Journal of Current and Advance Medical Research
January 2022, Vol. 9, No. 1, pp. 32-35
http://www.banglajol.info/index.php/JCAMR
ISSN (Print) 2313-447X
ISSN (Online) 2413-323X
NLM Catalog ID 101673828
DOI: https://doi.org/10.3329/jcamr.v9i1.59742

OPEN ACCESS

ORIGINAL ARTICLE

Evaluation of Naso-facial proportion of the Face and Their Correlation in Bangladeshi Buddhist Rakhain Ethnic Males

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[**Received on:** 1 October 2021; **Accepted on:** 20 December 2021; **Published on:** 1 January 2022]

Abstract

Background: The face and nasal dimensions are most important cephalometric parameters describing human morphology. Nose is the most important aesthetic unit of face. There is wide variation in size and shape of nose and face due to ethnic influences. **Objective:** The purpose of the present study was to evaluate the naso-facial proportion of the face and their correlation in adult healthy Bangladeshi Buddhist Rakhain Ethnic males. **Methodology:** This cross-sectional observational study was carried out in the Department of Anatomy, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka from January 2011 to December 2011 for a period of one (01) year. Adult Healthy Bangladeshi Buddhist Rakhain males with the age group of 18 to 30 years were included as study population. **Results:** This study shows mean of nose width was 41.16 (±3.03) and mean of ¼ face width was 34.80(±1.70). This study shows nose width was 41.16 (±3.03) and ¼ face width was 34.80(±1.70). **Conclusion:** It was observed that nose width was significantly wider than ¼ of face width in the adult healthy Bangladeshi Buddhist Rakhain. This parameter was the importance of using patients as observers, as well as clinicians, in facial attractiveness research. [*Journal of Current and Advance Medical Research, January 2022;9(1):32-35*]

Keywords: Naso-facial proportion; Buddhist Rakhain; Ethnic Males

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Cite this article as: Iqbal M, Nahar N, Rahman KMS, Rahman MZ, Uddin SkAM, Alam MS, Alam U. Evaluation of Naso-facial proportion of the Face and Their Correlation in Bangladeshi Buddhist Rakhain Ethnic Males. J Curr Adv Med Res 2022;9(1):32-35

Funding: This study has been performed without any funding from outside else.

Conflict of Interest: There was no conflict of interest to any of the authors.

Contributions to authors: All authors involved from protocol preparation up to manuscript writing & revision. Iqbal M: Conceptualization, manuscript writing, data analysis; Nahar N, Rahman KMS, Rahman MZ: Manuscript revision, data analysis; Uddin SkAM, Alam MS, Alam U: Manuscript revision

Introduction

Naso-facial anthropometry is a specific component of the anthropometric field that focuses on the facial and nasal region which is also vital for sex determination, forensics uses, quantifying nasofacial dysmorphology, facial surgery and diagnostic reconstruct congenital or post traumatic facial disfigurement successfully. The anthropometry of any part of the body varies between individuals among race. The face and nose are important physiognomic features in humans[1].

Variation in human is of great importance to scientists for effective diagnoses and to classify human based on race and ethnicity. Throughout the world, there are remarkable differences in facial morphology in different races[2]. Therefore, facial anthropometric study is a useful tool in facial reconstructive surgery, forensic analysis and in genetic counseling[3-4]. Many researchers have indicated the use of nasal anthropometry to categorize human into different races[5]. Aside variations in races, it has been reported that individuals of varying ethnic groups, age, sex and culture also exhibit differences in nasal anthropometry parameters[6].

Nasal anthropometry is the measurements of the size, proportion and shape of human nose[7]. In human, the part of the nose that projects forward from the face is the external nose[6] and is variable in shape. Face and nose developed from the frontonasal prominences, nasal prominences, maxillary and mandibular prominences[2]. The final characteristics of the face depend on the changes in the proportion and position of these components[1,8].

The knowledge of the absolute and the relative variability in the size and shape of the human body is crucial to study human growth, population variation, and medicological identification in forensics as well as in optimization of instrument such as respirators, gas and dust marks, and military helmets[1]. Nasal prominence is often the most dominating parameter of the facial profile, and an observer's visual perception is often drawn to this important facial promontory[8].

Many researches on naso-facial proportion of the face have been conducted among diverse ethnic groups in different countries. The aim of this study was to evaluate the naso-facial proportion of the face and their correlation in Bangladeshi Buddhist Rakhain ethnic males.

Methodology

This cross-sectional observational study was carried out in the Department of Anatomy at Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh from January 2011 to December 2011 for a period of one (01) year. Participants of the study were adult healthy Bangladeshi Buddhist Rakhain ethnic males (100) who were in the age group of 18 to 30 years. The following exclusion criteria were used to screen out the ineligible participants through history taking and physical examinations like mixed ethnic origin, congenital craniofacial anomaly, major craniofacial trauma, orthodontic treatment or craniofacial reconstructive surgery, malocclusion, common genetic, endocrine or neurological disorders and beard or mustache, cranio-facial diseases and abnormalities, growth related disorders and history of facial trauma/ reconstruction surgery were excluded from the study. During landmark marking, the participant was asked to sit relaxed on a chair and the head was kept in the normal head position. This position was suitable for correct identification of facial features[9]. All the measurements were taken twice to avoid measurement error. With the help of a sliding calliper and spreading calliper the measurements were taken in millimeters. The data was statistically analysed by Statistical Package for Social Science (SPSS version 17.0) to determine the range, the mean and standard deviation and any significant correlation between nose width and ¼ of face width. P value less than 0.05 was considered as significant.

