

## Mother's Knowledge and Attitude towards Orthodontic Treatment for Children in Aseer Region, Saudi Arabia

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### Abstract

**Aim:** The present cross-sectional study was conducted to evaluate the knowledge and attitude of mother's towards orthodontic treatment for children in Aseer region, Kingdom of Saudi Arabia.

**Materials and Methods:** A cross-sectional study was carried out on the sample size of 150 mothers' attending outpatient pediatric dental clinics in Female College of Dentistry King Khalid University, Abha, Saudi Arabia. Written informed consent was obtained from the participants after explaining them the purpose of the study. Sampling method included in the study is a simple random sampling method. The questionnaire was formulated, which comprised of two parts: The first portion included the questions related to the demographic information of participants, such as age and educational qualification. The other part of the questionnaire comprised 15 questions related to knowledge and attitude of orthodontic treatment for children. The survey data was collected and organized into Microsoft Excel spreadsheets (Microsoft Inc., USA), and was statistically analyzed.

**Results:** Eighty-nine participants (59%) think that heredity can influence the occurrence of malalignment of teeth (Table 3). A total of 84% of participants agreed that oral habits have ill effect on teeth; 62% do not decide to remove the primary tooth with pain and caries. Mothers' (55%) believe that early removal of primary teeth will affect the eruption of permanent teeth into irregular. 132(88%) of participant know that taking proper orthodontic treatment at an early age would improve their facial appearance. Majority of participants (53%) disagreed that if primary teeth exfoliate prematurely, space maintenance device could be applied to prevent secondary dentofacial deformities.

**Conclusion:** Awareness of malocclusion among parents needs to make correction towards their children orthodontic treatment. Orthodontists need to carry out orthodontic treatment awareness among parents by various oral health education programs and acquaint to handle the parents with a negative attitude towards orthodontic treatment.

**Keywords:** Knowledge; Children; Orthodontic Treatment; Mothers; Saudi Arabia

### Introduction

Dentofacial features play a pivotal role in social integration and interpersonal communication. While proper aesthetic occlusion leads to look more attractive, amplifying self-esteem, more acceptable and respected character among peer groups and greater social achievements, malocclusion results in being teased and embarrassed, and consequently social rejection and certain psychological disorders. Epidemiological studies have shown that most of the patients delay their dental visits primarily due to the fear of dental needles, pain, and bodily harm from the injection.

Increasing the effectiveness of orthodontic treatment is one of the most urgent tasks of modern orthodontics and a constant object of searching for new methods of influencing this process [1-3]. It is the instrumental method in orthodontics that is one of the most specific and useful mechanisms for treating children with dento-facial anomalies [4]. Children, however, find it as an additional stimulus of continuous and prolonged action, which is 35.7% of cases leads to treatment interruption [5]. Due to the psychological characteristics of the child during the period of occlusal changes, motivation for orthodontic treatment is practically absent

[6,7], since personal and dental self-esteem are overestimated. The most useful thing that an orthodontist can use while treating a child with occlusal changes is the dominant role of the parents. The family is the closest social network, which determines what will be the impact on the child of all other social factors, so the cooperation of the doctor with the parents is an obligatory part of orthodontic treatment. Therefore, the success of orthodontic treatment depends on the readiness and ability of parents to follow the doctor’s prescription and on their active participation in treatment.

**Aim of the Study**

The aim of this study was to evaluate the knowledge and attitude of mother’s towards orthodontic treatment for children in Aseer region, Kingdom of Saudi Arabia.

**Materials and Methods**

A cross-sectional study was carried out on the sample size of 150 mothers’ attending outpatient pediatric dental clinics in Female College of Dentistry King Khalid University, Abha, Saudi Arabia. Written informed consent was obtained from the participants after explaining them the purpose of the study. Sampling method included in the study is a simple random sampling method. The questionnaire was designed to evaluate the knowledge, attitudes and practices of the mother’s awareness toward orthodontic treatment for children. The questionnaire was be tested for face validity and reliability. Ethical approval for performing the survey was obtained from the Scientific Research Committee (SRC/ETC/2018-19/084) of King Khalid University, College of Dentistry.

