother	31-51yrs (41.4+-4.91)
Father	31-55yrs (44.4+-5.52)
<b>Occupation</b>	
<b>Mother</b>	
Housewife	251(67.2%)
Working	122(32.7%)
<b>Father</b>	
Service	128(35.8%)
Business	229(64.1%)

A self designed close ended 12 questionnaire form was prepared both in English and Hindi. (APPENDIX 1). A mixture of closed-ended multichotomous and dichotomous questions were formed with responses presented as either simple yes or no choices, or multiple tick boxes. A pilot study was conducted to check the reliability and validity of questions, 20 forms were distributed to school children taken from original sample. A lecture was conducted by the examiner to explain the forms. After a week's interval, forms were distributed to the same sample to check whether the similar responses were given by the respondents or whether they have understood the language. Necessary modifications were done accordingly i.e. orthodontic terminology was replaced by simpler terms.

A single trained calibrated examiner distributed the questionnaire forms

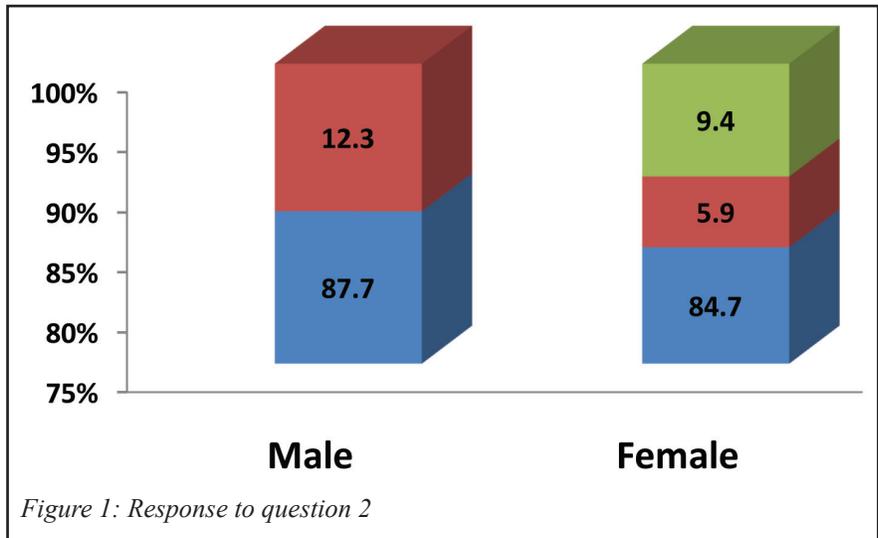


Figure 1: Response to question 2

to parents of school students during the annual ceremony being held in the school. Two forms were distributed per sample and the need of study and questionnaire forms were explained by the examiner. The collected data was subjected to statistical analysis using spss software version 20.

**STATISTICAL ANALYSIS**

Questionnaire forms were collected and data was subjected to statistical analysis using spss software version 21.

**RESULTS**

A response rate of 78% was achieved; a total of 800 adult patients agreed to participate in the study, and 730 adults completed and returned the questionnaire. The demographic details of this group are outlined in TABLE I

Table 1- Distribution of study subjects by gender, mean age and occupation

The subjects of this study were divided on the basis of gender and occupation amongst which 51% were mothers and 48.9% were fathers; with mothers ranged in age group of 31-45 years, with a mean age of about 41 years; they were further divided on basis of occupation into 67.2% housewife and 32.7% working. Fathers ranged in age group of 31-51years, with a mean age of about 44 years; they were further divided on basis of occupation into 35.8% private job and 64.1% business.

