Iran J Orthod. 2023 June; 18(1):e1100. doi:10.22034/IJO.2023.1986190.1100.
Published online 2023 June 1
Research Article **Open Access**

Assessment of Patient's Reasons Affecting the Choice between Direct-to-consumer Aligner Companies, General Dentists, and Orthodontists in North Gujarat, India

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Received: 2022 December 30; **Revised:** 2023 January 23; **Accepted:** 2023 May 05

Abstract

Aim: The purpose of this questionnaire study was to determine what criteria lead potential orthodontic patients to choose a direct-to-consumer aligner company, orthodontist, or general dentist in north Gujarat, India.
Methods: A total of 100 potential orthodontic patients from the general population in north Gujarat participated in the study. Google Forms was used to send the questionnaire, and the data was recorded. Participants' views on the type of provider they would prefer for their orthodontic treatment were tabulated. Data was entered in the software SPSS (v. 20.0) and statistical analysis was performed ($p<0.05$).
Results: A total of 58 females and 42 males from the general population (100 potential orthodontic patients) in north Gujarat responded to the questionnaire. The participants (45%) held the opinion that a direct-to-consumer aligner company could offer better cost of treatment, 62% of participants preferred an orthodontist for better quality of treatment, 56% of participants preferred a direct-to-consumer aligner company because they felt that it would be more convenient, and 49% of participants preferred an orthodontist because they felt they would offer better follow-up after orthodontic treatment.
Conclusion: Participants tended to prefer orthodontists because they felt they would receive better quality of treatment and follow-up, and more treatment options such as aesthetic treatment. However, they preferred direct-to-consumer aligner companies because of their convenience, lower cost, shorter treatment duration, and better customer service. For their child's orthodontic care, parents typically choose an orthodontist.

Keywords: Direct-to-Consumer Aligners, General Dentist, Orthodontic Treatment, Orthodontist

Background

The traditional orthodontic marketing strategy relies heavily on the patient's request for recommendations from general dentists. Recently developed clear aligner therapy and a move toward direct-to-consumer (DTC) advertising have changed how some patients approach receiving orthodontic care. The number of adult patients seeking orthodontic treatment has increased by an estimated 16% between 2012 and 2014, accounting for 27% of all patients, and at the same time, clear aligners have become more widely available and advertising tactics for this product have changed (1). Early in the new millennium, manufacturers of orthodontic devices started advertising directly to customers, putting more emphasis on their products, like clear aligners or certain bracket systems, rather than on the services that an orthodontist offers (2).

Despite these shifts in customer behavior, more non-specialists have started delivering orthodontic care. According to studies conducted in the USA, 32%– 57% of general dentists offer some type of limited orthodontic treatment, whereas 18%–20% of general dentists routinely provide complete orthodontic care (3-5). There has also been an

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increase in the number of general dentists offering clear aligner therapy (6).

A new type of orthodontic treatment known as increased in popularity in recent years (2). Patients receive a kit through the mail and make dental impressions at home. A three-dimensional scan of the patient's teeth can also be done at a scanning facility, which is another option for patients. After being returned to the company, the impressions and scans are utilized to create a set of clear aligners that have been made by a qualified dentist. Patients wear the aligners to straighten their teeth without visiting a dentist or being under a doctor's supervision once they receive them in the mail.

Companies that make DTC aligners have quickly attracted the interest of the orthodontic community. Such companies claim that their products are more convenient, less expensive, and require less time to complete treatment than conventional methods (7- 10). However, the cost of advertising on television, social media, and other platforms has increased significantly, thus affecting the overall cost of aligners (2). In addition, the unfavorable effects of DTC aligners offered directly to consumers by companies have not been fully researched, but studies have indicated that there are significant potential health hazards associated with receiving treatment without the guidance of a licensed healthcare professional (11). However, the effectiveness of orthodontic therapy provided by general dentists and orthodontists has previously been compared in research (12-14).