Questionnaires were translated into the local language (Arabic) and then back to English in order to ensure that the translated version gives the proper meaning. The questionnaire was formulated, which comprised of two parts: The first portion included the questions related to the demographic information of participants, such as age and educational qualification. The other part of the questionnaire comprised 15 questions were prepared based on other studies [8,9], wherein some were related to the attitude. In contrast, others were related to knowledge of people towards orthodontic treatment for children. A 3-point Likert scale was used to assess the attitude of the respondents, which included three responses (agree, disagree, and neutral).

**Inclusion criteria**

- Mothers aged between 20 and above years.
- Residing in the geographical region of Abha region, Aseer District.

**Exclusion criteria**

- All incomplete responses will be excluded from the study.

The sample size was calculated by G\*power version 3.1.9.2. It was revealed from the pilot study the correlation coefficient was 0.226, and power 95%,  $\alpha$  error probability 5%; the sample size was 150. A self-administered structured questionnaire is developed and will be tested among a convenience sample of 10 patients, who will be interviewed to gain feedback on the overall acceptability of the questionnaire in terms of length and language clarity, according to their feedback the questions was corrected. Face validity was also assessed before the start of the study. Both descriptive and analytical statistical measurements were used to describe the main variables by SPSS 18 (IBM Corporation, Armonk, New York, USA) software. Chi-square, ANOVA, and the results were expressed as a percentage value.

**Results**

A total of 150 mothers responded to the questionnaire. 16% of study subjects were of 20 - 29 years, 41% were of 30 - 39 years, 43% were of 41 and above years (Table 1). Distribution of study sample according to educational level was shown in table 2.

Age	Number (n)	Percentage (%)
20 to 29 years	24	16%
30 to 39 years	61	41%
40 and above	65	43%

**Table 1:** Distribution of study sample according to Age.

n: Number; %: Percentage.

Educational Level	Number (n)	Percentage (%)
Less than high school	73	48.67%
High School	40	26.67%
University	37	24.67%

**Table 2:** Distribution of study sample according to Educational Level.

n: Number; %: Percentage.

Total participants (100%) agreed that irregular teeth could be aligned. Eighty-nine participants (59%) think that heredity can influence the occurrence of malalignment of teeth (Table 3). A total of 84% of participants agreed that oral habits have an ill effect on teeth; 62% do not decide to remove the primary tooth with pain and caries. Mothers’ (55%) believe that early removal of primary teeth will affect the eruption of permanent teeth into irregular. 132

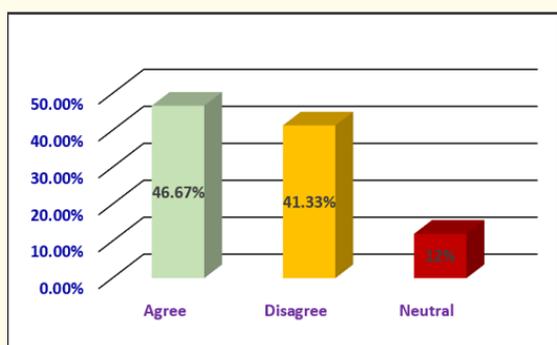
Questions	Mothers (n)-150	Percentage %
<b>Q1. Do you know that irregular teeth can be aligned?</b>		
Agree	150	100%
Disagree	0	0
Neutral	0	0
<b>Q2. Do you think heredity can influence the occurrence of malalignment of teeth?</b>		
Agree	89	59%
Disagree	49	33%
Neutral	12	8%
<b>Q3. Do you know that oral habits have ill effects on teeth?</b>		
Agree	126	84%
Disagree	20	13%
Neutral	4	3%
<b>Q4. If any of my child's primary teeth has pain or caries, I remove it because it is primary and transient</b>		
Agree	51	34%
Disagree	93	62%
Neutral	6	4%
<b>Q5. If I remove my child's primary tooth before it becomes mobile, the permanent teeth would erupt more irregular</b>		
Agree	83	55%
Disagree	52	35%
Neutral	15	10%
<b>Q6. Do you know that taking proper orthodontic treatment at an early age would improve your facial appearance?</b>		
Agree	132	88%
Disagree	14	9%
Neutral	4	3%
<b>Q7. When primary teeth exfoliate prematurely, space maintenance device could be applied to prevent secondary dentofacial deformities</b>		
Agree	45	30%
Disagree	78	52%
Neutral	27	18%
<b>Q8. To begin orthodontic treatment for our children, we wait till their wisdom teeth erupt</b>		
Agree	34	23%
Disagree	96	64%
Neutral	20	13%
<b>Q9. I take my child to visit the dentist to check the need for orthodontic care at age 7 or 8</b>		
Agree	82	55%
Disagree	65	43%
Neutral	3	2%

