

Relevance of the Antique Canons to the Contemporary Turkish Males

A. Yilmaz , R. Mesut

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

106 male students and research assistants without any orthopaedic problems and studying in different departments of Trakya University took part in our study which we determined the body proportions of young Turkish men and searched the congruity of the results with the antique canons.

The measurements of the subjects were performed in our "Laboratory of Anthropometry". Harpenden anthropometer was utilized in these measurements. We were obliged to include the empirical points defined by the artists in addition to the established anatomical structures in the anthropometric guidelines.

Testing the compatibility of the oldest four Canons (The Ancient Egyptian Canon; The New Egyptian Canon; The Greek Canon; The Roman Canon) to the young Turkish men is the aim of our study.

Key words: Artistic anatomy, anthropology, body proportion.

Introduction

All civilizations that have existed so far have treated the human body by their own social understanding and culture [2]. In the ancient and the new Egyptian (Ptolemaic) art closely related to religious beliefs and legends, men figures are illustrated as wide shouldered, narrow hiped and thin waisted.

In the ancient Greek art which represents a more sophisticated level, beauty, virtue, independence, love and immortality themes were embodied in the human figures.

In the plastic arts, the Romans pursuing the apprehension inherited from the Greeks, meant to embody the martial force and discipline by the magnificent statues of their commanders and emperors that they are proud of [11]. During this period known as the Antique Age, the Egyptian, Roman and Greek artists tried to fix the human body as an ideal shape and to make it systematic by setting some rules [9].

Material and Methods

150 male students and research assistants without any orthopaedic problems and studying in different departments of Trakya University took part in our study. Regional differences and socioeconomical factors were not taken into consideration.

All of the parameters were measured on our all subjects. But as our intention was not to find the anthropometric values of a randomly-selected population, we had to make a selection. As our emphasis was on artistic criteria, the very tall and the very short and the very weak and the very fat subjects were not comprised into the statistical analysis. Those who were below 18 years and over 30 years of age were not comprised either. So, the data obtained from 44 subjects were not included in the statistical calculations. Considering these criteria, a total of 106 students and research assistants (36 from Faculty of Medicine, 16 from Kirklareli Undergraduate School of Health Sciences and 54 from Undergraduate School of Physical Education and Sports) whose mean age 22,4 years were included in our study.

The measurements of the subjects were performed in our laboratory of anthropometry. When measurements were done the subjects were required to undress, with the exception of a slip, for the measurements to be done. Harpenden anthropometer was utilized in our measurements. We were obliged to include the empirical points defined by the artists in addition to the established anatomical structures in the anthropometric guidelines. In the first stage of our study we have defined experimentally those points which are not included in the scientific literature and are anatomically ambiguous ("collum femoris", "cubitale", "plica carpalis distalis", "suprapatellare", "midpatellare", "infrapatellare"). We have assigned the parameters mentioned below using the measurements based on these anthropologic and empirical points (Fig. 1) [4, 10]: 22 metric measurements were done on our each subject and their arithmetic mean and standard deviation were calculated. The topic we were

Table 1. Proportions and equations of the antique canons

I- Proportions

Ancient Egypt Canon	B-V / FL	6,33
New Egypt Canon	B-V / MFL	19
Greek Canon (Polykleitos)	B-V / HW	20
	HL / HW	2
	FH / HW	2
	Om-Sy / HW	2
	FL / HW	3
	Acr-Ol / HW	4
	Ol-Pha / HW	4
	St-Sy / HW	6
	B-SupP / HW	6
Roman Canon (Vitruvius)	B-V / HH	8

II- Equations

Greek Canon (Polykleitos)	$MidP-Om = Om - Por$
	$BID = B-MidP = MidP-CF = CF-St$
Roman canon (Vitruvius)	$B-V = Armspan$
	$BID = Cub-Dac = 2*(Ax-Cub)$

