Unilag Journal of Medicine, Science and Technology (UJMST) Vol 6. No. 2, 2018

CONTINUING PROFESSIONAL DEVELOPMENT IN IMPLANT DENTISTRY AMONG NIGERIAN DENTISTS

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ABSTRACT
The practice of implant dentistry is low in Nigeria. Continuing Professional Development (CPD) help dentists to keep up to-date with new scientific knowledge and integrate the learned skill into safe clinical practice. The aim of this study is to determine the level of exposure to Continuing professional development in implant dentistry amongst Nigerian dentists.

A cross sectional study was carried out amongst dentists drawn from all geopolitical zones of Nigeria who were attending a dental update course including the dental house officers present in the institution where the update course took place. A structured self-administered questionnaire was used to elicit information on their knowledge of different providers of CPD and assessment of CPD in implant dentistry in Nigeria, dental implant treatment experience, undergraduate exposure to dental implant education and continuing professional development in implant dentistry among respondents. Data was analysed with statistical package for social Sciences software version 17 (SPSS, Chicago, IL).

A total of 110 respondents, comprising of 55.5% males and 44.5% females participated in the study. The mean age was 33.5(±7.4) years. Undergraduate exposure to implant dentistry was mostly by lectures 91(82.7%), the most common post-graduation exposure to implant training was live demonstration (49.1%) followed by organized short courses (28.2%). The largest CPD providers were private organizations 41(37.3%) and the National/local dental association 39(35.5%). Majority (82.7%) of the respondents had not received CPD on implant dentistry. This indicated a low level of exposure. There is therefore a need for well-structured CPD courses on implant dentistry to be made available in Nigeria.

Keywords: *Implant Dentistry, Continuing Professional Development*

INTRODUCTION

Medical education and knowledge never ends as it continues after graduation from medical school. Thus, knowledge is a dynamic process that changes with evolution of new technologies and advances in biomedical science (Ogbaini-Emovon, 2009). Continuing medical education (CME) involves training in order to update knowledge, improve skills and maintain an effective and relevant delivery of health services (Davies,1998). CME extends beyond actual clinical

work and goes further to include research, audit, managerial activities, attendance at local and international conferences and writing articles for publications(Ogbaini-Emovon, 2009). Hence the term continuing professional development (CPD) is preferred, though the two terms can be used interchangeably for practical purposes (World Health Organization. Regional Guidelines for Continuing Medical Education,2010)

Dental Implants are prosthetic devices made of inert material, surgically implanted into the mandible or maxilla to provide retention and support for a fixed or removable dental prosthesis used to replace missing teeth (Ajayi et al 2017). They are retained in the jaw bone by a process called Osseo integration. Osseo integration is the direct attachment or connection of osseous tissue to an implant without intervening connective tissue. Dental implants greatly improve denture retention, stability, functional efficiency and quality of life (Zitzmann et al 2005). Dental implants can be used to replace single tooth and multiple teeth without using natural teeth as support. High cost of implant treatment and the need for a surgical procedure are the major disadvantages of dental implants (Saha et al 2013). Other methods of teeth replacement are removable dentures and bridges. The major disadvantage of a bridge is that healthy adjacent teeth are prepared as abutments to support the bridge. Removable dentures have limited retention and stability especially in the lower arch free end saddle (Balsi et al 1994).

The types of CPD activity available to dentists are, reading professional journals, attending lectures, courses or study clubs and undertaking short-term or modular training courses to learn new techniques (Barnes et al., 2012). CPD activity should be systematically structured (sequential CPD programme leading to predetermined learning outcomes) with reference to the specific learning needs of individual clinicians. (Ucer et al .,2014b)

Dental implant practice is very low in Nigeria. (Akeredolu et al., 2007) There is a need to increase the knowledge and proficiency in dental implant practice among dentists through continuing professional development in Nigeria as this will promote delivery of quality dental care. Matheos et al reported that the University Commission and Medical and Dental Council are the bodies with legal mandate for accreditation because they have effective and reliable quality assurance tools important for undergraduate, post graduate or continuing education (Matheos et al.,2009).

