

## Original Article

# Management of Cleft Lip and Palate in Nigeria: A Survey

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ABSTRACT

**Background:** Clefts of the lip and/or palate are the most common congenital craniofacial defects and second only to club foot among all congenital anomalies. The management of this condition is resource intensive due to the multidimensional needs. This survey was carried out to ascertain the current state of cleft management in Nigeria with emphasis on training, scope of management, and assessment of treatment outcome. **Materials and Methods:** Structured questionnaires were administered to cleft surgeons based on professional and practitioners' register and the result of literature search for cleft surgeons whose names may not appear in the registers. **Results:** A total of 69 returned questionnaires were analyzed. The highest number of surgeons was from southwest geopolitical region while the northeast had the least. Fifty-eight (84.1%) were specialists with the fellowships. Forty-seven had been cleft surgeons for <10 years. Majority undertook lip repair between 3 and 4 months while 50% did cleft palate at or more than 9 months. Millard rotation and advancement was used for lip repair by 91.2% and 44 employed the von Langenbeck technique for palatal repair. Forty-six respondents carried out nasal repair at the time of lip surgery with 44 doing this as closed rhinoplasty. Adhesive tapes were usually employed by 44 (63.7%) for managing the protruding premaxilla. Orthodontic evaluation was not usually part of the treatment plan of 34 respondents. Otology assessment and assessment of velopharyngeal competence were rarely done. Revision surgeries, alveolar bone grafting, rhinoplasties, and maxillary osteotomies were uncommon. Interdisciplinary team care approach was practiced by 54 (78.2%) respondents. **Conclusion:** Findings suggest an increase in the number of surgeons, but the training, scope, and standard of care remain relatively limited. Audit and assessment of the practice should also become points of emphasis.

**KEYWORDS:** Cleft lip, management, palate, Nigeria, survey

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## INTRODUCTION

Clefts of the lip and/or palate are the most common congenital craniofacial defects. Although significant geographic variation exists in its incidence, it is estimated to be between 1/500 and 1/700 live births in Europe.<sup>[1]</sup> Iregbulem<sup>[2]</sup> in a hospital-based study in Southeast Nigeria put the incidence at 1 in 2703 live births. Due to the multidimensional needs of the cleft patient and the resource-intensive nature of care, an interdisciplinary mode of management is generally accepted as the best approach,<sup>[3]</sup> with each member of the team contributing specific skills for optimum

treatment outcome. This condition is also associated with significant clinical and psychosocial impact.<sup>[4,5]</sup> Its management, therefore, will have substantial influence on the quality of life and the overall well-being of the patients. The care of cleft in the developing parts of the world has been shown to lag behind that of the Western world due to several challenges in the developing environment,<sup>[6]</sup> including limited resources,

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infrastructural and workforce deficits. The aim of the present study was to ascertain the current scope of cleft surgery and services provided in a developing and resource-limited country in sub-Saharan Africa.

## MATERIALS AND METHODS

A list of the cleft surgeons in Nigeria was compiled from the registers of the Nigerian Association of Cleft lip and Palate, Nigerian Association of Oral and Maxillofacial Surgeons, and the Nigerian Association of Plastic, Reconstructive and Aesthetic Surgeons. A questionnaire done on Google survey was mailed or handed over directly to those identified. The surgeons were asked among other questions to provide information about their specialty, the geopolitical location of their practice, cleft surgery training, the workload, scope of the surgical care they provide, and the existence of an interdisciplinary team where they practiced.

## RESULTS

### Geographic distribution/specialty and year since qualification

Sixty-nine completed forms were returned out of the 101 sent out, giving a response rate of 68%. Majority of the respondents (58, 84%) were practicing in university teaching hospitals. The respondents were spread throughout the six geopolitical regions of the country [Figure 1]. Southwest (26, 37.7%), South-South (13, 18.8%), Southeast (9, 13.0%), Northwest (9, 13.0%), North Central (9, 13.0%), and Northeast (3, 4.4%). Majority (41, 59.4%) of the respondents were plastic surgeons while 25 (36.2%) were oral and maxillofacial surgeons. Three (4.3%) did not disclose their specialty [Figure 2]. Forty-seven respondents have been practicing as cleft surgeon for  $\leq 10$  years and 22 others for more than 10 years.

