Institute of Experimental Morphology and Anthropology

Acta morphologica et anthropologica, 10
Sofia • 2005

Some Nasofacial Indices in Turkish Men and Women

O. Taskinalp, N. Erden, Z. Yildiz

Trakya University, Faculty of Medicine, Department of Anatomy, Edirne, Turkey

We aimed to find some of the nasofacial indices in adult Turkish people studying 1038 person (495 women, 543 men) who were educated in the second class of the Medical Faculty of Trakya University between the years 1986 and 1993. The mean ages of the subjects were 19.4 (women) and 19.47 (men). Nose, face, mouth and orbita widths are taken as parameters in this study which were measured with a modified caliper compass. Nose width (women/men) 3.24+0.28/ 3.57+0.30 cm, face width 10.90+1.07/ 11.77+1.14 cm, mouth width 4.98+0.42/5.19+0.48 cm and orbita width 3.75+0.50/3.94+0.51 cm were found with the measurements. Nasofacial index (women/men) %29.72/ %530.33, nasooral index %65.06/ %68.78 and nasoorbital index % 86.40/7 %90.60 were found with the indices.

The results were compared with the literature and the difference between adult Turkish people and the other societies were determined.

Key words: Anthropometry, nasofacial index, nasoorbital index, nasooral index, Neoclassical Facial Canons.

Introduction

The studies on human body had begun before centuries and still go on. The aim was to know human body better in this studies which were continuing since the Hippoccrates time. The human body which has aroused the scientists' interest had the artists' interest then and this interest had been seen in their artworks. Especially with the renaissance this interest had got to the top, lots of artworks had been made which had had the human body as a subject [9, 3, 4, 6]. But the change in body measures was a subject which had been discussed for a long time. For this reason, a terminology named Anthropometria was developed for determining and grouping the measurement values scientifically [8]. The anthropometric studies on living human body is called somatometria. A division of somatometria includes head measurements and is called cephalometria. Measurements including only the skull were determined as craniometria [11]. The anthropological points are very important in anthropometric studies.

The first studies on this subject were made by Quetlet, the Belgian mathematician, in 1870 [8]. Also the studies have achieved ethnic specialties in 20th century. But, the measurements in ethnic studies on anthropology are at fenotype level, today. The anthropologists had attached importance to some points while they were classifying the mankind. The most important of these are the body measures and blood groups [7].

Head is the less differed part of human body. Lots of constant points are present on head which has the bones most in its anatomical structure. These are known as superficial finding points (Landmark) and anthropologic points. Most of the anthropological points had been described on head in human body. These characteristics provide that the studies about this region to be more easy and reliable [11].

The anthropometric measurements about face were constituting an important place, both in neoplasty in plastic and reconstructive surgery and in ideal face proportions. There is vertical and horizantal proportions in ideal face measurements. The harmony between the proportions depending on the nose which is at the middle of the face, is considered important in ideal face definition. And with this aim, we planned to investigate the values of some horizontal canons on face in Turkish people and compare them with the other ethnic groups.

Material and Methods

1038 persons (495 women, 543 men) who have educated in Medical Faculty of Trakya University and have had no deformity had taken place in our study. The mean ages of the subjects were 19.40 and 19.97 (women/men). The measurements were made with the same researcher, at the same time of the day (time: $14^{:00}$-$15^{:00}$) for reducing the error ratio. The measurements were repeated three times, the average values were taken for the study. A modified caliper compass suited to our aim was used in the study. The results were evaluated with the NCSS computer program, averages and standard deviations were calculated.

We can list the points which we used in our measurements like that [11, 5].

1. Nose width: The distance between the external points of ala nasi.
2. Face width: The distance between both zygions.
   Zygion: Lateral point of arcus zygomaticus.
3. Mouth width: The distance between the intersection points (comissura labiorum) of upper and lower lips while the mouth was closed.
4. Orbita width: The distance between the most protruding points of medial and lateral side of the basis of orbita.

We found some of the nasofacial indices by comparing the horizantal data with nose width. According to this:

a) Nasofacial index: The explanation of nose width/ face width by per cent.
b) Nasooral imdex: The explanation of nose width/ moth width by per cent.
c) Nasoorbital index: The explanation of nose width/ orbita width by per cent.

Results

The results that we found are shown in table 1. The indices we got from these results are shown in table 2. Though the proportions are in table 3.

Conclusions

We investigated some of the nasofacial indices in this study. But when literature were searched, it can be seen that there are results according to proportions of parameters to the number of subjects, not as an index, in this kind of studies. And this doesn't make complete comparison of the indices we found possible. But these studies give

Table 1. Statistical Data (mm)

Features	Women	Men
Nose width (mm)	32,4+2,8	35,7+3,0
Face width (mm)	109,0+10,9	117,7+11,4
Mouth width (mm)	49,8+4,2	51,9+4,8
Orbita width (mm)	37,5+5,0	39,4+5,1

Table 2. Data of Indices %

Features	Women		Men	
	ratio	%	ratio	%
Nasofacial index	1/3,36	29,72	1/3,29	30,33
Nasooral index	1/1,53	65,06	1/ 1,45	68,78
Nasoorbital index	1/1,15	86,40	1/ 1,10	90,60

Table 3. Proportions

Features	Women	Men
Face width/Nose width	3,36	3,30
Mouth width/Nose width	1,53	1,45
Orbita width/Nose width	1,15	1,10

us some information as well as it is not complete. Comparison of the data we got is with this limited information.

