

Original Research Article

Barriers in Receiving Orthodontic Treatment; A Survey-Based Study in Riyadh, Saudi Arabia

Abdulaziz Saad M AlAnzan^{1*}, Arwa Nasser Almosheqah², Rahaf Nawfal Al-Jutaili²,
Maram Fahaid Al-hemadani², Fatmah Fahaid Al-hemadani² and Ayad Bulayd Hunyan Almutairy²

¹Riyadh Elm University.

²Qassim Private College.

Accepted, 24th February, 2019.

Introduction: Orthodontic treatment is considered to be one of the most expensive treatment options in dentistry. Due to its long time of completion and flexible payment plans, people have been able to go for this procedure in order to improve their dental esthetics. **Materials and methods:** This is a cross-sectional study conducted among the general Saudi public using a closed-ended survey. The survey was designed using Google forms and distributed among the public using social media. **Results:** 60% believed that orthodontic treatment is too expensive to opt for. Whereas, 40% thought the treatment duration was too long for their liking. **Conclusion:** High cost was the most common cause of refusing orthodontic treatment.

Keywords: Orthodontic treatment, Treatment barriers, Socioeconomic status.

INTRODUCTION

More than 50% of the American population suffers from dental malocclusion to some extent. Whereas, 15% of those people do not feel their appearance is socially acceptable. This leads to the need of going for orthodontic treatment in order to improve their facial esthetics. However, treatment is determined by the socioeconomic background of the patient rather than the eagerness to receive the treatment alone¹. The prevalence of dental malocclusion was seen to be even higher among the citizens of Columbia, where more than 80% of the population were reported to have some kind of dental abnormality. Maxillary overjet and spacing were seen to be the most common types of dental anomalies among these people².

Orthodontic treatment is considered to be one of the most expensive treatment options in dentistry. Due to its long time of completion and flexible payment plans, people have been able to go for this procedure in order to improve their dental esthetics. However, high cost and long duration of treatment have also been the most common causes for refusal of orthodontic treatment³. An Indian investigation followed up with a few orthodontic patients, who reported that one of the major barriers to the treatment were high cost and greater need of maintaining oral hygiene⁴.

Orthodontic treatment has also been strongly linked to improve the chances of healthy dentition for future as properly aligned teeth are important for the prevention of dental caries as well as periodontal disease. To achieve this, the treatment cost needs to come down and be more accessible to patients who are not able to seek benefit out of it. Without any

treatment cost reduction, it will be a huge challenge in improving the oral health of majority of the citizens⁵.

Both high cost, as well as, long treatment duration have a significant impact on the decision making done by patients if they want to continue with the procedure or not. Several studies have reported the prevalence of patients discontinuing and missing their appointments due to the above-mentioned reasons. Therefore, patient selection is also an important aspect of orthodontic treatment as far as the dentists' responsibilities are concerned⁶.

Apart from the socioeconomic factor being a strong determinant of choosing orthodontic treatment as mentioned above, gender also plays an important role. It has been seen that the most common proportion of orthodontic patients have been females as compared to males. They seek higher satisfaction and improvement as far as dental and facial esthetics is concerned⁷. Another investigation reported that the female orthodontic patients were willing to seek the treatment to improve their smile, straighten their teeth and improving the self-confidence and self-esteem. These factors are crucial in determining whether patients would want to opt for orthodontic treatment and pay high costs or not⁸.

AIM OF THE STUDY

- To determine the factors associated with non-access to orthodontic treatment.

*Corresponding Author: Abdulaziz Saad M AlAnzan. Riyadh Elm University, Saudi Arabia. Email: dralanzan@gmail.com

MATERIALS AND METHODS

This is a cross-sectional study conducted among the general Saudi public using a closed-ended survey. The survey was designed using Google forms and distributed among the public using social media. Convenient sampling was achieved and the survey was targeted towards male and female adults having at least one previous visit to the dentist. A total of 400 participants were anticipated to fill the survey.

The survey included questions related to demographics, such as gender, age, and educational as well as socioeconomic levels. Further queries included points related to the experience of orthodontic treatment, reasons behind opting for orthodontic treatment and factors associated with barriers in orthodontic treatment.

Collected data was subjected to statistical analysis using SPSS version 19. Descriptive analysis was done and presented in the form of figures and tables.