"A wide variety of educational pathways towards achieving competencies in implant dentistry through continuing professional development(CPD)" is available in Europe(Ucer et al, 2014b) and US however Ucer et al recommended the development of a structured CPD system with defined objectives mapped against specific levels of competence in implant dentistry (Ucer, 2014b). There are no previous studies to our knowledge on CPD in implant dentistry in Nigeria. The aim of the present study was to determine the level of exposure to continuing professional development (CPD) in Implant dentistry and the perception and reception of CPD in implant dentistry amongst Nigerian dentists. The null hypotheses is that dentists are significantly exposed to CPD in Implant dentistry in Nigeria

MATERIALS AND METHODS

This was a descriptive cross sectional study carried out with the use of a structured self-administered questionnaire administered to dentists attending a dental update course and all the dental house officers employed by the institution where the update course took place were included in the study.

Ethical approval was obtained from the Health Research Ethics Committee of the institution where this study was conducted. The dentists came from all the six geopolitical zones of Nigeria. The questionnaire was in two parts: the first part included the respondents' socio-demographic background which included their age, gender and region of practice. The second part included their CME/CPD experience. The questionnaire was pre-tested among a group of dentists for clarity. This group was not included in the study. Written informed consent approved by Health Research Ethics Committee was obtained from the respondents.

Out of 117 questionnaires administered, 110 were returned completely filled giving a response rate of 94%. Data was analysed with Statistical Package for Social Sciences software version 17 (SPSS, Chicago, IL) and statistical significance between frequencies was evaluated with chi-square test at a significance level of $p<0.05$.

RESULTS

There was a total of 110 respondents, comprising of 61(55.5%) males and 49(44.5%) females, the mean age was 33.5years (±7.4years). The age range was 21-60 years. Most of the respondents 73(66.4%) were older graduates who had graduated before the year 2012 (>3years) while recent graduates (<3years) were

37(36.6%). Other details are as shown in Table 1. Most respondents were registrars (46%) undergoing postgraduate training, while the least number of respondents were consultants (9%) (Figure 1).

Implant experience: The undergraduate exposure of most of the respondents was through lectures alone 91(82.7%) The most common post-graduation exposure to implant training was live demonstration (49.1%) in private dental clinics and organised short courses by private organisations(28.2%). Most (80%) of the respondents had never provided implant treatment for patients but desire to provide implant treatment in future (Table 2).

There was no association between years of graduation and the desire that CPD in implant dentistry be made compulsory for dentists. Majority of the respondents 91(82.7%) had never received CPD on implant dentistry, while only 17.3% had received continuing professional development in implant dentistry. There was significant difference between respondents that have received CPD on implant dentistry and their year of graduation. Table 3 shows that older graduates(more than 3 years post graduation) had more exposure to CPD in implant dentistry compared to the recent graduates.

The ranking of the quality of implant dentistry CPD received by respondents shows that 70.6% of the respondent claimed that there was no formal assessment of participants after the professional development course (Table 4).Seventy nine(71.8%) of the respondents reported that lack of practical experience is a barrier to practicing implant dentistry. The expenses in procuring the implant kit and availability of implant and abutments were reported by 58.2% and 38.2% of the respondents respectively as barrier to practice of implant dentistry

The respondents reported that the forms of CPD which will be most beneficial to implant dentistry were hands-on courses (94.5%), webinars (39.1%) and lectures (32.7%) while distance learning (10.9%) was reported as least beneficial
There were varied opinions on the requirements for implant practice as 56 (50.9%) respondents agreed that additional degree was required to practice implant dentistry, 49 (44.5%) opined that Implant dentistry should be made a specialty (Table 5).

