SBORNÍK NÁRODNÍHO MUZEA V PRAZE
ACTA MUSEI NATIONALIS PRAGAE
Volumen XXX B (1974), No. 3
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SOMATOMETRIC DIFFERENCES BETWEEN THE ETHNIC GROUPS OF EGYPTIAN NUBIAN WOMEN

SOMATOMETRICKÉ ROZDIELY MEDZI ETNICKÝMI SKUPINAMI EGYPTSKÝCH NÚBIJSKÝCH ŽEN

Úvodom autorka charakterizuje historicky, geograficky a etnicky oblasť, z ktorej pochádzal jej materiál. Spracovala údaje o 282 ženách vo veku od 18 do 45 rokov. Ženy pochádzali z troch etnických a jazykových núbijských skupín, Kenúzov (83), Arabov (75) a Fedidžov (124). Údaje o veku probantok boli získané iba približne, takže vzorka bola spracovaná ako celok. 19 mier a 9 indexov boli štatisticky spracované pre celkový súbor aj jednotlivé skupiny. Najpočetnejšie štatisticky významné rozdiely v absolútnych mierách sú medzi Kenúzkami a Fedidžankami (10), 6 významných rozdielov bolo zistené medzi Kenúzkami a Arabkami a iba 3 medzi Fedidžankami a Arabkami. Významné rozdiely indexov medzi dvojicami spomínaných etnických skupín boli v pomere 5 : 4 : 5. Naivariabilnejšie sú Kenúzky, za nimi Fedidžanky a najmenej variabilné sú Arabky.

Nubia is a vast geographical teritory extending from the south of Upper Egypt to the Ethiopian border and from the Red Sea to the Libyan Desert. The Nile traverses this extensive Nubian desert. The Nubians were living only in the Nile valey. In recent times, till the resettlement of these people in 1963—4, Nubia extended from Asswan in the north to Debba in the south; that is between 18° and 24° north (AWAD 1965). The Sudanese-Egyptian frontier at Wadi Halfa (22°) passes through Nubia thus dividing it; some of it lies in Egypt and the remainder in Sudan. This is an artifical arrangement because both racial and geographical transitions take place at the First cataract (SELIGMAN 1957).

The inhabited part in Lower Nubia between the First and the Second cataract (HINTZE AND HINTZE 1968) was a narrow strip of cultivable land. It was more than 300 kilometres in length (REISNER 1910, GREENER 1962).

Nubia was long inhabited, but being small and impoverished it could never have supported compact population. The settlement in Nubia occurred not less than 5000 B. C. (AWAD 1965) but no village communities were known by then (WENDORF 1968). However, nothing is as yet known of the inhabitants of the Nubian Nile valley before the coming of the Predynastic Egyptians (FIRTH 1912). These Egyptians were Hamitic homogenous population (MORTON 1843, SMITH and WOOD-JONES 1910, MONTAGU 1960 and AWAD 1965).

All through its long history Nubia was subject to different invasions and immigrations (FIRTH 1912, AWAD 1965). The Egyptians migrated to it from the north and the Negroes from the south (FIRTH 1912), so that the modern Nubians are a mixture of Whites and Negroes.

Being inclosed on either side in the desert with its rocky hills and hillocks, this interference could not be on any large scale (REISNER 1910). Also its nature together with the difficult transport conditions resulted in its isolation from the other parts of Egypt for thousands of years (SHAFAII 1967).

The inhabitants of Egyptian Nubia split into three groups which are distinguished from one another according to their language (FERNEA 1963, AWAD 1965). The Kenuz and the Fadidja speak two Nubian dialects. The Kenuz occupied the most northern part of Nubia, the Fadidja were living in the southern part close to the Sudanese-Egyptian frontier. The third group, the Arabic-speaking Nubians were living in the area between the previously mentioned groups (HERZOG 1957).

According to the census of 1960, the Egyptian Nubians numbered 98.000; 48.000 lived in Nubia and the rest were living in some towns in other parts of Egypt (SHAFAII 1967).

The material which is the subject of this work was collected in New Nubia during the two Czechoslovak-Arab Anthropological Expeditions which took place it the end of 1965 and the begining of 1967; that is two and three years after the resettlement of the Nubians in their new land. Their resettlement was urged by the construction of the High Dam on the Nile at Asswan. The region which till that time the Nubians were inhabiting is under water now. The resettlement of the Nubians in New Nubia, an area in the Eastern Desert at Kom Ombo to the north of Asswan, began in October 1963 and was finished in April 1964.