RESULTS

A total of 230 surveys were filled and returned by the participants, which included 31% males and 69% females (figure 1). As far as the age groups were concerned, 78% belonged to 18-30 years group, 10% from 31-45 years, 10% from 46-60 years and 2% from 60+ years (figure 2). Participants' socioeconomic status was also inquired in the form of monthly income, which revealed that 46% earned less than 5000 riyals, 36% earned 5000-15000 riyals and 18% earned more than 15000 riyals (figure 3). Figure 4 states that 77% of the study participants had visited their dentist 1-2 times, 17% had visited 3-5 times and 6% had 6 or more visits.

Table 1 shows the descriptive analysis of each survey question and its response. 93% of the participants were aware of the use of orthodontic braces. 83% reported that they had a family member using orthodontic braces currently. 100% of the participants revealed that orthodontic treatment is done to straighten the teeth. 84% of the study subjects reported specialists to be performing the orthodontic treatment as compared to general practitioners. 71% revealed that they were advised by their dentist to undergo orthodontic treatment. 60% believed that orthodontic treatment is too expensive to opt for. Whereas, 40% thought the treatment duration was too long for their liking. In the end, 53% believed that they required more knowledge about orthodontic treatment in order to make up their mind.

DISCUSSION

This study was conducted to determine the possible factors behind patients not going for orthodontic treatment. These include high cost and long duration, which are the most commonly known barriers in receiving esthetic dental care. It is appreciated from the results that 100% of the participants are aware of the use of orthodontic braces, which is encouraging. It can also be noted from the findings that a large majority of participants were advised by their dentists to receive orthodontic treatment. However, 60% of them reported that they would not undergo orthodontic treatment due to high cost, which was also reported by many authors who conducted similar studies^{9,10}.

Similarly, 40% of the participants revealed that the long duration of treatment caused them to refrain from undergoing orthodontic treatment. This finding was also supported by various studies, which clearly described the dilemma of more than usual long duration of orthodontic treatment^{11, 12, 13}.

Around half of the study participants reported that they required further knowledge and awareness regarding the orthodontic treatment procedures. Findings from another Saudi study stated that this percentage of participants was found to be lower (25%) as compared to our study¹⁴.

According to our findings, family and dentist remain the major motivational forces behind decision making as far as orthodontic treatment is concerned. Similar results were obtained by authors studying the experiences of patients in Singapore¹⁵. Our study participants mainly comprise of young patients, which gives us an overall impression of what the young public perceives regarding the orthodontic treatment. Multiple studies have stressed that younger patients tend to opt for orthodontic treatment more than the older counterparts^{16, 17}.

One of the limitations of this study is the small sample size, which may have affected the findings and may not be generalized to represent the population of Riyadh city.

CONCLUSIONS

- High cost was the most common cause of refusing orthodontic treatment.
- Long treatment duration was the second most common cause of refusing orthodontic treatment.

CONFLICT OF INTEREST:

There is not conflict of interest among the authors of this study.

REFERENCES

1. Proffit, W.R., Fields, J.H. and Moray, L.J., 1998. Prevalence of malocclusion and orthodontic treatment need in the United States: estimates from the NHANES III survey. *The International journal of adult orthodontics and orthognathic surgery*, 13(2), pp.97-106.
2. Thilander, B., Pena, L., Infante, C., Parada, S.S. and de Mayorga, C., 2001. Prevalence of malocclusion and orthodontic treatment need in children and adolescents in Bogota, Colombia. An epidemiological study related to different stages of dental development. *European journal of orthodontics*, 23(2), pp.153-168.
3. Lee, R., Hwang, S., Lim, H., Cha, J.Y., Kim, K.H. and Chung, C.J., 2018. Treatment satisfaction and its influencing factors among adult orthodontic patients. *American Journal of Orthodontics and Dentofacial Orthopedics*, 153(6), pp.808-817.
4. Negi, N., Bhardwaj, V.K., Malhotra, A., Jhingta, P.K. and Sharma, D., 2018. Knowledge, attitude and practice of patients undergoing fixed orthodontic treatment in Shimla, Himachal Pradesh: A questionnaire survey. *Journal of Research: THE BEDE ATHENAEUM*, 9(1), pp.1-8.
5. Gutierrez, T., 2016. Overcoming barriers to orthodontic treatment in the United States. *Dental Hypotheses*, 7(2), p.70.
6. McDougall, N.I., McDonald, J. and Sherriff, A., 2017. Factors associated with discontinued and abandoned treatment in primary care orthodontic practice part 1. *Orthodontic Update*, 10(1), pp.8-14.
7. Healey, D.L., Gauld, R.D. and Thomson, W., 2015. The socio-demographic and malocclusion characteristics of adolescents presenting for specialist orthodontic treatment in New Zealand practices. *Australian orthodontic journal*, 31(1), p.20.
8. Singh, P., 2016. Adult orthodontic patients in primary care and their motivation for seeking treatment. *Orthodontic Update*, 9(2), pp.69-72.
9. Nichols, G.A.L. and Fowler, P.V., 2018. Impact of socioeconomic status on patient non-attendance and orthodontic treatment

