

Knowledge, Attitude, and Practice of Dental Implantology in Nigeria

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Implant dentistry has become increasingly important in oral reconstruction.^{1,2} The replacement of missing teeth by endosseous dental implants has been shown to be both functionally and aesthetically satisfactory.^{1,3} The technique is predictable as evidenced by an overall 5-year implant survival rate ranging from 93% to 97%.⁴ Given long-term reported failure rates of 10% for fixed partial dentures,⁵ 19% for resin bonded bridges,⁶ 13% for hemisection and root amputation,⁷ 15% for endodontic therapy,⁸ and 34% for endodontic retreatment,^{9,10} implant therapy has now been regarded as a more predictable successful method of restoring the dentition than the conventional method of restoration.

Although the first clinical application of dental implants was to retain and support full-mouth prosthetic appliances for the edentulous patient,⁴ the use of dental implants in the last 15 years has increased to include single-tooth replacement, multiple-teeth replacement, and implant supported overdentures. It is also used in dental rehabilitation following ablative surgery of the mandible and maxilla.^{1,2}

However, in Nigeria, anecdotal evidence reveals that traditional/conventional methods of dental restoration (removable partial/full dentures

***Aim:** The purpose of this study was to assess the knowledge, attitude, and practice of dental implantology among dentists practicing in Nigeria.*

***Materials:** Self-administered questionnaires to assess the knowledge, practice, and attitude of dental implantology were sent to dentists practicing in all the 6 geopolitical zones of Nigeria (i.e., all tertiary dental institutions, and selected general and private hospitals within the zones). Data collected were analyzed and presented in descriptive and tabular forms.*

***Results:** The response rate was 77%. Only 2 (1.3%) of the respondents claimed to have employed implant(s) for dental restoration in their practice, while 152 respondents (98.7%) have never used implants as a method of tooth/teeth restoration. Of the latter, 46.1% have suggested implants for full/partial denture patients, 31.8% have suggested dental implants*

to patients needing single-tooth replacement, and 89.6% were ready for dental implant placement if equipment and materials for dental implants backed up with adequate training were provided. Of respondents, 83.1% also believed that implantology is a multidisciplinary approach, and 42.9% rated implants as the best option for dental restoration.

***Conclusions:** The practice of implant dentistry is presently very low in Nigeria. Clearly, there is a need for dental implant education for Nigerian dentists to increase their knowledge and proficiency in dental implant dentistry. In addition, all efforts should be made to include implant education and practice in dental curricula in undergraduate and postgraduate institutions in Nigeria. (Implant Dent 2007; 16:110–118)*

***Key Words:** dental practitioners, questionnaire, implant practice, implant education*

and bridges) rather than implants are still widely practiced. In Nigeria, both the cost of the treatment and noninclusion of dental implantology in the dental curriculum have affected the use of implants for replacing missing teeth.

Therefore, we designed this study to assess the knowledge, attitude, and practice of dental implantology among dentists practicing in Nigeria, a developing country.

MATERIALS AND METHODS

Between July 2004 and June 2005, self-administered questionnaires

to assess the knowledge, practice, and attitude of dental implantology were sent to dentists practicing in all the 6 geopolitical zones of Nigeria. The questionnaires were sent to all the teaching dental hospitals, and selected general and private hospitals within the zones. The information recorded included demographics (age and sex), institutions of practice (private, tertiary, or general hospitals), specialty, and year of practice. The respondents were asked if they use dental implants for tooth/teeth restorations in their practice. If the answer to the question

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on the use of dental implants in a respondent's practice was "No," the respondent was asked to proceed to questions on knowledge and attitude regarding dental implantology. For respondents who routinely use implants for dental restoration in their practice, they were asked some basic questions regarding their practice: length of practice, types of treatment (surgical or prosthetic procedures) provided, indications for dental implants, types of implant used, implant diameter selection, cause of implant failure, diagnosis of peri-implantitis, and indications for guided bone regeneration.

