

A Survey of Craniofacial Orthodontic Care Amongst Orthodontists in Nigeria

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Abstract

Background: The aim of this survey study was to assess the clinical experience in craniofacial orthodontic care amongst orthodontists in Nigeria and to identify the challenges they face in providing this care.

Methods: A cross-sectional questionnaire survey was carried out among 26 Orthodontists attending the annual scientific conference of the Nigeria Association of Orthodontists (NAO) in October 2014. The questionnaires were self-administered and contained 19 close-ended questions, which evaluated the clinical experience of the respondents in different craniofacial orthodontic procedures and the challenges they faced in providing this sub-specialty service.

Results: The response rate was 80.8%. Sixty-two percent of the orthodontists were currently providing craniofacial orthodontic care at their respective centres. The most commonly performed procedure was pre-surgical infant orthopedics (96.4%), while the least clinical experience was recorded in orthodontic preparation for orthognathic surgery (7.4%). The two most commonly reported challenges (61.6%) were the lack of working tools and materials and poor support from the hospital management.

Conclusion: Orthodontists in Nigeria are currently providing a limited scope of craniofacial orthodontic care. A lot more needs to be done to overcome the current challenges being experienced and also to expand the scope of care provided.

Key words: Craniofacial Orthodontics, Clinical experience, Nigerian Orthodontists

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Introduction

Nigeria has a prevalence of oro-facial clefts of 0.5 per 1000.¹ The past decade in the country has witnessed an upsurge in the awareness and availability of surgical care for these patients.^{1,2} This is mainly due to the provision of free surgical care for cleft/craniofacial patients in Nigerian hospitals, sponsored by an international donor agency, The Smile Train. The increase in the number of patients who have received surgical care has also led to an increase in the number of patients requiring orthodontic treatment, as part of the multidisciplinary team care required for their ideal management.

Craniofacial orthodontics is the aspect of orthodontics that deals with the treatment of patients with congenital and acquired deformities of the integument and its underlying musculoskeletal system within the craniofacial area and associated structures.³ Orthodontics is an essential component of the reconstructive process for these children with craniofacial disorders. Early and ongoing orthodontic involvement, is needed to provide pre-surgical orthopaedics, to monitor facial growth and dental eruption, for appropriate timing of surgical procedures, to position tooth-bearing bony segments as a framework for surgery, and to correct debilitating occlusal abnormalities.⁴

In a previous paper, the authors had reviewed the perceptions of orthodontic residents in Nigeria to craniofacial orthodontics. Findings from that study revealed that while the residents considered training in craniofacial orthodontics to be very important, they had limited experience in advanced craniofacial orthodontic procedures.⁵

Bearing in mind that there are currently less than forty orthodontists in Nigeria, serving a population of over 170million people, the aim of this paper was to assess the clinical experience in craniofacial orthodontics of Nigerian orthodontists and to identify the challenges they face in providing care.

Materials and Methods

Ethical approval for the study was obtained from the Institution's Review Board

(ADM/DCST/HREC/APP/362) and informed consent obtained from the participants. A cross-sectional questionnaire survey was carried out among 26 Orthodontists attending the annual scientific conference of the Nigerian Association of Orthodontists, in October 2014. The questionnaires were self-administered and contained 19 closed-ended questions, which evaluated the clinical experience of the respondents in different craniofacial orthodontic procedures, previously described as key procedures required for the orthodontic management of the cleft/craniofacial patient.⁶ They also assessed the challenges they faced in providing this service. Likert scales were used to rate both clinical experience and the challenges faced. Clinical experience was rated using the scales ‘never’, ‘rarely’, ‘sometimes’ and ‘always’ to rate the frequency of performance of each procedure. Clinical experience was recorded as those who performed these procedures ‘sometimes’ or ‘always’. The severity of the challenges faced were recorded using a 5-point Likert scale with 1: signifying least importance and 5: most importance. Data analysis was carried out with the Statistical Package for Social Sciences (Version 17; SPSS Inc., Chicago, IL, USA).

