

Dentist's Knowledge and Attitude towards Using Invisalign in Orthodontic Treatment

M Zakirulla^{1*}, Rayed Ahmed M Al Shehre², Abdulaziz M Al Hosainah², Hussein Mahdi A Alamer², Nawaf Abdulrahim A Alhamood², Demah Saleh M Alharthi², Aliya Salem Alqhatani², Faisal Mubarak H Alqahtani³, Abdulmajeed Ali Alaamri⁴, Saad Awdah Aldail⁴, Aisha Ali M Alammari², Ahmad Mohammed M Alqahtani⁵, Haitham Mohammed Alsalem⁵, Naif M Alzahrani⁴

¹Department of Pediatric Dentistry & Orthodontic Sciences, College of Dentistry, King Khalid University, Abha, Saudi Arabia

²Intern, College of Dentistry, King Khalid University, Abha, Saudi Arabia

³General Dentist, General Hospital in Maxillo Facial Surgery, Ministry of Health, Khamis Mushait, Saudi Arabia

⁴Student, College of Dentistry, King Khalid University, Abha, Saudi Arabia

⁵General Practitioner, College of Medicine, King Khalid University, Saudi Arabia

ABSTRACT

Background: This study aims to assess the knowledge, attitude, and perception among dentists toward using Invisalign in orthodontic treatment.

Materials & Methods: A cross-sectional study was carried out on a total number of 300 dental surgeons (Male=150; Female=150) were participated in the study with age ranges from 20- to 55-year-old to know the knowledge, attitude, and perception among dentist's toward using Invisalign in orthodontic treatment. Written informed consent was obtained from the participants after explaining to them the purpose of the study. The sampling method included in the study is a simple random sampling method. A self-administered structured questionnaire was developed, and the data was collected. Both descriptive and analytical statistical measurements were done.

Results: The majority of participants, 285 (95%) were agreed that they have visited a dentist for orthodontic treatment. 110 (58%) and 66 (35%) said that they have undergone orthodontic treatment with fixed and Invisalign respectively. Majority of dentists got to know regarding Invisalign are from family (41%) sources. 228 (76%) participants said they know the translucent try (Invisalign).

Conclusions: From our study, we conclude that though the population was moderately aware of the Invisalign. Most participants perceived Invisalign treatment to be generally better, quicker as compared to traditional appliance. The main part of respondents not currently using clear aligners in their practice was willing to use them in the future.

Key words: Knowledge, Dentist, Invisalign, Orthodontic, Malocclusion, Saudi Arabia

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Corresponding author: M Zakirulla

e-mail✉: drzak786@gmail.com

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INTRODUCTION

A malocclusion is defined as an irregularity of one's teeth or a mal relationship of the dental arches beyond the number of what is accepted as normal. Malocclusion teeth can cause esthetic and psychosocial problems [1]. Malocclusion could also lead to problems of the oral cavity (traumatic bite and cheek bite), and it can also be one of the factors for rejection during marriage proposals. The uptake of orthodontic treatment is

influenced by the need to look attractive, self-esteem, and self-perception of dental appearance [2]. Malocclusion is currently just next to the other oral health such as dental caries, periodontal diseases and problems. It's been established to be the third most typical oral health problem, which are results in various environmental and genetic elements [3]. Prevalence of malocclusion was 62.3%, 28.4%, and 9.3% respectively seen among 15- to 17-year-old children that were reported in earlier research done in Aseer region [4]. Malocclusion affects esthetics, the physical, psychological, and social life of an individual. It is vital to take the orthodontic treatment, which mainly depends upon knowledge and knowing of the person towards orthodontic treatment.

Early orthodontic treatment is a precursor to the original therapy protocol in which braces and bands which are placed on permanent teeth. This early treatment starts with during either primary or transitional teeth to intercept malocclusion in a manner that ultimately leads to a better and more stable result than if treatment were initiated later. Many doctors offering early treatment aim to decrease the time and complexity of treating fixed devices [5]. The clinicians who want to use Clear aligners (CA) to deal with their patients have to depend on their own clinical experience, expert opinions, and limited published evidence-based results [6]. CA could be provided by both orthodontists and general dentists; however, some significant differences were evinced between your two groups in the usage of a CA treatment within their clinical practice [7].