A database was constructed using Microsoft Excel (Microsoft, Redmond, WA) and imported into SPSS 12.0 (SPSS, Inc., Chicago, IL) for analysis. Data were analyzed and presented in descriptive and tabular forms.

RESULTS

Of the 200 questionnaires sent out, only 154 (77%) were returned, giving a response rate of 77%. Most respondents (32.5%) were oral and maxillofacial surgeons, followed by general dental practitioners (31.8%) (Table 1). There were 91 (59.1%) males and 63 (40.9%) females (age range 25–55 years). Of respondents, 67.5% practiced ≤ 10 years, and

32.5% practiced >10 . One hundred and four (67.5%) were practicing in tertiary dental institutions, and 50 (32.5%) were practicing in general/private dental hospitals.

Only 2 (1.3%) of the respondents claimed to have employed implant(s) for dental restoration in their practice, while 152 respondents (98.7%) have never used implant as a method of tooth/teeth restoration for their patients. Of the latter, 46.1% have previously suggested implants for full/partial denture patients, 31.8% have suggested dental implants to patients needing single-tooth replacement, and 89.6% were ready for dental implant placement if equipment and materials for dental implants backed up with adequate training and laboratory facilities were provided (Table 2). Of respondents, 83.1% also believed that implantology is a multidisciplinary approach.

In comparison to other treatment options (bridge, denture) for replacement of missing teeth, respondents were asked to rate dental implants. Of respondents, 42.9% rated the implant as the best option, 22.7% denture, 31.2% bridge, and 3.2% of the respondents did not respond to the question.

DISCUSSION

Dental implant therapy has become an extremely predictable treatment for edentulism.¹¹ It has become an appropriate part of the general as well as specialty dental practice. Research has established the biological basis for and documented the long-term predictability of dental implants, which has promoted the acceptance of their clinical use worldwide.¹² Implant dentistry has also changed the perspective of clinicians on many aspects of dental therapy. Dentists have witnessed a paradigm shift from the practice of saving teeth at all costs to one

that considers extraction of compromised teeth to improve the aesthetics, function, and long-term prognosis of the entire dentition with the application of dental implant technology.¹² Therefore, this technology has become the "gold standard" of care for dental restoration in the developed world.^{13–15}

The present study reveals that 2 (1.3%) of 154 dentists who participated in this survey have used implants for edentulous ridge restoration. It is also noteworthy that the 2 dentists were also practicing outside the tertiary dental hospitals. The result of this study can be taken as a true reflection of the state of implant dentistry in Nigeria. It is a fact that implants have not traditionally been taught in dental schools in Nigeria to the level where young dentists feel comfortable using them as a form of restoration. Fixed prosthodontics and endodontics are taught to that level, so, for many dentists, these become treatments of choice. The other obstacle to the use of implants in Nigeria is the cost of treatment.

The use of implants for dental restoration has become a gold standard, and Nigerian dentists must receive training to provide implant dentistry to their patients and improve their skill level. Over 10 years ago, the state of implant dentistry in Asia and some selected African countries was similar to the present Nigerian experience.¹⁶ However, due to formulation and implementation of programs to address the problems by the appropriate authorities, there has been a tremendous change in knowledge, attitude, and practice of implant dentistry in those countries. Then, what needs to be done? Where can dentists in Nigeria receive the required training in implant dentistry?

