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A prospective, single center analysis of satisfaction following cleft lip and palate surgeries in Southwest Nigeria

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INTRODUCTION

Cleft lip and palate (CLP) continues to be one of the major disfiguring and distressful congenital craniofacial deformities with reported incidence of 1 in every 600 live births.¹⁻³ Global evidences suggest that it is often accompanied with grave psychological impairment and social stigma.⁴

Cleft treatment aimed at restoring aesthetics and ensuring adequate speech development are often prolonged and start from childhood and finish in adulthood. Frequent evaluations of these treatments are centered on the clinical outcomes disregarding patient related outcomes such as satisfaction and quality of life that can guarantee long-term compliance with care.

Encouragingly, the paradigm is shifting as many health providers, hospitals, medical institutions, and cleft centers have recognized that satisfaction evaluation offers an excellent chance to gauge the consumers/end users’ perspective in the quality of care provided and the providers’ success at meeting the clients’ expectations. Thereby, making services more client-centered, facilitating efforts to optimize outcome, regulate/modify services, and improve quality. Patient feedback is regarded as an essential and effective tool in marketing health services. Moreover, several researchers have emphasized that patient oriented outcome measurements provide more insights into

ABSTRACT

Objective: Aim of this study was to assess satisfaction with facial appearance and function following cleft lip and palate (CLP) surgeries. Materials and Methods: The surgical outcome of 70 consecutive patients who had CLP surgeries between October 2008 and December 2009 were prospectively evaluated at least 4 weeks postoperatively. Data collected included age, sex, type of cleft defects and type of surgery done, and postoperative complications. For cleft lip repair, the Pennsylvania lip and nose score was used to assess surgical outcome whereas the integrity of the closure was used for cleft palate repair. Results: A total of 70 subjects were enrolled in this study with 40 females (57.1%) and 30 males (42.9%) (female: male = 1.3:1). The age of the subjects at presentation ranged from 1 day to 26 years. Majority of the study group were infants 74.3% (52) and 25.7% (18) presented after age one. 19 (39.6%) of subjects were operated within the ages of 3 months for lip repair and 10 (45.5%) subjects after 18 months for palate repair. There was a good surgical outcome of 71.4% with an overwhelming parents/subjects satisfaction of 94.8% with the treatment outcome. Twelve cases (15.6%) in which surgical outcome was rated fair, the subjects or their parents were still very satisfied with the surgical outcome. Conclusions: There was a high patient satisfaction irrespective of treatment outcome. This satisfaction reflects not only the technical competence of the cleft surgeons, but also the dedicated performance of other supporting staffs of the hospital.

Key words: Cleft lip and palate, patient satisfaction, Pennsylvania lip and nose score, von Langenbeck

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the patients’ views of the impact of treatment, gives thorough outcome assessment and are crucial for improvement of patient care.

Recent studies have demonstrated that patients satisfied with the health service are much likely to be committed to future treatments and would recommend such services and health care provider to others.\(^5\)

Unfortunately, there is a dearth of research on patients’ satisfaction with cleft treatment in our region. Hence, the purpose of this study is to determine patients’ satisfaction following CLP surgeries.

**MATERIALS AND METHODS**

The study participants were willing consecutive CLP patients recruited from the cleft clinic of Lagos University Teaching Hospital, Idi-Araba, Lagos, Nigeria, between October 2008 and December 2009. Written informed consent was obtained from each study participants or surrogates. The study was approved by the hospital’s Human Research Ethics Committee and was conducted according to the Helsinki declaration.

A total of 70 patients were involved in this study. All treatment was free. Treatment protocol for these patients include lip repair generally at 10 weeks of age and palatal closure was achieved at a minimum age of 9 months.

Surgical repair was carried out by 4 consultants, oral and maxillofacial surgeons, assisted by senior registrars who are locally employed. The lead surgeon determined the surgical technique for each case. All the surgeons were permanently employed local surgeons.

Clinical evaluations of the surgical outcome of the repaired clefts were done at least 4 weeks postsurgery by the 2 investigators.

General and clinical information about the patients were included in the proforma which was divided into preoperative, intraoperative, and postoperative.

For cleft lip repair, outcome was adjudged by the Pennsylvania lip and nose score\(^6\) as good, fair, or poor.

**Pennsylvania lip and nose score**

**Lip scoring**

2. Fair: Some lip asymmetry noted at conversational distance. Minor reconstructive procedure required.

**Nose scoring**

2. Fair: Tip asymmetry seen mostly on worm’s eye tip. Rhinoplasty needed.
3. Poor: Nasal asymmetry seen on anteroposterior view, at conversational distance, crooked nose. Reconstructive rhinoplasty needed, i.e., graft might be necessary to achieve correction.

For cleft palate repairs, the outcome was judged based on the integrity of the closure, i.e., presence or absence of fistula using calibrated and validated Vernier caliper.\(^7\) Where there were difficulties in using the Vernier caliper in children, the fistula was measured on a wooden spatula by placing the spatula on the fistula and marking the fistula edges on the spatula and thereafter transferred the markings on the Vernier caliper for measurement.

