"A COMPARATIVE STUDY OF SPORT ACTIVITY CHILDREN PRACTITIONERS & NON-PRACTITIONERS (12-9 YEARS OLD) DUE TO PROFILE NET OF ANTHROPOMETRIC MEASUREMENTS"

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Abstract

Many scientific research and documentation of medical bodies indicate that the practice of physical activity on a regular basis are associated with many health benefits and is beneficial to the functions of the various organs of the body , people differ among themselves in terms of mental abilities , personality traits , and standards of physical and preparations , tendencies , trends , and the ability to physical performance ,And when we try to explain these differences and we measure and characterize it, we do so we have We put the phenomenon of individual differences for study and research. Individual differences be either in character type, or in the degree of the existence of such, through the views of some schools to some schools high school during the period of supervision of the students of the fourth phase in the material Tabiq researcher noted the existence of individual differences for some physical measurements, especially in the reconstruction following the primary stage, a stage of adolescence which is one of the most important stages of building physical and configured Farad researcher find out the cause of these differences and do physical activity role in the configuration of physical characteristic that leads to such a difference.The purpose of research to identify the individual differences between practitioners and non- practitioners sporting activity through the shape profile measurements of the physical network , the research sample included students study elementary, middle and they are not practitioners of sports activity was selected as the school career of Khanaqin babes practitioners of sports activity, Underwent physical measurements (main experiment) 8-11 / 2/2015 was taken (15) compared to physically between the lengths of the oceans and the thickness of fat and after processing the data statistically researcher concluded that there is excellence in physical measurements and in favor of practitioners of sports activity , the researcher recommends worthwhile lessons Sports primary and secondary schools because of their importance for the proper strength as a researcher recommends further research of other age groups.

Keywords: Practitioners, sport, activity, children, anthropometric measurements

1. INTRODUCTION

A lot of scientific researches and documents of medical authorities show that regular practice of sport activity is related to a lot of healthy benefits and this also benefits various body apparatuses (Williams & Wilkins, 2000, 2-21). Statistics issued in countries worldwide and USA show that 35% of deaths of coronary heart disease, 35% of diabetes and 32% of colon cancer are due to physical inactivity. Estimations in USA also refer that diseases related to lack of movement cause death to numbers of persons that are more in 14 doubles than deaths caused by AIDS. All of this negative effect is due to physical inactivity and the increasing role of the importance of physical activity for human life which led to issue guiding documents and scientific recommendations by many scientific associatios and health organizations asserting the importance of physical activity for health. They also recommend the necessity of practicing the minimum of activity regularly by men, women, the old and the young. People differ in terms of mental capacities, personal features, anthropometric measurements, preparations, tendencies, attitudes and the ability of physical performance. When we attempt to explain and measure these differences, by this way, we are applying individual differences under research. Individual differences are whether in the type of

characteristics or in the degree of the presence of these characteristics. The difference between length and weight is the difference in the characteristic type. Length difference is a difference in degree. Therefore, the difference between length and weight (type difference) does not subject to measurement as there is no common measurement for both of them. Anthropometric measurements are highly related to many vital fields as physical growth is related to health, social and emotional consistency for the child in middle years as well as relation with achievement and intelligence. There is also a relation between healthy children's physical and mental growth anthropometrically. In two of the best studies in this field found that there are positive relations between intelligence and a number of anthropometric measurements in ages between (2) and (17) years. As for sports, it was proven that anthropometric measurements are related to many motor capacities and distinction in different activities. Some researches proved that there is a direct relation between fist strength, length and weight. In addition, Cureton found that athletes in some games are distinguished from others in many anthropometric measurements such as trunks length, shoulder width and narrow pelvic (Hassanin 2003, 22-38).

Problem of the Study

Through viewing some secondary schools during the supervision period on 4th stage students at application stage, the researcher found that there are individual differences of some anthropometric measurements, and especially in ages that came after the primary stage which is the adolescence stage that is considered one of the most important stages of body building and formation. The researcher wanted to know the reason of these differences and the role of physical activity in special anthropometric formation that leads to such differences.

