

An Update on Orthodontic Manpower and Practice in Nigeria

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Abstract

Background: There has been a steady and progressive growth in the training and practice of orthodontics and the number of Orthodontists in Nigeria have increased over the years. Numerous adolescents and adults have become more concerned about their appearance and are seeking and demanding orthodontic care. The objective of the study was to assess the level of training and practice among orthodontists in Nigeria. Challenges were also identified.

Methods: A 29-item survey was conducted among orthodontic practitioners at the annual meeting of the Nigerian Association of Orthodontists (NAO), which held in Lagos in October 2014. Responses obtained were entered into a computer and results analyzed. Basic statistics including chi-square comparative analyses were performed.

Results: A total of 80 questionnaires were sent out in all; and 71 completed and returned with a 88.8% response rate. Thirty six orthodontists (24 females and 12 males) and 35 residents (18 females and 17 males) participated in the study; total of 42 females and 29 males. Ages of the respondents ranged from 28-64 years with a mean age of 41.50±8.20 years. Eight training institutions were identified in Nigeria. Majority of respondents were trained in Lagos University Teaching Hospital, Lagos. Over 90% of qualified orthodontists received their training in Nigeria. Duration of training ranged between 5 and 8 years. Orthodontic treatment in Nigeria is mostly financed from patient or family/guardian funds and this makes it difficult for those that need orthodontic care to afford treatment. Many adult patients who are 18 years of age or older make up a reasonable percentage of those treated by orthodontic practitioner and fixed appliances alone are therefore a commonly utilized treatment modality. Of adjuncts to orthodontic care, temporary anchorage devices and clear aligner therapy are the most prevalent in use by majority of orthodontists in Nigeria. The knowledge on the use of temporary anchor devices is on the increase among orthodontists in Nigeria.

Conclusions: The present state of orthodontic practice in Nigeria is a welcome development. However, the duration of training should be looked into to foster exponential phenomenon in the dimension of growth of the specialty.

Keywords: Orthodontics in Nigeria, Orthodontists, orthodontic training, orthodontic practice.

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Introduction

Orthodontists are fully qualified dentists who embark on a further study and gain extensive clinical experience. The training of an orthodontist takes six years in Nigeria after the first six years of undergraduate education with a pass in the final professional examination in orthodontics in

the Faculty of Dental Surgery of either the West African College of Surgeons or the National Postgraduate Medical College of Nigeria.

There has been a steady and progressive growth in the training and practice of orthodontics and the number of Orthodontists in Nigeria have increased over the years. About 30 years ago, training of orthodontic residents started at the Lagos University Teaching Hospital, Lagos and since then several other institutions have been accredited to train residents in the discipline of orthodontics. Together with the few qualified orthodontists, the residents have been able to offer orthodontic care to numerous adolescents and adults who have become more concerned about their appearance and are seeking and demanding orthodontic care.

Board Certification has been shown to be a valid method with a goal to help protect the public by ensuring continued competency through the certification of eligible orthodontists.¹ Only 20% of the AAO members were Board certified in 2002.² The American Board of Orthodontists (ABO) has continued to refine and improve the certification and recertification processes and in 1998, it became time limited, and a renewal process was initiated then.³ Certification is now attainable for more orthodontists providing a standard for existence as a

specialty globally. It has been shown to be a valid method with a goal to help protect the public by ensuring continued competency through the certification of eligible orthodontists.¹

An increasing number of adults are undergoing orthodontic treatment; and this makes up only 15 percent of all orthodontic patients. Reasons given by adults for not seeking treatment include a lack of awareness that orthodontic treatment can be performed in adults, apprehension about possible pain or discomfort and concern about social acceptance.⁴ The choice of treatment modalities reflects the educational background and professional preferences of orthodontic practitioner in each country. There is greater preference for functional appliances by European orthodontists compared with their American colleagues.⁵ Dual arch fixed appliance treatment provides the best post-treatment and post-retention result; and used mostly in the late mixed or permanent dentition.⁶

The report sets out the information related to orthodontic specialty in Nigeria. The overall objective of the report is to provide, as far as possible, an accurate reflection of orthodontic practitioners in the country.