### Training

While 58 (84.1%) respondents had the professional, specialist fellowship qualifications, 6 others (8.6%) had other qualification not equivalent to a specialist qualification. With regard to cleft-specific training, only 31 (44.9%) had a cleft-specific training or fellowship.

### Volume of work done

Although three respondents operated more than 50 cases of cleft lip annually, majority (41, 59.4%) however undertook  $< 20$  cleft surgeries in a year. All the “high-volume” operators were practicing in the northern part of the country; two in the northeast and one in the north-central geopolitical zones.

### Timing of surgery and surgical techniques

While 52 (75.3%) respondents carried out lip repairs between 3 and 4 months of age, others did it at other

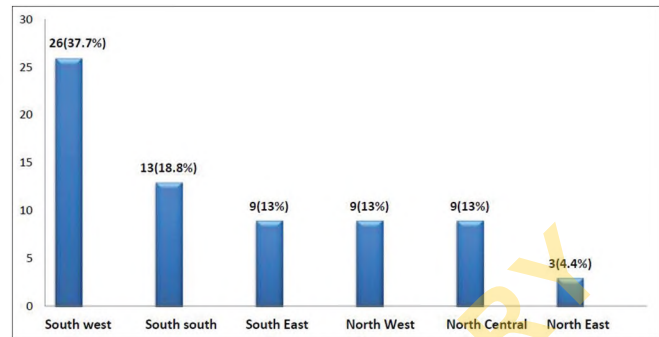


Figure 1: Distribution of respondents within the geopolitical zones

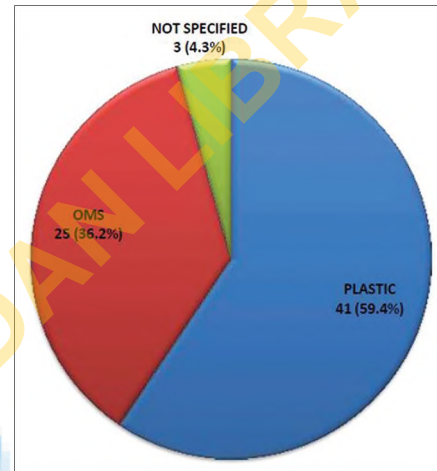


Figure 2: Distribution of respondents within specialties

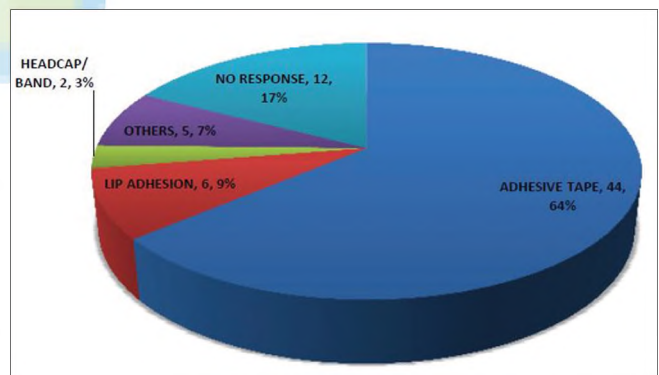


Figure 3: Methods of treating protruding maxilla by respondents

times including 1–2 months (1, 1.4%). Millard rotation and advancement technique was the most commonly used technique for lip repair (62, 89.8%). In addition, 46 (66.6%) respondents carried out nasal repair during lip surgery with 42 of them doing it as a closed procedure. Fifty-four (78.3%) respondents repaired a cleft palate at 9 months with 62 (89.8%) doing it as a single procedure. Forty-four (63.7%) respondents carried out palatal repair routinely using the Von Langenbeck technique. The vomer flap was rarely used by respondents.