<b>Q10. One of the reason for avoiding orthodontic treatment is that orthodontic braces are difficult to wear it?</b>		
Agree	46	31%
Disagree	93	62%
Neutral	11	7%
<b>Q11. Do you know the duration for braces treatment is longer than other dental procedures?</b>		
Agree	124	83%
Disagree	17	11%
Neutral	9	6%
<b>Q12. If some teeth have to be removed in the course of your treatment of malalignment teeth, will you agree for the removal of healthy teeth?</b>		
Agree	81	54%
Disagree	66	44%
Neutral	3	2%

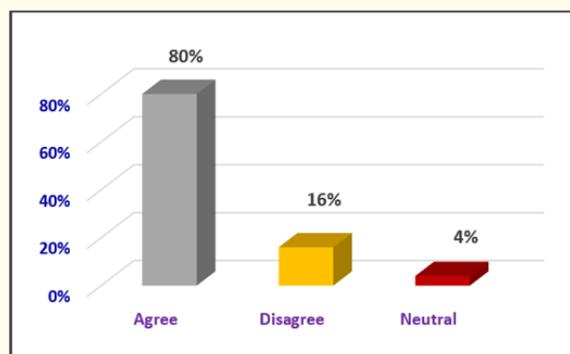
**Table 3:** Knowledge and attitude of mother's towards orthodontic treatment for children.

n: Number; %: Percentage.

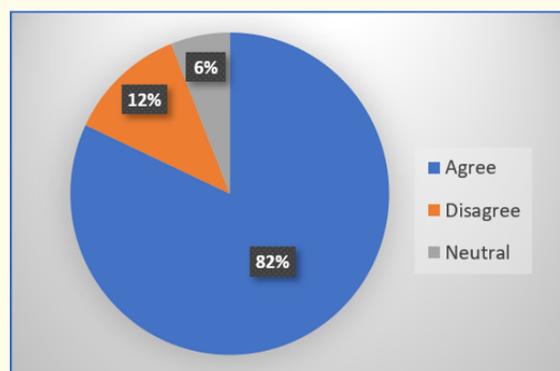
(88%) of participant know that taking proper orthodontic treatment at an early age would improve their facial appearance. Majority of participants (53%) disagreed that if primary teeth exfoliate prematurely, space maintenance device could be applied to prevent secondary dentofacial deformities. 96 (64%) disagreed that to start the orthodontic treatment for their children before wisdom teeth eruption. More than half of the participants (62%) disagreed that wearing orthodontic braces is one of the reasons for avoiding orthodontic treatment. Among the mother, 47% agreed that Early orthodontic treatment in childhood could prevent the need for later treatment (Figure 1). Majority of mothers believe (80%) that they would like to begin orthodontic treatment of their children after the eruption of permanent teeth (Figure 2). Figure 3 shows the response of participants related to awareness of orthodontic treatment cost, 83% agreed that orthodontic treatment is costly.



**Figure 1:** Early orthodontic treatment in childhood can prevent the need for later treatment.



**Figure 2:** To begin orthodontic treatment, I wait till all his/her permanent teeth erupt completely.



**Figure 3:** Are you aware that orthodontic treatment is costly?

## Discussion

Health education and income are associated with the level of dental health knowledge, and positive attitude are both inter-linked. Perception and attitude regarding esthetics and dental appearance vary among different individuals and populations [10]. One of the communities which are seeking orthodontic treatment are consists of children. Parents play an essential role in the treatment of orthodontic problems in children [11]. Various studies have shown that parents take children to seek orthodontic treatment to promote oral health and limiting their social stigma. Evidence suggests that the parents, who had undergone orthodontic treatment prior are more approving of utilizing the procedure for their children in future [12]. Studies were conducted to know the parents' attitude in seeking orthodontic treatment for their children; these data are an important instrument to assess parent's knowledge and opinion regarding the orthodontic process and outcome. Parents play a dominant role while treating their children malocclusion by an orthodontist. Another issue which was addressed is the fact that it is usually a parent who brings a child for both dental and orthodontic care. Thus, an understanding of the role of parents' perceptions of the child's appearance must be considered from the standpoint of treatment.