- duration in patients with severe malocclusions. New Zealand Dental Journal, 114(1).
10. Imani, M.M., Jalali, A., Ezzati, E., Heirani, Z. and Dinmohammadi, M., 2018. A decision-making process to undergo orthodontic treatment: a qualitative study. Patient preference and adherence, 12, p.2243.
 11. Aidaros, A.M., 2015. Factors affecting treatment duration in a group of Egyptian Angle class I patients; a retrospective study. J. Dent. Med. Sci, 14(8), pp.30-41.
 12. Grace, A.N.G. and UMESAN, U.K., Fixed appliance orthodontic treatment duration in Brunei Darussalam.
 13. Faruqui, S., Fida, M. and Shaikh, A., 2018. Factors affecting treatment duration—A dilemma in orthodontics. Journal of Ayub Medical College Abbottabad, 30(1), pp.16-21.
 14. Bindayel, N.A., 2018. Knowledge, demand, and the need of lay people for the orthodontic specialty in comparison to other dental disciplines. journal of orthodontic science, 7(1), p.9.
 15. Li, T.C., 2000. A pilot survey of orthodontic awareness among a group of young people in Singapore. Singapore dental journal, 23(1), pp.12-17.
 16. Trulsson, U., Strandmark, M., Mohlin, B. and Berggren, U., 2002. A qualitative study of teenagers' decisions to undergo orthodontic treatment with fixed appliance. Journal of orthodontics, 29(3), pp.197-204.
 17. Klages, U., Bruckner, A. and Zentner, A., 2004. Dental aesthetics, self-awareness, and oral health-related quality of life in young adults. The European Journal of Orthodontics, 26(5), pp.507-514.

