

## STATE DISTRIBUTION OF NEW PATIENTS PRESENTING WITH CLEFT LIP AND PALATE TO THE UNIVERSITY COLLEGE HOSPITAL: A PILOT STUDY

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### ABSTRACT

**Background:** The UCH/Smile Train partnership, which offers free cleft surgeries to patients provides succor.

**Objective:** The objective of the study was to determine the state distribution of new patients presenting with cleft lip and palate, to The UCH.

**Method:** A retrospective review of all new cleft patients presenting to The UCH between January 2012 and June 2015. The data obtained were their local government area of residence, age of the patients, gender of the patients and the type of cleft. Descriptive statistics was used to analyze the distribution of patients seen while Chi square test was used to analyze the influence of gender and laterality on the type of cleft.

**Results:** Sixty-seven eligible patients were seen within the study period. Majority (83.6%) of patients seen were from 14 of the 33 Local Government Areas (LGA's) in Oyo state. Patients were seen from LGA's in proximity to UCH. A few (16.4%) of the patients came from outside the state. Iwajowa, the LGA with the least number of patients (1.8%) was furthest from UCH. Left sided clefts were significantly more than bilateral or right-sided clefts ( $p=0.001$ ). Most of the patients from Oluyole LGA had CP while no patient with CP was seen from Lagelu and Akinyele LGA's.

**Conclusion:** There is the need to intensify cleft awareness programs. Further studies into the health habits, cultural beliefs and genetic profile of communities may explain some regional distribution of cleft types seen.

**Keywords:** Cleft lip, Cleft palate, Cleft distribution

### INTRODUCTION

There are an estimated 800,000 untreated cases of clefts in Africa every year.<sup>1</sup> This means 800,000 children with the likelihood of isolation, rejection from their disfigurement, reduction in their quality of life and sub optimal productivity in the society.<sup>1,2</sup> The scourge of this deformity is seen more among the low socio-economic groups.<sup>3,4</sup> Financial constraints and ignorance limits the likelihood of presentation to centers for proper management. In a study in Lagos most of the patients presented with cleft lip and palate were delivered in maternity homes, with only 22% of cases were delivered in general or teaching hospitals.<sup>2</sup> Smile Train is the world largest charity for clefts with a goal to make free, safe and quality treatment of cleft lip and palate available to those who cannot afford it.<sup>1</sup> They are in partnership with both government and non-government owned hospitals worldwide. University College Hospital, Ibadan (UCH) is a Federal government owned tertiary care facility in South West Nigeria with a bed capacity of 850.<sup>5</sup> It is located in

Ibadan North Local Government Area, Oyo State (Oyo State Government (2016). Oyo State is located in the southwestern geopolitical zone of Nigeria. It has a land mass of approximately 27,249 square kilometers and a population of approximately five million. It is divided into 33 Local Government Areas (LGA's). The major ethnic group is Yoruba. The state has both urban and rural settlements.<sup>6</sup> The UCH has been in partnership with Smile Train since 2007. It is the only Smile Train government owned partner in the state. It has effectively carried out two awareness programs (in the years 2008 and 2012) on the availability of this free service in Ibadan North and Ibadan South West local government areas. The awareness programs consisted of radio jingles, television health talks, distribution of hand fliers and posters as well as community meetings. Resource constraints had prevented the continuation of awareness programs. There had been no awareness programs within the period of the study. The aims

of the study were to identify the regional distribution of new patients presenting with cleft lip and palate, to determine any peculiarities of cleft epidemiology from the regions represented, to assess the impact of UCH on this distribution and make recommendations for subsequent awareness programs.

## PATIENTS AND METHODS

It was a retrospective review of new patients with cleft of primary palate (CL), cleft of the secondary palate (CP) and cleft of both the primary and secondary palate (CLP) presenting to the outpatient cleft clinic of the University College Hospital between January 2012 and June 2015. Informed consent was obtained for all patients recruited under the Smile Train grant and approved by the institution. Patients data were entered into the Smile Train/institutional approved proforma. The data obtained were their addresses, age of the patients, gender of the patients and the type of cleft. The local government areas of residence were identified from the addresses. The study complied strictly with the Helsinki declaration on research involving human subjects. Statistical analysis was done using frequencies and Chi square tests to analyze the influence of gender and laterality on the type of cleft.

## RESULTS

Sixty-seven patients out of Seventy (70) patients seen within the study period were eligible and their data analyzed. Majority (83.6%) of patients were seen from only 14 of the 33 LGA's in Oyo state while a few

(16.4%) of the patients came from outside Oyo State, figure 1. Lagelu and Ido LGA's had the largest (14.2% each) number of patients. Iwajowa had the least number of patients (1.8%). More patients were seen from Local government areas in proximity to Ibadan North LGA in which the University College Hospital was located. Iwajowa is the furthest of the LGA's represented, Figure 1.

