

Original Article

Knowledge on Clear Aligner Therapy in Orthodontics Among Undergraduate Dental Students in Benin City, Nigeria

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ABSTRACT

Orthodontic aligner therapy is gaining rapid popularity among the potential orthodontic patients as well as general practitioners. The purpose of this study was to evaluate the knowledge and awareness on clear aligner therapy among undergraduate dental students of the Faculty of Dentistry, University of Benin, Benin City, Nigeria. The study population consisted of eighteen 600 level (Final year) students, twenty two 500 level students and sixteen 400 level students, giving a total population of 63. The study instrument was a self-administered questionnaire. Data was computed and analyzed using SPSS version 21.0. Statistical significance was set at $P < 0.05$. 63 respondents consisted the study population. The minimum age was 20 years, maximum age was 35 years, and the mean age was 24.73 ± 2.63 years. Majority of the respondents knew about clear aligners. The 500 level students had a higher population of knowledge on clear aligners (95.6%), and the female population had a higher knowledge on clear aligners (92.3%), and most of them got their information from Dentists. It is necessary to increase the awareness about clear aligners at the undergraduate level, as well as a basic idea about which cases are ideal for treatment with aligners.

Keywords: Clear aligner therapy, Knowledge, Undergraduate Dental students.

INTRODUCTION

Orthodontic aligner therapy is gaining rapid popularity among the potential orthodontic patients as well as general practitioners.^{1,2,3} The main reason for this popularity seemed to be reduced treatment time, more aesthetic approach and more comfort.⁴

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 20 hours a day for 2 weeks prior to the affected person can progress to the next tray.^{5,6,7} 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 aligners can correct just a mild malocclusion, so patients with severe open bite, deep overbite, or crossbite may necessitate more complex orthodontic treatment.^{8,9,10} Clear aligners also boast of increased hygiene over traditional braces.^{11,12,13} Since this appliances is removable, patients can maintain oral hygiene because they

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usually would decrease the prospects of potential discoloration and decay that regularly occur with conventional braces.^{14,15,16} Food and drink choices are less strict as well. Patient who would like to eat sticky candy can do so after removing their clear aligner retainers.^{17,18,19}

There is a dearth of research on the knowledge on clear aligner therapy among undergraduate dental students in Nigeria, hence the purpose of this study was to evaluate the knowledge and awareness on clear aligner therapy among undergraduate dental students in Benin City, Nigeria.

MATERIALS AND METHODS

This cross-sectional study was carried out among undergraduate dental students of the University of Benin, Benin City, Nigeria. The study population consisted of eighteen final year students (600 level), twenty two 500 level students and sixteen 400 level students giving a total population of 63. A self-administered questionnaire was given to each study participant. The questionnaire consists of a section on demographic information, and another section on general knowledge of malocclusion and orthodontics and clear aligner therapy. Data was computed and analyzed using SPSS version 21.0 software. Data generated were subjected to statistical analysis to determine the variables (frequencies, percentages, and means). Differences between variables were evaluated with Chi-square test. P values at <0.05 were set as significant.

RESULTS

Table 1 shows the distribution of respondents by their level of education. 600 level were 18 (33.3%), 500 level were 22 (36.5%), and 400 level were 16 (30.2%)

Table 2 shows the relationship between the respondents' knowledge of clear aligners and their level of education. In the 600 level group 18 (85.7%) had knowledge of clear aligners while 3 (14.3%) did not know, in the 500 level group 22 (95.6%) had knowledge on clear aligners while 1 (4.4%) did not know. In the 400 level group 16 (84.2%) had knowledge on clear aligners while 3 (15.8%) did not know. There was no statistically significant difference between level of study and knowledge on

clear aligners ($P=0.427$)

Table 3 shows the relationship between Gender of the respondents and their knowledge on clear aligners. In males, 32 (86.5%) had knowledge of clear aligners while 5 (13.5%) did not know. In females 24 (92.3%) had knowledge on clear aligners while 2 (7.7%) did not know. There was no statistically significant difference between the gender of the respondents and their knowledge on clear aligners ($P=0.469$).

Fifty (79.4%) of the respondents have at a time in the past visited a dentist or an orthodontist, while 13 (20.6%) have never visited a dentist or an orthodontist. Forty (63.5% claimed they were satisfied with their smile or appearance while 23 (36.5%) were not satisfied with their smile or appearance.