Forty one (37.3%) respondents reported that the private organizations provide regular CPD on implant dentistry. Thirty nine (35.5%) respondents, reported that

the national and local dental association provide regular CPD on implant dentistry (Table 6).

DISCUSSION

This study surveyed the opinion of a group of doctors who were participating in an update course as attendees or facilitators at a university teaching hospital. The response rate to the questionnaires was good being 94%. All the geo-political zones in Nigeria were represented though the highest number (74.5%) of the respondents was from the south-west region.

This study revealed that though dental implant education was available, the undergraduate exposure of respondents to implants was inadequate as 82.7% were through lectures only and 22.7% was by clinical observation. Respondents (88.2%) therefore did not think that newly graduated dentists have acquired necessary surgical skills to provide implant treatment. This was in agreement with previous studies in Europe, which reported that undergraduate education does not equip dentists with the clinical skills needed for implant dentistry in modern general dental practice. (Matheos et al 2009a, 2009b)

Post-graduation exposure of the respondents to implant education was mostly live demonstration(49.1%) followed by organized short courses (12.7%). This reveals the need for universities to provide both undergraduate and postgraduate dental implant education. This view is supported by Koole et al. (2014) who reported that universities and other accredited educational bodies should offer implant education.

Forty one (37.3%) respondents reported that CPD in implant dentistry is regularly provided by private dental organizations followed by the National and Local dental associations(35.5%). Whereas in another study in Europe, the national/professional dental organizations followed by the universities were the principal professional bodies accrediting CPD courses in implant dentistry while implant manufacturers provided product training only(Ucer et al 2014a). Ucer et al.(2014b) recommended that structured post graduate training and assessment of competence in implant dentistry should be provided by national/professional dental organisations because they are more likely to provide necessary core competency. Private dental organizations may have conflict of interests.

The high percentage (80%) of respondents that have never provided implant treatment but desire to do so suggests the need for a well- structured and available

CPD in implant dentistry in all the geopolitical zones of Nigeria. This corroborates the finding of another study in Nigeria that reported 89.6% respondents desired to place implants and were ready for implant placements provided equipment, material and adequate dental implant education was provided (Akeredolu et al.,2007)

There was no significant difference between recent and older graduates on their opinion in making CPD in implant dentistry compulsory for dentists. Majority (57.3%) reported that CPD in implant dentistry should not be made a compulsory requirement for implant practice. Although no additional degrees are currently required to practice implant dentistry in Nigeria, in the present study 50.9% reported that additional degrees should be made a requirement to practice implant dentistry. Despite this, 55.5% of the respondents were of the opinion that implant dentistry should not be made a specialty. This is in contrast to studies in Europe by Ucer et al (20014a ,2014b) which reported that dentists strongly agreed that implant dentistry should be made a specialty though additional degrees were not required to practice implant dentistry. The European dentists (Matheos et al., 2014) were of the opinion that the required clinical skill and competence in implant dentistry can be acquired from well-structured CPD. Highly complex cases and complications should be treated by the specialist in implant dentistry while non- specialists should treat straight forward cases (Mattheos et al., 2014).They also reported that the "scope of implant dentistry is readily subsumed within the scope of other recognised specialties such as oral and maxillofacial surgery, prosthodontics and periodontics and the demand for dental implant services can be met by these specialists or general practitioners".

In this study, there was no significant difference in the current status of CPD in implant dentistry reported by respondents from different regions of practice in Nigeria. About 33.6% dentists reported that there was an urgent need for structured CPD in their regions. This was further emphasized as 14.5% did not know the status (available or not, structured or not) of implant CPD in their region. This is contrary to some studies in Europe and Australia that reported the availability of well-structured CPD in implant dentistry(John and Parashos,2007). The fact that some dentists in our study did not know the CPD status on implants indicated the need for improved CPD awareness and also demonstrated the need for it to be available and structured. In the UK, dentists are required to undertake structured implant education and training under mentor supervision before they can provide implant dentistry (The General Dental Council and FGDP 2012).

