To Study Nasal Index of Jaat Community of North Western Rajasthan

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Abstract

Background: Nasal anthropometry deals with the measurement of size and shape of the human nose. The shape of the nose is greatly influenced by so many factors such as race, sex, culture and age. The aim of this study was to study the nasal anthropometry of the Jaat community and compare these data with the Indian and foreign study.

Materials and Methods: One hundred (100) subjects were taken for the study. The selected subject's age ranged between 18-50 years. Subjects who had undergone for any facial surgery were not taken for the study. Digital vernier caliper and spreading caliper were used for the measurement of nasal length and nasal breadth.

Results: The overall average nasal index in Jaat community of north western Rajasthan was 78.10±8.19. The average mean nasal index in female of Jaat community was 78.92±7.17. The average mean nasal index in male of Jaat community was 77.02±9.36. The result showed sexual dimorphism, with the female had higher nasal dimensions as compared to the males.

Conclusion: The result showed that the mean nasal index of Jaat community falls within the mesorrhine type of nose.

Keywords: Anthropometry, sexual dimorphism and nasal dimensions.

Introduction

The human body had faced many changes and still continues to do so. The factors which produced these changes are ecological, biological, geographical, racial, sex and age. Nasal anthropometry deals with the measurement of size and shape of human nose. It is a pyramidal structure which is located in the midline and is attached to the facial skeleton [1].

The nasal parameters are used to describe the differences between racial and sexual aspect [2]. Three facial structures which contributes to source of attention are lips, nose and chin [3]. Nasal index is obtained by the fraction of the width of the nose and the length of the nose, and multiplying the resultant by 100[4]. There are two divisions of the nose they are, external and internal nose [5]. The external nose also helps in the improvement of the beauty of the person [6]. Nasal index is very important factor as it contributes towards the medical management [7].

There are various studies about nasal index has been done. Oladipo [8] studied the nasal indices of Igbo and Yorubas. The mean nasal indices of Igbo males and females were 95.8. The nasal length is measured from nasion to the subnasale and nasal breadth is measured as the distance between the right and left ala. Martin and Sallar [9] categorized the nose into:

Table 1: Categorial, size of nose and nasal index

Categorical	Size of nose	Nasal Index
Hyperleptorrhine	Long Narrow Nose	40-54.9
Leptorrhine	Moderately Narrow Nose	<70
Messorrhine	Moderate or Medium Size	70-84.9
Platyrrhine	Moderately Wide Nose	85-99.9
Hyper Platyrrhine	Very Wide Nose	100 or more

As very few data were available about the Nasal indices of Jaat community of North western Rajasthan, this study aimed to provide the nasal parameters of the abovesaid community.

Materials and methods:

A cross sectional descriptive study was conducted in the Department of Anatomy, Sardar Patel Medical College, Bikaner, Rajasthan. A total of 100 subjects of the Jaat community of the north western Rajasthan were taken for the study. Subject's age ranged between 18-50 years. The subjects were taken by random sampling. Prior approval of the ethical committee and the required consent of the subjects were taken.

Inclusion criteria: - Subjects whose age ranged between 18-50 years were taken for the study. They all were apparently healthy individual belonging to Jaat community of north western Rajasthan. Exclusion criteria: - Subjects who had undergone any facial surgery were excluded from the study. Materials: - Digital vernier caliper and spreading caliper were used for the measurement of the dimensions.

Methodology:

All the dimensions i.e. nasal length and nasal breadth were measured with the help of digital vernier caliper and spreading caliper. Subjects were asked to sit on the chair and all the measurements were taken in a relaxed position with the head in the anatomical position. The digital vernier caliper of Mitutoyo company was used.

Nasal length: was measured from nasion to subnasale.

Nasal breadth: was measured from the right ala and left ala at right angle to the nasal height.

Nasal index: This was calculated as the ratio between nasal breadth and nasal length multiplied by 100.

Statistical analysis: All the dimensions were recorded and were arranged in table form. Finally, they were statistically analyzed. Complete data was entered in the Microsoft excel. Mean and standard deviations were taken of all the nasal dimensions.