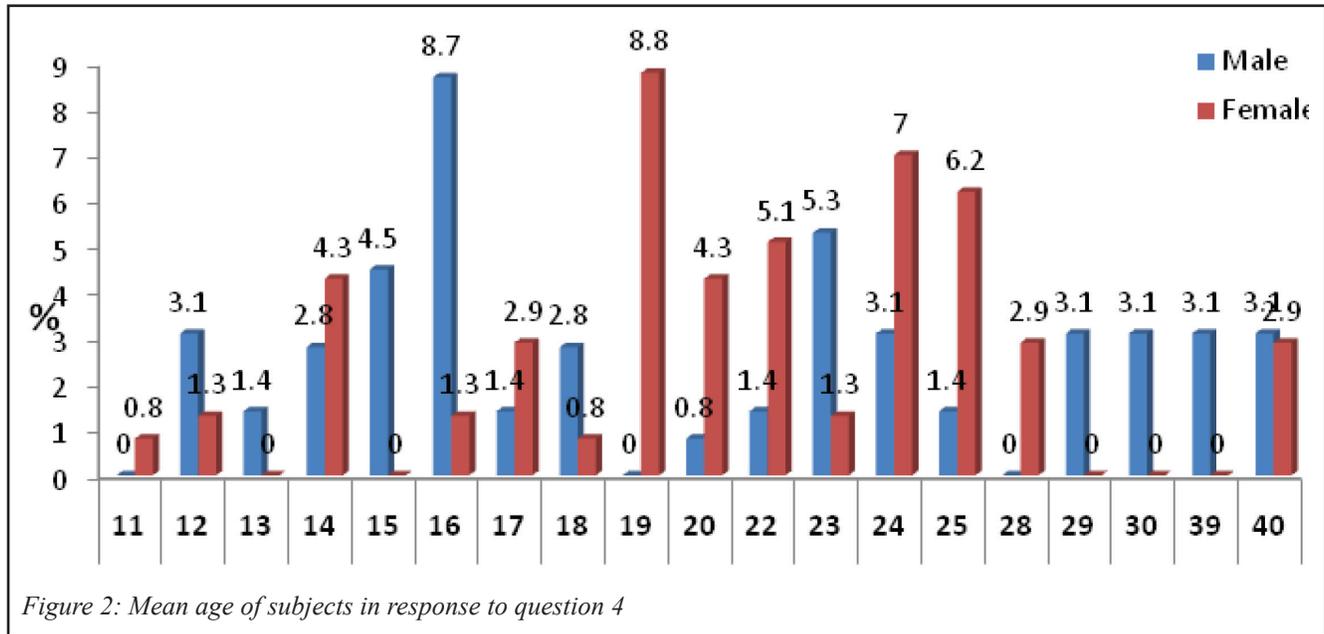
Table 2-Results showing responses given by subjects in relation to close ended questions pertaining to yes/no type.

In response to question 1-84.7% subjects responded in affirmation and among them 87.7% were fathers and 81.8% were mothers

In response to question 3- 49.6%

**Table 2: Results showing responses given by subjects pertaining to dichotomous close ended questions**

Question	Yes response	males	females	No response	Males	females
Q1.	84.7	87.7	81.8	15.3%	12.3	18.2
Q3.	49.6	49	50.1	50.4%	51	49.9
Q5.	53.6	36.4	34.6	46.3%	28.0	33.2
Q6.	46.3	31.9	29.5	53.6%	32.5	38.3
Q7.	55.4	36.7	35.9	44.5%	26.3	31.9
Q8.	46.3	28.0	33.2	53.6%	36.4	34.6
Q10.	41.2	45.9	36.7	58.1%	54.1	61.9



subjects took orthodontic treatment in their young age amongst them 49% were fathers and 50.1% were mothers; when they were in age of 15-30 years with a mean age of 22 years.

In response to question 4-mean age of subjects were shown in figure 1. Age group of 15-30 years with a mean age of 22 years.

In response to question 5- 53.6% subjects completed their treatment, in which 36% were males and 34% were females

In response to question 6- 46.3% subjects wore removable retainer plates in which 31.9% were males and 29.5% were females; whereas 53.6% subjects did not wear removable retainer plates. In response to question 8- 46.3% subjects discontinue the treatment in between and among them 22% were males and 33.2% were females.

In response to question 9- reasons cited for discontinuation of orthodontic treatment were shown in Figure 2.

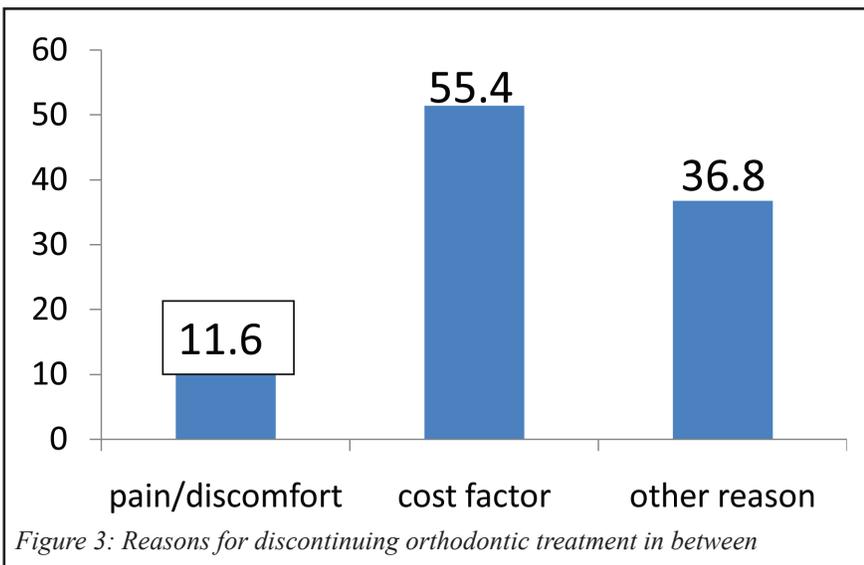
In response to question 10- only 45.9%

males and 36.7% females responded that they require orthodontic treatment at adult age whereas 54.1% males and 61.9% females felt that they don't need treatment.