Results

Twenty-one orthodontists returned completed questionnaires, thus the response rate was 80.8%. The fourteen female orthodontists (66.7%) constituted twice as many as their 7 male counterparts (33.3%). Sixty-two percent (13) of the

orthodontists were currently providing craniofacial orthodontic care at their respective centres. Of the thirteen orthodontists who currently offer craniofacial orthodontic services, twelve (92.3%) were working in public health facilities and only one (7.7%) was working solely in private practice. Figure 1 shows the frequency of performance of the different procedures. Among the thirteen orthodontists, the two most commonly performed procedures were counselling of parents with children born with craniofacial anomalies (92.4 %) and pre-surgical infant orthopedics using lip taping (92.4%) . Conversely, the least clinical experience was recorded in orthodontic preparation for orthognathic surgery (7.7%, 1) (Figure 2). The two most commonly reported challenges were the lack of support between team members (71.4%) and the absence of multidisciplinary team care (61.0%).

Figure 3 showed that lack of interdisciplinary team care and co-operation between team members were the most important challenges faced, while lack of working tools and materials were the least important challenges.

Discussion

This study is a follow-up to a previous study which assessed the perceptions of orthodontic residents in Nigeria to the treatment of patients with clefts and craniofacial anomalies.⁵ Thus, the emphasis on orthodontists in this paper, was to determine how much is currently being done by them in this important aspect of care for cleft and craniofacial patients in Nigeria.

FREQUENCY OF PERFORMANCE OF CRANIOFACIAL ORTHODONTIC PROCEDURES.