When the respondents were asked to assess the quality of previous CPD in implant dentistry which they received, majority reported the need for formal (70.6%), appropriate assessment (64.7%) and the need for predetermined learning objectives (52.9%). Previous studies in Europe also reported the need for accredited and formalized training with predetermined objectives.(Ucer et al,. 2014a)

CONCLUSION

Continuing professional development in implant dentistry is provided mainly by private dental organisations through short courses at their private clinics. There was low level of attendance of CPD in implant dentistry by the respondents. Majority of the respondent had never provided dental implant treatment but desired to do so. Development of CPD in Implant dentistry by the Dental schools and the Nigerian Dental Association is recommended.

REFERENCES

Ajayi YO, Nwachukwu N, Akinoboye BO (2017), Treatment outcome of short dental implants. J west Afr Coll Surg **7**:52-71.

Akeredolu PA, Adeyemo WL, Gbotolorun OM, James O, Olorunfemi BO, Arotiba GT.(2007), Knowledge, attitude and practice of dental implantology in Nigeria. *Implant Dent*, **16**: 110-118.

Balsi T, Wolfinger G, Hernandez R. (1994) Patient attitude before and after dental implant rehabilitation. Implant dent, **3**:106-9.

Barnes E, Bullock AD, Bailey SE, Cowpe JG, Karaharju-Suvanto T.(2012), A review of continuing professional development for dentists in Europe. *Eur J Dent Educ*,**16:** 166–178.

Davies D. (1998), Continuing medical education: global health, global learning. *Brit Med J*, **316**:385-389.

General Dental Council. Continuing professional development. Available at http:// www-gdc-uk.org/dentalprofessionals/cpd/documents.

John V, Parashos P.(2007), Factors involved in the translation of continuing professional development programmes into clinical practice among Victorian dentists. *Aust Dent J* **52**:305-314.

Koole S, VandeWeghe, Matheos N, DeBruyn H. (2014), Implant dentistry education in Europe: 5 years after ADEE consensus report. *Eur J Dent Educ* , **18**(suppl 1):43-51.

Matheos N, Albrecktsson T, Buser D.(2009), Teaching and assessment of implant dentistry in undergraduate and postgraduate education: a European Consensus. *Eur J Dent Educ* ,**13**(suppl 1): 10-17.

Matteos N, Alberktsson T, Buser D, De Bruyn H, Donos N et al.(2009), Teaching and assessment of implant dentistry in undergraduate and postgraduate education: a European consensus. *Eur J Dent Educ* , 13(suppl 1): 11-17.

Mattheos N, de Bryun H, Hutlin M, Jepsen S, Klinge B, Koole S et al(.2014), Developing implant dentistry education in Europe: the continuum from undergraduate to postgraduate education and continuing professional development.*Eur J Dent Educ,* **18**(suppl 1):3-10

Ogbaini-Emovon E.(2009), Continuing medical education: closing the gap between medical research and practice. *Benin Journal of Postgraduate* , **11**:43-49.

Saha A, Dutta S, Vijaya V et al.(2013), Awareness among patients regarding implants as a treatment option for replacement of missing teeth in Chattisgarh. *J Int Oral Health*; **5**:48-52.

Training standards in Implant Dentistry FGDP 2012 available at http:// www.fgdp.org.uk/assets/pdf/publications/policy.

Ucer TC, Botticelli D, Stavropoulos A, Mattheos N.(2014), Current trends and status of continuing professional development in implant dentistry in Europe. *Eur J Dent Educ*, **18**: 52–59.

Ucer TC, Botticelli D, Stavropoulos A, Cowpe JG.(2014), Continuing professional development in implant dentistry in Europe. *Eur J Dent Educ*, **18**(suppl 1): 33-42.