Materials and Methods

A cross sectional questionnaire based study among orthodontic practitioners was conducted during the annual session of Nigerian Association of Orthodontists (NAO) in October 2014. Approval was sought and obtained from the Health Research and Ethics Committee of Lagos University Teaching Hospital, Lagos. Self-evaluating questionnaires were distributed to all orthodontic practitioners representing all the eight training institutions who attended the meeting. Information sought included questions about their knowledge and skills in the aspect of orthodontics. A compilation of those who did not attend the meeting was made and e-mails with the questionnaire attached were sent to them. A follow up was also made to those who did not return their questionnaires at the end of the meeting. Responses obtained through email and from questionnaires returned to the principal investigator (OOS) were entered into a computer and results analyzed with a statistical program (SPSS 20.0, SPSS Incorporation, Chicago, USA). Basic statistics including chi-square comparative analyses were performed. Level of significance was set at 5%.

The first draft was pre-tested on a limited sample of resident dental surgeon; about ten in number. After a thorough review of the responses, a final draft of the questionnaire was completed and prepared for distribution.

Results

A total of 80 questionnaires were distributed. The total number of respondents was 71 with a response rate of 88.8%. There were 44; 62% females and 27; 38% males. Female to male ratio was 1.6:1. Age range of respondents was 28-64 years, with a mean age of 41.5 + 8.2 years. Majority of the respondents were in 35-44 years age group (31; 43.7%). About 91.5% of the respondents were trained in Nigeria and 46 (64.8%), 48 (67.6%) and 4 (5.6%) belonged to various international organizations which are World Federation of Orthodontists (WFO), American Association of Orthodontists (AAO), European Orthodontic Society (EOS) respectively. Only 5 (7.0%) belonged to other international organizations, Table 1, Figure 1.

There were a total of 8 training institutions accredited for the training of orthodontists in Nigeria. About half (50.7%) of the respondents were

Table 1: Demographic and other Characteristics of Respondents

Variable	Frequency	Percentage
Age of participants (total)		
25 – 34	15	21.1
35 – 44	31	43.7
45 – 54	18	25.4
55 – 64	7	9.9
Total	71	100.0
Sex of participants		
Male	27	38.0
Female	44	62.0
Total	71	100.0
Status of participants		
Registrar	35	49.3
Consultant	36	50.7
Total	71	100.0
Country where training was acquired		
Nigeria	65	91.5
United kingdom	3	4.2
France	1	1.4
Non response	2	2.8
Total	71	100.0
Membership of international organizations		
World federation of orthodontists	46	64.8
American association of orthodontists	48	67.6
European orthodontic society	4	5.6
Others	5	7.0