**Discussion**

A recent survey conducted by the American Association of Orthodontists (AAO) showed an increase in the percentage of patients over 21 years of age from a fraction more than 4% ten years ago to almost 7% today and nearly 11% is expected after another decade (1). The demand for adult orthodontic treatment has grown rapidly worldwide, hence the importance of clinicians gaining insight into how and why they seek treatment. This aids orthodontists in their communications with patients, and this understanding is a vital part in achieving patient satisfaction with treatment. Thus the aim of this study was to assess awareness and social perceptions of orthodontic treatment in adults.

More than 80% of the subjects in the study were aware about orthodontic treatment (Figure1). This shows a high awareness among subjects that they knew the meaning of term 'Orthodontics' whereas only 15.3% subjects gave a negative response. Oshagh et



*al* showed that parents' awareness of orthodontic problems can be increased by means of information leaflets (4). Importance of an orthodontic information package has been emphasized by Anderson *et al* (5). Thus a simple statement providing information about orthodontic treatment that it is correction of irregular and forwardly placed teeth and improving smile and looks of a person" was included in the present questionnaire form.

It was observed in present study that nearly half of the subjects took orthodontic treatment in their young age group. Amongst them females showed a higher percentage which is in accordance with study conducted by Rafighi *et al* and Szulc *et al* who stated that girls, in general, undergo orthodontic treatment more frequently than boys as they are more sensitive to dentofacial attractiveness (3, 6). 50.4% of the subjects did not seek orthodontic treatment. This constitutes almost half the sample population. Various reasons may be attributed like some adults with malocclusion problems did not get orthodontic treatment when they were children for a variety of reasons such as high treatment cost not affordable by their family or because they were being embarrassed about wearing braces. In our study those who underwent orthodontic treatment in their young age group, majority of them were able to complete their orthodontic treatment. Thus it can be deduced that there was no limitations to them in their young age like compliance, financial constraints or parental restrictions. Also during retention phase subjects of our study were compliant and wore removable retainer plates. As stated by Wong *et al*, the common reasons for not wearing retainers may be discomfort and forgetfulness (7). In the present study males were more compliant in wearing removable retainers as compared with females which is in contrast with findings of Cucalon *et al* who stated that girls were more compliant than boys (8).

It was observed that more than half of the subjects for whom treatment was completed reported that retention and stability was maintained after treatment. They had no complaints regarding their treatment and must have cooperated well during their retention phase and have understood the importance of retention in treatment. Such a positive attitude will help them to instill same in their children regarding the treatment. The results of our study were similar to study conducted by Blake *et al* who mentioned the importance of retention and stability and stated that holding the teeth in their treated position is of utmost importance to allow for reorganization of the gingival and periodontal tissues; minimize changes due to growth; thus orthodontists are turning toward permanent retention to ensure stability of post-treatment tooth positions as removable retainers are dependent mainly on patient's compliance (9).

In the present study 51.4% subjects reported high cost of treatment as a factor in discontinuing treatment in between. (Figure 3) Also 11.6% subjects reported that they discontinue treatment because of pain/discomfort which is similar to study done by Krishnan who reported that 8 per cent of a study population discontinued treatment because of pain Discomfort from orthodontic appliances and pain has been attributed

as one of the causes in discontinuation or early termination of treatment (10). Thus proper pre-treatment counselling, oral hygiene instructions and utmost care provided to the patient will help in reducing the chances of in between discontinuation of treatment. Proper treatment planning and right selection of the appliance for individual patient also helps in maintaining effective treatment duration. Thus, reducing the chances of patient's losing interest and motivational attitude in treatment. With the advent of new technologies and better patient care, the factor of pain associated with orthodontic treatment has been reduced.