World Health Organization. (2010), Regional Guidelines for Continuing Medical Education (CME)/Continuing Professional Development (CPD) Activities.; PG 2. Available at https://www.wbginvestmentclimate.org/toolkits/health-in-africa-policy-toolkit/upload/WHO-CME-Requirements.pdf . Accessed April 14, 2016.

Zitzmann N, Sendi P, Marinello C (2005). An economic evaluation of implant treatment in edentulous patients- preliminary results. Int. J Prosthodont;**18**:20-27.

Table 1: Demography of Respondents

	Frequency(n=110)	**Percent %**
Age Group (years)		
21-30	40	36.4
31-40	55	50.0
41-50	12	10.9
51-60	3	2.7
TOTAL	**110**	**100**
Gender		
Male	61	55.5
Female	49	44.5
TOTAL	**110**	**100**
Year of graduation		
(Graduates ≤3years)	**37**	**33.6**
(Graduates >3years)	**73**	**66.4**
TOTAL	**110**	**100**
Region of practice		
North east	6	5.5
North west	6	5.5
North central	6	5.5
South south	6	5.5
South east	4	3.6
South west	82	74.5
TOTAL	**110**	**100**

Table 2: Implant education experience among respondents

	Frequency(n=110)	Percent%
Undergraduate Exposure		
Lectures alone	91	82.7
Hands on	2	1.8
Clinical observation	25	22.7
None	6	5.5
Total*	***124**	****112.7**
Post-graduation Exposure		
Product training by implant company at conferences	21	19.1
Web based courses (Webinars)	10	9.1
Hands on training	15	13.6
Organized short courses	31	28.2
Live demonstration on patients	54	49.1
Diploma/master degree course	1	0.9
No post graduate exposure	21	19.1
Total	***153**	**139.1
Dental Implant Experience		
Provided implant treatment for patients	10	9.1
Never provided treatment but desire to provide implant treatment in future	88	80
Not interested in providing implant treatment	12	10.9
Total	110	100

* The total was more than the number of respondents because the respondents were allowed more than one option
** The percentages add up to more than 100 because the respondents were allowed more than one option

Table 3: Perception and reception of CPD

	Older graduate		**Recent graduate**		
	n =73	**%**	**n =37**	**%**	
CPD should be made compulsory	29	39.7	18	48.7	**P=0.37** **X^2 =0.799**
CPD should not be made compulsory	44	60.3	19	51.4	
Total	**73**		**37**		**110**
Received CPD on implant dentistry	18	24.7	1	2.7	**P=0.00*** **X^2= 8.283**
Have not received CPD on implant dentistry	55	75.3	36	97.3	
Total	**73**		**37**		**110**

P< 0.05 *Significant

Table 4: Ranking of quality of implant dentistry CPD received by respondents

	Response			
	Yes		**No**	
	N	**%**	**N**	**%**
Formal Post assessment of participant	5	29.4	12	70.6
Available predetermined learning objectives	8	47.1	9	52.9
Official recognition and accreditation of speakers	8	47.1	9	52.9
Accreditation of CPD Provider	10	58.8	7	41.2

*2 out of the 19 respondent that received CPD did not rank the CPD received.

Table 5: Respondents perception on requirements for implant practice

	Response			
	Yes		**No**	
	N	**%**	**N**	**%**
Additional degree required to practice implant dentistry	56	50.9	54	49.1
Implant dentistry should be made a specialty	49	44.5	61	55.5
CPD on implant dentistry should be made compulsory for dentists	47	42.7	63	57.3
New graduates have acquired necessary surgical skills to provide implant treatment	13	11.8	97	88.2

Table 6: Respondents report on organization that provides regular CME/CPD in implant dentistry

	n	**%**
University	27	24.5
National/Local Dental Association	39	35.5
Private Organization	41	37.3
Product manufacturers	22	20.0
Others (I don't know)	28	25.5
Total	*157	**142.8

* The total was more than the number of respondents because the respondents were allowed more than one option

** The percentages add up to more than 100 because the respondents were allowed more than one option