



## Online Training in Implant Dentistry in Nigeria: An Aid to Improve Dental Practice

Ikimi Nathan Ukuoghene<sup>1\*</sup>, Amrore Irene<sup>2</sup>, Adetoye Johnson Obiniyi<sup>3</sup> and Nwabueze Sylvester Ihieuwaro<sup>4</sup>

<sup>1</sup>Dental and Maxillofacial Department, State House Medical Center, Abuja, FCT, Nigeria

<sup>2</sup>Barbara Castle Dental Practice, Broadley Road, Harlow Essex, United Kingdom

<sup>3</sup>Garki General Hospital, Abuja, FCT, Nigeria

<sup>4</sup>Division Hospital, Nigeria Army, Jos, Plateau State, Nigeria

**\*Corresponding Author:** Ikimi Nathan Ukuoghene, Dental and Maxillofacial Department, State House Medical Centre, Aso Rock, Abuja, FCT, Nigeria.

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### Abstract

**Objective:** This study would seek to find out the relevance of online (internet) training in implant dentistry as an aid to improve the skill and efficiency of the dentist treating patients that need implants and if the dentist in Nigeria would respond positively to such training which would be combined with mentorship.

**Methods:** This is an electronic survey using questionnaires consisting of structured questions which are both open-ended and close-ended sent via one of the dental “WhatsApp” group of the Nigeria Dental association with 61 members registered although, this is not the total number of dentist practicing in Nigeria. Responses were collected by a single operator; data was analysed using SPSS version 20 and a descriptive statistical analysis was carried out with level of statistical significance set at  $\leq 0.05$ .

**Results:** The overall response rate was 90.2% (n = 55) consisting of 47.3% male dentists and 52.7% females; public service 61.8% and 38.2% in private practice. Dentists with previous implant training were 63.5% and 36.4% had no previous training. As few as only 9.1% felt confident in handling full mouth restoration with dental implants, while 87.3% would welcome a combination of online training and mentorship on implant dentistry.

**Conclusion:** Within the limitations of this study, online training with clinical mentorship to improve the skill and confidence of dental practitioners in implant dentistry has relevance in Nigeria and is an acceptable aid to training in implant dentistry however, this is not a substitute to clinical training and hands-on.

**Keywords:** Implant Dentistry; Nigeria; Online Training

### Abbreviations

FCT: Federal Capital Territory; IBM: International Business Machines; NDA: Nigeria Dental Association; SPSS: Statistical Package for the Social Sciences; USA: United States of America

### Introduction

The field of implant dentistry has grown tremendously and there has been increased awareness with acceptability of dental implants by patients as a treatment option for missing teeth. A study carried out among 120 Americans [1] indicated a high level of awareness and acceptability of dental implants. In another survey carried out in Austria, 72% of respondents were aware of dental implants procedures [2]. This increased awareness and acceptability of dental implants could be attributed to the fact that the use of partial denture has long been associated with discomfort especially while eating because of denture instability. Other undesirable side-effects associated with the use of dentures include: gum stripping from rough edges of dentures, food packing, infection such as candidiasis, halitosis from poorly maintained dentures, fracture of dentures and poor speech; thus, patients are ready to accept alternative dental restorative options [3]. Fabricated dental Bridges on the other hand, used as alternatives is associated with a compromise of the enamel and dentine of adjacent teeth that is used as abutment for the bridge [3] and recurrent gingivitis could also result from gingival margins that are not well prepared [4]. Studies among patients

that got dental implants in Riyadh reported that about 71% of the respondents expressed satisfaction with the aesthetics result of the implants as better restorative preferences [5]. Giedre., *et al.* in their study on the effects of mandibular fixed implant supported prosthesis reported improvements in deglutition, speech and an increased satisfaction of the implant treatment among edentulous patients [6].