Methods

The study was conducted after obtaining relevant permission from the Scientific Advisory Committee and the Institutional Ethics Committee. A questionnaire study was conducted in the Department of Orthodontics and Dentofacial Orthopedics, Narsinhbhai Dental College and Hospital, Sankalchand Patel University, Visnagar, Gujarat, India. All the willing participants who gave written informed consent and were present at the time of the study were included in the study. The total sample size derived was 100 participants.

Inclusion criteria were potential orthodontic patients from the general population in north Gujarat; the age range of the participants was kept between 18-57 years, and both sexes were included. Exclusion criteria were patients who received previous orthodontic treatment, patients presently undergoing orthodontic treatment, patients aged below 18 years or above 57 years, and potential orthodontic patients who did not give their consent.

A closed-ended questionnaire was distributed via Google Forms to a total of 100 potential orthodontic patients from the general population in north Gujarat. The questionnaire consisted of three domains. The first domain consisted of demographic and educational details of the study participants, followed by their employment status. The next two domains consisted of closed-ended questions that were regarding awareness and knowledge of each orthodontic treatment provider: DTC aligner companies, orthodontists, and general dentists (Table 1). The responses were collected and further coded, then analyzed to assess the knowledge and attitude scores.

Table 1. Questions asked in the questionnaire study using Google Forms

1. Select your age group
2. Select your gender
3. Which of this best describes the area of your residence?
4. What is your education level?
5. What is your current employment status?
6. Are you aware of orthodontic treatment?
7. From where you received the awareness about orthodontic treatment?
8. How often do you use social media?
9. Do you have dental insurance?
10. In your opinion, who will provide you with the better cost of treatment?
11. Who would you prefer for a better quality of treatment?
12. Which of these providers would be more convenient for you to receive treatment?
13. According to you, which provider would complete your treatment in a shorter duration?
14. Who is most likely to provide better customer service?
15. Who would you prefer for more esthetic orthodontic treatment?
16. Who is more likely to provide you with better follow-up after orthodontic treatment?
17. Who will give you more treatment options for your orthodontic needs?
18. Who will give you more payment options for your orthodontic treatment?
19. For your children, who would you take them to for orthodontic treatment?

Statistical analysis

Data was collected using a structured PROforma. Data collected was sorted and entered in a Microsoft Excel sheet, and analyzed using the software SPSS, version 20.0. Frequency statistics of each variable were performed, and then the frequency distribution and percentage of each item of the questionnaire were calculated. The Chi-square test and Fisher's exact test of proportion were performed to analyze the significant difference between the parameters. A p-value of less than 0.05 was considered statistically significant.

Results

The present study aimed to determine and evaluate the potential patient's reasons affecting their decision to choose either a DTC aligner company, a general dentist, or an orthodontist for orthodontic treatment. Potential orthodontic patients were divided into four age groups: 18-27 years, 28-37 years, 38-47 years, and 48-57 years. A total of 58 females and 42 males from the general population in north Gujarat participated in the study. Out of 100 participants, 42 resided in a rural area, and 58 resided in an urban area. 20 completed higher secondary education, 55 were undergraduates, 20 were postgraduate, and five held a Ph.D. degree; 32 were unemployed, nine were employed part-time, and 52 were employed full-time.

The frequency analysis of the different questions is shown in Table 1. Different age groups and the question-wise distribution are shown in Table 2. The Chi-square test of proportion showed statistically significant results (p-value<0.05) with respect to all questionnaire items.

Out of 100 participants, 45 became aware of orthodontic treatments from DTC consumer aligner company advertisements, 32 from an orthodontist, and 18 from a general dentist. According to age group, the majority of the study participants (76%) from the age group of 28 to 37 years became aware of the orthodontic treatment from a DTC aligner company's advertisement, followed by the age groups 38 to 47 years (40%) and 48 to 57 years (56%) (Figure 1).

In this present study, when the responses were analyzed to evaluate the patient's reasons affecting their choice between DTC aligner companies, general dentists, or orthodontists, it was observed that the majority of the participants (84%) from the age group 18 to 27 years selected an orthodontist because they wanted more orthodontic treatment options. In this regard, a statistically significant difference was observed among all the age groups (Figure 2).