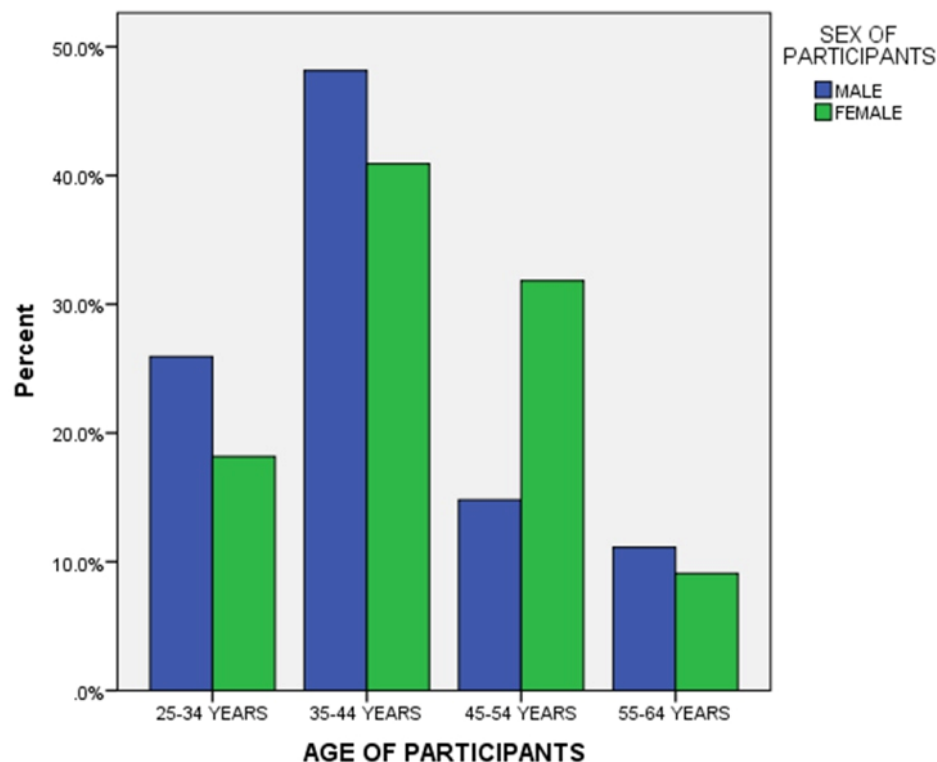


Figure 1: Age and Gender Distribution of Participants

Table 2: Shows Training Institutions/status and Duration of Training of Respondents

Institution of Training		
Lagos University Teaching Hospital	36	50.7
Obafemi Awolowo University Teaching Hospital	11	15.5
University College Hospital	8	11.3
Univ. of Benin Teaching Hospital	5	7.0
Univ. of Port Harcourt Teaching Hospital	1	1.4
Aminu Kano Teaching Hospital	3	4.2
Lagos State Univ. Teaching Hospital	3	4.2
University of Nigeria Teaching Hospital	1	1.4
No response	3	4.2
Total	71	100.0
Status of Institutions of Training		
Programme Accredited	64	90.1
Programme not Accredited	4	5.6
No response	3	4.2
Total	71	100.0
No of years spent in Training (years)		
2-4	20	28.2
5-6	38	53.5
>6	13	18.3
Total	71	100.0
Type of college/exam subscribed to		
West African College of Surgeons	38	53.5
National Postgraduate College of Nig.	16	22.5
Both Colleges	14	19.7
Not applicable	3	4.2
Total	71	100.00

trained at the Lagos University Teaching Hospital, Lagos. Over 70% of the training institutions are fully accredited to train residents. Duration of training ranged 5-8 years; majority spent 5-6 years (53.5%). West African College of Surgeons (WACS) more subscribed to for training (38; 53.5%) than the National Postgraduate Medical College of Nigeria (NPMCN) (16; 22.5%), Table 2.

Board certification, a process by which an individual Orthodontist is voluntarily examined by his/her peers as to orthodontic knowledge and clinical skills were understood by 42 out of 71 (59.1%) respondents, and they gave the right answer. The converse was the response in 20 out of 71 (28.2%) respondents. Nine respondents (12.7%) didn't understand the term at all. There was no statistically significant difference in board certification by status of the respondents ($\chi^2=3.025$; $p=0.082$), Tables 3a and 3b.

Seventy percent of respondents believe that an orthodontist needs to be board certified and the most suggested process was through discussion of patient case reports treated by the applicant 41 (46.1%). Other processes suggested were by written examination 22 (24.7%) and diagnosis and treatment planning of cases seen 19 (21.3%). There were multiple responses given for this aspect of the questionnaire. The Nigerian Association of Orthodontists (NAO) was highly suggested as a

Table 3a: Responses on Board Certification by Respondents

Variable	Frequency	Percentage
What do you understand by board certification?		
This is a process by which an individual Orthodontist is voluntarily examined by his/her peers as to Orthodontic knowledge and clinical skills	42	59.1
Incorrect response	20	28.2
Don't know	9	12.7
Total	71	100.0
Do you think an orthodontist in Nigeria needs to be board certified?		
Yes	50	70.4
No	20	28.2
Don't know	1	1.4
Total	71	100.0
If yes, reason(s)		
Proficiency and excellence	45	95.7
N/A	2	4.3
Total	47	100.0

Table 3b: Board Certification by Status of Respondents

Variable	Do you think an Orthodontist in Nigeria needs to be board certified?		X ²	P – value
	Yes	No		
Status of participant				
Registrar	21(61.8)	13(38.2)		
Consultant	29(80.6)	7(19.4)	3.025	0.082
Total	50(71.4)	20(28.6)		

provider for the opportunity for members to become certified (84%). The training bodies in Nigeria namely: the West African College of Surgeons and the Nigerian Postgraduate Medical College of Nigeria were also suggested by 3 (6.0%) and 1 (2.0%) respondent(s) respectively. Board certification is not in demand among our members and being unsure on how to implement the process are some of the barriers identified to non-certification of members (7; 35.0% and 6; 30.0%) respectively, Table 4.