This sample was collected in the health centers in the three Nubian areas. It is a chance sample; all the women who accepted and provisionally fulfilled our requirements were examined. So the only selective factor at the stage of collecting the material was the willingness of the women to be examined. The elaboration concerned only 282 women who were within the limits of fittness for this study. They were at the age from 18 to 45 years. 83 were Kenuz, 75 were Arab and 124 Fadidja (plates VI—VIII). Most of the women, especially the older ones, were unable to give their exact age. The age was obtained by visual appreciation and

oral questioning, that it corresponds only approximately to the real age. Thus the material was treated as one age group. The parents of each proband are of the same ethnic group as the proband herself. We aimed to study normal women both physically and physiologically; all cases of deformed physique were eliminated.

We sticked to the classical anthropometric techniques published by MARTIN (1928) and by MARTIN and SALLER (1957). We also followed the terminology and used the instruments which they prescribed. But regarding dimensions that may be measured on both sides of the body, the left side was the one used (VALLOIS 1965).

Table 1 gives the avarages and the standard error of the body measurements and indices of the total material and of the individual ethnic groups.

The average weight and stature of the total sample are 53.2 ± 0.55 kg and 157.3 ± 0.35 cm. The average weight per 1 cm (Quetelet-Bouchard index) is 3.42 ± 0.04. This average puts the Nubian women in the class of optimal development "Biologische Vollwertigkeit" according to Martin's classification. 40.2 % of the Nubian women fall in this class, 13.5 % are in the class of insufficient development and 46.3% have excessive development. These results can be influenced by the fact that we did the examination in the period when the Nubians were still getting from the government financial support as a compensation for leaving their old land, and food was distributed to them by some international organisations.

The sum of the three measured skinfolds, tricipital, subscapular and supracristal is significantly larger in the Fadidja than in the other two groups. In both the Kenuz and the Arab there are no significant differences between the thickness of the three skinfolds. In the Fadidja the subscapular skinfold is thicker than the other two folds.

According to VALLOIS (1965) classification, the average cormic index of the total sample and of the individual ethnic groups is metriocormic. Although the longitudinal trunk proportions are similar, there are interesting differences between the groups regarding the transverse proportions; the Arab have largest biacromial/bicristal index and the Kenuz have the largest thoracic index.

The averages of the head measures are given in table 2, in which it is seen that the Kenuz have the broadest and shortest heads, the Fadidja, on the other hand, have the narrowest and longest heads. The values of the head length and breadth of the Arab fall between these of the other two groups. The Kenuz and the Arab are mesocephalic but the Fadidja are dolicocephalic.

The differences in the averages of the height and the breadth of the nose are not significant, but the differences in the nasal index are significant. The Kenuz are leptorrhin, while the Arab and the Fadidja are in the category of mesorrhiny.

From tables 1 and 2 we can conclude that the most frequent significant differences in the absolute measurements are between the Kenuz and the Fadidja (10); followed by the significant differences between the Kenuz and the Arab (6) and least frequent are the significant differences bet-

ween the Arab and the Fadidja (3). Regarding the indices, the numbers of significant differences between the groups in their previously mentioned order are 5 : 4 : 5.

The results of testing for the significance of the differences in the coeficient of variation of every two ethnic groups (Table 3) shows that the most variable are the Kenuz and the Arab are the least variable.

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Table 1:

The averages and the standard error of body measurements and indices of the total sample and of the individual ethnic groups.

