An Anthropometric Study of Nasal Index Among Medical Students in Rajasthan

TUSHAR SHARMA[1], SAHIL YADAV[2], SNEHA GARG[3], DR RASHEE MITTAL[4]

[1,2,3]*MBBS Student, Jnuimsrc*

[4]*Professor, Department of Anatomy, Jnuimsrc*

Abstract- Introduction: The nose is an attraction point in our face and one of the important sense organs of our body. The knowledge of the type of nose is essential for surgeons undertaking esthetic repair and reconstruction of noses. The main objective of this study is to find the mean nasal index and nose type of medical students of Jaipur National University Institute of Medical Sciences and Research Centre.

Methods: A study of 200 medical students out of which 100 were males and 100 were females was conducted. Students of age group 17-22 years from different religions with various castes / ethinicities were included. The subject comprised of individuals with normal craniofacial configuration and without any past surgery of head and neck. Subjects with trauma of the craniofacial structures and congenital abnormalities were excluded. All nasal parameters were measured with the help of vernier's caliper.

Results: Among 200 medical students, the prevalence of mesorrhine type of nose was 123(61.5%)

Conclusion: The prevalence of mesorrhine type of nose among medical students was similar to other studies done in similar settings.

I. INTRODUCTION

The word anthropometry is derived from a greek word "Anthropos" means human and "metron" means measure. Anthropometric measurements are useful for comparison between peoples of different ethnic groups and also in sexual dimorphism. Nasal anthropometry is the study of different parameters of human nose. The nasal morphology is mainly determined genetically but it also gets affected by environmental factors. The nose is considered as one of the best clues to racial origin (1).

The nose can be categorized on the basis of nasal index. Nasal analysis is the first step a surgeon takes before performing rhinoplasty to change the shape of the nose which is at present a very important branch of cosmetology. Nasal index is an ethnic sensitive anthropometric index which is used to classify race and sex of an individual. The nose type is best classified into following types based on the nasal index:

1. Leptorrhine: NI≤69.9
2. Mesorrhine: NI = 70- 84.9
3. Platyrrhine: NI ≥85

The main objective of this study is to find the mean nasal index and nose type of medical students of Jaipur National University Institute of Medical Sciences and Research Centre.

II. MATERIALS AND METHODS

The study was conducted in 200 medical students (100 Males and 100 Females) aged between 17 to 22 Years from JNUIMSRC. All the participants were volunteers and informed consent was taken from them for the study. The subject comprised of individuals with normal craniofacial configuration and without any past surgery of head and neck. Subjects with trauma of the craniofacial structures and congenital abnormalities were excluded.

The measurements were taken with the persons sitting relaxed in the chair and with head in an anatomical position and without any facial expression, so that it does not alter the size of the nose. All the measurements were taken using Vernier

Caliper. All the measurements were done by a single observer to prevent inter-observer error.

The following measurements were taken.
1. Nasal Height (NH): Distance from nasion (midpoint of nasofrontal suture) to subnasale (junction between lower border of nasal septum and the cutaneous part of upper lip)
2. Nasal Width (NW): Maximum distance from ala to ala at right angle to nasal height.
3. Nasal Index (NI): It was calculated by using the formula:NI: NW/ NH X 100

Data obtained was entered into Microsoft Excel and after that analyzed.

III. RESULTS

Among 200 medical students, the prevalence of mesorrhine type of nose was 123 (61.5%), among them 58 were males and 65 were females. Second most common type present was platyrrhine 61 (30.5%). In remaining 10 males and 8 females shape of nose was leptorrhine type. The mean nasal index, nasal height and nasal width of all the subjects are as follows (Table 1):

Table 1: Nasal parameters of 200 medical students		
Nasal Parameters	MEAN±SD (MALE)	MEAN±SD (FEMALE)
Nasal Height (mm)	47.11±3.55	42.57±4.02
Nasal Width (mm)	38.20±3.61	34.36±2.91
Nasal Index	81.49±9.32	81.43±10.51

IV. DISCUSSION

The prevalence of mesorrhine type of nose among medical students was 61.5 % in the present study. In a study conducted on medical students in central Nepal showed 63.03% of mesorrhine types of noses, which is similar to that in our study (2).In contrast to the study conducted on dental students of Nepal, the prevalence of mesorrhine type of nose was 70.6% which is higher than the present study (3). Study done by Heidari et al in Sistani and Baluch aborigine women in southeast of Iran showed only 44.5% and 1.5% of mesorrhine type of nose, which is significantly different than our study (4).Priyanka et al in their study found that mean nasal index was 82.9 in males and 90.7 in females of Madhya Pradesh. The values for males are similar to that in our study, however, it is comparatively lower for females in comparison to our current study (5).

Variables that determine the shape of the nose include race, tribe and environmental climatic conditions (6) with narrower noses being favored in cold and dry climates and broader noses in warmer, moist ones as consequence of natural selection in human evolution (7). So, the nasal index is useful to classify different races. Also, the importance of nasal parameters in aesthetic and nasal reconstruction surgery is very well recognized now.

CONCLUSION

There is a highly significant differences found between either sex with values of nasal height and width being higher in males than for females. Although the values of nasal index were quite similar in both sex. The prevalence of mesorrhine type of nose among medical students was similar to other studies done in similar settings. Future studies are recommended in the field of forensic science, reconstructive cosmetic surgery and anthropology.

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