Fixed appliances alone are the commonly utilized treatment modality in 50.7% of respondents where between 51-75% of the patients are treated with fixed appliances. Other modalities of treatment used are the use of functional appliances (49 (59%) of respondents for the treatment of about 5% of the patients), use of combined fixed and functional appliances (40 (56.3%) of respondents for the treatment of about 5% of the patients), use of removable appliances only (41 (57.7%) of respondents for the treatment of about 5% of the patients) and the use of fixed and removable appliances (33 (46.5%) of respondents for the

treatment of about 5% of the patients), Table 5. There was statistically significant difference in the percentage of patients treated by registrars and consultants using a combination of fixed and functional appliances only ($\chi^2=4.58$, $p=0.032$); residents treated more than 5% of the patients using a combination of fixed and functional appliances, Table 6. Practitioners with about 5-6 years in training are more proficient in the use of fixed appliances alone in treating 51-75% of the orthodontic patients. There was a statistically significant difference in the duration of training and the use of fixed appliance alone ($\chi^2=9.84$, $p=0.043$), Table 7.

Orthodontic care in Nigeria is mostly financed from patient or family/guardian funds. About 76% of respondents reported that orthodontic treatment was totally financed from patient or family/guardian funds. There was no funding available for orthodontic care from government or private insurance. Patients older than 18 years of age make up about 26-50% of the patient population and are treated by about 65% of the respondents, Table 8.

On the question on the use of adjuncts to orthodontic care prevalently used in different centers

Table 4: Processing and provider of board certification among respondents

	Frequency	Percentage
If yes, what process will you suggest to be used for applicants to become board certified (<i>multiple response</i>)		
Written exams	22	31.0
Discussion of patient case reports treated by the applicants	41	57.7
Diagnosis and treatment plan of case the applicant has not seen before	19	26.8
Others	7	9.9
If yes, who do think should provide the opportunity for members to become certified		
Nigerian Association of Orthodontists	42	84.0
West African College of Surgeons	3	6.0
Nigerian Postgraduate Medical College of Nigerian	1	2.0
Others	4	8.0
Total	50	100.0
If no, reason(s)		
We are unsure how to implement a board certification process	6	30.0
We don't have the time and resources needed	3	15.0
Board certification is not in demand among our member	7	35.0
Others	4	20.0
Total	20	100.0

the respondents practice; the responses were dichotomised by merging responses “none use it” and “few use it” into “least used”. Responses “some use it” and “most used it” were merged into “mostly used”. Therefore of adjuncts to orthodontic care, temporary anchorage devices are the most prevalent (15, 21.1%) in use by majority of respondents providing orthodontic care in Nigeria, Table 9. Other adjuncts are the use of lingual fixed orthodontic appliances and clear aligner therapy (9, 12.7% and 6, 8.4%) respectively. There was no statistically significant difference in the prevalence in use of adjuncts to orthodontic care by the registrars and consultants, Table 10.

Discussion

There are more females than males among the orthodontic practitioners studied. This is in agreement with the finding reporting that more female orthodontists qualify as specialists in Sweden.⁸ However, in the United Kingdom more male (60.2%) than female (39.8%) orthodontists worked in the United Kingdom until recently when the trend of the workforce changed drastically.⁹ Similarly, majority of residents (64 percent) were male in a graduate orthodontic programs in North America.¹⁰ Ogunbodede concluded that there has been a consistent rise in female dental practitioners

from 15.3% in 1981 to 35.1% at the end of 2000 and he projected that gender balance will be attained in the year 2015.¹¹

Orthodontic training started in Nigeria about thirty years ago with the commencement of training at the Lagos University Teaching Hospital (LUTH), Lagos. Other training institutions have since been established in about 7 other locations spread all over the country. A large number of orthodontic practitioners belong to one international body or the other; the most popular being the American Association of Orthodontists (AAO). Membership in the AAO is an outstanding value for orthodontists. From practice management tools and marketing materials to world-class education and meetings, AAO membership is the ideal way to stay current and ensure success both now and in the future.