Thus, with the steady increase in the use of dental implants as suitable restorative alternatives for missing teeth, it has become imperative that the dentist should be well trained in delivering this treatment satisfactorily. However, standard dental implant education and practical sessions is currently not included in the undergraduate curricula in Nigeria dental schools [7]. This situation is not different in India where dental undergraduate are also not taught dental implants in school [8,9] and are therefore not equipped to handle implant cases on graduation. The resultant effect of this trend as reported by Akeredolu., *et al.* is that in Nigeria, a large number of dentists have never placed dental implants in any patients since graduating from the dental school partly due to not having the required training and not been properly equipped [7]. Since this seems to be a common challenge in most developing countries, there is a serious need for an improvement in postgraduate training in the area of implant dentistry mainly as the patients look up to the dentist for reliable information and treatment [7,10]. There is a general agreement that postgraduate

education in residency programs in Nigeria has been found to increase the knowledge and dental skills of the dentist [11] and this may be the only source of training on dental implant for dentist in Nigeria. However, only a few dentist go into residency programs, while the bulk of dentist are in general dental practice and these latter group’s source of implant education is the internet where most published papers are “closed” and have to be paid for before one can access them while the few ones with “open” access do not have enough materials to train the dentist on dental implantology. Workshops and update lectures are also sources of training but these training programs are almost often not attended by the general dental practitioner because of his busy patient schedule, thus benefits from these workshops with the update lectures are lost. The general dental practitioner only attends trainings to accumulate the required credit points needed for annual registration by the Medical and Dental council of Nigeria [12].

The objective of this study is to find out if dentists in Nigeria would respond positively to an alternative method of education which combines online (Internet) training with offline (traditional classroom instruction), the online aspect of the training he can receive within the comfort of his home and office. The study would seek to find out if the dentist would be comfortable with mentorship during and after the online training, where the mentor would be able to come to his clinic and supervise him while he is managing his patients on dental implant. We hope that at the end of this study, there would be enough bases to advocate for an additional and acceptable training method on implant dentistry in Nigeria.

Material and Methodology

Ethical permit was applied for and granted by the health and ethic committee of the Federal capital territory (FCT) for this cross-sectional electronic survey using questionnaires consisting of structured questions which are both open-ended and close-ended sent via one of the dental “WhatsApp” group of the Nigeria Dental association (NDA) with 61 members registered although, this is not the total number of dentists practicing in Nigeria. The dentists were required to indicate their Sex, years in dental practice, professional ranks such as dental consultants, resident doctors in residency training; dental officers or general practice dentistry. The questionnaires seek to find out if the dentists are in Government institutions or Private practice. Questions such as “Do you feel confident placing implants and restoring (both cemented and screw-retained) implant restorations in your own practice setting?”, “Do you feel confident treating patients that require full mouth implant-based restorations?” were asked and options such as “ Yes, No, Maybe” were given for respondents to choose from. The questionnaire we hope would form part of the initial evaluation process involved in the design of an educational programme [13], such that a cost effective

online training program could be advocated for dentists in Nigeria to augment postgraduate training in Nigeria. Responses were collected by a single operator; data were analysed using SPSS version 20 (IBM, USA) and a descriptive statistical analysis was carried at with level of statistical significance set at  $\leq 0.05$ .

Results

The overall response rate was 90.2% (n = 55). This study consisted of 47.3% male dentists and 52.7% females; majority of the respondents have been practicing dentistry for more than 10 years. Details shown in table 1.

Variable	n = 55	Frequency (%)
Gender	Male	26 (47.3)
	Female	29 (52.7)
Practicing center	Public	34 (61.8)¶
	Private	21 (38.2)
Additional qualification post-graduation	Yes	23 (41.8)
	No	32 (58.2)
Year of practice (years)	≤ 5	14 (25.5)
	6 - 10	16 (29.0)
	> 10	25 (45.5)

Table 1: Socio-demographic characteristics of respondents.  
¶: Majority of respondents work in the public service.

Investigating if respondents had previous training in implant dentistry, 63.5% answered to the affirmative that they had undergone a form of training. Details in figure 1.