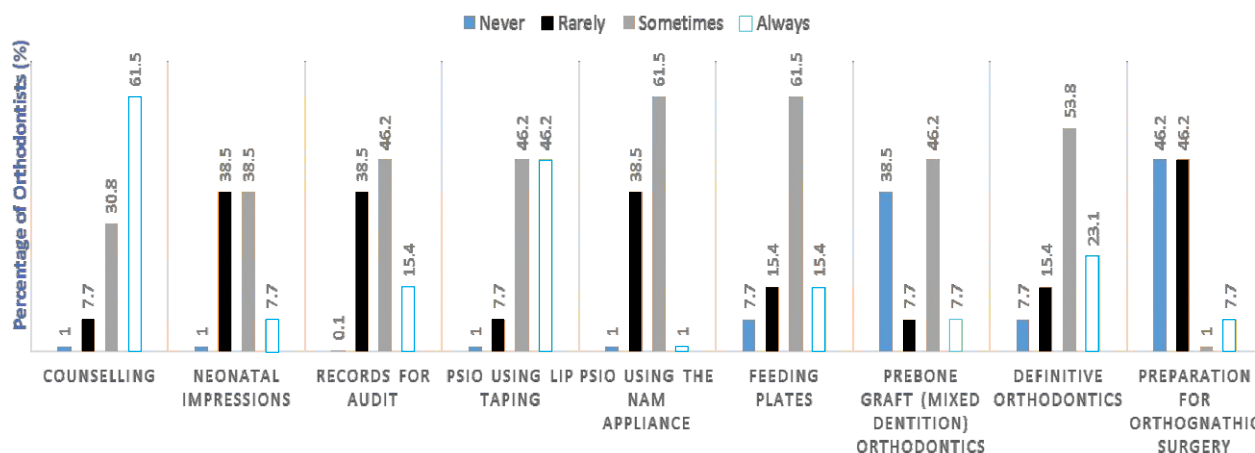


Figure 1: Frequency of Performance of Craniofacial Orthodontic Procedure

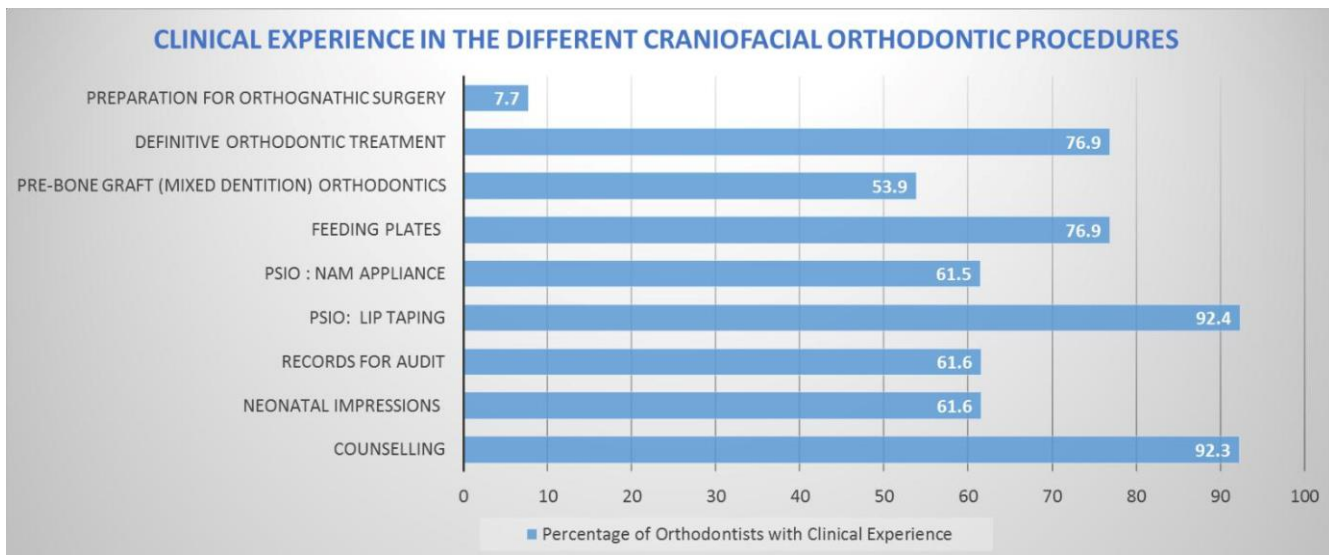


Figure 2

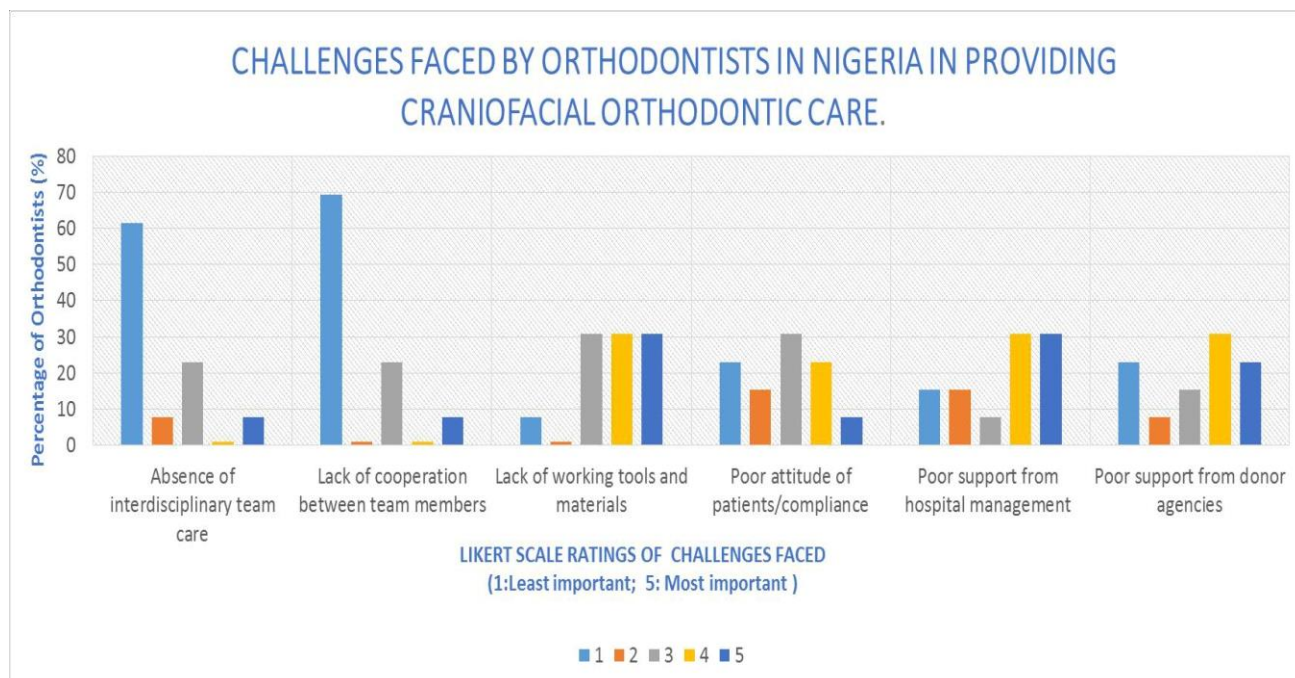


Figure 3

Craniofacial orthodontics evolved from the early collaborations between research orthodontists who were studying severe anomalies of craniofacial growth and the surgeons treating these patients. These collaborations led to the appreciation of the role of the orthodontist in the multidisciplinary management of patients with complex craniofacial problems as well as those with cleft lip and palate.⁷

Orthodontic treatment for these patients often requires increased complexity and difficulty, extended length of treatment time and often limited financial benefit. ⁸ Orthodontists, therefore, may have a tendency to limit the treatment of these patients in their private practices. Thus, treatment for

these patients is often limited to hospitals and university centers.⁸ This may explain why over 90% of the orthodontists in this study, who were providing craniofacial orthodontic care, were working in public health facilities.

The fact that about 60% of the orthodontists surveyed were involved in the provision of craniofacial orthodontic care is noteworthy. However, a greater majority of these orthodontists recorded greater frequency of performance and clinical experience in basic procedures such as counselling of cleft patients and presurgical infant orthopedics using lip taping. This may be as result of the fact that these procedures are relatively easy to

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perform and do not require further clinical training to execute.

