

## **Attitudes and perceptions of orthodontists and residents -in- training to the need for orthognathic surgery in Nigeria**

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### **Abstract**

**Background:** The use of orthognathic surgery (OS) protocol in the correction of severe skeletal malocclusions is still not widely practiced especially in the developing world despite its obvious benefits. In order to assess its acceptance and utilization in our environment, it is necessary to understand orthodontic practitioners' current attitudes and perceptions toward this emerging treatment option. This survey was therefore aimed to provide an insight into orthodontists' attitudes and perceptions to this treatment modalilty in Nigeria

**Methodology:** Thirty- six practicing Nigerian Orthodontists were included in this cross-sectional study. An 18-item self administered open ended questionnaire was used to collect data on their attitudes and perceptions of orthognathic surgery. Descriptive statistics were computed and analyzed as appropriate.

**Results:** The mean age of the respondents was 41.3 years (range 29-68 years) with a female to male ratio of 2:1. Fifteen respondents (41.7%) were fellows of postgraduate Colleges (National postgraduate College of Nigeria/West African Postgraduate Medical College) while the remaining 21(58.3%) were resident doctors. Most of the respondents (88.9%) indicated that there was a need for OS in managing patients with dentofacial deformity while only 9(47.2%) of the respondents treat all cases of malocclusion with orthodontic methods alone irrespective of the actiology. Majority believed that orthognathic surgical procedure is not easily accessible in Nigeria and they identified cost, fear and safety of surgery, lack of facilities and expertise as possible obstacles.

**Conclusion:** Nigerian orthodontists and trainees seem to view OS as a useful treatment protocol that is capable of improving efficiency and quality of patient care.

**Keywords:** *Orthognathic surgery, malocclusions, cross-sectional, respondent, dentofacial.*

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### **Résumé**

**Contexte :** L'utilisation du protocole de chirurgie orthognathique (CO) pour la correction des malocclusions squelettiques sévères n'est pas encore largement pratiquée, en particulier dans les pays en voie de développement, en dépit de ses avantages évidents. Afin d'évaluer son acceptation et son utilisation dans notre environnement, il est nécessaire de comprendre les attitudes et perceptions actuelles des praticiens orthodontiques à l'égard de cette nouvelle option de traitement.

Cette enquête visait donc à fournir un aperçu des attitudes et des perceptions des orthodontistes à l'égard de cette modalité de traitement au Nigéria.

**Méthodologie:** Trente - six orthodontistes pratiquants nigériens ont été inclus dans cette étude transversale. Un questionnaire ouvert de 18 questions auto-administré a été utilisé pour collecter des données sur leurs attitudes et leurs perceptions de la chirurgie orthognathique. Des statistiques descriptives ont été calculées et analysées le cas échéant.

**Résultats :** L'âge moyen des répondants était de 41,3 ans (intervalle de 29 à 68 ans) avec un ratio femmes / hommes de 2:1. Quinze répondants (41,7%) étaient membres des collèges de troisième cycle (Collège national de troisième cycle du Nigeria / Collège de médecine de troisième cycle de l'Afrique de l'Ouest), les 21 autres (58,3%) étaient des médecins résidents. La plupart des répondants (88,9%) ont indiqué qu'il y a un besoin de CO pour la prise en charge des patients présentant une déformation dento-faciale, tandis que seulement 9 (47,2%) des répondants traitent tous les cas de malocclusion avec des méthodes orthodontiques seules, indépendamment de l'étiologie. La majorité a estimé que la procédure chirurgicale orthognathique n'était pas facilement accessible au Nigéria et ils ont identifié le coût, la peur et la sécurité de la chirurgie, le manque d'installations et de compétences spécialisées comme obstacles possibles.

**Conclusion:** Les orthodontistes et stagiaires nigériens semblent considérer la CO comme un protocole de traitement utile, capable d'améliorer l'efficacité et la qualité des soins prodigués aux patients.

**Mots clés:** *Chirurgie orthognathique, malocclusions, transversale, répondant, dento - faciale*



**Introduction**

Historically, orthognathic surgery (OS) or corrective jaw surgery is designed to correct dentofacial conditions related to structure, facial growth, temporomandibular joint (TMJ) disorders, sleep apnoea and other skeletal malocclusions that cannot easily be treated with simple orthodontic mechanics [1]. This procedure dates back to 1945s and now accounts for about 5% of all treated cases of dentofacial deformity in the general population [1-3]. Though the procedure involves a team approach, orthodontists are often the patients' primary providers of information concerning the goals, benefits, and risks of OS treatment<sup>4</sup>. Patients' decision to seek OS treatment therefore is often initiated and influenced by orthodontist referral [4].