A desire to straighten teeth and to improve the smile was the prime motivating factors, for seeking orthodontic treatment (figure 4). Very few subjects stated functional problems as their concern for opting treatment. Or certain limitations like treatment were denied to them as kids, or they have seen the wonderful impact of orthodontic treatment on their own children. Some adults had orthodontic problems as children but were unable to correct them until now. Others, who had treatment as children, may need further treatment as adults due to relapse or limitations in initial treatment. Rafighi *et al* stated that facial appearance is one of the most important physical characteristics in the development of one's

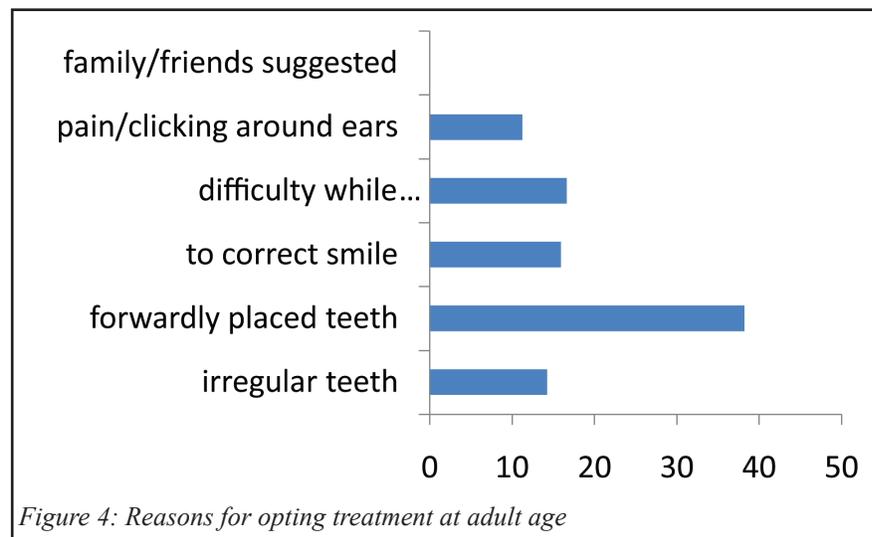
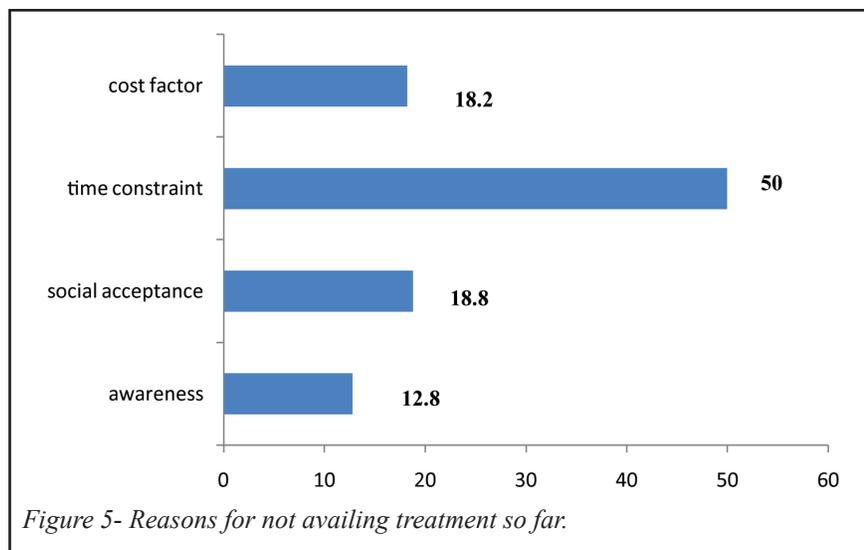


Figure 4: Reasons for opting treatment at adult age



self-confidence; therefore, the most important motivation for orthodontic treatment is improvement in dentofacial esthetics (3). Also the reasons given by majority of subjects for not availing treatment so far were mainly awkwardness to wear braces at this age and difficult to manage time for visits with their daily job. (Figure 5). Butke *et al* stated that the embarrassment associated with wearing appliances, high cost and increased duration of treatment were the main causes for not seeking orthodontic treatment (11).

### Conclusion

Majority of the subjects in the study were aware about the term Orthodontics. Near about half percentage of the subjects took Orthodontic treatment in their young age group but still more awareness has to be generated among

adult patients regarding the treatment. Discontinuation of the treatment in between and retention and stability achieved after treatment in the subjects were of major concern. Adult patients provide us the opportunity to render the greatest service possible in orthodontics. Continuing education of the general public will result in an increasing demand for this type of service. Adjunctive and comprehensive orthodontic treatment is feasible for adults owing to the growing emphasis on cosmetic dentistry. Also, correction of malocclusion makes it possible to improve the quality of periodontal and restorative treatment outcomes in addition to providing psychosocial benefits. Hence to conclude more such studies should be conducted with a larger sample size to know about future requirement of treatment and to create

awareness in the general public related to the new advent technologies.

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