However, in the case of more advanced craniofacial orthodontic procedures such as orthodontic preparation for orthognathic surgery and pre-alveolar bone graft mixed dentition orthodontics, a more limited clinical experience was recorded. This finding corroborates that recorded for orthodontic residents in the country, in a previous study.⁵ Similar findings of limited experience in similar craniofacial orthodontic procedures, have also reported by Sandy et al.,⁶ in a survey carried out amongst British orthodontists. This finding among orthodontists in Nigeria is not surprising, considering the fact that a recent study reported that alveolar bone graft surgeries were performed in only one third of the centers,⁹ while less than 5% of the centers in the country currently provide any form of orthognathic surgery.⁹ This may be because of limited surgical expertise in these procedures, which would also impact negatively on the frequency of performance of the corresponding orthodontic procedures required to support the surgeons. Apart from this, of greater importance is the fact that orthognathic surgery is quite expensive and currently not covered by grants received from international donors to cover the surgery for cleft patients. However, as the patients who have received free cleft surgeries in the country over the past decade mature into adulthood, procedures such as orthognathic surgery may become more relevant for such patients. Likewise, surgeons in the country may seek to increase their skills in this area and more orthognathic surgeries may be performed.

A major limitation of the questionnaire used for this study is the fact that it did not assess self-rated competence of respondents in performing these procedures. However, considering the limited frequency of performance of both orthodontic procedures it is very unlikely that they would possess a high level of competence in both areas.