Possible differences in training and exposure may affect orthodontists' perception of OS treatment need and this variation can impact directly or indirectly on the utilization and success of treatment of dento-facial deformities with resultant effect on patients' satisfaction [5].

Unlike in advanced countries of Europe and America where OS procedures are common place and routine due to advances in three-dimensional imaging and computer-assisted surgery have significantly improved surgical outcomes and reduced surgical morbidity [6], current utilization of OS in Nigeria is very low [7-9]. It is conceivable that orthodontist' perception of OS treatment need may play a role in its under-utilization.

The purpose of this study was to assess Nigerian orthodontists and trainees' attitudes towards OS as a veritable surgical protocol in the management of skeletal anomalies.

**Methods**

This survey was carried out through structured questionnaire distributed to orthodontists who attended the 10th Annual International Conference of the Nigerian Association of Orthodontists in Lagos in 2016. After the congress, the same questionnaires were sent electronically to orthodontists who did not attend the congress and are registered members of Nigerian Association of Orthodontists as at October 2016. A reminder mail was sent after 3 weeks to those who did not respond. An 18- item self-administered questionnaire was used to assess their attitudes and perceptions of orthognathic surgery in treating patients with dentofacial deformity. The questions were subdivided into 2 main topics: socio-demographics and attitude/perception.

Data were obtained through the electronic mail and from questionnaires returned at the meeting and they were entered into a personal computer and descriptive statistical analysis of variables which were presented as frequencies and percentages with level of significance set at 5% was done.

**Results**

Thirty-six out of the total 61 questionnaires issued were returned giving a response rate of 59.0 %.

*Demographic data*

The mean age of the respondents was 41.3 years (range 29-68 years) with the majority in the 35-44 age category. There was significant female predilection (overall female to male ratio of 2: 1) in all the age categories except 25-34 (figure 1). Fifteen respondents (41.7%) were Fellows while the remaining 21(58.3%) were senior residents.

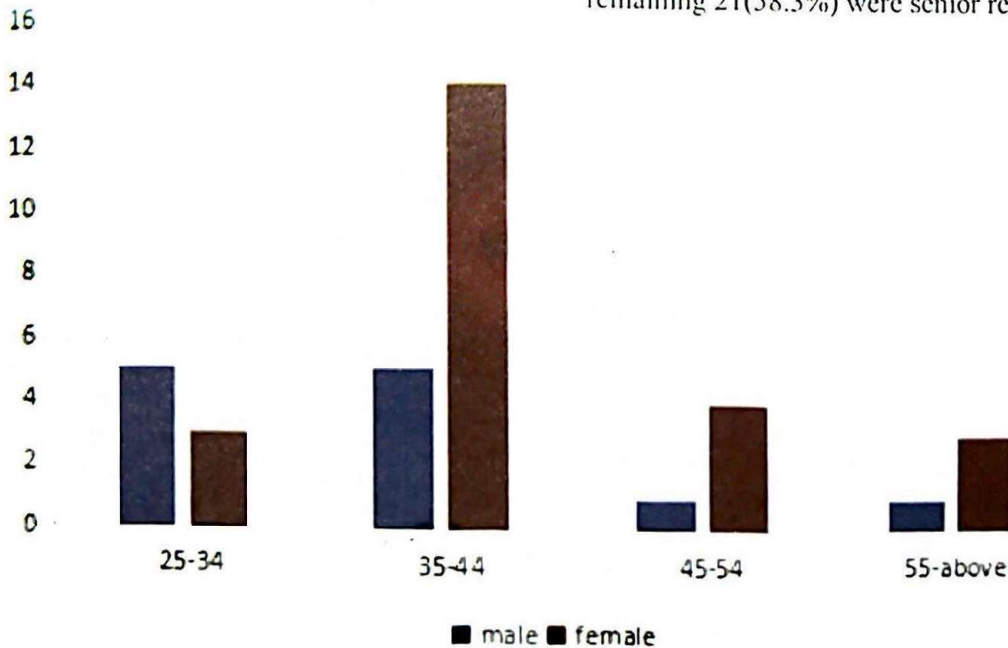


Fig. 1: Age and gender distribution of the respondents



**Table 1:** Demographic characteristics of the respondents.

Variable	Frequency	Percentage
<i>Age</i>		
25-34	8	22.2
35-44	19	52.8
45-54	5	13.9
55-above	4	11.1
Total	36	100
<i>Gender</i>		
male	12	33.3
female	24	66.7
total	36	100
<i>Status</i>		
registrar	21	58.3
consultant	15	41.7
total	36	100
<i>Location of practice</i>		
Lagos	22	61.1
Ibadan	4	11.1
Ile-Ife	4	11.1
OthersTotal	636	16.7100