There are generally 3 sources providing the required clinical and

Table 1. Area of Specialization of the Respondents

Specialty	Number (%)
Oral surgery	50 (32.5)
Restorative dentistry	21 (13.6)
Preventive dentistry	7 (4.5)
Child dental health	17 (11)
Orthodontics	3 (1.9)
Oral medicine	2 (1.3)
Oral pathology	5 (3.2)
General dental practice	49 (31.8)
Total	154 (100)

Table 2. Response of the Participants to Questions Related to Knowledge and Attitude Toward Dental Implantology

1. Have you suggested implants to any of your full/partial denture patients?	Yes (46.1%)	No (52.6%)	No response (1.3%)
2. Have you suggested implants to patients needing single-tooth replacements?	Yes (31.8%)	No (31.2%)	No response (37%)
3. Provided your institution provides equipment and materials for dental implant procedure, would you readily begin to practice dental implant placement?	Yes (89.6%)	No (5.8%)	No response (4.5%)
4. Do you think a multidisciplinary approach is required for dental implant treatment?	Yes (83.1%)	No (6.5%)	No response (10.4%)

laboratory experience in implant dentistry,¹⁷ which are: graduate level training at dental schools, course/training/meeting that provides excellent training in implant dentistry organized by dental associations as a form of continuing education program, and courses organized by implant manufacturers.¹⁷ Graduate level training involves teaching and inclusion of dental implantology in a dental curriculum. If the state of implant dentistry must change in Nigeria, then implant dentistry must be taught and included in the dental curricula. In 1990, the American Association of Dental Schools and the American College of Oral Implantology formulated and approved curriculum guidelines for predoctoral implant dentistry.^{18,19} These guidelines suggested that upon completion of the dental school program, dental students should be able to identify and discuss aspects of implant dentistry, including a historical background and current trends in dental implantology, and should also be able to compare the use with other more conventional modes of treatment.^{12,18,19} With this knowledge, students would be expected to describe both surgical and prosthetic procedures used to provide implant therapy. The guidelines recommended that dental students be given lecture format instruction in implant dentistry, and that courses should be taught to a level that achieved exposure and understanding.¹²

Courses/meetings organized by dental/implant associations or implant manufacturers are appropriate for qualified dentists who desire proficiency in implant dentistry. These courses should provide supervised hands-on laboratory training as well as clinical training on live patients in addition to a broad didactic education by recognized teachers in implant dentistry.^{11,12} A recently established center of excellence in implantology in West Africa located in Ibadan, Nigeria, by the International Congress of Oral Implantologists, can serve this purpose. Dental implant manufacturers may also organize implant dental education to keep dentists abreast of new developments in implant dentistry.¹¹ Manufacturer-sponsored educational programs can be extremely informative, especially when the resource

personnel include well-experienced dental implantologists.¹¹

We also attempted to assess the knowledge and attitude of the respondents regarding dental implant dentistry. Of the respondents who have never used implants for dental restoration, 46.1% have suggested implants for full/partial denture patients, and 31.8% have suggested dental implants to patients needing single-tooth replacement. Although the first clinical application of dental implants was to retain and support full-mouth prosthetic appliances for the edentulous patient,⁴ the use of dental implants in the last 15 years has increased to include single-tooth replacement, multiple-teeth replacement, and implant supported overdentures.^{20,21} It is also used in dental rehabilitation following ablative surgery of the mandible and maxilla.^{1,2}

In addition, 89.6% of respondents were ready for dental implant placement if equipment and materials for dental implants backed up with adequate training and laboratory facilities were provided. This comment is rather encouraging, meaning that Nigerian dentists are psychologically prepared for dental implant restoration, given adequate training and facilities.

More than 80% of respondents believed that a multidisciplinary approach is required for dental implant treatment. Implant dentistry is a multidisciplinary therapy comprised of surgical and restorative requirements.¹² Oral surgeons, periodontists, and prosthodontists are commonly involved in dental implant restorations.¹¹ Today, oral and maxillofacial surgeons and periodontists perform the vast majority of dental implant surgeries.²² General dentists perform the majority of simple implant restorations, while prosthodontists treat more complex oral rehabilitations.²³

Respondents were asked to rate dental implants in comparison to other treatment options (bridge, denture) for replacement of missing teeth. Of the respondents, 42.9% rated the dental implant as the best option. The replacement of missing teeth by endosseous dental implants has been shown to be both functionally and aesthetically satisfactory.^{1,3} Implant therapy has now been regarded as a more

predictable successful method of restoring the dentition rather than the conventional methods of restoration. The success rate of dental implants in comparison to other forms of dental restorations has been reported to be the best.⁴