The outcome was good when there was no postoperative fistula at the operative site, fair or poor, respectively, when the resultant fistula was less or more than 1 cm in greatest diameter.

Satisfaction with facial appearance and function was assessed qualitatively using a three point Likert scale, i.e., (1) very satisfied, (2) satisfied, and (3) not satisfied.

Data were analyzed using the SPSS for Windows (version 17.0; SPSS Inc., Chicago, IL, USA) statistical software package and presented in descriptive and tabular forms. Comparisons between variables were made to determine the pattern of association using Pearson’s Chi-square test and Fisher’s exact test. Statistical significance was used as appropriate and set at \(P \leq 0.05\).

**RESULTS**

A total of 70 subjects were enrolled in this study with 40 females (57.1%) and 30 males (42.9%) (female: male = 1.3:1) [Table 1]. The age of the subjects at presentation ranged from the 1 day to 26 years. Majority of the study group were below 1 year of age (74.3%) (52) [Table 2].

Majority of the families 59 (84.3%) belong to the low socioeconomic class whereas 10 (14.3%) and 1 (1.4%)
belonged to the middle and high socioeconomic class, respectively.

Nineteen (39.6%) of subjects were operated within the ages of 3 months for lip repair and 10 (45.5%) subjects after 18 months for palate repair [Table 3].

Clefts lip with or without alveolus/palate were the most commonly seen defects (77.1%) followed distantly by cleft of hard and soft palate (14.3%) whereas the least seen defect was isolated clefts of soft palate (8.6%) [Table 1]. The left side was the most commonly involved side (70.4%) in unilateral cleft lip with or without alveolus and unilateral CLP [Figure 1]. There was no positive family history of cleft in all the cases. Associated congenital anomalies were seen in 15.7% of cases.

Esthetic was the most common reason for presentation (37.7%). Seventy-seven primary cleft surgeries were done in 70 subjects; 48 (62.3%) and 29 (37.7%) were cheilorrhaphy and palatorrhaphy, respectively [Table 3]. Sixty-three subjects (90%) had undergone either cheilorrhaphy or palatorrhaphy whereas 7 subjects (10.0%) had both cheilorrhaphy and palatorrhaphy done consecutively at different times [Figure 2].

There was a good surgical outcome of 71.4% with an overwhelming parents/subjects satisfaction of 94.8% with the treatment outcome and a complication rate of 19.5%. In 12 cases (15.6%) in which surgical outcome was rated fair, the subjects or their parents were still very satisfied with the surgical outcome [Table 4].

**DISCUSSION**

The dominance of female in the study agrees with previous studies done in West Africa.[8-13] However, it contrasts with some reports from Ghana and Nigeria that observed a male preponderance.[14,15] This present series observed a high frequency of cleft involving the lip[16,17] and also showed cleft of the palate as the least common cleft deformity.[14,15,18,19] These agree with several studies from Nigeria and beyond.

This current study revealed predominance of cheilorrhaphy over palatorrhaphy which is in concordance with earlier reports from West Africa sub-region.[14-16,20] The reasons for this finding might be due to higher number of subjects that presented with cleft lip defect than cleft palate defect.[12,14,15,20,21] However, some workers declared that many patients and their families give more weight to esthetic than speech, hence, they present more for lip repair than that of palate.

### Table 1: Pattern of sex distribution of cleft deformity

<table>
<thead>
<tr>
<th>Type of cleft deformity</th>
<th>Sex of subjects</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male (%)</td>
<td>Female (%)</td>
<td></td>
</tr>
<tr>
<td>Unilateral cleft lip±alveolus</td>
<td>8 (11.4)</td>
<td>14 (20.0)</td>
</tr>
<tr>
<td>Bilateral cleft lip±alveolus</td>
<td>1 (1.4)</td>
<td>1 (1.4)</td>
</tr>
<tr>
<td>Clefts of hard and soft palate</td>
<td>3 (4.3)</td>
<td>7 (10.0)</td>
</tr>
<tr>
<td>Isolated clefts soft palate</td>
<td>2 (2.9)</td>
<td>4 (5.7)</td>
</tr>
<tr>
<td>Unilateral clefts lip and palate</td>
<td>11 (15.7)</td>
<td>11 (15.7)</td>
</tr>
<tr>
<td>Bilateral cleft lip and palate</td>
<td>5 (7.1)</td>
<td>3 (4.3)</td>
</tr>
<tr>
<td>Total</td>
<td>30 (42.9)</td>
<td>40 (57.1)</td>
</tr>
</tbody>
</table>

### Table 2: Age of subjects at presentation

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 day-1 year</td>
<td>52 (74.3)</td>
</tr>
<tr>
<td>&gt;1 year-26 years</td>
<td>18 (25.7)</td>
</tr>
<tr>
<td>Total</td>
<td>70 (100)</td>
</tr>
</tbody>
</table>