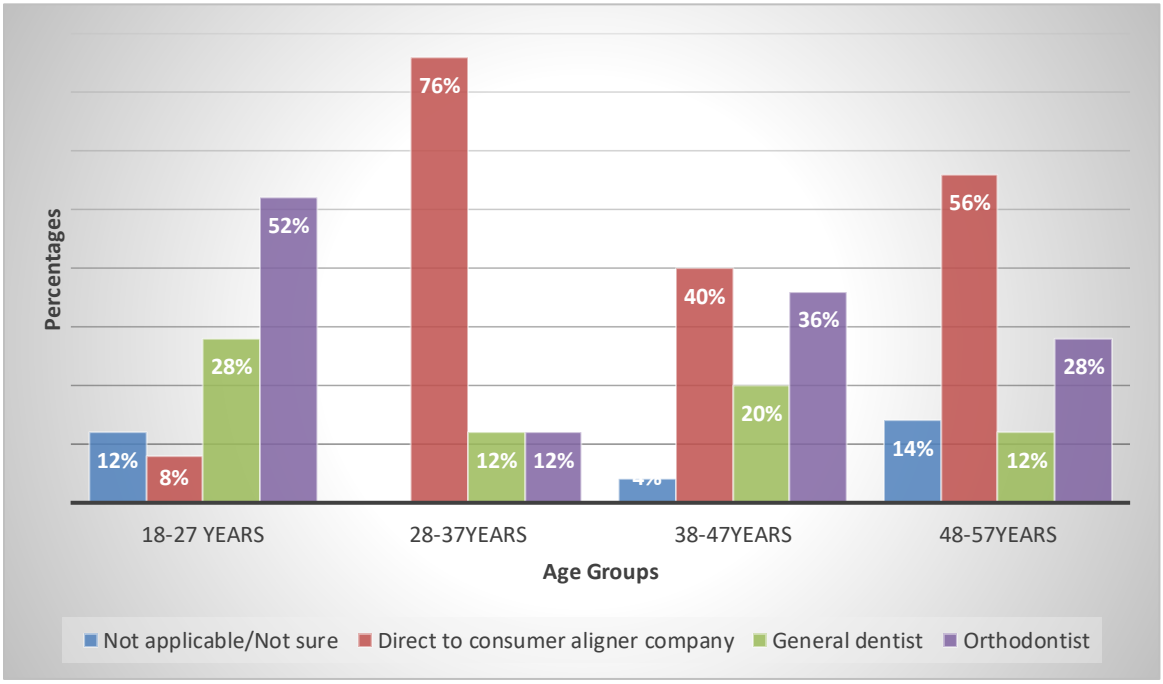


Figure 1. Percentage of age groups and from whom they received information about the orthodontic treatment

