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Afr. J. Biomed. Res. Vol.15 (May 2012); 141 - 143

Short communication

Nasofacial Indices among Children in Southern Nigeria

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ABSTRACT: The facial and nasal indices are among the most important cephalometric parameters useful in inter-racial and intra-racial morphological classification and categorization. They are useful in the description of the facial and nasal morphological characteristics of human population in different geographical location. This study was carried out to describe the naso-facial morphology of children in the Southern part of Nigeria. Four hundred and eighty children aged 5 to 15 years were randomly selected to represent the larger population. The mean facial index for the male and female children was 87.15 ± 1.70 and 86.25 ± 1.70 respectively. The mean nasal index for the male and female children was 93.45 ± 1.66 and 89.62 ± 1.58 respectively. The nasal index value showed significant sexual variation with the male subjects having higher values than female subjects but the facial index values was not significantly different across gender. This study showed the prevalence of the mesoprosopic face type and the platyrrhine nose type among the children of Southern Nigeria.

Key words: Nasal Index, Facial Index, Children, Nigeria

INTRODUCTION

Physical anthropometry is an aspect of anthropology that involves the measurement of human body dimensions (Heidari *et al*, 2004; Golalipour *et al*, 2003). Anthropometric body measurements are affected by factors such as geographical, racial, gender and age (Golalipour *et al*, 2001a, 2001b). Cephalometry is an important aspect of physical anthropometry in which the dimensions of head and face can be determined (Safikhani *et al*, 2007; Golalipour *et al*, 2007). Cephalometric measurements are useful in forensic medicine, plastic surgery, orthodontics, clinical diagnosis and treatment planning (Heidari *et al*, 2004; William *et al*, 1995; Will *et al*, 1995). The facial and nasal indices are among the most important cephalometric parameters useful in inter-racial classification and intra-racial categorization. There are five categories of face based on the facial index namely: hypereuryproscopic, euryproscopic,

mesoprosopic, leptoprosopic and hyperleptoprosopic. Based on the nasal index, there are three categories of nose namely: leptorrhine, mesorrhine and platyrrhine (William *et al*, 1995; Porter and Olson, 2003). This study was carried out to describe the naso-facial morphology and determine the facial and nasal morphological classification of children aged between 5 to 15 years in the Southern part of Nigeria.

MATERIALS AND METHODS

This descriptive study was conducted among children in Southern Nigeria. The sample size comprises 480 randomly selected children (245 males and 235 females) age ranged from 5 to 15 years. The length and width of nose and face was measured between relevant anatomical landmarks and recorded. The nasal and facial indices were calculated using the following equations (Romo and Abraham, 2003; Heidari *et al*, 2004; William *et al*, 1995).

$$\text{Nasal Index} = \frac{\text{Nasal Breadth} \times 100}{\text{Nasal Height}}$$

$$\text{Facial Index} = \frac{\text{Facial Length} \times 100}{\text{Facial Width}}$$

The data obtained was statistically analyzed and the results were compared among males and females subjects.

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Received: December 2011; Accepted (Revised): February, 2012

RESULTS

From the result represented in Tables 1, the mean nasal index value for male and female children was 93.45 ± 1.66 and 89.62 ± 1.58 respectively. The mean facial index value for male and female children was 87.15 ± 1.45 and 86.25 ± 1.70 respectively. This result therefore showed a significant sexual difference in the nasal index of the children in Southern Nigeria.

The morphological classification of the nose represented in Table 2 showed the prevalence of platyrrhine nose type among both male (82.4%) and female (75.3%) children.

The result from Table 3 showed the prevalence of mesoprosopic face type among the male (52.2%) and female (46.8%) children. The hyperleptoprosopic face type and the leptorrhine nose type were not observed among the children.

Table 1:
Mean and Standard Deviation of Nasal and Facial Indices for the Southern Nigerian children

Variables	Males (245)		Females (235)	
	Mean \pm S. E	S. D	Mean \pm S.E	S. D
Nasal Index	93.45 \pm 1.66	3.40	89.62 \pm 1.58	2.97
Facial Index	87.15 \pm 1.45	2.25	86.25 \pm 1.70	2.47

Table 2:
The Frequency and % of the nose types among the Southern Nigerian children

Classes	Range	Males (245)		Females (235)	
		F	%	F	%
Leptorrhine	55 – 69.9	–	–	–	–
Mesorrhine	70 – 84.9	43	17.6	58	24.7
Platyrrhine	\geq 85	202	82.4	177	75.3

F = Frequency

Table 3:
The Frequency and % of the face types among the Southern Nigerian children