**Table 1:** Distribution of cleft types

Type of cleft	Number (%)
Primary palate	30 (44.8)
Secondary palate	12 (17.9)
Both primary and secondary palate	25 (37.3)
Total	67 (100.0)

Overall, the male to female ratio was 1.2: 1. Patients having only clefts of the primary palate were predominant with a ratio of 2.5:2.1:1 for CL: CLP: CP, Table 1. Left sided clefts were significantly more than bilateral or right-sided clefts ( $p=0.001$ ), Table 2. A larger percentage of patients had complete clefts,  $p=0.005$ , Table 1. Table 3 illustrates the effect of gender on the laterality of clefts. A higher proportion of male patients (72.2%) had left sided cleft lip while a higher percentage of female patients had left sided clefts of the palate (12.5%) and cleft lip and palate (37.5%). These were not statistically significant. When the clefts occurred on the right side, the effect of gender was not statistically significant ( $p=0.9$ ). For bilateral clefts of the lip alone, there were a higher percentage of

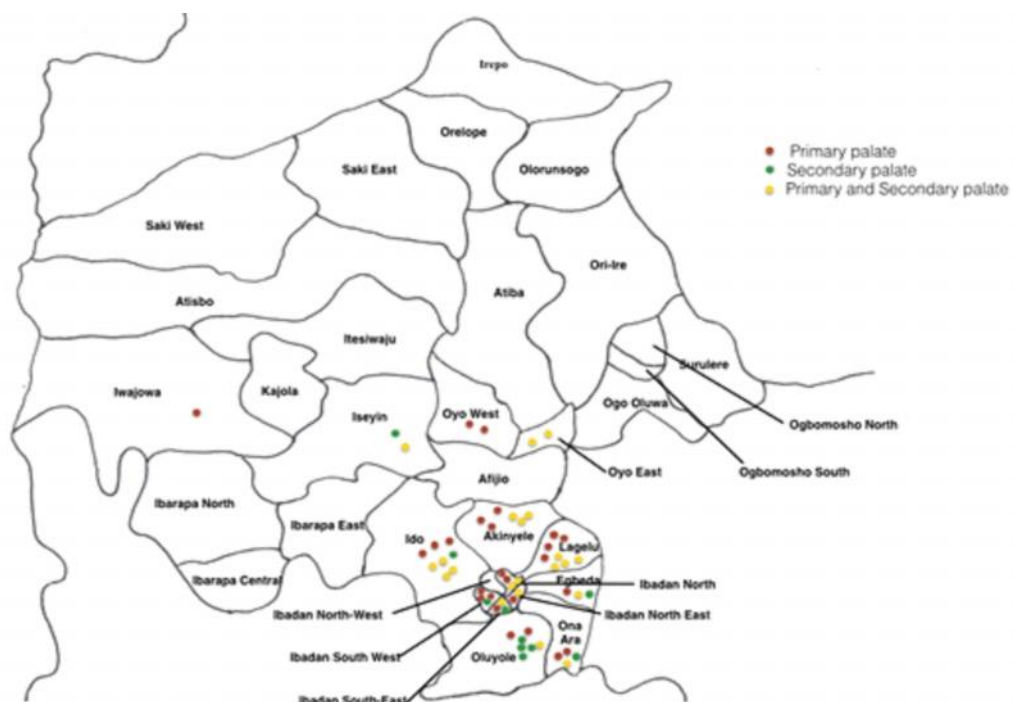


Figure 1: Map of Oyo State with dots representing the distribution and type of cleft seen at UCH

**Table 2:** Chi square analysis of influence of laterality and extent on the type of cleft

		Type of cleft			Total	Chi Square Value	p
		CL	CP	CLP			
Side	Left	17 (65.4)	2 (7.7)	7 (26.9)	26 (100.0)	22.7*	0.001
	Right	10 (50.0)	2 (10.0)	8 (40.0)	20 (100.0)		
	Bilateral	3 (16.7)	5 (27.8)	10 (55.6)	18 (100.0)		
	Soft palate	0 (0.0)	3(100.0)	0 (0.0)	3 (100.0)		
Extent	Incomplete	11 (61.1)	6 (33.3)	1 (5.6)	18 (100.0)	11.4	0.003
	Complete	19 (38.8)	6 (12.2)	24 (49.0)	49 (100.0)		