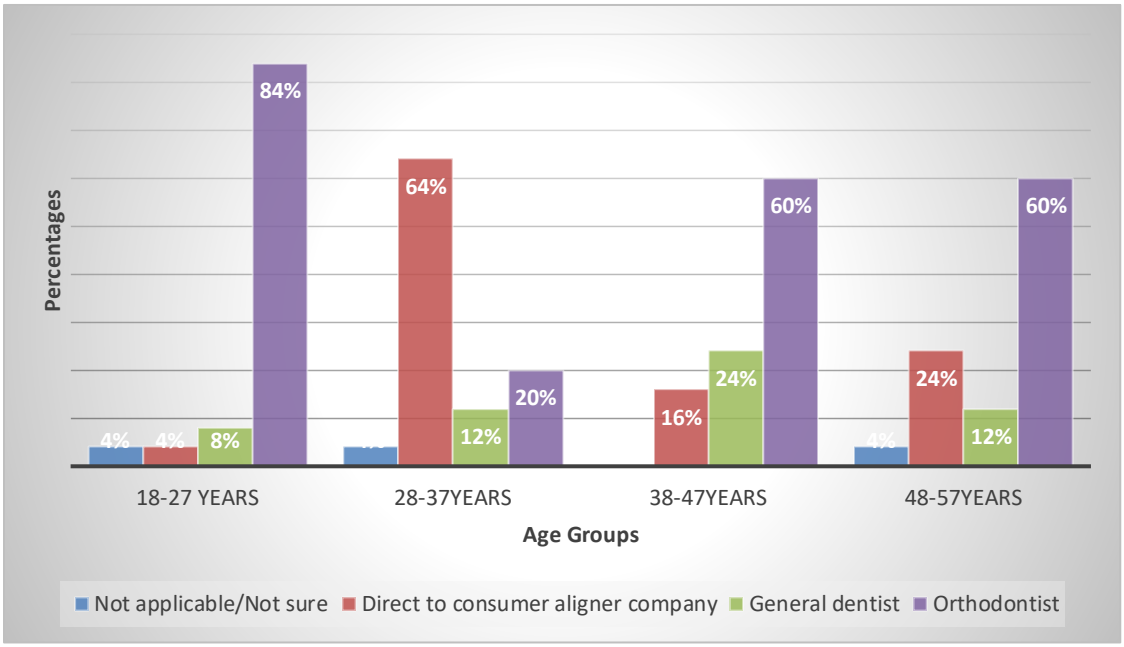


Figure 2. Percentage of different age groups that preferred more orthodontic treatment options

In this study, when the responses were analyzed to evaluate the patient's reasons affecting the choice between the different provider types, it was seen that 45% of participants held the opinion that a DTC aligner company could provide better cost of treatment (Q10), 62% of participants believed an orthodontist offered better quality of treatment (Q11), 56% of participants believed a DTC aligner company could offer more treatment convenience (Q12), and 49% of participants believed an orthodontist could offer better follow-up after orthodontic treatment (Q16) (Figure 3).