Clear orthodontic aligners are used to straighten a patient's teeth minus the use of wires and brackets of traditional braces. They contain a sequence of clear, removable trays that fit over the teeth to straighten them. These trays should be worn by the patient for a specified period of time, usually around 20h a day for 2 weeks prior to the affected person can progress to the next tray [8]. Clear orthodontic aligners are ideal for patients with mild or moderate crowding or minor spacing issues but can't be appropriate for sufferers

with severe crowding or spacing. Since the aligners can correct just a mild malocclusion, so patients with severe under bites, overbites, or cross bites may necessitate more complex orthodontic treatment. Invisalign system also boasts increased hygiene over traditional braces. Since this appliance is removable, patients can maintain oral hygiene because they usually would, decrease the prospects of potential discoloration and decay that regularly occur with conventional braces. Food and drink choices are less strict, as well. Patients who would like to eat sticky candy can do so after removing their clear Invisalign retainer [9]. Therefore, the aim of the present study is to assess the knowledge, attitude, and perception among dentists toward using Invisalign in orthodontic treatment.

MATERIALS AND METHODS

A cross-sectional study was carried out on a total number of 300 dental surgeons (Male=150; Female=150) were participated in the study with age ranges from 20- to 55-year-old to know the knowledge, attitude, and perception among dentist's toward using Invisalign in orthodontic treatment. Written informed consent was obtained from the participants after explaining to them the purpose of the study. The sampling method included in this study was simple random sampling method. Ethical approval for performing the survey was obtained from the Scientific Research Committee of King Khalid University, College of Dentistry.

The questions were designed and circulated through online google forms among dental surgeons practicing in the Abha region of Saudi Arabia. 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, gender, year of experience, and level of education. The other part of the questionnaire comprised of 10 questions with 'yes' and 'no' pattern, and the multiple-choice question was prepared, and piloting was done. Questionnaire was tested for reliability and validity.

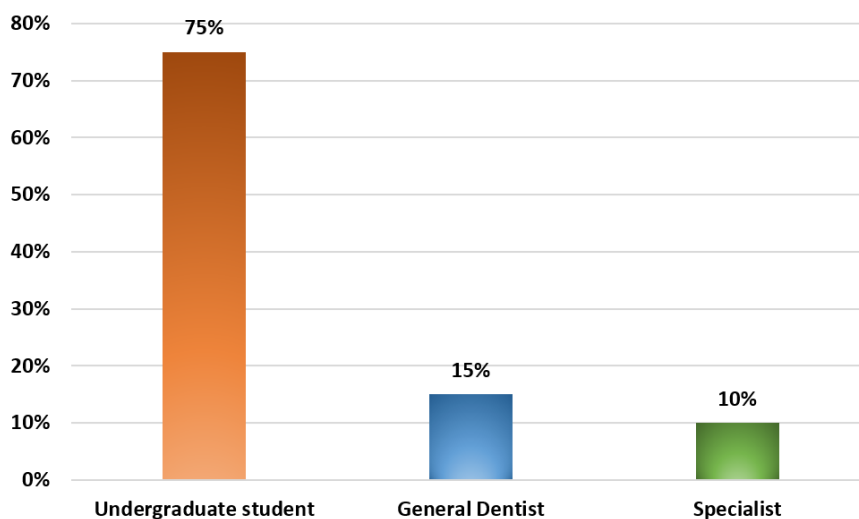


Figure 1: Distribution of study sample according to level of education.

A self-administered structured questionnaire originated and was tested among a comfort sample of 20 dental surgeons. These were interviewed to get feedback on the entire acceptability of the study when it comes to length and language clearness; in accordance with their feedback, the queries were corrected. Validity was furthermore assessed before the start of research. Both descriptive and analytical statistical dimensions were used to describe the primary variables by SPSS 18 (IBM Corporation, Armonk, NY, USA) software.

RESULTS

A total of 300 (150 males and 150 females) dental students, general dentists, and specialists responded

to the questionnaire. 77% of study subjects were of 20-30 years, 18% were of 31-40 years, 4% were of 41-50 years, and 1% were >50 years. The distribution of study samples according to a level of education was shown in Figure 1. Knowledge and attitude among dentists towards using Invisalign in orthodontic treatment were shown in Table 1. The majority of participants, 285 (95%) were agreed that they have visited a dentist for orthodontic treatment. 110 (58%) and 66 (35%) said that they have undergone orthodontic treatment with fixed and Invisalign respectively. Majority of dentists got to know regarding Invisalign are from family (41%) sources. 228 (76%) participants said they know the translucent tray (Invisalign). When question was asked regarding whether Invisalign better than traditional

Table 1: Knowledge of dentists towards using Invisalign in orthodontic treatment.