Training of residents was found to span an average of 5-6 years from this study. This is in contrast to what obtains in Europe and USA where the duration is of shorter duration.^{12, 13} Majority of practicing orthodontists in this study were trained in Nigeria with a very few number trained outside the country; in countries like France and UK. The local postgraduate training though started three decades ago in Nigeria, there is a need for restructuring and strengthening of the programme in order to face the challenges ahead. The importance of constant

Table 5: Treatment Modalities of Respondents

Variable	Frequency	Percentage
Fixed appliance alone (0%)		
10–50	15	21.1
51– 75	36	50.7
76–100	19	26.8
Non response	1	1.4
Total	71	100.0
Functional appliance alone (0%)		
0–5	49	59.0
>5	21	29.6
Non response	1	1.4
Total	71	100.0
Combination of fixed and functional appliance (0%)		
0–5	40	56.3
>5	30	42.3
Non response	1	1.4
Total	71	100.0
Other removable appliance alone (not to include clear aligners) (0%)		
0–5	41	57.7
>5	28	39.4
Non response	2	2.8
Total	71	100.0
Fixed and removable appliance combination (0%)		
0 – 5	33	46.5
6 – 10	22	31.0
>10	14	19.7
Non response	2	2.8
Total	71	100.0

Table 6: Treatment Modalities by Registrars and Consultants

Variable	Status of participant		X ²	P – value
	Registrar	Consultant		
Fixed appliance alone			5.904	0.052
10 – 50	11(73.3)	4(26.7)		
51 – 75	17(47.2)	19(52.8)		
76 – 100	6(31.6)	13(68.4)		
Total	34(48.6)	36(51.4)		
Functional appliance alone			2.135	0.144
0 – 5	21(42.9)	28(57.1)		
>5	13(61.9)	8(38.1)		
Total	34(48.6)	36(51.4)		
Combination of fixed and functional appliance			4.580	0.032**
0 – 5	15(37.5)	25(62.5)		
>5	19(63.3)	11(36.7)		
Total	34(48.6)	36(51.4)		
Other removable appliance alone			1.881	0.170
0 – 10	23(56.1)	18(43.9)		
>10	11(39.3)	17(60.7)		
Total	34(49.3)	35(50.7)		
Fixed and removable appliance combination			3.558	0.169
0 – 5	15(45.5)	18(54.5)		
6 – 10	9(40.9)	13(59.1)		
>10	10(71.4)	4(28.6)		
Total	34(49.3)	35(50.7)		

Table 7: Relationship Between Duration of Training and Modalities of Treatment

Variable	Number of years spent in training			X ²	P- value
	2 – 4	5 – 6	>6		
Fixed appliance alone (%)				9.840	0.043**
10 – 50	3(23.1)	3(23.1)			
51 – 75	7(21.9)	22(68.8)	3(9.4)		
76 – 100	4(22.2)	9(50.0)	5(27.8)		
Total	18(28.6)	34(54.0)	11(17.5)		
Functional appliance alone (%)					
0 – 5	11(25.0)	25(56.8)	8(18.2)	0.914	0.633
>5	7(36.8)	9(47.4)	3(15.8)		
Total	18(28.6)	34(54.0)	11(17.5)		
Combination of fixed and functional appliance				3.256	0.196
0 – 5	7(20.0)	19(55.9)	8(23.5)		
>5	11(37.9)	15(51.7)	3(10.3)		
Total	18(28.6)	34(54.0)	11(17.5)		
Other removable appliance alone (%)					
0 – 10	13(32.5)	19(47.5)	8(20.0)	2.492	0.288
>10	4(18.2)	15(68.2)	3(13.6)		
Total	17(27.4)	34(54.8)	11(17.7)		
Fixed and removable appliance combination (%)				6.863	0.143
0 – 5	5(16.1)	22(71.0)	4(12.9)		
6 – 10	6(35.3)	7(41.2)	4(23.5)		
>10	6(42.9)	5(35.7)	3(21.4)		
Total	17(27.4)	34(54.8)	11(17.7)		

upgrading of knowledge and skills in all areas of orthodontics cannot be over emphasized.¹⁴ in