Most respondents (61.1 %) practiced in the Lagos area (Table 1). When asked if there is a need for surgery in managing patients with dentofacial deformity, most orthodontists (88.9%) responded in the affirmative despite the fact that up to one half (41.7%) claimed that their center was involved in orthognathic surgery. About one half (52.8%) of the respondents had attended a seminar on the relevance of orthognathic surgery in orthodontic practice but only a quarter 9(25.0%) of the respondents indicated that they will offer only orthodontic treatment to their patients irrespective of the aetiology of malocclusion.

Overwhelming majority (91.7%) believed that orthognathic surgical procedure was not easily accessible in Nigeria and cited patient factors (69.4%), institutional factors (61.1%), surgeon related factors (47.2%) and orthodontist related factors (41.7%) as possible obstacles. Out of the institutional factors mentioned, lack of infrastructural support was identified by most respondents while cost and fear of surgery was cited often as the patient factors while lack of expertise was indicated as the surgeon or orthodontist related factor.

## Discussion

This study gathered information about the attitudes of Nigerian orthodontists and trainees toward orthognathic surgery.

The response rate of 59% was lower than that of the previous national survey carried out by Sanu *et al.*, 2014 [10] 2 years previously and this was most likely affected by the fact that junior residents were

not included in the study because we felt that they may not have had adequate exposure to orthognathic surgery. It is also possible that some orthodontists could not find time out of their busy schedule to respond electronically. Furthermore, an earlier study had suggested that the response rate among health care professionals is decreasing [11]. Data in this study consisted of respondents mainly located in Lagos area and previous report [10] had indicated that majority of Nigerian orthodontists are based in Lagos hence reasons of proximity may have contributed further to the larger number of respondents from Lagos since the conference was held in Lagos. This calls for caution when extrapolating the opinions expressed on a national basis.

Slightly more females and residents responded in the present survey when compared with an earlier study in 2014 among Nigerian orthodontists by Sanu *et al* [10] and exclusion of junior residents from the present sample may again account for these differences because this study [10] had documented significant female preponderance in orthodontic practice.

Orthodontists' traits such as age, gender, status and location of practice did not appear to affect attitudes and opinions [11]. This survey suggests that Nigerian orthodontists believe in the need for orthognathic surgery in the treatment of patients with dentofacial deformity even though they believe it is not easily accessible. Lack of infrastructural facilities, expertise, cost and fear of surgery are mainly responsible. Similarly, Yao *et al* [12] reported high cost and lack of expertise/equipment as major barrier to accessing reconstructive surgery in Vietnam and other low- and middle-income countries leading to over reliance on charitable care.

Added cost of virtual surgical planning, model surgery and 3D printing of surgical splints makes OS to be relatively more expensive compared to other reconstructive surgeries [13] however, strategies for reducing cost such as regionalization of patients to high volume centers in out-patient setting [14-15] have been suggested.

On the other hand, certain patients' traits were the major determinants of orthognathic surgery referral in a Canadian [16-17] and UK [18] surveys with less frequent recommendations for patients with mild or moderate compromise. Patients' motives and fears [19] of surgery were also identified as the most prevalent reasons for declining surgery in a Norwegian population [20].

## Recommendations

If this perceived need for OS will be translated to more referrals, there is a need to make OS more



accessible in Nigeria. Concerted efforts must be made by policy makers to make OS more affordable. This can be accomplished in several ways. First, both the orthodontist and oral/ maxillofacial surgery specialists must reinforce the importance and value of orthognathic surgery to patients, referring clinicians and government. Efficient, safe, and effective outpatient orthognathic surgery in facilities that can substantially reduce cost will help patients benefit from this valuable service.

### Conclusion

The study highlights uniformity in treatment philosophies/need for orthognathic surgery among Nigerian orthodontists, despite variations in background. Nigerian orthodontists seem to view OS as useful and capable of improving efficiency and quality of patient care.

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