Questionnaire	Total (n)-300	%
Q1. Have you ever visited a dentist?		
Yes	285	95%
No	15	5%
Q2. Have you been on orthodontic treatment?		
Yes	189	63%
No	111	37%
Q3. If the answer is yes, what type of treatment done?		
Fixed	110	58%
Invisalign	66	35%
Both	9	5%
None	4	2%
Q4. Do you know about fixed metal orthodontic treatment?		
Yes	267	89%
No	33	11%
Q5. Do you know about translucent tray (Invisalign)?		
Yes	228	76%
No	72	24%
Q6. If the answer was yes, how do you know about it?		
Family	93	41%
Friends	41	18%
Social Media	73	32%
Dentist	12	5%
Advertisement	9	4%

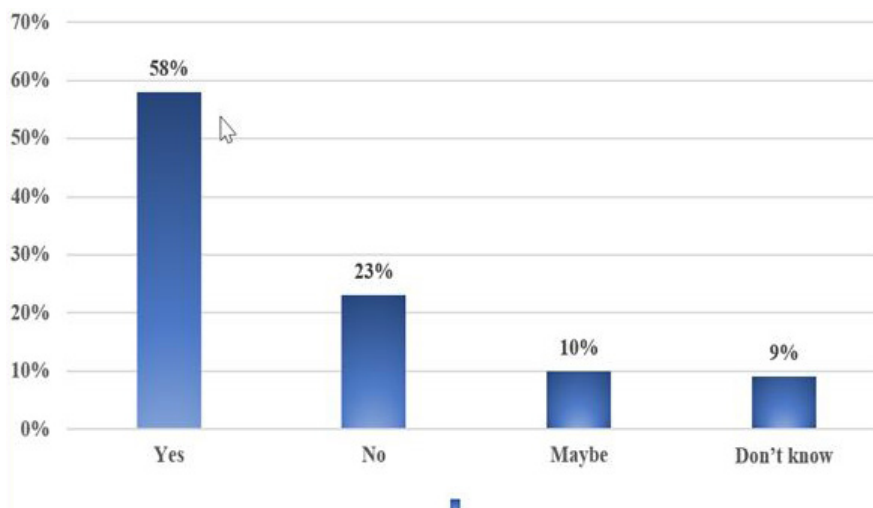


Figure 2: Is Invisalign better than traditional braces?

braces? the distribution of results shown in Figure 2.

DISCUSSION

In recent years, the use of clear dental aligners has significantly grown in popularity, with more and more advertisements promoting it and garnering public exposure [10]. This study examined the dentist's knowledge regarding Invisalign treatment and found that 76% of the respondents were familiar with Invisalign aligners. This figure was higher than that was previously found in a report on direct-to-consumer aligners (45%) [11]. The insight into the type of malocclusions and patients demanding for CA in the clinical practice was an original point of this survey, and it was underlined which increasingly focus on the esthetic appearance of adults and the importance of advertising and marketing in the great interest in invisible orthodontic treatment with CA. Given the growing patient interest in clear aligner treatment, health providers must strive to deliver credible and evidence-based information to patients [12]. The present study found that participants had concepts about the Invisalign clear aligner treatment, with most respondents (58%) believing that such devices were generally better than traditional braces. Clear aligners are often promoted as an equally effective orthodontic treatment modality to traditional fixed appliances. Nonetheless, the current evidence-based research suggests that clear-aligner treatment is more suitable for mild-to-moderate malocclusions, whereas traditional braces remain the gold standard treatment choice in orthodontics [13].

Most respondents in the present study (71%) believed that Invisalign treatment produces superior results to traditional braces. Very few studies have employed occlusal indices to measure the quality of treatment outcomes with clear aligners. Previous studies showed that over 80% of orthodontic patients use social media, with the most popular platforms being Facebook and Instagram [14,15]. In addition, Hanzell, et al. found that only 6.7% of participants use social media to seek orthodontic information, whereas Siddiqui et al. found this figure to be 30% [15]. The present study found that around 32% of the participants use social media to seek orthodontic information. The differences between these findings and those of the previous studies may be due to the research time frame, as well as participants' ages and ethnicity. Moreover, research participants in this study were selected through social media sites, and thus their social media use may be over-represented. Only 38% of our study participants reported that Invisalign was a better treatment option than traditional braces. A study conducted by Miller et al. (2007) demonstrated substantial variances between the two treatment types in how they influence patients during the initial days of treatment [16].