**Table 3:** Chi square analysis of the effect of gender on laterality and type of cleft

	Gender	CL	CP	CLP	Total	Chi Square	p
	Female	4 (50.0)	1 (12.5)	3 (37.5)	8 (100.0)		
Right	Male	5 (55.6)	1 (11.1)	3 (33.3)	9 (100.0)	0.3	0.9
	Female	5 (45.5)	1 (9.1)	5 (45.5)	11 (100.0)		
Bilateral	Male	3 (37.5)	0 (0.0)	5 (50.0)	8 (100.0)	10.9	0.004
	Female	0 (0.0)	5 (50.0)	5 (50.0)	10 (100.0)		

males (37.5%) while a higher percentage of females (50.0%) had bilateral clefts of the palate alone. These values were statistically significant (P=0.004), Table 3. All patients who came from Lagelu LGA and most of the patients that came from Ido LGAs had either CL or CLP while the highest number of patients with CP was seen from Oluyle LGA. Ibadan North and Ibadan South West LGAs where awareness programs had been done produced half as many patients. Most of these patients had either CL or CLP.

## DISCUSSION

### State distribution of new cleft patients

Despite the low turn out of patients during the study period attributable to industrial disharmony in the health sector at that time, the study shows that the UCH/ Smile train initiative has been able to impact on the presentation of cleft patients from around its locality as evidenced by the clustering of patients from regions around Ibadan North LGA. The UCH/Smile train initiative could still do more as the low turn out of patient may be because no awareness programs had been carried out for more than three years prior to the study. It has been reported that non-government owned hospitals actively involved in cleft care manage more patients with cleft lip and palate than government owned hospitals because non-government owned hospitals pay more attention to awareness creation and community mobilization for patient recruitment

(Adebola *et al.*, 2014). As is the case with the UCH, community mobilization is yet to be harnessed in recruiting patients with cleft lip and palate. Awareness programs in the UCH have been carried out within personnel and budgetary constraints. The cleft care team has been responsible for the awareness programs. One of the success factors to proper awareness creation and community mobilization is appropriate budgeting. Such areas as transportation for both short and long distances, production of educational materials, training manuals, picture cards, audiovisual aids, media budget, and training of certain key persons in the community require adequate budgeting.<sup>7</sup>

The LGA with the least number of patients such as Iwajowa and Iseyin are located furthest from the UCH in contrast to the cluster of cleft seen in close proximity to the UCH. This may suggest that access to specialized care was responsible for the presentation of more patients from these LGAs. Fells Elliot *et al* reported regional variance in clefts within Zambian provinces with the highest number of clefts emanating from regions, which were physically closest to their University Teaching Hospital or most visited by plastic surgeons.<sup>8</sup>

Looking at the nature of clefts in The LGAs with the most patients, all patients from Lagelu and Akinyele LGA had either CL or CLP while most patients from Oluyle LGA had CP. There may be unexplored

environmental or genetic linkages. Environmental influences, though inconsistent, on the occurrence of cleft lip and palate include vitamin A and B deficiencies, infections with rubella, exposure to irradiation, ingestion of harmful drugs such as thalidomide and anti convulsants, maternal alcohol consumption and smoking.<sup>9-11</sup> Environmental pollutants in Lagos, Nigeria were suggested as a possible cause for the peculiarity of cleft patients seen during a screening program.<sup>12</sup>

### Epidemiology of clefts seen

The prevalence of orofacial clefts in Nigeria is 0.5 per 1000 live births.<sup>4</sup> A higher proportion of patients in this study had clefts of the primary palate alone. This is consistent with previous studies done in Nigeria and Zambia.<sup>8</sup> This study shows an overall male preponderance but a higher female preponderance in clefts of the secondary palate alone. Other studies document a male preponderance or an equal ratio of males to females.<sup>13-15</sup> Other studies have found a higher female preponderance.<sup>16,17</sup> Cleft defects are reportedly commoner on the left.<sup>15,18</sup> The reason for this is not fully understood. We also found a higher proportion of defects on the left. However from our study if these defects were on the left, there was a 65% probability that it would be a cleft of the primary palate while if the defects were bilateral there was a 55% probability that the defect would involve both the primary and secondary palate.

### Limitations and strength of the study

The small sample size is a weakness of the study. Due to the difference in population size between the local government areas caution is exercised in concluding on actual patient distribution per population.

The clustering of patients from regions in close proximity to UCH suggests more needs to be done to reach out to communities further afield.

### RECOMMENDATIONS

There is the need for UCH to increase awareness programs for clefts. Engaging key personnel from each of the 33 local governments or for certain clusters of local governments who would continue the sensitization of the community to cleft lip and palate on a more regular basis would result in a wider impact. They would also serve to direct parents with these children to points of specialized care. Cleft clinics opened up closer to the communities may be helpful. A study into the sociocultural practices of these communities that may result in the formation of clefts is important.

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