Results: Out of 100 subjects, 57 subjects were female and 43 subjects were male. On statistical analysis, mean age in Jaat community was 31.83±7.37. On statistical analysis, overall mean height in female subjects were 163.96±6.43 while in male subjects mean height was 173±5.85. On statistical analysis, overall mean weight in

female was 68.18±12.78 while in male mean in weight was 74.58±7.99. The overall mean nasal length in female was 51.91±4.16 mm, while in male was 52.56±4.45 mm whereas overall mean nasal breadth was found in female 40.95±4.21 mm, while in male it was found to be 40.33±5.54 mm. Mean nasal index of 57 female subjects was found to be 78.86±7.18. Mean nasal index of 43 male subjects was found to be 77.02±9.36 The overall average nasal index in Jaat community of north western Rajasthan was found to be 78.10±8.19. Both male and female have Mesorrhine nose type. Discussion: The Anthropometric dimensions shows variation according to the age, sex and climatic conditions [10]. Nasal parameters are very important for the surgeons to deal with the repair of facial structures [11]. The nasal parameters are affected by the changes in the microscopic structure of soft tissues [12].

Table 2: Shows distribution of cases according to nasal index in relation to Jaat community

S.No	Nasal index (mm)	Female		Male		Total	
		No	%	No	%	No	%
1	40.00 - 69.99 Leptorrhine	4	7.01%	9	20.93%	13	13%
2	70.00 – 84.99 Mesorrhine	43	75.43%	24	55.81%	67	67%
3	≥ 85 Platyrrhine	10	17.54%	10	23.25%	20	20%
	Total	57	57%	43	43%	100	100%
Mean		78.92		77.02			
SD		7.17		9.36			

The present study showed that the average mean nasal index of female of Jaat community was 78.92±7.17 and for male it was 77.02±9.36. According to this data, both male and female have Mesorrhine nose type.

Table 3: shows distribution of cases according to mean nasal index with gender in relation to Jaat community.

S.No	Gender	Subjects	Mean Nasal Index	SD
1	F	57	78.86	7.18
2	M	43	77.02	9.36
Total		100		
P –Value	0.26			

Table 4: shows distribution of cases according to mean nasal breadth with gender in relation to Jaat community

S.No	Gender	Subjects	Mean Nasal Breadth(mm)	SD
1	F	57	40.95	4.21
2	M	43	40.33	5.54
P-Value	0.52			

Table 5: shows distribution of cases according to mean nasal length with gender in relation to Jaat community.

S.No	Gender	Subjects	Mean Nasal length (mm)	SD
1	F	57	51.91	4.16
2	M	43	52.56	4.45
P-Value	0.44			

Table 6: Comparison of Nasal Index of different populations

Population	Author	Year	Nasal index		Type of nose
			Male	Female	
Ahirwars (M.P.)	Singh and Purkait	2006	81	82.4	Mesorrhine
Dangis (M.P.)	Singh and Purkait	2006	76.5	76.5	Mesorrhine
Bheel-Meena (Rajasthan)	Gangrade	2012	83	79.73	Mesorrhine
U. P	Ahmed & Nasir	2021	77.47± 0.32	76.94±0.32	Mesorrhine
Bihar	Ahmed & Nasir	2021	78.76 ± 0.24	80.38± 1.27	Mesorrhine
Jammu	Ahmed & Nasir	2021	62.31± 0.42	62.96± 0.40	Leptorrhine
Andoni (Nigeria)	Oladipo et al	2009	79.83± 4.19	83.77±1.09	Mesorrhine
Chinese	Aung et al.	2000	79	81	Mesorrhine
Egypt-East Delta	Hegazy	2014	71.46	64.56	Mesorrhine & Leptorrhine
Kosovo Albanian	Staka	2012	67.07±6.67	63.87±5.56	Leptorrhine
Jaat (Rajasthan)	Present study	2022	77.02±9.36	78.92±7.17	Mesorrhine

These data showed that like in other populations, the nasal dimensions were sexually dimorphic. The result of this study will be of uttermost importance for the surgeons to perform facial surgery.

Conclusion:

The present study showed that both the male and female have mesorrhine nose type. The overall average nasal index in Jaat community of northwestern Rajasthan was found to be 78.10±8.19. The average mean nasal index in female of Jaat community was 78.92±7.17. The average mean nasal index in male of Jaat community was 77.02±9.36. This study showed that nose pattern differs from place to place. This data can be used by forensic expert as to aid in their investigations.

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