The Invisalign patient's general quality of life was superior to that of the fixed orthodontics patients. Several aspects affect the choice of suitable orthodontic

equipment. The outcomes of this investigation provide the orthodontist and the patient supplementary evidence that can be taken into account when selecting appliance variety. Main reason why adult patients choose clear aligners is that they appear invisible. This helps conceal the fact that the patient is undergoing orthodontic treatment, which can be embarrassing for some adults [17]. Clear aligners also help hide existing gaps, another esthetic benefit. Unlike traditional braces, patients prefer to remove their clear aligners when they eat and brush their teeth [18]. This allows them to continue their usual hygiene routine of brushing and flossing. Overall, these survey research participants indicated satisfaction and positive outcomes.

CONCLUSION

A questionnaire study evaluated the awareness of orthodontic aligners among dentists of Abha, Saudi Arabia by putting forward 10 questions and the responses were noted. From our study, we conclude that though the population was moderately aware of the Invisalign. Most participants perceived Invisalign treatment to be generally better, quicker as compared to traditional appliance. The main part of respondents not currently using clear aligners in their practice was willing to use them in the future.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article.

REFERENCES

1. Kenealy P, Frude N, Shaw W. An evaluation of the psychological and social effects of malocclusion: some implications for dental policy making. *Soc Sci Med* 1989; 28:583-591.
2. Bhullar MK, Nirola A. Malocclusion pattern in orthodontic patients. *Indian J Dent Sci* 2012; 4.
3. Dhar V, Jain A, Van Dyke TE, et al. Prevalence of gingival diseases, malocclusion and fluorosis in school-going children of rural areas in Udaipur district. *J Indian Soc Pedod Prev Dent* 2007; 25:103.
4. Meer Z, Sadatullah S, Wahab MA, et al. Prevalence of malocclusion and its common traits in Saudi males of Aseer region. *J Dent Res Rev* 2016; 3:99.
5. Kluemper G, Beeman C, Hicks E. Early orthodontic treatment: what are the imperatives?. *J Am Dent Assoc* 2000; 131:613-620.
6. Drake CT, McGorray SP, Dolce C, et al. Orthodontic tooth movement with clear aligners. *Int Scholar Res Net Dent* 2012; 2012:1-7.
7. Vicéns J, Russo A. Comparative use of invisalign by orthodontists and general practitioners. *Angle Orthod* 2010; 80:425-434.
8. Moyers RE. Standards of human occlusal development.

- Ann Arbor, MI, USA: University of Michigan CHGD; 1976.
9. Lione R, Paoloni V, Bartolommei L, et al. Maxillary arch development with Invisalign system: Analysis of expansion dental movements on digital dental casts. *Angle Orthod* 2021; 91:433-440.
 10. Noll D, Mahon B, Shroff B, et al. Twitter analysis of the orthodontic patient experience with braces vs. invisalign. *Angle Orthod* 2017; 87:37783.
 11. Olson JC, Shroff B, Carrico C, et al. Comparison of patient factors influencing the selection of an orthodontist, general dentist, or direct-to-consumer aligners. *Am J Orthod Dentofac Orthop* 2020; 157:526-532..
 12. Adobes-Martin M, Montoya-Morcillo ML, Zhou-Wu A, et al. Invisalign treatment from the patient perspective: A Twitter content analyses. *J Clin Exp Dent* 2021; 13:e376-382.
 13. Johal A, Bondemark L. Clear aligner orthodontic treatment: Angle society of Europe consensus viewpoint. *J Orthod* 2021; 48:300-304.
 14. Nelson KL, Shroff B, Best AM, et al. Orthodontic marketing through social media networks: The patient and practitioner's perspective. *Angle Orthod* 2015; 85:1035-1041.
 15. Henzell M, Knight A, Antoun JS, et al. Social media use by orthodontic patients. *N Z Dent J* 2013; 109:130-133.
 16. Miller KB, McGorray SP, Womack R, et al. A comparison of treatment impacts between Invisalign aligner and fixed appliance therapy during the first week of treatment. *Am J Orthod Dentofac Orthop* 2007; 131:302.
 17. Alhaja ES, Al-Nimri KS, Al-Khateeb SN. Self-perception of malocclusion among north Jordanian school children. *Eur J Orthod* 2005; 27:292-295.
 18. Siddegowda R, Rani MS. An epidemiological survey on awareness towards orthodontic treatment in South Indian school children. *Open J Dent Oral Med* 2013; 1:5-8.