### Protruding premaxilla

With regard to the management of the protruding premaxilla, adhesive tape was used by the majority (44, 63.7%) followed by lip adhesion (6, 8.7%). Two (2.9%) respondents used head band while five (7.2%) did not intervene. Twelve (17.4%) respondents gave no response [Figure 3]. Orthodontic evaluation was usually part of the treatment plan by only 31 (44.9%) respondents.

### Alveolar bone grafting and secondary surgical procedures

Only eight (11.5%) respondents carried out alveolar bone grafting and secondary surgeries when indicated. Patients' refusal (25, 36.2%) and finance (20, 28.9%) were the most common reasons for such not being regularly provided.

### Other surgical and ancillary care

Referral for ear assessment was part of the care provided by 42 (60.8%) respondents, and velopharyngeal competence was regularly assessed by 15 (21.7%) respondents. Thirteen of the 15 respondents who did velopharyngeal assessment however did it only manually by voice and resonance evaluation. Among those who did the assessment, four (26.6%) gave no response as to the treatment option that will be employed, while five (33.3%) considered speech therapy.

### Follow-up, audit, and research

Forty respondents had social support services at their centers. Fifteen respondents gave the average follow-up period after cleft lip repair as <6 months, but a significant number (24, 34.7%) had a 6–12-month follow-up. The follow-up period after palatal defects repair was 18–24 months by 27 (39.1%) respondents. Others gave no answer. While audit and research were a part of the practice of 52 respondents, treatment outcome measurements were not standardized and usually limited to visual assessment.

### Interdisciplinary care

Interdisciplinary care was practiced by 54 (78.2%) respondents, although orthodontists and speech pathologists were hardly part of the team. Other surgeons were essentially solitary operators.

## DISCUSSION

Cleft is a condition that is associated with significant clinical and psychosocial impact.<sup>[4,5]</sup> How comprehensive the management of this condition is will substantially influence the quality of life and the overall well-being of the patients. The management of cleft in the developing parts of the world has been shown to be less than optimum due to several development-associated

challenges in these environments.<sup>[6]</sup> Results from this study provide current and additional insight into the state of cleft management in Nigeria. Our results show a distribution of cleft surgeons along the Nigerian geopolitical zones to be largely skewed toward an obvious southern predominance as well as the federal institutions [Figure 1]. This imbalance which has been previously reported<sup>[7,8]</sup> is a major issue in care provision as other parts of the country remain underserved. This is partly attributable to a larger concentration of the training institutions and facilities in the southern states.

Since there is currently no evidence that cleft is more prevalent in the northern parts of the country, the fact that the high-volume operators in this study are all from the northern parts of the country may be largely due to the lower surgeon: patient ratio as well as the presence of fewer facilities. This phenomenon appears to be prevalent in many African nations as part of their unique and urgent barriers to cleft care in the continent.<sup>[9]</sup>

Contrary to what obtains in the Scandinavian countries and the United Kingdom where care is centralized,<sup>[10]</sup> the result of this study shows that cleft management in Nigeria is provided in a dispersed manner by many surgeons and different institutions. Decentralized care could result in inferior outcomes and difficulties for the patient, family, and the system.

Previous study had reported that the majority of surgeons worked in isolation are “low-volume” operators.<sup>[7]</sup> There appears to be an increase in the number of centers and of low-volume operators in this study relative to what was previously reported; only 39.1% (27) of the surgeons undertook more than 20 cleft surgeries per year. While this may not necessarily translate into a poor outcome,<sup>[11]</sup> it does not make for optimum utilization of resources in a poor-resource environment, and low volume has a negative impact on skills' maintenance. Centralized interdisciplinary centers are to be encouraged by both the governments and the organizations funding cleft care in Nigeria and by extension the West African subregion. Anecdotal reports suggest that the situation prevalent in Nigeria similarly exists in the subregion. Nonspecialists also appear to be involved in the surgical management of cleft with 11 of the respondents in this study not being holders of the recognized qualifications of a specialist in Nigeria, though they were listed in the register of the cleft association.