The fact that the absence of multidisciplinary team care and a lack of cooperation amongst team members were the two major problems highlighted by respondents who were currently providing craniofacial orthodontic care is very important. Worldwide, the gold standard for the care of patients with craniofacial anomalies is a multidisciplinary approach. Indeed, as far back as 1991, the American cleft palate and craniofacial association recommended the centralization of patient care through the multidisciplinary treatment of patients with orofacial clefts.¹⁰ This was done to facilitate better patient care and for lower healthcare costs as

team approaches have been recorded to be more comprehensive and successful.^{11,12}

The findings from this study reinforce the findings from previous studies which have highlighted the fact that only a limited number of centers in Nigeria actually practice multidisciplinary team care.^{9, 13} Furthermore, even in centres where multidisciplinary team care is practiced, only very few provide orthodontic care. A recent study highlighted the fact that slightly over 70% of the centers in the country do not currently provide orthodontic services.⁹ A major reason for this could be the fact that there are a limited number of orthodontists in the country, with less than fifty qualified orthodontists serving a population of over 180 million people. Furthermore, findings from this study in which orthodontists report the absence of multidisciplinary care as a major challenge to the provision of craniofacial orthodontic care is very insightful. This is because it implies that in some centers, the lack of provision of craniofacial orthodontic care may be more as a result of the absence of a co-ordinated multidisciplinary team approach, as against the absence of orthodontists in those centers. This may be particularly true in large secondary and tertiary health care facilities in the country. Other factors which have been previously highlighted as possible causes of the absence of multidisciplinary team care are faulty hospital management structure and limited commitments and heavy workloads of some specialists.

Some of the limitations of this study include the fact that there might have been a response bias by some orthodontists recording slightly higher scores to reflect a greater experience than possessed. The anonymity in completing the questionnaires should have reduced this to a minimum. The survey also did not extensively assess the competence of the orthodontists in the management of other craniofacial anomalies, such as craniosynostosis; this can be explored in future.

There is also need for future studies to assess the level of importance that patients with craniofacial anomalies in Nigeria currently attach to orthodontic treatment. This is imperative considering the fact that apart from cost, patient motivation for treatment is also a very important factor.

Conclusion

About 60% of the Orthodontists in Nigeria currently provide some form of craniofacial orthodontic care. A large percentage of these orthodontists reported sufficient clinical experience in basic procedures such as counselling and pre-

surgical infant orthodontics. However, for advanced craniofacial orthodontic procedures such as orthodontic preparation for alveolar bone graft and orthognathic surgery, very limited clinical experience was recorded. The major challenges reported by the Orthodontists in providing this care was the absence of multidisciplinary team care and lack of cooperation between team members. In an environment of many specialist professionals all vying for their own importance, communication and co-operation are key factors in the success of the cleft team in any institution.

Recommendations

Health authorities at the federal and state government levels should promote well-coordinated multidisciplinary team care as the gold standard for the management of patients with clefts and craniofacial anomalies in the country. Where possible, the government should establish designated regional referral centers for the multidisciplinary management of these patients in different geopolitical zones of the country, using selected teaching hospitals.

Donor agencies currently sponsoring free surgical care for cleft/craniofacial patients in the Nigeria, should extend this sponsorship to include orthodontic care for these patients also. The Government should also consider subsidizing the total treatment for these patients, including orthodontic care. This would increase these patients' access to orthodontic care and ultimately this would expand the scope of craniofacial orthodontic care currently provided by Orthodontists in the country. Hospital managements in the country, also need to significantly increase the level of support currently provided for craniofacial orthodontic care.

Contributors

IGI initiated the study, designed the questionnaire, data collection and general write-up of the manuscript.

DOO was involved in the initiation of the study, design of the questionnaire and in the preparation of the manuscript.

FDV facilitated the initiation of the study and was involved in the preparation of the manuscript.

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Self

Conflict of Interest

Nil

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