CONCLUSIONS

In a survey of dentists with ≤ 20 years of experience in Nigeria, only 1.3% of them have restored teeth with dental implants. The practice of implant dentistry is presently very low. Therefore, there is a need for dental implant education for Nigerian dentists to increase their knowledge and proficiency in implant dentistry. In addition, all efforts should be made to include implant education in dental curricula in Nigeria. Practicing dentists who desire training and proficiency in dental implant restorations should make a conscious effort to attend continuing education programs in implant dentistry locally and/or internationally.

Disclosure

Not applicable.

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Abstract Translations

GERMAN / DEUTSCH

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Kenntnisse, Standpunkte und praktische Verfahrensweisen in der Zahnimplantologie in Nigeria

ZUSAMMENFASSUNG: Zielsetzung: Zielsetzung dieser Studie war es, die Kenntnisse, Standpunkte und praktischen Verfahrensweisen bei der Zahnimplantologie der in Nigeria praktizierenden Zahnärzte zu ermitteln und bewerten. **Materialien und Methoden:** Eigenständig aufgesetzte Fragebögen

zur Bewertung der Kenntnisse, Standpunkte und praktischen Verfahrensweisen hinsichtlich Zahnimplantierungen wurden an Zahnärzte versandt, die in allen 6 der geopolitischen Zonen Nigerias praktizieren (alles tertiäre Zahninstitute sowie ausgewählte allgemeine und private Kliniken innerhalb der Gebiete). Die so gesammelten Daten wurden analysiert und in leicht verständlichen und tabellarischen Formularen dargestellt. **Ergebnisse:** Die Antwortquote lag bei 77%. Nur 2 (1,3%) der per Fragebogen Befragten gaben an, Implantate zur zahntechnischen Wiederherstellung in ihren Praxen eingesetzt zu haben, während 152 der Antwortenden (98,7%) noch nie Implantate als Mittel zur Zahnwiederherstellung benutzt haben. Aus der zuletzt genannten Gruppe haben 46,1% ihren für eine Voll- bzw. Teilprothese vorgesehenen Patienten eine Implantationsbehandlung vorgeschlagen, 31,8% haben einen Vorschlag zur Zahnimplantierung bei den Patienten unterbreitet, die eine Einzelzahnwiederherstellung benötigten, und 89,6% wären zum Einsatz einer Zahnimplantationsbehandlung bereit, sofern Ausrüstung und Materialien zur Zahnimplantierung in Kombination mit der entsprechenden Schulung zur Verfügung stünden. 83,1% der per Fragebogen Befragten äußerten des Weiteren die Meinung, dass es sich bei der Implantologie um einen Fachübergreifenden Ansatz handele. 42,9% der Antwortenden sahen Implantate als die beste Alternative zur Zahnwiederherstellung an. **Schlussfolgerungen:** Aktuell wird in Nigeria nur sehr selten mit Implantatgestützter Zahnheilkunde gearbeitet. Es ist deutlich, dass ein großer Bedarf besteht, nige-

rianische Zahnärzte hinsichtlich des Einsatzes von Zahnimplantaten zu schulen, um darüber ihren Kenntnisstand und ihre Fertigkeiten auf dem Gebiet der Implantatgestützten Zahnheilkunde zu erweitern. Zusätzlich sollten alle nur erdenklichen Anstrengungen unternommen werden, um Theorie und Praxis zur Thematik der Implantierungsbehandlungen in den zahnheilkundlichen Stundenplan der Universitätslehrgänge an nigerianischen Universitäten zu integrieren.