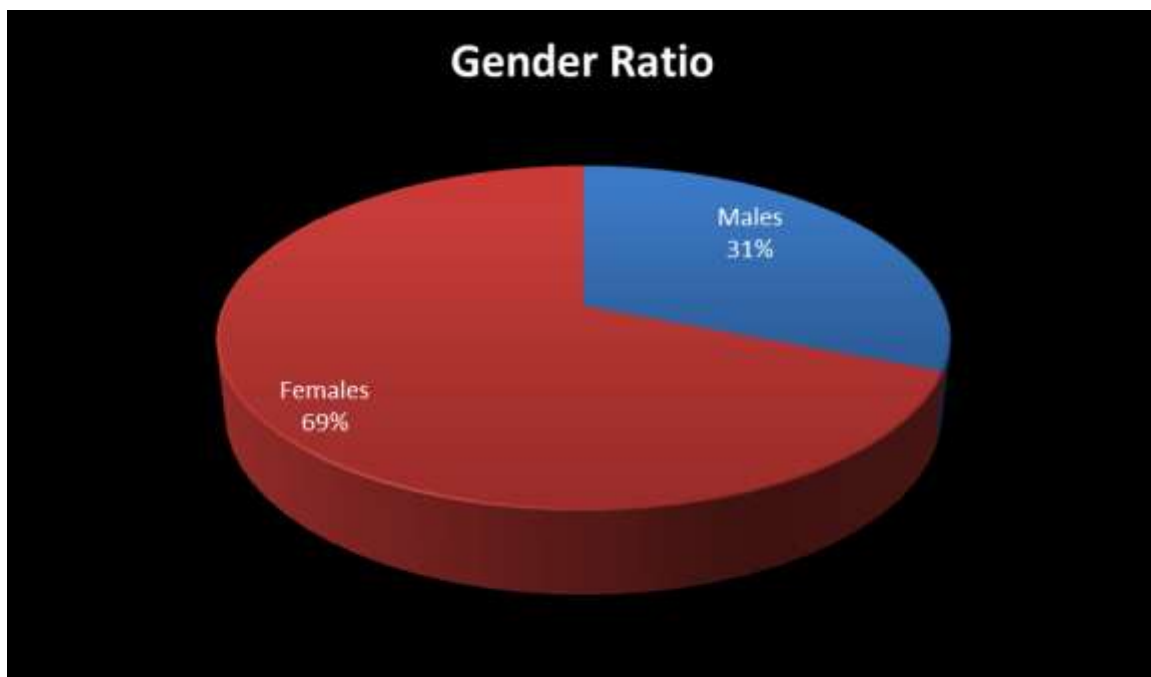


Figure 1: Gender ratio of the study participants

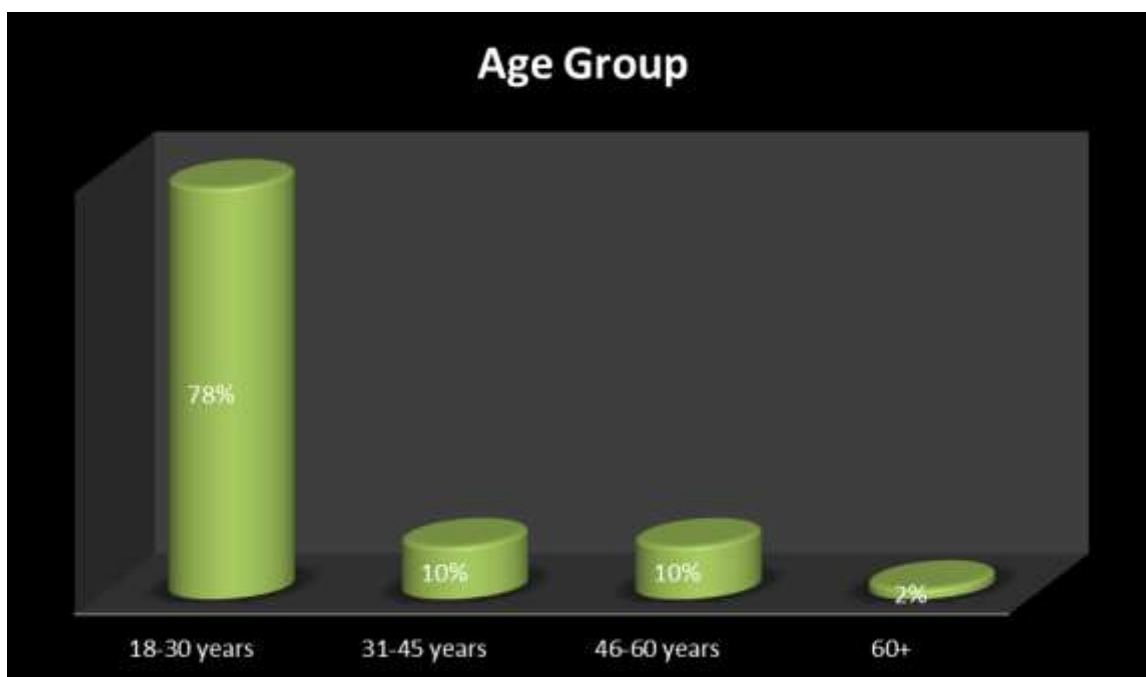


Figure 2: Age groups of study participants

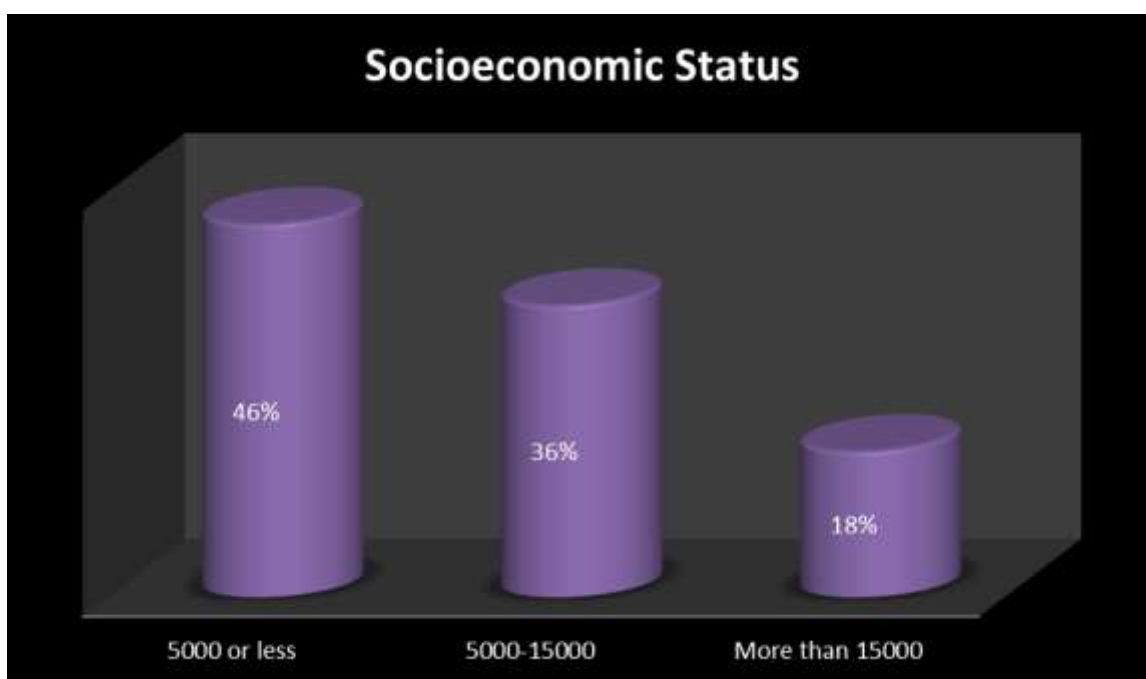


Figure 3: Socioeconomic status (monthly income in Riyals) of study participants

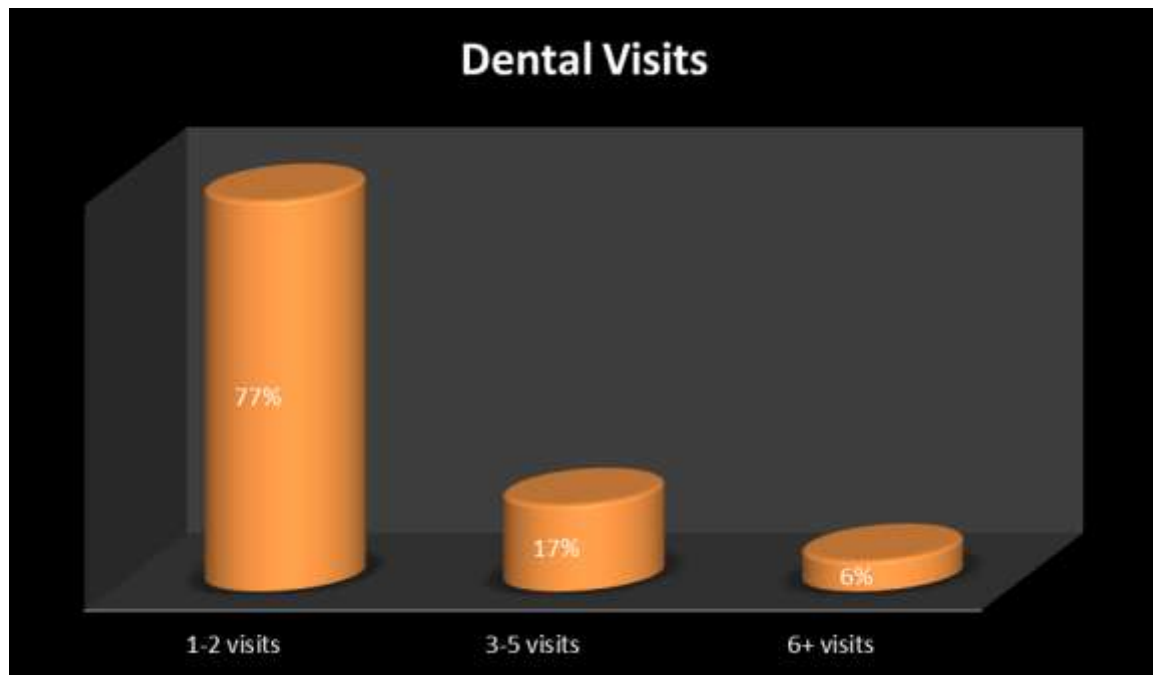


Figure 4: Frequency of dental visits by the study participants

Table 1: Survey question responses from the study participants

Survey questions	Response percentages
Do you know what Orthodontic braces are used for?	Yes: 93% No: 7%
Anyone in the family used Ortho braces?	Yes: 83% No: 17%
What is the purpose of Orthodontic treatment?	To straighten teeth: 100% To treat caries: 0% To treat gum bleeding: 0%
Who performs orthodontic treatment?	General practitioner: 7% Specialist: 84% Both: 9%
Did your dentist advice you to undergo Ortho treatment?	Yes: 71% No: 29%
What was the reason to accept dentist's advice?	Good for esthetics: 88% Good for treating caries: 7% Good for treating bleeding gums: 5%
What was the reason to reject dentist's advice?	Expensive treatment: 60% Long treatment duration: 40%
Do you need more information about orthodontic treatment?	Yes: 53% No: 47%