Board certification is an essential process in orthodontic practice to protect the public by ensuring competency through the certification of eligible orthodontists.¹⁵ Though many orthodontists understood the term, many still were not sure of the term. It was also found out that board certification is surprisingly not in high demand among orthodontists in Nigeria and many are even unsure on how to implement it. The inadequacy of the knowledge may have contributed to the attitude towards certification of orthodontists in Nigeria. The importance of certification cannot be over emphasized. This would help to stem the influx of non-professionals in the provision of orthodontic care to the populace. The local orthodontic body, the Nigerian Association of Orthodontists (NAO) should take up the challenge as suggested by respondents in this study. The Association was founded in April 2004 and became affiliated to the World Federation of Orthodontists 2 years later. The vision of NAO is to advance and promote orthodontic practice in Nigeria and throughout the world. This, the Association hopes to achieve among other objectives by promoting high ethics and standards in the clinical practice of orthodontics and

expressing views on all proposed legislations affecting the practice of the specialty.

Fixed appliance treatment is a popular treatment modality with a burgeoning increase in the numbers of children and adults realizing the benefits that can be gained. It is used in up to three quarters of all patients seen in orthodontic practices spread all over Nigeria. However, other modalities are also available and include the use of removable

appliances under which falls the category of functional appliances.

In the 1980s, when the growth of orthodontics started in Nigeria, Begg brackets and technique were quite popular. With exposure at international orthodontic conferences, there was a transition to the use of the preadjusted brackets and technique in the late 1990s. The swings in variety of appliances, from extraction to non- extraction therapy and in treatment philosophy have been quite dramatic. The focus has always been on faster treatment, reduced visits/appointments and superior results.¹⁶ The orthodontic program in the US was rated to offer exposure and training to numerous orthodontic treatment philosophies and was reported in a study.¹⁷ Fixed appliances alone are commonly utilized treatment modality in 50.7% of respondents. There was a statistically significant difference in the

Table 8: Ways of Financing Orthodontic Treatment in Practice

Variable	Frequency	Percentage
Totally financed from patient or family/guardian funds (%)		
0 – 50	7	9.9
51 – 75	5	7.0
76 – 85	5	7.0
86 - 100	54	76.1
Total	71	100.0
Totally financed from government funds (%)		
0	63	88.7
5.0	4	5.6
10.0	1	1.4
20	2	2.8
100.0	1	1.8
Total	71	100.0
Totally financed from private insurance (%)		
0	65	91.5
1.0	1	1.4
5.0	2	2.8
10.0	2	2.8
30.0	1	1.4
Total	71	100.0
Partially financed from patient and partially from private insurance (0%)		
0	62	87.3
5.0	2	2.8
10.0	2	2.8
15.0	1	1.4
20.0	2	2.8
30.0	2	2.8
Total	71	100.0
Partially financed from government and partially financed from patient (0%)		
0	56	78.9
1.0	2	2.8
5.0	2	2.8
10.0	4	5.6
15.0	1	1.4
20.0	1	1.4
50.0	2	2.8
80.0	1	1.4
100.0	2	2.8
Total	71	100.0
Of these patients treated by orthodontic specialist for full case (comprehensive) orthodontics, % performed for adult patients who are >18 years		
0 – 25	16	23.5
26 – 50	44	64.7
>50	8	11.8
Total	68	100.0

percentage of patients treated by registrars and consultants using a combination of fixed and functional appliances ($\chi^2=4.58$, $p=0.032$); and duration of training and the use of fixed appliance

alone ($\chi^2=9.84$, $p=0.043$).