Objective of the Study

The study aims to define individual differences among practitioners and non-practitioners of physical activity for children (9-12 years old) due to profile net of morphological measurements.

Hypothesis of the Study

There are statistically significant differences between morphological measurements due to profile net among practitioners and non-practitioners of physical activity for children (9-12 years old).

2. METHODOLOGY

The researcher used the descriptive method as it is proper with the nature of the study.

Sample of the Study

The sample of the study consists of (40) students collected purposively among them 20 students were selected and the researcher ensured they are non-practitioners of sport activity. The rest of the sample (the other 20 students) selected from the football school at Khaniqin city as practitioners of sport activity.

Field Procedures of the Study

Upon taking anthropometric measurements, the following conditions should be considered:

- Measurement should be made by a similar manner in terms of measurement series.
- Using the same measurement tools.
- Measurements should be taken at the same timing daily.
- Measurements (and members of the sample wearing logn pants) (Khater & Al Bek, 1988, 88)
- Measurements of body lengths and diameters for the approximate half of a cm. In addition, body widths were measured at the approximate ml and the thickness of skin folds at the approximate ml. measurements were performed as follows and according to the series mentioned below:
- Body weight: measured through medical scale at the approximate 1/5 kg as the tested stands at the middle of scale base in a way that body weight is distributed on feet.
- Body length: measured at the standard erect posture as heels are stuck together and arms are hung at body sides. Measurement is taken by a graded wall as the wall is touched by the heels, the bottom, shoulder blades and head back and then measurement is taken at the approximate 1/5 cm.
- Arm length with palm: the distance from the lateral edge of the dorsal bend of shoulder bones till the tip of middle finger while stretched.
- Humerus length: measuring the distance from lateral top of the dorsal bend of blade bones till the elbow bend (ulna bone) which is the distance from shoulder to the elbow.
- Forearm length: measuring the distance from elbow bend of the ulna till the radius bend which is the distance from elbow to the wrist.

- Leg length: measured by counting the average between the following two measurements:
- Measuring the distance from the anterior superior iliac spine till the medial heel of tibia bone.
- Measuring the distance from the pubic symphysis till the medial heel of tibia bone.
- Thigh length: measuring the average distance of the inguinal canal till the top edge of the patella bone.
- Leg length: measuring the distance between the line of knee joint and medial heel of tibia bone putting a leg over the other.
- Chest diameter (normal): fixing a measuring tape from top back and under the axilla at the level of breast nipples. Arms should also be extended downwards noting that measurement is taken at the normal inhale posture. (Radwan, 1997, 73-99).
- Abdomen diameter: measured by putting the measuring tape horizontally at the level of the navel and the measurement is taken after normal exhale period (Khater & Al Bek, 1984, 96).
- Humerus Diameter: measured while both arms are hung from middle of the distance of lateral top of the dorsal bend and the end of lateral edge of humerus bone to make measurement spot while the arm is bent with the palm at an angle of 90 degree and the palm is pointing upwards.
- Thigh Diameter: the tested stands in a way that the distance between feet equals the width of shoulders and then measuring tape is put horizontally right at the end.
- Leg diameter: measured by putting the measuring tape around the maximum diameter of the leg. This can be obtained by moving the tape upwards and downwards till we get the required measurement.
- Thickness of skin bend at the iliac fold: this measurement is taken from the area above the forward relief of the iliac bone (right side) and at the anterior line of the axilla with a diagonal line downwards and inwards 45degrees. This fold is diagonal. The person who measures holds the skin fold from below the spot by the flow master pen and then pulls it outwards. After that, he puts caliper jaws above the vertical axis of the skin fold (Radwan, 1997: 176 – 197).
- Thickness of Skin Fold beneath Shoulder Blade: this measurement is taken from under the angle of right blade bone (from 1 to 2 cm) in a diagonal direction downwards and another one outwards with an angle of 45 degrees. This skin fold is diagonal (Hassanin, 1995: 136). In order to have accurate measurement of skin folds, the tester should follow a number of notes including accurate detection of the measured area, separating skin and adipose tissues from the body's muscular tissues in addition to the area of skin fold by the caliper and not using hand fingers. Moreover, measurement should be made at a time limit (2 – 5 sec) after putting the device at the position and then three repetitions are taken for measurement and the rate is counted. (Kir Knedal, D. et al, 168).