### Table 3: Age of subjects at time of cleft repair and total surgeries done

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lip repair</td>
<td></td>
</tr>
<tr>
<td>0-3 months</td>
<td>19 (39.6)</td>
</tr>
<tr>
<td>&gt;3 months-1 year</td>
<td>14 (29.2)</td>
</tr>
<tr>
<td>&gt;1 year</td>
<td>15 (31.2)</td>
</tr>
<tr>
<td>Total</td>
<td>48 (100.0)</td>
</tr>
<tr>
<td>Palate repair</td>
<td></td>
</tr>
<tr>
<td>10-12 months</td>
<td>5 (17.2)</td>
</tr>
<tr>
<td>&gt;12 months-18 months</td>
<td>7 (24.2)</td>
</tr>
<tr>
<td>&gt;18 months</td>
<td>17 (58.6)</td>
</tr>
<tr>
<td>Total</td>
<td>29 (100.0)</td>
</tr>
</tbody>
</table>

### Table 4: Treatment outcome and subject/parent/guardian satisfaction with management outcome

<table>
<thead>
<tr>
<th>Assessment of treatment outcome</th>
<th>Subjects/parents/guardian satisfaction with management outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>Good</td>
<td>46 (59.7)</td>
</tr>
<tr>
<td>Fair</td>
<td>12 (15.6)</td>
</tr>
<tr>
<td>Poor</td>
<td>1 (1.3)</td>
</tr>
<tr>
<td>Total</td>
<td>59 (76.6)</td>
</tr>
</tbody>
</table>

The result of the study clearly indicates a high overall good treatment outcome comparable to findings from Nigeria and other European cleft centers.[22] This result might be a reflection of the competence of the center’s cleft team.[23]

Evaluation of patient satisfaction once considered as a soft indicator has become an integral component of healthcare quality management and an important handle for improvement of care.[24,25] Kaoje et al. postulated that to guide/draft strategies that would improve healthcare services, identifying what patients’ want in contrast to the perceptions and desires of the

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providers or administrators or policy makers is more invaluable.\textsuperscript{[5]} Hence, client satisfaction evaluations are an indispensable mean of realizing this objective and amplifying the competitiveness of our cleft centers. The success and quality of cleft surgeries can be succinctly reflected by the level of patients’ satisfactions with the treatment outcome.\textsuperscript{[24,25]} However, assessing patient satisfaction is challenging owing to its multifaceted dimension. Determinants associated with satisfaction include outcome of care, patient sociodemographics, physical and psychological status, attitudes and expectation of medical care, and demeanor of the facility staff.

Ninety-five percent of these repairs were satisfactory to the patients or parents of the affected children compared with 89% reported from Jos, Nigeria.\textsuperscript{[14]} Met expectation has been shown to be a potent predictor of patient satisfaction.\textsuperscript{[26]} Therefore, cleft surgeons should strive to improve their technical skills in cleft repair.

Satisfaction with treatment outcome was generally high in this study, which is similar to many reports.\textsuperscript{[22,27,28]} Interestingly, some subjects expressed satisfaction with the treatment outcome despite the fact that the surgical outcome was not rated good. Williams et al. 2001, Semb et al. 2005 and Nollet et al. 2007, in European studies have made similar observations.\textsuperscript{[29-31]} Plausible reasons given for patients’ satisfaction even with poor outcome include the fact that the treatment outcome might resonate with patient expectations or that the surgery itself was an improvement on the initial cleft presentation.\textsuperscript{[22,27]} Other reasons could be that patients/parents have belief and profound respect for their caregivers, hence, finds it difficult to criticize their work.\textsuperscript{[32]}

A study from a developing countries revealed that when client are respected and provider are polite that these have a strong predictive influence on satisfaction.\textsuperscript{[33]} We also speculate that the free treatment received might have influenced their judgments, but we cannot determine the extent.

The study demonstrates some subjects express satisfaction with the treatment outcome despite unfavorable surgical outcome suggesting that in some cases the level of satisfaction is unrelated to the outcome.\textsuperscript{[14]} Earlier studies also indicate that other variables have significant influence on client satisfaction.\textsuperscript{[22,29,30]} Reports across Africa have disclosed that besides the competence of service providers, the attitude and behavior of other staff can sway the direction of patient satisfaction.\textsuperscript{[35-37]} Patients place high premium on courtesy, respect, friendliness, and politeness from the clinical staff making communication and information trouble-free.\textsuperscript{[5]} Furthermore, most patients respond favorably to complete, open, and frank pre-and post-operative discussions tinged with empathy and respect. Hence, these groups are more receptive irrespective of the surgical outcome and are more compliant with future treatments.\textsuperscript{[5]}

However, sociodemographics determinants such as social status, gender, and age have poor correlation with client satisfaction. Anecdotally, parents/patients perceived that the surgery itself has ameliorated the stigma associated with CLP anomalies in spite of the complication.

Limitations of the study include the free nature of treatment and the African culture, which we suspect might influence our clients not to be too critical of the outcome.\textsuperscript{[22]} Furthermore, patients’ satisfaction with initial cleft appearance before surgery was not evaluated.

CONCLUSIONS

The present study showed a high patient satisfaction irrespective of treatment outcome possibly reflecting not only the technical competence of the cleft surgeons, but also the amiable performance of other supporting staff of the hospital.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that
their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

**Conflicts of interest**
There are no conflicts of interest.

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