

## DEMOGRAPHIC DATA ON THE CHARACTERIZATION OF ORAL CLEFTS IN MALAYSIA

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### ABSTRACT

The aim of this study was to investigate current epidemiology of several types of oral clefts among the patients receiving treatment at two tertiary care hospitals, namely University Malaya Medical Centre (UMMC) Kuala Lumpur, and Hospital Kota Bharu / Hospital Raja Perempuan Zainab II (HKB/ HRPZII) Kelantan. This study evaluated the records of 526 cleft lip and palate (CLP) patients with or without additional malformations, who came for treatment during 2003 to 2007. Of the total 526 patients registered in the study hospital records during the study period, 338 were from HKB/ HRPZ II and 188 from UMMC. Majority 86.7% of these patients were in the age group  $\leq 18$  years. The results of this study show that 57% females and 43% males were affected by oral cleft. Out of the total patients, 77.8% were CLP, 13.5% were cleft palate (CP), and 8.7% were cleft lip (CL) patients. Moreover 57.2% patients were with unilateral cleft, 32.7% were left sided and 24.5% were right sided. Total 42.8% patients were with bilateral oral cleft. To best of our knowledge this is the first reported multi-center study on CLP in Malaysia with regard to the proportion of different types of oral clefts.

**Key Words:** Demographic data, oral clefts, isolated cleft palate (CP), isolated cleft lip (CL), Cleft lip and palate (CLP).

### INTRODUCTION

Cleft lip and palate has become a major public health problem affecting one in every 500-1000 births worldwide.<sup>1</sup> It is the fourth most common defect and most common congenital defect of face.<sup>2</sup> Oro facial clefts are the most common facial malformations in all populations and ethnic groups. Every day about

700 children with CL and/or CP are born in the whole world, which means that a baby with oral cleft is born every 2 minutes or 240,000 children per year.<sup>3</sup> The overall incidence of oral cleft is typically quoted as 1 in 700 live births in Europe.<sup>4</sup> CL with or without CP is an epidemiologically and etiologically distinct entity from isolated CP.<sup>5</sup> CL is associated with CP in 68% to 86% of cases.<sup>6</sup>

The incidence of CLP varies significantly by racial group and with socioeconomic status, with an incidence of 1 in 1,000 births in whites, 1 in 500 births in Asians and Native Americans and approximately 1 in 2,400 to 2,500 births in people of African descent are male, but a predominance of female infants affected by isolated CP has been recognized.<sup>4,6,7</sup> Unilateral CLP is twice as common as bilateral CLP, and usually affects the left side.<sup>6</sup> In Asia the incidence of CLP was found 1.91 per 1000 live births in Pakistan.<sup>8</sup> In Malaysia CLP affected 1: 941 births.<sup>9</sup>

The CLP being a major public health problem needs to be investigated regarding its magnitude, demography. This study did not find any multi-center study on CLP in Malaysia with regard to the proportion of

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different types of oral clefts. Present study will help in creating a data base about the oral cleft condition. Furthermore the study will help to indicate the requisite interventions thus benefit the patients and their families in particular and the society in general. It is hoped that this data collection will act as an umbrella of CLP data for Malaysia, making this information available to all concerned with the care of these patients.

**METHODOLOGY**

After obtaining formal permission from the administrators of the study hospitals, the principal investigator collected data on epidemiology of CLP by reviewing the record of patients who visited the study hospitals for treatment from 2003 to 2007. Total 526 patients registered in the hospital records during the study period were included. The record of some oral cleft patients was found to be incomplete in the two study hospitals so they were excluded from the study. Modified Craniofacial Anomalies Registration (CARE) form was used for data collection on epidemiology of CLP. It consisted of socio-demographic information of the patients including name, address, sex, birth certificate number, hospital name. It also included cleft detail, right, and left and cleft summary.<sup>10</sup> All data collected were checked for completeness and then were entered and analyzed using Statistical Package for Social Sciences (SPSS version 16.). After data collection, descriptive statistical analysis was carried out to determine percent-ages and means, as well as possible relationships between the variables included in the study. Chi square test was performed to calculate the significant association between the type of oral cleft and gender. P value ≤ 0.05 was taken as significant. The Ethic Committee University of Malaya re-viewed and approved the present study before its onset.