SCHLÜSSELWÖRTER: Praktische Zahnärzte, Fragebogen, Verfahrensweisen bei Implantierungsbehandlungen, Schulungen zur Implantatgestützten zahnheilkundlichen Behandlung

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Actitud, conocimiento y práctica de la implantología dental en Nigeria

ABSTRACTO: Propósito: El propósito de este estudio fue evaluar el conocimiento, actitud y práctica de la implantología dental entre los dentistas que practican la profesión en Nigeria. **Materiales y métodos:** Cuestionarios autoadministrados para evaluar el conocimiento, práctica y actitud de la implantología dental fueron enviados a dentistas que practican la profesión en las seis zonas geopolíticas de Nigeria (todas las instituciones dentales terciarias, y hospitales selectos privados y generales de las zonas). Los datos recolectados fueron analizados y presentados en forma tabular y descriptiva. **Resultados:** La tasa de respuesta fue del 77%. Solamente 2 (1,3%) de los entrevistados indicaron haber usado implantes para la restauración dental en sus prácticas mientras que 152 entrevistados (un 98,7%) nunca habían usado un implante como una manera de restaurar un diente. De estos últimos, un 46,1% han sugerido implantes para pacientes con dentaduras postizas completas o parciales, un 31,8% han sugerido los implantes dentales a pacientes que necesitaban el reemplazo de un solo diente y un 89,6% estaban listos para la colocación de implantes dentales si los materiales y equipos para los implantes dentales estaban apoyados con una adecuada capacitación. Un 83,1% de los entrevistados también creían que la implantología es un método multidisciplinario.

Un 42,9% de los entrevistados calificaron a los implantes como la mejor opción para la restauración dental. **Conclusiones:** La práctica de la odontología de implantes es actualmente muy baja en Nigeria. Claramente, existe la necesidad de la educación sobre implantes dentales a los dentistas nigerianos para aumentar su conocimiento y capacidad en el campo de los implantes dentales. Además, se deberán hacer todos los esfuerzos posibles para incluir educación sobre implantes y la práctica en los programas dentales en las instituciones universitarias de pregrado y postgrado en Nigeria.

PALABRAS CLAVES: Practicantes dentales, cuestionario, práctica de implantes, educación sobre implantes

PORTUGUESE / PORTUGUÊS

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Atitude de Conhecimento e Prática de Implantologia Dentária na Nigéria

RESUMO: Objetivo: O objetivo deste estudo era avaliar o conhecimento, a atitude e a prática de implantologia dentária entre os dentistas praticantes na Nigéria. **Materiais e Métodos:** Questionários auto-administrados para avaliar o conhecimento, a prática e a atitude de implantologia dentária foram enviados para dentistas praticantes em todas as seis zonas geopolíticas da Nigéria (todas as instituições dentárias terciárias e hospitais gerais e particulares selecionados dentro das zonas). Os dados coletados foram analisados e apresentados em formulários descritivos e tabulares. **Resultados:** A taxa de resposta foi de 77%. Apenas 2 (1,3%) dos respondentes alegaram Ter empregado implante(s) para restauração dentária em sua clínica, enquanto 152 respondentes (98,7%) nunca usaram implantes como meio de restauração de dente/s. Dos últimos, 46,1% sugeriram implantes para pacientes com dentadura total/parcial, 31,8% sugeriram implantes dentários a pacientes que precisavam de substituição de dente único 89,6% estavam prontos para a colocação dentária se o equipamento e os materiais para implantes dentários respaldados por treinamento adequado fossem fornecidos. 83,1%

dos respondentes também acreditavam que a implantologia é uma abordagem multidisciplinar. 42,9% dos respondentes classificaram os implantes como a melhor opção para restauração dentária. **Conclusões:** A prática de odontologia de implante é atualmente muito baixa na Nigéria. Claramente, há a necessidade de educação sobre implantes dentários para os dentistas nigerianos aumentarem seu conhecimento e proficiência em odontologia de implante dentário. Além disso, todos os esforços deveriam ser feitos para incluir a educação e prática de implantes no currículos odontológicos em instituições de graduação e pós-graduação na Nigéria.