Results

This study shows mean of nose width was 41.16±3.03 and mean of ¼ face width was 34.80±1.70. This study shows nose width was 41.16±3.03 and ¼ face width was 34.80±1.70 (Table 1).

Table 1: Variables Related to the Naso-facial Proportion in Adult Healthy Bangladeshi Buddhist Rakhain Males (n=100)

Variable	Mean±SD (Range)	P value
Nose width (al – al)	41.16±3.03 34.07-51.50	0.000
Face width x0.25 (zy-zy)	34.80±1.70 31.87-38.12	

al: alare; zy: zygion; paired t test was performed to see the level of significance

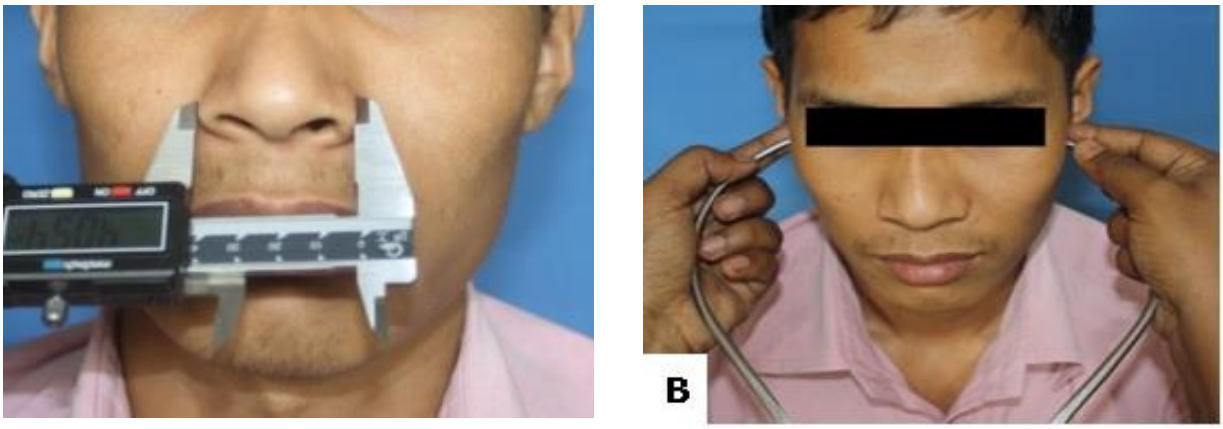

Figure I: A) Procedure of measuring the nose width ('alare' to 'alare') in a participant using a sliding caliper. **B)** Procedure of measuring the face width ('zygion' to 'zygion') in a participant using a spreading caliper

Discussion

The nose shape has a great importance in facial beauty, and its dimensions widely used in plastic surgery and facial reconstruction[9]. Ethnic influences and environmental climate conditions are the two main factors that result in different shapes and size of the nose[10]. To conform the basic standard shape of the nose at rhinoplasty surgery in each ethnic group, there is a great need to have the craniofacial anthropometric databases in different populations. Furthermore, the nasal measurements like nasal height, nasal width and nasal index, as anthropometric parameters can be used for distinguishing between different races[11].

In the current study nose width was 41.16 (±3.03). Farkas study showed that the mean values of nose width in Indian it was 37.9mm, in Singaporean Chinese it was 39.2mm, in Thai it was 40.8mm, which showed differences with the values of Bengali it was d 33.81 mm and Chakma it was 34.70mm.[12] When compared with Caucasian Azerbaijan the mean values of nose width was 35.7mm and Negroid Angolan it was 46.3mm, ethnic differences also established.[13] Nasal anthropometric measurements were compared with the results outlined by Turkish population, Ofodile and Bokhari[14] African, Afro–Caucasian, Caucasian and Afro–Indian, Ochi and Ohashi,[15] Chinese population, Xuetong et al[16] for Han nationality, Japanese population, Aung et al[17] Canadian–Caucasian adults, Borman et al[18] and Afro–American population, Ofodile et al[19].

In the current study ¼ of face width mean value was 34.80(±1.70). The mean value of the face width was 37.23 of Iranian population which is significantly lower than the mean value for Nigerian population (39.15). The values for the Nigerian face width are 41.33 mm. A study carried out on Russian population[12] revealed a mean face width of 35.8 mm, Poland in 35.20 mm, Azerbaijan in 35.70 mm, Slovania in 35.90 mm, Czech Republic in 36.20 mm, Croatia in 36.50 mm, Russia in 35.80 mm, Portuguese in 36.60 mm, Turkish male in 36.80, Greece in 35.70 mm, Bulgaria in 36.00 mm[12] Serbia in 36.7 mm[20].

Conclusion

It has been observed that nose width is significantly wider than one fourth of face width in the adult healthy Bangladeshi Buddhist Rakhain. This parameter is the importance of using patients as observers, as well as clinicians, in facial attractiveness research.

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