Measurements and indices	Total sample	Kenuz	Arab	Fadidja
Weight	53.2±0.55	53.5±1.14	52.5±1.04	53.4±0.88
Stature	157.3±0.35	158.4±0.64	157.3±0.68	157.1±0.58
Sitting height	81.1±0.20	80.9±0.37	81.0±0.43	81.2±0.29
Arm length*	70.0±0.21	70.4±0.42	70.3±0.34	69.6±0.31
Biacromial D.+	33.6±0.11	33.8±0.19	33.1±0.19	33.7±0.18
Bicristal D.	26.2±0.11	26.1±0.23	26.4±0.15	26.1±0.18
Transv. thoracic D.+−	23.6±0.10	24.1±0.22	23.3±0.18	23.5±0.14
Ant. post. thoracic D.+−	15.8±0.08	16.4±0.22	15.6±0.11	15.6±0.14
Circumf. Arm	26.5±0.23	26.1±0.64	27.1±0.42	26.5±0.34
Circumf. Calf	31.1±0.20	30.7±0.44	31.0±0.35	31.3±0.27
Skinfold tricipital−	12.9±0.41	13.4±0.69	12.5±0.85	12.9±0.62
Skinfold subscapular−	13.4±0.44	12.6±0.68	14.0±0.83	14.6±0.70
Skinfold supracrist.	12.5±0.42	12.9±0.72	11.5±0.64	11.9±0.64
Sum of skinfolds+−	38.9±0.99	38.5±2.51	38.0±2.27	39.5±1.45
Quetelet-Bouchard I.	3.42±0.04	3.41±0.07	3.40±0.06	3.44±0.06
Cormic Index	51.56±0.12	51.12±0.25	51.79±0.24	51.60±0.17
Biacrom/bicristal I.+*	83.00±0.34	82.39±0.62	84.77±0.62	82.32±0.43
Thoracic Index.+−	66.95±0.31	68.05±0.57	66.95±0.60	66.38±0.49

Significant differences between Kenuz and Arabs are marked +, between Fadidja and Arabs and between Fadidja and Kenuz —.*

Table 2:

The averages and the standard error of head measurements and indices of the total sample and of the individual ethnic groups.

Measurements and indices	Total sample	Kenuz	Arab	Fadidja
Head length−	180±0.35	179±0.52	180±0.75	181±0.43
Head breadth−*	138±0.29	140±0.75	139±0.62	137±0.38
Min. frontal D.+−*	102±0.31	100±0.61	104±0.52	102±0.45
Bizygomatic D.	123±0.30	123±0.75	124±0.46	123±0.46
Bigonial D.+−	93±0.24	90±0.66	93±0.69	94±0.47
Facial height	112±0.38	112±0.72	113±0.72	111±0.50
Nasal height	48±0.25	48±0.49	49±0.44	47±0.33
Nasal breadth+−	34±0.71	33±0.32	34±0.31	34±0.27
Cephalic Index*−	76.81±0.19	77.94±0.35	77.23±0.38	76.12±0.25
Facial Index	90.64±0.33	91.48±0.63	91.80±0.61	90.28±0.50
Jugofrontal I.+*−	80.81±0.62	84.37±0.41	83.23±0.35	82.82±0.27
Jugomandibular I.+*−	73.06±0.52	75.03±0.40	76.20±0.37	74.96±0.26
Nasal Index*−	71.93±0.51	69.53±0.95	71.05±0.83	74.20±0.69

Significant differences between Kenuz and Arabs are marked +, between Fadidja and Arabs and between Fadidja and Kenuz —.*

Table 3:

The results of testing for the significance of the differences between the coefficient of variation of every two ethnic groups.

Measurements and Indices	K / A	K / F	F / A
Weight	1.02	0.67	0.49
Stature	0.21	0.78	1.05
Sitting height	1.02	1.43	0.39
Arm length	2.42*	1.43	1.08
Biacromial D.	0.00	2.04*	2.05*
Bicristal D.	4.08*	4.23*	0.42
Transv. thoracic D.	1.60	0.20	1.96*
Ant. post thoracic D.	5.78*	3.80*	2.92*
Circumf. arm	4.13*	0.46	3.94*
Circum. calf	1.07	3.75*	2.84*
Sum of skinfolds	0.93	1.93	2.88*
Head length	1.04	1.03	0.01
Head breadth	2.14*	0.41	2.70*
Minim. frontal D.	3.30*	1.38	2.65*
Bizygomatic D.	1.13	1.10	0.17
Bigonial D.	1.00	1.46	0.00
Facial height	0.70	0.79	0.53
Nasal height	1.62	0.02	1.76
Nasal breadth	1.24	1.42	0.01
Quetlet-Bouchard Ind.	1.15	1.24	0.12
Cormic Index	0.72	1.35	2.17*
Biacrom./bicristal I.	0.54	0.80	1.35
Thoracic Index	0.54	0.99	0.18
Cephalic Index	0.34	1.46	1.13
Facial Index	0.76	0.63	0.03
Jugo-frontal I.	4.39*	0.52	2.15*
Jugo-mandibular I.	2.09*	0.85	1.48
Nasal Index	1.82	0.01	1.96*

K : Kenuz A : Arab F : Fadidja

*Significant differences are marked *.*