Of adjuncts to orthodontic care, temporary anchorage devices and clear aligner therapy are the most prevalent in use by majority of orthodontists in

TABLE 9: Prevalence of Adjunct Use in Orthodontic Care Among the Respondents

Variable	Frequency	Percentage
Temporary anchorage devices		
Least used	56	78.9
Mostly used	15	21.1
Total	71	100.0
Lingual fixed orthodontic appliances		
Least used	62	87.3
Mostly used	9	12.7
Total	71	100.0
Clear aligner therapy		
Least used	65	76.1
Mostly used	6	8.5
Total	71	100.0
Laser device		
Least used	70	98.6
Mostly used	1	1.4
Total	71	100.0
Cone beam computed tomography (cbct)		
Least used	71	100.0
Mostly used	0	0.0
Total	71	100.0

Table 10: Use of Adjuncts to Orthodontic Care by Registrars and Consultants

Variable	Status of participant		X ²	P – value
	Registrar	Consultant		
Temporary anchorage devices			2.587	0.460
Least used	25(44.6)	31(55.4)		
Mostly used	10 (66.7)	5(33.3)		
Total	35(49.3)	36(50.7)		
Lingual fixed orthodontic appliances			3.146	0.370
Least used	32(51.6)	30(48.4)		
Mostly used	3(33.3)	6(66.7)		
Total	35(49.3)	36(50.7)		
Clear aligner therapy			0.151	0.927
Least used	32(49.2)	33(50.8)		
Mostly used	3(50.0)	3(50.0)		
Total	35(49.3)	36(50.7)		
Laser device			4.121	0.127
Least used	35(50.0)	35(50.0)		
Mostly used	0(0.0)	1(100.0)		
Total	35(49.3)	36(50.7)		
Cone beam computed tomography (cbct)			2.001	0.157
Least used	35(49.3)	36(50.7)		
Mostly used	0(0.0)	0(0.0)		
Total	35(49.3)	36(50.7)		

Nigeria. No statistically significant difference in the prevalence in use by the registrars and consultants.

Funding of orthodontic treatment in Nigeria is mostly financed from patient or family/guardian funds. Most private insurance companies do not sponsor orthodontic treatment to its customers. Majority of patients utilizing orthodontic services

are from the higher social classes, therefore the uptake of orthodontic treatment is mainly a function of cost and not need or demand in Nigeria.¹⁸ Therefore the large number of adolescents and young adults who should receive orthodontic treatment because of the associated health risks, esthetics, functional and psycho-social problems

with malocclusion unfortunately do not have access to such services because of lack of funding of any sort from the government.

The knowledge on the use of temporary anchorage devices (TADs) is on the increase among orthodontic practitioners in Nigeria. Patients do accept TADs and prefer their use rather than have teeth extracted in orthodontics.¹⁹

Less used in orthodontic practice in Nigeria are the laser technique and cone beam computed tomography (CBCT). It was however reported that laser technique is widely applied in orthodontic treatment and proved to have many benefits. Soft tissue lasers can be used to perform gingivectomy, frenectomy and surgical exposure of a tooth with less bleeding and swelling, improved precision, reduced pain and less wound contraction. Other laser applications include enamel etching and bonding and bracket debonding. Lower level lasers have the potential effects of pain control and accelerating tooth movement. Clinicians must be aware of the safety issues and risks associated with laser and receive proper training before the laser treatment is started.²⁰

Cone beam computed tomography (CBCT) has probably been one of the most revolutionary innovations in the field of dentistry in the past decade and it provides a novel platform for orthodontic diagnosis and treatment planning. Current imaging techniques are essentially two-dimensional (2D) representations of three-dimensional (3D) objects and suffer from several limitations. Hence, fulfillment of ideal imaging goals has been limited. Two-dimensional radiographs are insufficient, especially in complex cases like impacted teeth, supernumerary teeth and orthognathic surgeries. CBCT images provide far more detailed information than conventional 2D radiographs and are user friendly. Soft tissues, skull, airway and the dentition can be observed and measured on CBCT images in a 1:1 ratio. CBCT provides an excellent tool for accurate diagnosis, more predictable treatment planning, more efficient patient management and education, improved treatment outcome and patient satisfaction.²¹

Conclusion

The present state of orthodontic practice in Nigeria is a welcome development. However, the duration of training should be looked into to foster phenomenon growth in orthodontic practice in Nigeria. Board certification should be implemented. Orthodontic care should be financed, remunerated and supported by National Health Insurance Scheme

(NHIS) of the government.

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Contributors

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Nil

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