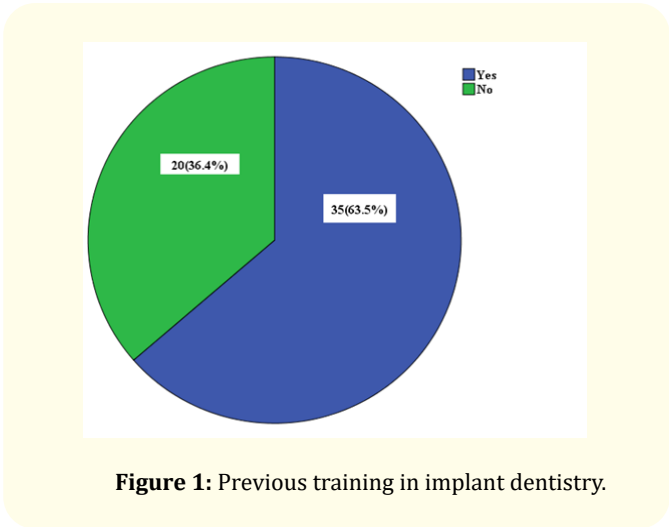


Figure 1: Previous training in implant dentistry.

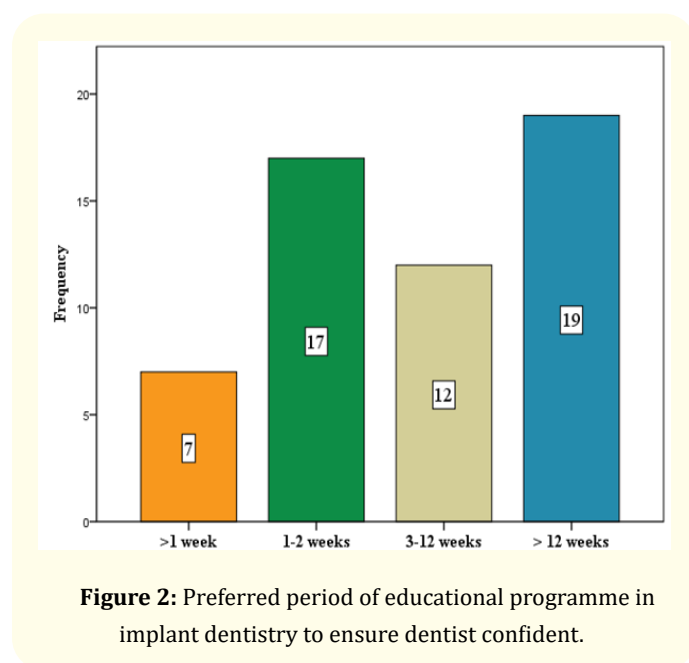
Respondents gave different opinions based on their various level of confidence in the management of patients that required dental implants. Majority, 89.1% would welcome a mentor to assist them in placing implants. See details in table 2.

Variable (multiple response) n = 55	Frequency (%)
Feel confident placing implant and restoring implants in practice	12 (21.8)
Feel confident treating patients that require full mouth implant-based restoration	5 (9.1)
Would invite a mentor to assist with cases to help build confidence to place implant	49 (89.1)
Think 1-year certificate/2-year diploma course in implant improve standard of practice of implant dentistry in Nigeria	48 (87.3)
Think online learning has a role to play in some part of training in implant dentistry	44 (80.0)
Would chose a training course that combine online learning with face to face learning over a course that apply either method only	48 (87.3)†

**Table 2:** Opinion on implant dentistry.

†: A high percentage favours online training and mentorship.

Online training in implant dentistry was welcomed by respondents and majority would prefer a training that is less than 12 weeks. See details below in figure 2.

**Figure 2:** Preferred period of educational programme in implant dentistry to ensure dentist confident.

## Discussion

The response rate for this survey is 90.16% and this is considered as satisfactory. In a similar survey done by Shah, *et al.* on "Trends in implant dentistry among private dental practitioners of Gujarat, India", an acceptable response rate of 65.33% was reported [14]. The result of the response in this survey indicates that the survey aroused the interest of a good number of dentist in the "WhatsApp's group" and this could be as a result of the increase of patient's acceptance of dental implants as a treatment option for replacement of missing teeth [1,2,5]. In addition, 61.8% of respondents are in public service where they come in contact with more patients than the 38.2% that are in private practices. The result in table 1 also shows 41.8% of dentists with postgraduate qualifica-

tion and this might be the explanation for the higher number of the respondents (63.5%) with previous knowledge of implant dentistry as shown in figure 1 since implant dentistry is not included in the undergraduate curriculum in Nigeria [7]. Despite this high percentage with previous knowledge of implant dentistry, that knowledge seems not to be sufficient since only 9.1% feel confident in treating patient that need full mouth implant-based restorations. Correspondingly, only 30.61% of dentists in private practice in Gujarat, India, where confident and willing to practice implant dentistry [14].