PALAVRAS-CHAVE: Profissionais odontológicos, questionário, prática de implantes, educação sobre implantes

RUSSIAN / РУССКИЙ

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Теоретические подходы и практика стоматологической имплантологии в Нигерии

РЕЗЮМЕ: Цель: Цель данной научной работы состоит в изучении знаний, подходов и практики стоматологической имплантологии, применяемых стоматологами, работающими в Нигерии. **Материалы и методы:** самостоятельно заполняемые анкеты для оценки знаний, практики и подходов к стоматологической имплантологии были направлены

стоматологам, работающим в шести геополитических районах Нигерии (все специализированные стоматологические учреждения и избранные больницы общего профиля, а также частные больницы, расположенные в данных районах). Собранные данные были подвергнуты анализу и представлены в описательной форме, а также в виде таблиц. **Результаты:** Доля ответивших при анкетировании составила 77%. Только 2 (1,3%) из общего числа респондентов заявили о том, что в своей работе применяли имплантат(ы) для замещения дефектов зубов, в то время как 152 респондента (98,7%) никогда не применяли имплантаты для замещения дефектов зуба/зубов. 46,1% последних рекомендовали использование имплантатов для полного/частичного зубного протезирования пациентов, 31,8% рекомендовали использование зубных имплантатов пациентам, нуждающимся в замене одного зуба, и 89,6% были готовы осуществить вживление зубного имплантата в случае предоставления надлежащего оборудования и материалов для вживления зубных имплантатов и при условии проведения соответствующего курса обучения. Кроме того, 83,1% от общего числа респондентов полагают, что имплантология требует мультидисциплинарного подхода. 42,9% респондентов считают, что использование имплантатов является наилучшим вариантом при замещении дефектов зубов. **Выводы:** В настоящее время практика стоматологической помощи с применением имплантатов в Нигерии находится на очень низком уровне развития. Безусловно, существует необходимость в обучении стоматологов Нигерии вживлению стоматологических имплантатов с целью развития их знаний и совершенствования их умений в области стоматологии с вживлением зубных имплантатов. Кроме того, необходимо предпринять все возможные усилия для включения обучения теории и практике вживления имплантатов в учебную программу последнего курса и аспирантуры учебных заведений Нигерии по подготовке стоматологов.

КЛЮЧЕВЫЕ СЛОВА: зубные врачи, анкета, практика имплантологии, обучение вживлению имплантатов

ナイジェリアにおけるデンタルインプラントの知識、AttitudeとPractice

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要約:

目的: 本研究の目的は、ナイジェリアで歯科医療に従事している歯科医師におけるデンタルインプラントの知識、attitudeとpracticeの実情を把握することであった。

素材と方法: デンタルインプラント学の知識、attitudeとpracticeの実情を把握するための本人記入のアンケートが、ナイジェリア国内の6地域のすべてで歯科医療に従事している歯科医師(すべてのtertiary dental institutions、地域内の選ばれた総合病院と民間病院)に送付された。データは集計後に分析され、解説と図表によって発表された。

結果: 回答率は77%であった。回答者の中で歯科修復のためにインプラントを使用したことがあると答えたのは2人(1.3%)にすぎず、152人(98.7%)が歯牙修復のためにインプラントを一度も使ったことがないと返答した。後者のうち46.1%分が総または部分義歯患者のためのインプラント使用を示唆し、31.8%が単独歯replacementを必要とする患者のためのインプラント使用を示唆し、89.6%が設備と材料がそれを使うための十分な訓練とともに提供されればデンタルインプラント使用を開始したいと回答した。また83.1%が、インプラント歯科はmultidisciplinaryな方法であると思うと回答した。回答者の42.9%が、歯科修復のためにインプラントはもっとも優れたオプションであると回答した。