**RESULTS**

Of the total 526 patients registered in the study hospital records during the study period, 338 were from HKB (HRPZ II) and 188 were from UMMC. Majority (86.7%) of these patients were in the age group ≤18years (456/526), most (56.7%) of them were females (298/526) (Table 1).

Although the oral cleft was more prevalent in females (56.7%) as compared to males (43.3%), there was no significant association between the type of cleft and gender (p-value = 0.572) (Table 2).

Out of the total, 409 (77.8%) were CLP, 71 (13.5%) were CP, and 46 (8.7%) were CL patients. (Table 3). Moreover 301(57.2%) were with unilateral cleft, 172 (32.7%) was left sided and 129 (24.5%) was right sided. Total 225 (42.8%) patients were with bilateral oral

TABLE 1: GENDER DISTRIBUTION OF ORAL CLEFTS

Gender	Frequency (n)	Percentage
Male	228	43.3
Female	298	56.7

TABLE 2: GENDER DISTRIBUTION OF ORAL CLEFT TYPE

Variable	Male (n)	Female (n)	P value*
Cleft lip	19	27	0.572
Cleft palate	27	44	
Cleft lip and palate	182	227	

TABLE 3: ORAL CLEFT TYPE

Oral Cleft type	Frequency(n)	Percentage
Cleft lip	46	8.7
Cleft Palate	71	13.5
Cleft lip Palate	409	77.8

TABLE 4: CLEFT PALATE TYPE

Cleft Palate type	Frequency(n)	Percentage
Hard	21	4.4
Soft	18	3.7
Hard and Soft	441	91.9

cleft. This study results showed that combined hard and soft palate cleft proportion was 83.8%, soft palate cleft alone was 3.4% and hard palate cleft alone was 4.0% (Table 4).

**DISCUSSION**

The female gender was more involved in oral cleft condition in this study compared to males (56.7% and 43.3% respectively). This finding was similar to that reported by Jamilain et al from Iran.<sup>11</sup> Similarly study from Sudan has reported almost three times higher number of females as compared to males suffering from cleft condition.<sup>12</sup>

The present study found that out of 526 children with oral cleft, 77.8% were CLP, 8.7% CL and 13.5% were CP. Study from Singapore by Tan et al 2008 has reported the distribution as 48.7% CLP, 19.1% CL, and 32.2% CP.<sup>13</sup> The difference in the distribution between present study and the Singapore study can be due to the racial or genetic factor. More Malays were included in this study as oppose to Chinese in the Singapore study. However there was difference of the distribution of the oral cleft types even between the Malay children from the two studies indicating that environmental factors

can also be involved. Furthermore, current study findings are supported by many published studies with regard to the higher percentage of CLP compared to isolated CL and CP.<sup>14</sup> The percentage of CLP was 66% in Brazil<sup>15-16</sup>, 78.3% in Saudi Arabia<sup>17</sup>, 76.8% in Sudan<sup>12</sup>, and in Mexico it was found to be 70%.<sup>18</sup> A study from Pakistan has reported a higher proportion of CL alone 42% compared to CLP 34%.<sup>8</sup> The probable explanation for the difference with this study can be genetic as well as environmental factors.

Present study results showed that combined hard and soft palate proportion was 83.8%, soft palate alone was 3.4% and hard palate alone was 4.0%. This finding of the current study is supporting the results of Magdalenic et al 2005 from Croatia.<sup>19</sup>

The limitation of this study was the secondary nature of the data. Patients' information was retrieved from their medical records or folders available at the cleft center records of the study hospitals.

**CONCLUSION**

It is concluded that oral cleft was more prevalent in females as compared to males. Unilateral cleft was found to be more common and left side being more frequently affected by oral cleft.

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