Awareness plays an essential role in the healthy lifestyle of children to last for a lifetime. In one study concludes that there was a significant link between mother's awareness and education with dental esthetic [13]. Mothers knowledge would be benefitted about their orthodontic treatment since the early intervention of these orthodontic problems could be helping in preventing complication of future malocclusion in children. Globally, orthodontics plays an important role as a dental speciality in treating malocclusion in children and adults [14]. In our study, 88% of mothers believe that taking proper orthodontic treatment at an early age would improve facial appearance. Further supportive evidence for this view is provided by Gochman, in his study of 774 school children aged 8 - 17 years, where a large proportion of the sample mentioned social improvements, appearance, and self-confidence as the significant benefits of the treatment [15]. Many people taking orthodontic treatment for many reasons, dentofacial esthetic appearance is the primary motivational reason to seek treatment [16]. More than half of the participants (62%) disagreed that wearing orthodontic braces is one of the reasons for avoiding orthodontic treatment. These results are in agreement with a study conducted in the Kingdom of Saudi Arabia; it was found that patients were more apprehensive for pain and discomfort in wearing the braces than its effect on esthetics. They were more concerned about the trouble they might face during the archwire activation [17].

Participants related to awareness of orthodontic treatment cost, 83% agreed that orthodontic treatment is costly. Which is supportive with one study shows that a bulk of respondents (81.2%) agreed that the orthodontic treatment is expensive, while only 7.4% of the respondents disagreed for the same [18]. These results were similar to the earlier studies wherein the financial restriction was found to be one of the barriers for the patients to undergo orthodontic treatment. They found that majority of those who opted for orthodontic treatment belonged to high socioeconomic status. In contrast, very few patients who belonged to low socioeconomic status would prefer to undergo orthodontic treatment. Socioeconomic factor has been seen as having an impact on the uptake on orthodontic treatment [19,20]. Around 83% of the respondents agreed that orthodontic treatment takes a long time than compared to other dental procedures, while 6% were neutral in responding to the same. This observation was in accordance with the previous study wherein majority of Malaysian patients thought that the orthodontic treatment takes a long time, while only 4% of the patients considered the other way [5]. It is suggestive of the fact that respondents were aware of the time-consuming nature of orthodontic treatment which might be due to the information from friends, relatives, the Internet, and other social media networks. Although nowadays various efforts are being made to minimize the duration of treatment and the number of visits by using heat-treated nickel-titanium wires, self-ligating brackets, and frictionless mechanics, the problem of the long period of therapy exists [21].

Dental caries and periodontal diseases due to pain are given more importance as compared to the orthodontic treatment of malocclusion. Malocclusion is not considered as a dental problem by most parents due to following reasons like inadequacy of resources, lack of knowledge about malocclusion, ignorance of parents, illiteracy and socioeconomic status [22]. Esthetic appearance and irregular teeth play a crucial role in the psychological behaviours of children. Therefore, intercepting malocclusion might have a positive impact on children's psychological development as well. This study may prove to be of beneficial help to those undertaking similar studies in future to broaden our views regarding orthodontic treatment undertaking in children in their early life with proper and adequate knowledge among parents to treat their children.

## Conclusion

Awareness of malocclusion among parents needs to make correction towards their children orthodontic treatment. Orthodontists need to carry out orthodontic treatment awareness among parents by various oral health education programs and acquaint to handle the parents with a negative attitude towards orthodontic

treatment. As a growing public interest in oral health increased, the demand for orthodontic treatment also became more noticeable in dental practices. Mothers play an important role as they will bring a child for both dental and orthodontic care.

### Conflict of Interest

No funds were provided by any outside agency for this study, and neither author has any conflict of interest.

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