In our study, we found the nasofacial index %29.72 in woman and %30.33 in men. When we evaluate this proportions, it is seen that the nose width of Turkish people is less than 1/3 of their face width. However, Wang D. et al. had found the proportion of nose width to face width as %38.9 and %21.8 (less than 1/3) respectively in North American Indians and Chinese. In the same study, the proportion of nose width was found to be approximately equal to 1/3 of face width in %51.5 of Chinese and %36.9 of North American Indians [10]. We can think that these results had similarity with the study groups in the meaning of mathematics.

In our study the nasooral index was found %65.2 in women and %68.78 in men. In wide meaning, we can comment these proportions like that; mouth width is approximately less than 1.5 times of nose width in men (1.45 times) and approximately more than 1.5 times in women (1.53 times). Wang had found mouth width to nose width proportion less than 1.5 in %71.8 of Chinese in his study.

Though this proportion had been found %60.2 in North American Indians [10]. However, Bozkir et al. had found mouth width more than 1,5 times of nose width in %66.9 of women and %49.1 of men in a study which 272 women and 228 men had taken place [1]. Also in another study made by Borman et al. mouth width was found 1.5 times of nose width in %6 of women, wide mouth in a proportion of %53 and narrow mouth in %41 had been determined [2]. In another study made by Soyluoglu et al. this ratio had been found %67.23 in women and %70.85 in men too. The proportion of nose width to mouth width is less than 1.5 in both women and men in their study [8]. Less difference is seen when all proportions were evaluated. According to these data, mouth width is found to be equal to 1.5 times of nose width in Turkish people. However, the nose is wider in a ratio of ¾ than these proportions in Chinese people. The nose is more wide in %60 of North American Indians, too.

In the third part of our study we investigated the proportion of nose width to orbita width. This index is %86.4 in women, %90.6 in men in our study. In another definition, it is seen that, orbita width is 1.15 times of nose width in women and 1.1 times in men as well. This proportion shows us that the orbita width is wider in men than in women. But we could not find any data in literature to compare this proportion in ethnic aspect.

As a result, it is seen that the face width is approximately 3.3 times of nose width, mouth width is 1,5 times and orbita width is 1.15 times as well in adult Turkish women. However, these results are 3.3, 1.45 and 1.1 in men respectively.

References

1. Bozkir, M. G., P. Karakas, O. Oguz. Vertical and Horizontal Neoclassical Facial Canons in Turkish Young Adults. — In: Surgical Radiologic Anatomy, 2003, 19.
2. Borman, H., F. Ozgur, G. Gursu. Evaluation of Soft-Tissue Morphology of The Face in 1050 Young Adults. — Annal of Plastical Surgery, **42**, 1999, No 3, 280-288.
3. Cokanov, K. R. Plasticna Anatomia. Sofia, Navikai izkustvo, 1974, 370-396.
4. Kahraman, G. Yetişkin. Türk Kadın ve Erkeklerinde Üst Ekstremite Ölçümleri ve Oranları. — Uzmanlık Tezi., İstanbul. 1988.
5. Mesut, R., M. Yıldırım. İnsan Vücudunda Antropolojik ve Yüzeyel Buluş Noktaları. — İstanbul, Beta Basım Yayım Dağıtım A. Ş., 1989, 51-60.
6. Pestemalci, T., G, Kahraman. Türk Erkeklerinde Üst Ekstremiteye ait Bazı Ölçümler ve Oranlar. — Morfoloji Dergisi, **9**, 2001, No 2, 37-40.
7. Saran, N. Antropoloji. — Ankara, İnkilap Kitabevi, 1993, 72-75.
8. Soyluoğlu, A. I. et al. Erişkin Türk İnsanında Cranium'un Antropometrik İncelenmesi. — SBAD, **3**, 1992, 61-67.
9. Taskinalp, O. Yetişkin Türk Kadın ve Erkeklerinde Aksiyal Vücut Çapları ve Çevreleri. — Uzmanlık Tezi., Edirne. 1989.
10. Wang, D. et al. Differences in Horizontal, Neoclassical Facial Canons in Chinese (Han) and North American Caucasian Populations. Ï Aesthetic Plastical Surgery., **21**, 1997, N0 4, 265-9.
11. Yildirim, M., R. Mesut. Disseksiyona Yönelik Topografik Anatomi. T. 1. Baş-Boyun. — İstanbul, Beta Basım Yayım Dağıtım A. Ş., 1995, 10-26.