Sixty two (98.4%) claimed they have heard of the word "orthodontist" while 1 (1.6%) have not. For those who have heard about orthodontists, 4 (6.39%) obtained their knowledge through television, 9 (14.3%) through the internet, 8 (12.7%) through a friend and 42 (66.7%) through a dentist.

Thirty-five (55.6%) claimed they have some irregularity in their dentition while 28 (44.4%) did not notice any such in their dentition. Fifty six (88.9%) claimed that either them or their friends had undergone previous orthodontic treatment while 7 (11.1%) have not. Fifty six (88.9%) had knowledge on clear aligners while 7 (11.1%) do not. Majority, 40 (63.5%) of those who know about clear aligners obtained their knowledge through a dentist.

Fifty (79.4%) agreed that they knew the purpose of clear aligners while 13 (20.6%) did not know the purpose of clear aligners. Forty-seven (74.6%) knew the difference between clear aligners and braces. Thirty-five (55.6%) claimed they would choose braces if in need of treatment, while 28 (44.4%) preferred clear aligners. Forty-four (69.8%) knew that clear aligners are removable while 19 (30.2%) did not know. Forty-five (71.4%) knew that maintenance of oral hygiene is better with clear aligners while 18 (28.6%) did not know.

Twenty-one (33.3%) agreed that clear aligners can be used in the correction of various types of

malocclusion, while 42 (66.7%) agreed that clear aligners cannot correct all types of malocclusion.

Table 1: Distribution of respondents by Level of Education

Level of Education	Frequency	Percent
600 Level (Final Year)	18	33.3
500 Level	22	36.5
400 Level	16	30.2
Total	63	100.0

Table 2: Relationship between Knowledge on Clear Aligners and Level of Study

Level of Education	Knowledge on Clear Aligners		
	Yes	No	Total
600 Level	18 (85.7%)	3 (14.3%)	21
500 Level	22 (95.6%)	1 (4.4%)	23
400 Level	16 (84.2%)	3 (15.8%)	19
Total	56 (88.9%)	7 (11.1%)	63 (100.0%)

Chi-square 1.701; Pvalue 0.427

Table 3: Relationship between Gender and Knowledge on Clear Aligners

Gender	Yes	No	Total
Male	32 (86.5%)	5 (13.5%)	37
Female	24 (92.3%)	2 (7.7%)	26
Total	56 (88.9%)	7 (11.1%)	63 (100.0)

Chi-square 0.524; P value 0.469

DISCUSSION

Clear aligner therapy is gaining rapid popularity among the potential orthodontic patients as well as general practitioners.^{1,2,3}

This study showed that majority of the respondents had knowledge on clear aligner therapy in orthodontics. This was a similar finding in a previous study.⁴ In this study, more females had knowledge on clear aligners when compared to males, however the difference was not statistically significant. Previous studies^{4,5}, recorded similar findings.

This study showed that the 500 level class had higher knowledge on clear aligner therapy though they were younger in clinical exposure than the 600 level group, the difference however was not statistically significant. This finding differed from previous study⁴ where seniority played a role in the knowledge on clear aligners. In other studies, both the older and the younger practitioners had equal knowledge on clear aligners.^{9,20,21}

In this study, majority of the respondents had either visited the dentist or orthodontist, have satisfaction with their smile or appearance and have also heard about an orthodontist. This is a similar finding in a previous study.¹³ This study showed that majority of the respondents acquired their knowledge on clear aligners from dentists, this differed from previous study where majority of the respondents acquired their knowledge on clear aligners from their family members.⁵

In this study, majority of the respondents would choose braces instead of aligners for their treatment, while in previous study majority preferred clear aligners.⁸ This study showed that majority of the respondents were of the opinion that oral hygiene could be better maintained using clear aligners. This was in agreement with previous studies.^{4,13}

In this study, majority of the respondents did not agree that clear aligners can correct various kinds of occlusal irregularities. This was a similar finding in a previous study.¹³

CONCLUSION

This study, which was carried out among Undergraduate Dental Students in a Nigerian University showed that majority of them had knowledge on clear aligner therapy in orthodontics and most of them acquired their knowledge from Dentists, more females had knowledge on clear aligners. Majority of them did not believe that clear aligners can correct all types of malocclusion.

Recommendations

Increasing number of Orthodontists and general dentists are providing Orthodontic aligner therapy which necessitates the need to increase the awareness about it at the undergraduate level as well as a basic idea about which cases are ideal for treatment with aligners.

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Conflict of Interest

Nil

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