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IP Indian Journal of Orthodontics and Dentofacial Research

Journal homepage: https://www.ijodr.com/

Original Research Article

Awareness about clear aligner among dental students- Cross sectional study

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ARTICLE INFO

Article history:
Received 08-06-2024
Accepted 19-07-2024
Available online 02-09-2024

Keywords:
Awareness
Clear aligner
Dental students

ABSTRACT

Objective: To assess the awareness about clear aligner among dental students of first year, second year, third year, final year and interns of Pushpagiri College Of Dental Science.

Materials and Methods: A cross-sectional questionnaire study conducted among Dental Students of Pushpagiri College of Dental Sciences, by collecting data using questionaire. Students of first year, second year, third year, final year and interns were included for the study. A questionnaire composed of 10 questions, designed to assess awareness about clear aligner among students. Fifty students participated in the study.

Result: The study reveals that out of fifty attendees – I)83.3% attendees didn't used clear aligner before II) 91.7% of attendees aware about clear aligner III)83.3% attendees knows in which cases Invisalign can be use IV)83.3% attendees knows clear aligner have better oral hygiene than traditional brackets.

Conclusion: Awareness program regarding clear aligner are necessary to create awareness among dental students.

1. Introduction

1.1. History

Dr. Kesling described using flexible tooth positioners to move teeth in 1945. The tooth positioning appliance was originally composed of rubber and was a flexible appliance in a single piece that covered the upper and lower tooth surfaces. It permitted active tooth movement and was used for treatment of moderate relapse as well as a retainer. Nahoum introduced the vacuum moulded dental contour appliance in 1964.

Ponitz pioneered the notion of the "invisible retainer" in 1971, recognising that these thin thermoplastic devices might be used to shift teeth. 3 McNamara discussed invisible retainers in 1985 and use of these retainers for minor tooth movements.

Zia Chishti and Kelsey Wirth, both Stanford University graduates, invented the initial technology of Invisalign trays. Chishti's orthodontist provided him with his own plastic retainer to maintain his teeth in place after his treatment was completed and his metal braces were removed. When he noticed that these plastic retainers could also move his teeth back into position when they became out of alignment, he recognised that retainers on their own may be just as effective at aligning teeth. Christi had background in Computer Science and had an idea these new teeth aligners might be built to the desired specifications using 3D CADCAM software before being sent to manufacturing. With 3D design tools, software programming, and 3D printing technologies, Align Technology produced "incremental retainers." They can digitally model a patient's existing bite using software they created in-house and then utilise that to construct an aligner particularly for the patient. Align Technology

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https://doi.org/10.18231/j.ijodr.2024.034

received FDA clearance for Invisalign, a patented term derived from the words "invisible" and "aligners," in 1998. Robert Boyd, chairman of the Department of Orthodontics, University of the Pacific helped Wirth and Christi with means and assistance for testing this technology. Zia Chishti cut connections with Align Technology, the parent business he founded, in 2005. He went on to start his own company, OrthoClear. Align Technology eventually went to court, and after a lengthy legal struggle, Align paid Zia and asked him to stop manufacturing. After 8 years of research and development, Clearpath was incorporated in the United States in 2008. ClearCorrect, which was established in 2006, gained FDA clearance in 2009. It was launched to Australia in 2015 by osseodent. K-line was also launched in 2008. Inman aligners are a variation on the conventional spring retainer. The Inman aligner, unlike the Invisalign system, is not completely transparent and includes a visible metal bar that runs across the front teeth. 3M Clarity aligners entered the clear aligner market in 2008. The analysis and treatment planning were carried out by Dr. Neil Warshawski. Airnivol aligners were introduced by NIVOL in association with the University of Pisa in Italy, in 2010. NovoAlign was created in the United States in 2016 after two years of research and development by a team of orthodontists, engineers, dental technicians, and information technology specialists. [1–3]

Now a days, not only adults have influence of appearance in their professional and personal lives but also children have influence of the same. The maloccluded patients when think about the correction of their malaligned teeth, the first thing that come to their mind are braces, and wires. However, according to the demands and needs of the patients, dentistry has been revolutionized. [4] Dentists are concerned about the aesthetics and it is the major concerns among patients who takes orthodontic treatment. To tackle the increasing aesthetic insist for an alternative to conventional braces, researchers have developed several solutions, such as composite braces, ceramic, lingual orthodontics and clear aligners. Clear aligners are the new age Aesthetic Orthodontic Treatment. [5] The demand of clear aligner is increasing nowadays due to its esthetic demand for those patients who are indisposed of wearing usual orthodontic appliances. Clear aligners are thin transparent removable unobserved plastic aligners for successful moving of teeth into their required position. [6] The patient is instructed to wear such aligner for approximately 20 hours per day and is supposed to change approximately every two weeks. Each aligner will shift the teeth around 0.25 to 0.3 mm. In current years, the figure of teenager patients looking for orthodontic treatment has increased, so the aesthetics of the orthodontic appliance has become a topic of interest. The orthodontic patient today demands a beautiful smile at the end of treatment, but is equally concerned with appearance during the treatment. Due to increasing esthetic demands of adolescent patients and clinical simplification in customizing lingual appliances, the indication of lingual orthodontics today is extended to adolescents apart from young patients. [7–9]

2. Materials and Methods

The awareness about clear aligner questionnaire consisting of 10 questions. Practice were administered to a sample of 50 dental students of first year, second year, third year, final year and interns in Pushpagiri College Of Dental Sciences, Thiruvalla.

3. Result

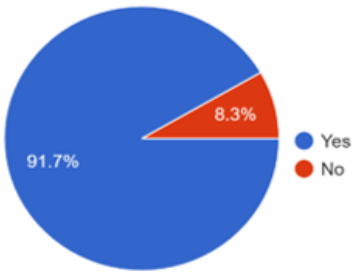

Figure 1: Are you aware about clear aligner?