With regard to the timing for surgical intervention, although majority of surgeons carry out cleft lip repair between 3 and 4 months, 12 others wait till about 8 months, apparently due to weight/feeding and nutrition-related problems often rife in parts of the

rural communities. This problem will invariably impact negatively on anesthesia and surgery. However, only 50% carry out palatal repair at 9 months. This is partly due to the fact that patients with cleft of the palate hardly present for repair, particularly if it existed with a cleft lip which had already been successfully repaired. Single-stage repair for either lip or palatal cleft was the practice by majority of the respondents. This could be largely due to the financial implications of a staged procedure.

Nasoalveolar molding devices have been embraced in Europe as the major means of handling the protruded premaxilla,<sup>[10]</sup> and Adeyemi and Bankole<sup>[12]</sup> reported 8.3% use of the device among practitioners in Africa. Previous studies on cleft management in Nigeria reported that very few specialists recommend presurgical orthopedics.<sup>[7]</sup> In the present study, the device was not in use by any of the respondents; rather, adhesive tapes were the mainstay. There appears to be a continued dearth of expertise for the production of the devices, lack of the knowledge of their uses by practitioners, and the challenge of the additional financial burden to the patients. This is, however, not without the attendant consequences on feeding and the difficulty associated with repair of cleft without the appropriate molding of a prominent premaxilla.

Secondary procedures such as alveolar bone grafting, orthognathic surgery, and surgery for the correction of velopharyngeal incompetence were hardly part of the services provided by cleft surgeons in Nigeria. This is probably due to paucity of the requisite competences,<sup>[13]</sup> patients' lack of interest by both surgeons and patients, and funding for such procedures. The consequences of this situation on training and scope of surgical care provided will be dire unless the trend is reversed.

It was previously reported that multidisciplinary team approach had not been embraced by Nigerian cleft caregivers<sup>[7,8]</sup> and African<sup>[9]</sup> practitioners. In the present study, the concept has still not been accommodated by all practitioners, perhaps largely due to inadequate number of the needed experts in the system to bring into the cleft care team. However, irregular clinical meetings by those in a team, where a team exists, could also mean that the concept is apparently not fully appreciated.

This study provides an insight into the current demographics, training, and localization of expertise and practices in Nigeria with regard to cleft management. Patients with cleft in developing countries have needs similar to those of their counterparts in the developed countries. However, the existing shortages of resources and infrastructure continue to preclude the provision of

the most basic care to the patients. The findings suggest that, while there appears to be a significant increase in the number of cleft surgeons in the country, perhaps, the scope of care remains relatively limited. More efforts are needed to ensure the availability of more comprehensive care, inclusive of nonsurgical care such as psychological and social services as well as early hearing and ear examinations.

The importance of training and continuing education of practitioners as well as centralization of care in the different geopolitical zones, where possible, cannot be overemphasized. This will not only impact positively on standard of care and clinical outcome, but also on training, as these centers can become regional centers for cleft care as obtained in Europe and other developed parts of the world. All cleft surgeons in Nigeria may not have been surveyed in this study, particularly if such persons were not listed in the three associations' registers used majorly for compiling the list of practitioners. However, the results are significantly representative of the current scope of cleft management in Nigeria.

## CONCLUSION

This study provides an update on the probable standard of cleft care presently available in Nigeria. Findings are suggestive of progressive increase in number of surgeons with lack of effective interdisciplinary cleft care delivery. It is therefore suggested that a centralized approach should be undertaken which will enhance training and provide adequate and comprehensive cleft care delivery.

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## Conflicts of interest

There are no conflicts of interest.

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