Classes	Range	Males (245)		Females (235)	
		F	%	F	%
Hypereuryproscopic	< 80	12	4.9	19	8.1
Euryproscopic	80 – 84.5	70	28.6	78	33.2
Mesoprosopic	85 – 89.9	128	52.2	110	46.8
Leptoprosopic	90 – 94.9	35	14.3	28	11.9
Hyperleptoprosopic	\geq 95	–	–	–	–

F = Frequency

DISCUSSION

The facial and nasal indices were both higher among the male than the female children. The nasal index from this study showed a significant sexual variation among the children in Southern part of Nigeria. This is in agreement with the study by Ajayi (2005) which showed no significant differences in the cephalometric measurements between Nigerian boys and girls. The prevalence of mesoprosopic face type from this study was similarly reported by Ewunonu *et al*, 2006. In their study, the major tribes in Nigeria: Yoruba, Hausa and Igbo were prevalently mesoprosopic: 85.06 ± 3.64 , 87.67 ± 3.69 and 86.56 ± 4.08 respectively. This implied no significant racial variation in their facial forms of the three tribes. The prevalence of platyrrhine nose type was in agreement to the result obtained in a study by Oladipo *et al*, 2007 among the major ethnic groups in Southern Nigeria. From their study, the mean nasal index values of the Yoruba, Igbo and Ijaw tribes were: 89.2, 94.1 and 96.4 respectively. As observed in this study, their study also reported significantly higher values among males than females in the three ethnic groups. This implied a significant sexual and racial variation in the nasal morphometrics of Southern Nigerians. This study therefore, showed mesoprosopy and platyrrhinity as the current phenomenon in the facial and nasal morphology of the Southern -Nigerian children.

REFERENCES

Ajayi, E.O. (2005). Cephalometric norms of Nigerian children. *American Journal of Orthodontics and Dentofacial orthopedics. Volume 128, Issue 5, pages: 633-656.*

Ewunonu, E. O., Ekanem T.B., Aligekwe A.U., Igiri A.O., Igbigbi P.S., Obikili E.N., Egwu O.A., Eteudo A.N. (2006). Comparative study on the Facial Indices of the three major tribes in Nigeria. *An Abstract of Journal of Anat. Soc of Nig.*

Golalipour, M. J., Haidari, K., Jahanshahi, M., Farahani, R. M. (2003). The shapes of Head and Face in normal male newborns in South – East of Caspian Sea (Iran - Gogan). *J.Anat. Soc. India 52(1): 28 – 31.*

Golalipour, M. J., Haidari, K., Jahanshahi, M., Vakilli, M. A., Mohareri, A. R. (2001a). Relationship between race and head and face variation in newborn girls in Gorgan. *Gorgan Univ. Med. Sci. J. 8: 47 – 52.*

Golalipour, M. J., Jahanshahi, M., Haidari, K. (2007). Mophological evaluation of Head in Turkman males in Goragan – North of Iran. *Int. J. Morphol. 25(1): 99 102.*

Golalipour, M. J., Vakilli, M. A., Ahamadpour, M. (2001b). Height and Weight of Newborns in relation with mother age, race and parity. *J. Qazvin Univ Med Sci, 16: 58 – 64.*

Heidari, Z., Mahmoudzadeh- Sagheb, H., Mohamadi, M., NooriMugahi, M. H., Arab, A. (2004). Cephalic and

Proscopic indices: Comparison in one – day newborn boys in Zahedan. *J. Fac. Med.* 62: 156 – 65.

Oladipo, G.S.I., Olabiyi, A.O., Oremos A.A., Noronha, C.C. (2007). Nasal indices among major ethnic groups in Southern Nigeria. *Scientific Research and Essay Vol 2 (1): pp 20- 22*

Porter, J. P., Olson, K. L. (2003). Analysis of the African American Female Nose. *Plast. Reconstr. Surg.* 111(2): 620 – 626.

Romo, T., Abraham, M. T. (2003). The ethnic nose. *Facial Plast. Surg.* 19 (3): 269 – 278.

Safikhani, Z., Afzali, N., Bordar, H. (2007). Determination of anatomical type of head and face in children under 6 years in Ahwaz. *Acta Medica Iranica.* 45(1):43-45

Will, M.J., Ester, M.S., Ramirez, S.G., Tiner, B.D., Aneer, J.T.M.C., Epstein, L. (1995). Comparison of cephalometric analysis with ethnicity in obstructive sleep apnea syndrome. *Sleep*, 18: 873 – 5.

Williams, P.L., Bannister, L.H., Berry, M.M., Collins, P., Dyson, M., Dussak, J.E., Ferguson, M.W.J. (1995). Gray's Anatomy: Skeletal System, 38th Edition, pages 607 – 612, Churchill Livingstone, Philadelphia.