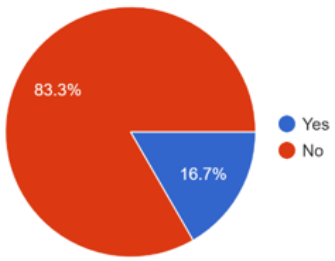

Figure 2: Did you ever use clear aligner?

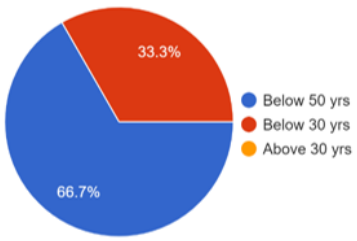

Figure 3: In which age group clear alignercan be use?

4. Discussion

The study was conducted based on a self prepared questionnaire circulated among 50 students of Pushpagiri

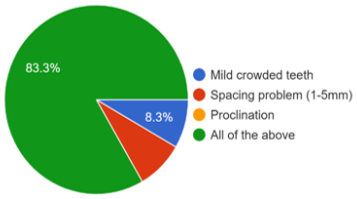

Figure 4: In which cases clear alignercan be use?

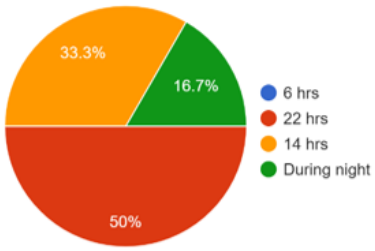

Figure 5: How long an clear alignershould wear?

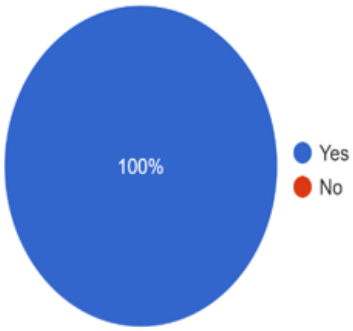

Figure 6: Do you think clear aligneris expensive?

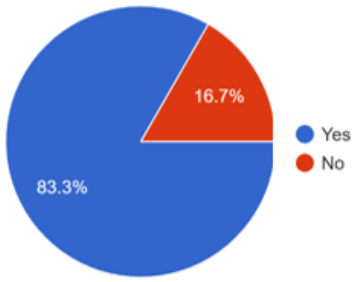

Figure 7: Do you think clear alignerhave better oral hygiene than traditional brackets?

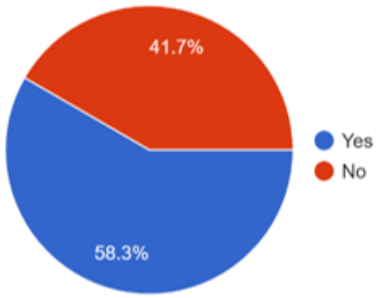

Figure 8: Is clear aligner applicable in premolar extraction cases?

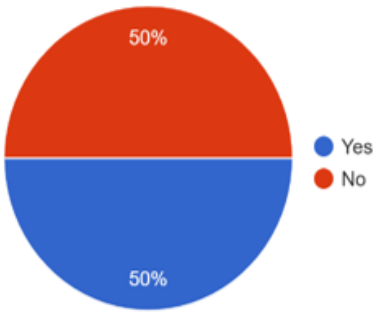

Figure 9: Do you think dental appointments need more for clear alignerthan traditional brackets?

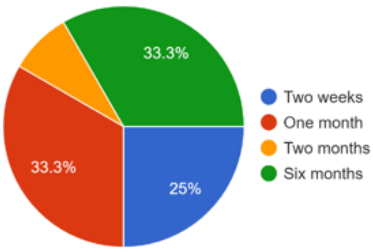

Figure 10: How frequently clear alignermust be changed?

college of Dental Sciences, Thiruvalla, via Google Forms. There are 10 direct questions focused on the awareness about clear aligner among dental students and interns on the awareness about clear aligner. Majority of the participants belonged to the age of 18-25 years.[10–15]

In a developing nation like our country India, where there are numerous dental colleges, an attempt was made to know the awareness level of the dental students and interns about the clear aligner. High level of education may be one of the main reasons that majority of our sample population had medium-high level of awareness. The level of awareness of this sample population is reflective of the quality of education provided and the clinical exposure they receive in the dental college. The limitation in this study is that it was conducted only on dental students and interns in one college and was not representative of dental students of all over the

country and hence the results cannot be generalized. Other weakness in the study is that it has a small sample size of 50 individuals. This study highlights the significant role that the dental college plays in the level of awareness about clear aligner among dental students and thus upcoming dentists. This in turn ensures that these dentists can then provide the best quality of treatment to their patients. [16–18]

As per the survey conducted, about 91.7% of the participants would like to increase their awareness in the field of orthodontics. The necessary arrangements for this can be made by conducting lectures which are more clinically relevant in classes and by providing opportunities to the students to attend more CDE (continuing dental education) programmes held by leading orthodontists.

5. Conclusion

In conclusion, awareness about clear aligner was fair among the study participants. Inadequate knowledge significantly affects the quality of treatment that they can provide to their patients. This study explored the awareness level of the dental students and interns about the clear aligner. This helped in assessing the effectiveness of the existent dental curriculum and understanding the changes to be made to improve the general awareness and knowledge of upcoming dentists.

6. Source of Funding

None.

7. Conflict of Interest

None.

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Cite this article: Daniel JJ. Awareness about clear aligner among dental students- Cross sectional study. *IP Indian J Orthod Dentofacial Res* 2024;10(3):189-192.