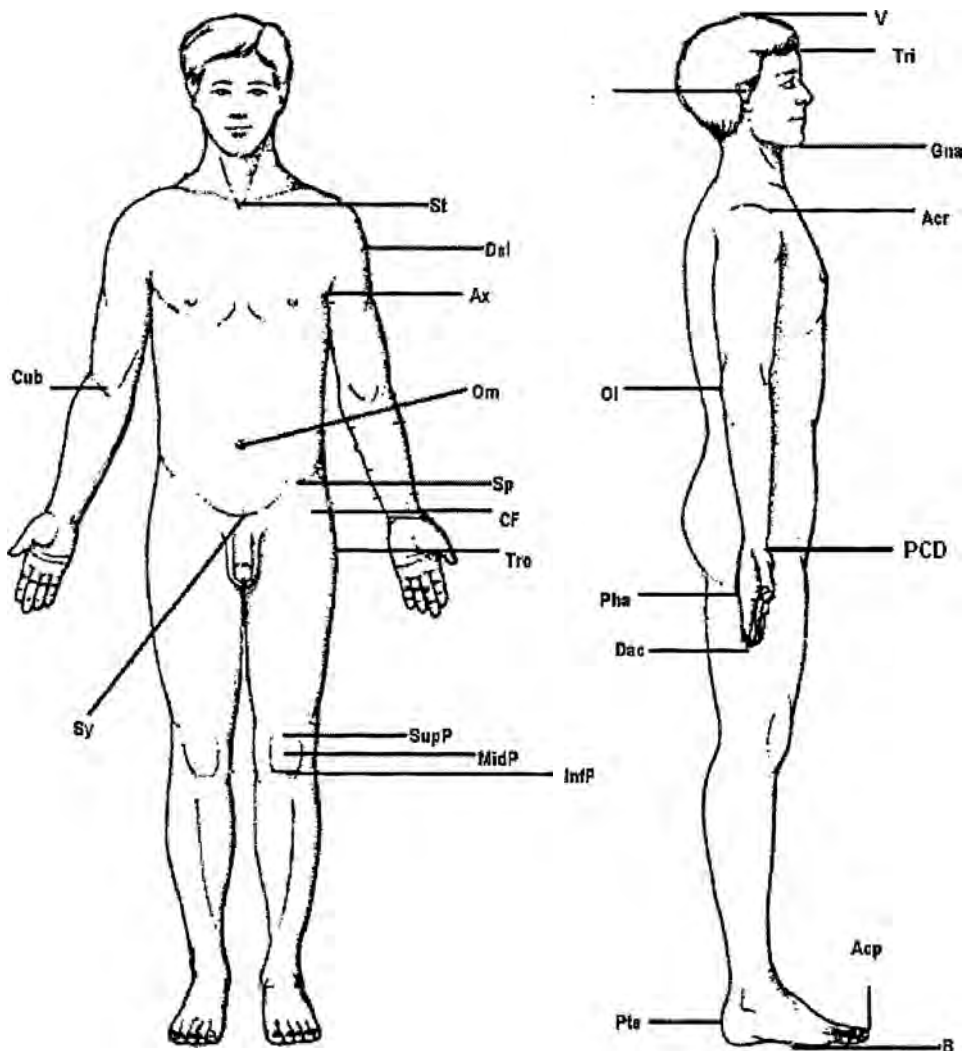


Fig. 1. Anthropological and artistic points

V—vertex; Tri—Trichion; Por—porion; Gna—Gnathion; St—sternale; Del—deltoidale; Acr—acromiale; Ax—axillare; Ol—olecranon; Cub—“cubitale”; Om—omphalion; Sp—spinale; Sy—symphision; CF—“collum femoris”; PCD—“plica carpalis distalis”; Tro—trochanterion; Pha—phalangion; Dac—dactylion; SupP—suprapatellare; MidP—midpatellare; InfP—infrapatellare; Pte—pternion; Acp—acropodion; B—basion

T a b l e 2. Comparison of our subjects with Antique Canons

Features	Ancient Egypt	New Egypt	Greek Canon	Roman canon
B-V / FL	6.0±0.6	****	****	****
B-V / MFL	****	19.6±1.4	****	****
B-V / HW	****	****	21.6±1.8	****
HL / HW	****	****	2.0±0.3	****
FH / HW	****	****	2.0±0.0	****
Om-Sy / HW	****	****	2.5±0.5	****
FL / HW	****	****	3.0±0.9	****
Acr-Pha / HW	****	****	4.3±0.0	****
Ol-Dac / HW	****	****	4.3±0.3	****
St-Sy / HW	****	****	6.7±0.0	****
B-SupP / HW	****	****	6.1±0.9	****
B-V / HH	****	****	****	7.2 ±0.5