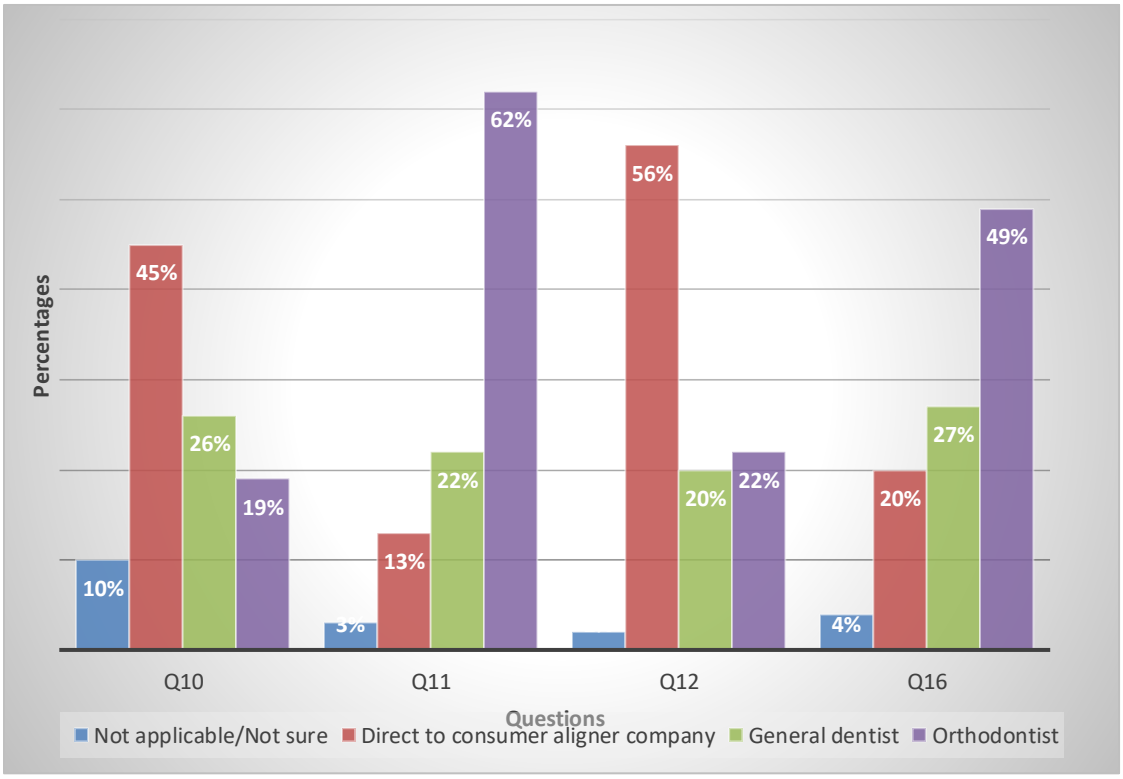


Figure 3. Selecting DTC aligners, general dentists, or orthodontists based on cost, quality, convenience, and better follow-up

Discussion

The purpose of this questionnaire study was to determine what criteria lead potential orthodontic patients to choose DTC aligners, orthodontists, or general dentists in north Gujarat, India. In the past, patients received care from highly skilled orthodontic specialists; however, a rise in non-specialists offering orthodontic treatment and the introduction of DTC aligners offer potential patients with more options. This study analyzes the factors affecting potential patients' provider selection.

Our results showed that there was no statistically significant difference in the rate of selection among participants seeking orthodontic treatment from both orthodontists and DTC aligner companies. However, significantly more patients preferred these over general dentists. In the United States and Canada (1), there are an estimated 5.42 million patients receiving active orthodontic treatment, whereas DTC aligner businesses reported treating up to 500,000 individuals overall as of May 2019 (15). Based on the statistics, it is clear that DTC aligner companies have not been able to largely attract the interest of potential orthodontic patients as they still prefer an orthodontist. Those who chose DTC aligners also showed little interest in choosing an orthodontist. These findings may give orthodontists some sense of security if they are worried that the introduction of DTC aligners will drastically alter patient flow in their offices.

According to our research, prospective patients frequently have to decide between the perceived greater quality of orthodontic treatment provided by an orthodontist and the perceived convenience and lower cost of DTC aligners. It is interesting to note that most people who chose DTC aligners considered these as the major factors influencing treatment quality. Showing that the respondents chose DTC aligner companies could be due to their higher emphasis on affordability and convenience compared to the standard of care.

The convenience that an orthodontist can offer, such as evening appointments, Saturday openings, and accessible office locations, has been the focus of previous studies on the role of convenience in the choice of a provider. All of these convenience factors were found to be of moderate importance (16,17).

However, DTC aligner companies give patients a completely new level of convenience by removing the necessity for routine doctor appointments and minimizing the amount of time away from work or school. Moreover, according to studies, having a good payment plan has a far greater influence on a patient's decision. We demonstrated that the greatest perceived drawback for treatments received by orthodontists is expense. Therefore, it might be advised that orthodontists who offer flexible payment plans might better serve the needs of their patients (16-19). According to studies, orthodontists treat cases more quickly and effectively than conventional dentists, while also evaluating the complexity of orthodontic situations more precisely (20).

DTC marketing proponents claim that customers are provided with information that gives them power, while its opponents worry that patients are not given all the information, they need to make an informed decision about their treatment (2). There is evidence that clear aligners can be used to treat a variety of malocclusions (19); however, these studies have been carried out under the close supervision of dental experts. Regarding the assurance and efficacy of treatment using DTC aligners, no trials are currently available.

This study offers insightful information about how DTC aligners affect the purchase behavior of potential patients. It can be used to guide orthodontists as they work to meet the requirements of their patients, and to provide important knowledge to professional organization leaders as they defend the rights of their members.

Conclusion

Our study results indicate that the existing knowledge and approach of potential orthodontic patients toward different types of orthodontic treatment should be improved. Adults tend to select orthodontists due to the quality of treatment, more treatment options such as esthetic treatment, and better follow-up after treatment, whereas they select DTC aligner companies because of convenience, cost, shorter treatment duration, and better customer service. However, for their child's orthodontic care, parents typically choose an orthodontist.

Conflicts of interest: None to declare.

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