This survey shows the interest in a high percentage of dentists to accept mentorship and further assistance in online training to build their confidence in implant dentistry. As shown in table 2, 87.3% were willing to accept a training that combines online training and mentorship so as to improve their knowledge and skill of implant dentistry. This desire to improve one's skill is also seen in the 29.59% of dentists in Gurujat that attended implant courses conducted by experienced dentist [14] who probably could also have served as mentors. Furthermore, there is willingness noticed in 34.6% (19) of dentists that participated in this survey, to attend a training and mentorship programme for a period of more than twelve months (12) so as to improve their skill in implant dentistry (Figure 2).

## Conclusion

Within the limitations of this survey, we can conclude that online training in implant dentistry combined with mentorship during and after the training to improve the skill and confidence of dental practitioners is an acceptable training method for dentists in Nigeria. While the lack of training in implant dentistry in undergraduate colleges of Dentistry is not peculiar to Nigeria, online training as an additional training done especially for postgraduate dentist will further improve their skill and efficiency, however this is not an alternative to clinical training and hands-on. Thus, clinical mentorship is important for the dentist that is undergoing

online training and it is imperative that dental educationist should include implant dentistry in the undergraduate school curriculum especially since the patient’s only reliable source of information for the best treatment options is the dentist himself.

Additionally, more studies should be carried out on the cost implication of online training in implant dentistry to counter the effects of the expensive cost of online training and of purchasing all the equipment necessary to start a good practice that can offer affordable treatment on dental implants.

Questionnaires

Relevance of online Implant Dentistry Education in Nigeria

1. Please what is your sex?

☐

Female

☐

Male

☐

Prefer not to say

☐

Other:

2. Is your organisation Public or Private?

☐

Public

☐

Private

☐

Other:

3. Do you have additional qualifications?

☐

Yes

☐

No

4. If Yes to the above, Please indicate below, if no, go to the next question

☐

Fellow of a Postgraduate College

☐

Member of a Postgraduate College

☐

Other:

5. How long have you been practicing dentistry?

☐

1-5 years

☐

6-10 years

☐

11-15 years

☐

16-20 years

☐

21-25 years

☐

26-30 years

6. Have you had any training in Implant Dentistry?

☐

Yes

☐

No

☐

Maybe

7. If yes to question 6, how long was the training for?

☐

1-3 days

☐

3-5 days

☐

5-14 days

☐

2-12 weeks

☐

3-6 months

☐

7-36 months

8. Do you feel confident placing implants and restoring (both cemented and screw-retained) implant restorations in your own practice setting?

☐

Yes

☐

No

☐

Maybe

9. Do you feel confident treating patients that require full mouth implant- based restorations?

☐

Yes

☐

No

☐

Maybe

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Conflict of Interest

There is no conflict of interest to declare. No financial support was received for this paper.

**10. How long do think an education programme in Implant Dentistry should be for you to feel confident enough to plan your treatment adequately, place the implants in the optimal position and restore them for the best possible successful treatment outcomes?**

- ☐ 1-3 days
- ☐ 3-5 days
- ☐ 6-14 days
- ☐ 2-12 weeks
- ☐ 3-6 months
- ☐ 7-36 months

**11. Would having a mentor come to your own practice to assist with your cases help you build up confidence to place Implants**

- ☐ Yes
- ☐ No
- ☐ Maybe

**12. Would a 1-year certificate / 2 -year Diploma course in Implant Dentistry make a difference to the standards of the practice of Implant Dentistry in Nigeria?**

- ☐ Yes
- ☐ No
- ☐ Maybe

**13. Do you think online learning has a role to play in some part of the training in Implant Dentistry?**

- ☐ Yes
- ☐ No
- ☐ Maybe

**14. Would you choose a training course that combines online learning with face-2 face learning over a course that applies either method only?**

- ☐ Yes
- ☐ No
- ☐ Maybe

**15. Finally, do you have any comments that you think may be helpful in implementing Post-graduate education in Implant Dentistry in Nigeria?**

**15. You may wish to leave your e-mail address if you want to be contacted.**

Submit

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