結論: ナイジェリアにおいては、インプラント歯科診療が行われている率は非常に低い。ナイジェリアの歯科医がインプラント歯科学の知識を蓄えそれに熟達するためのデンタルインプラント教育の必要性は、明らかに高い。さらにナイジェリアの学部/大学院などの教育機関において、インプラント教育と治療推進のためのカリキュラムの充実のためにあらゆる努力が行われるべきであると考えられる。

キーワード: デンタル・プラクティショナー、アンケート、インプラント歯科診療、インプラント教育

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奈及利亞牙科植體學的知識態度與實務

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摘要：

目的： 本研究的目的旨在評估奈及利亞執業牙醫有關牙科植體學的知識、態度與實務。

資料與方法： 將評估牙科植體學的知識、實務與態度的自填問卷寄給在奈及利亞六個地理區執業的牙科醫師（所有第三級牙科機構，並選擇區域內的一般與私人醫院）。收集資料後進行分析，並以描述性與列表方式提出。

結果： 問卷回覆率為77%，僅有2個受訪者（1.3%）表明曾經採用植體作為牙科復形之用，其餘152個受訪者（98.7%）則從未使用植體作為牙科復形的工具。這152位受訪者中，46.1% 曾建議患者採用完全／部分假牙、31.8% 曾建議需要單顆牙種植的患者採用牙科植體、89.6% 如果擁有牙科植體設備、材料及適當的教育訓練，則能進行牙科植體種植。83.1% 的受訪者也相信植體學是涉及多學科整合的做法。42.9% 的受訪者評選植體為牙科復形為最好的選擇。

結論： 奈及利亞目前牙醫植體學的實行率非常低。很明顯的，奈及利亞牙醫師需要牙科植體教育，以提升其牙科植體學的知識與熟練度。此外，應盡力在奈及利亞的大學和研究所的牙醫課程中加入植體教育與實務。

關鍵字： 牙科開業醫師、問卷、植體實務、植體教育

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나이지리아에서 치아 임플란트학의 지식, 태도 및 기술

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초록:

목적: 이 연구의 목적은 나이지리아에서 활동하는 치과의사들이 치아 임플란트학에 대해 어떤 지식, 태도를 가지고 있고 임플란트를 어떻게 시술하고 있는지를 평가하는 것이다.

자료와 방법: 치아 임플란트학에 대한 지식, 기술, 태도를 평가할 수 있는 자기기입식 질문지를 나이지리아의 모든 지구(地區)인, 여섯 지구에서 활동하는 치과의사들에게 보냈다(지역 내 모든 3차 치과 교육기관, 선택된 종합/개인 병원). 모아진 자료를 분석하여 표를 첨부한 문서로 발표하였다.

결과: 응답률은 77%이었다. 152명의 응답자(98.7%)가 치아 수복용으로 임플란트를 시술한 적이 한 번도 없다고 대답한 반면, 두 명(1.3%)만이 일선에서 치아 수복을 위하여 임플란트를 시술한 적이 있다고 대답하였다. 전자(前者)들 중에, 46.7%가 총/국소 의치 환자에게 임플란트를 권한 적이 있었고 31.8%가 단치(單齒) 교체가 필요한 환자에게 임플란트를 제안한 적이 있었으며 89.6%가 적절한 교육을 받고 장비와 재료가 있다면 치아 임플란트를 시술할 준비가 되어 있었다. 83.1%의 응답자는, 또한 임플란트학이 여러 전문지식의 종합이라고 생각하였으며 42.9%의 응답자는 임플란트를 치아 수복을 위한 가장 좋은 방법으로 꼽았다.

결론: 현재 나이지리아에서 임플란트 시술이 많이 행해지지 않는다. 분명, 임플란트 치과학의 지식을 높이고 숙련도를 향상시키기 위한 교육을 받고자 하는 욕구가, 나이지리아 치과의사들에게 있다. 또한 나이지리아의 대학과 대학원 교육과정에 임플란트 교육과 실습이 포함되도록 모든 노력을 기울여야한다.

핵심단어: 치과개업의, 질문지, 임플란트 시술, 임플란트 교육

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