T a b l e 3. The percentage ratios of each of the segments in Polykleitos' equations to the stature

Parameter	Our subject (n=106)	Difference, %
MidP-Om/Body height(%)	32.0	100
Om-Por/ Body height (%)	32.7	101.
BID/ Body height (%)	25.5	100.
B-MidP/ Body height (%)	28.2	109.
MidP-CF/ Body height (%)	25.1	100
CF-St/ Body height (%)	28.	112.8

T a b l e 4. The percentage ratios of each of the parameters in "Vitruvius' equations" to the stature

Parameter	Our subject n=106	Difference, %
Body Height (cm)	175.6	
Armspan (cm)	180.8	+% 3.1
Body Height/Armspan	0.7	
BID/ Armspan (%)	25.1	100.0
Cub-Dac/ Armspan (%)	25.1	100.4
2*(Ax-Cub)/ Armspan (%)	27.6	110.9

focused on was the proportions and equations defined by the Egyptian artists, Polykleitos and Vitruvius.

The results we obtained from our subjects are shown in the Tables 2, 3, 4.

Discussion

“Module” concept in the artistic anatomy was created in the ancient times. In our study the modules utilized in the four canons we put emphasis on were FL (foot length); MFL (middle finger length); HW (hand width); HH (head height). We have determined the values of the modules mentioned above in a metric scale. There were some data published on the anthropometric measures of Turkish men albeit they were scattered. Despite methodological differences we compared our data with the ones published before. We found the stature/foot length ratio 6.60 which was specified as 6.33 in the ancient Egyptian Canon, the first canon we reviewed for compatibility to the young Turkish men. Although we have encountered many studies on foot length during our literature review none of these studies examined the relationship between this parameter and stature.

In Yildirim, Kahraman and Yildiz’s studies the values they obtained were very close to each other and higher than ours [3, 7, 8] . Based on the studies conducted in the last decade we observed that the stature/foot length ratio was in a decremental trend although it was higher than the value (6.33) accepted by the ancient Egyptian artists. According to the artists who use the middle finger length as the determinant of stature. Stature/middle finger length ratio is 19:1. This ratio is 19.96:1 in our study. During our literature review we saw that only Yildirim and Kahraman studied on these ratios. The results they reported, 16.67 and 16.83, respectively were significantly different from ours [6, 7]. This difference appears to be due to the middle finger length measurement method they utilized. The percentage of the middle finger length to the stature is 5.0% in the young Turkish men which was 5.2% according to the Egyptian artists. It can be argued that the Turkish young men have shorter fingers according to the Egyptian artistic criteria.

We observed that all of our subjects did have higher values when we examined the ratios described by the eminent artist Polykleitos. These results were within our expectations as Turks have narrower and longer shaped hands. The most significant differences were in the ratios of upper extremity lengths to the hand width. In our literature review we observed that all the segments used in the ratios were examined separately but as they were not examined as a whole we could not make any comparison with our data.

In the fourth canon we reviewed for compatibility to the young Turkish men, the Roman (Vitruvian) Canon, the stature was acknowledged as being equal to eight times the head height. In our study the stature/head height ratio was 7.82 for the Turkish men. Muftuoglu (1990) reported this value as 7.28 before [5]. We can conclude that the head height has a higher increment than the stature while it does not comply with Vitruvius’ description in the young Turkish men.

In our study we also analysed the compatibility of the equations described by Polykleitos and Vitruvius to the young Turkish men. We observed that the MidP-Om and Om-Por distances that Polykleitos used in his dual equation were very close to each other in the young Turkish men as well. We observed that the young Turkish men don’t comply with the quartet equation that Polykleitos described and the longest segment belongs to body. We think that it is not a surprising result for Turks who have a macroskelic shape.

We observed that the armspan length is higher than the stature in the young Turkish men. In their study in 2001 Cıkmaz et al. reported that 72% of their subjects had higher armspan length [1]. Another equation proposed by Vitruvius is the triple equation which is concerned with the shoulder width and upper extremity. The shoulder width and the forearm length including the hand which must be equal to 25% of the armspan length were close to each other but the last parameter of the triple equation, the double arm length was longer. As arm length is longer than the expected this may be the basis for the armspan to be longer than the stature.

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