Designing the Profile of Anthropometric Measurements

In order to design the profile for anthropometric measurements, we have to mention the way we used through which we can define the level of measurements whether at middle, higher or less levels as well as comparing its different units.

Profile Net:

At first column, anthropometric measurements forming the profile – the rest of columns are (5). Counted profiles are presented as follows:

Average rate column – column 4 – the main column.

A. The maximum is the arithmetic mean of measurement (2/1+) the standard deviation of the same measurement.
B. The minimum is the arithmetic mean of measurement (2/1-) the standard deviation of the same measurement.
C. The minimum for columns at the right of average rate of measurement (2, 3) as order is the maximum limit of the directly previous column in order added to (0.01).
D. The maximum of columns at the right of average rate of measurement (2, 3) as order is the arithmetic mean of the sample 1h, 2h (*) consecutively.
E. The minimum of columns at the left of average rate of measurement (4, 5) as order is the maximum of each is the minimum limit of the directly previous column in order subtracted from to (0.01).
F. The minimum of the mentioned cells (4, 5) is the arithmetic mean of the sample subtracted from 1h and 2h as order.

Drawing the Individual's Profile:

In order to draw the profile, a special figure with columns should be drawn asymmetric with these established for the profile net. An individual's measurements or group averages may be set (if the needed is knowing levels of as group and not the individual) to indicate measurements at the middle of columns and due to the level position of each of them due to the asymmetric levels at the profile determined previously.

After that, points of individuals or groups are linked to form the profile net for the person or group and we became able to determine proximity of the shown anthropometric measurements units or those separated from each other or separated from the sample level on which levels of the profile were built (Khater & Al Bek, 1996: 120 – 121).

Final Application of Measurements:

Final application of measurements was performed on 8, 9, 10 and 11 of February, 2015 between 9 and 11 am following all conditions of measurement.

3. DISCUSSION AND PRESENTATION OF RESULTS:

Results:

Table (1): Arithmetic Mean and Standard Deviation S.D of anthropometric measurements for practitioners and non-practitioners of sport activity:

Anthropometric Measurements	Arithmetic Mean	Standard Deviation
Weight	37.830	7.140
Length	142.125	7.090
Arm length	58.980	3.960
Humerus length	26.410	2.160
Forearm length	22.360	2.010
Leg length	81.860	4.380
Thigh length	40.770	3.070
Foot length	23.330	1.590
Chest diameter	70.670	5.840
Abdomen diameter	65.250	6.850
Humerus diameter	21.450	2.540
Thigh diameter	40.230	4.360
Leg diameter	30.230	4.130
Thickness of skin bend at the iliac fold	10.225	6.237
Thickness of Skin Fold beneath Shoulder Blade	8.850	6.351

Based on this table, the researcher built nets for the profile levels for anthropometric measurements of practitioners and non-practitioners of sport activity.

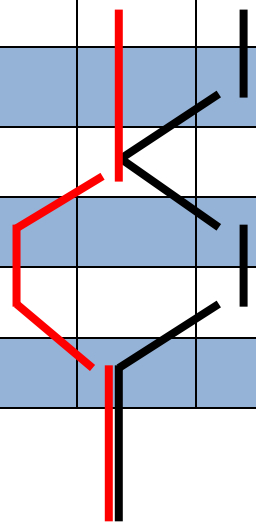
Table (2): the net of the profile of anthropometric measurements of practitioners and non-practitioners of sport activity:

Anthropometric Measurements	Very High Growth	High Growth	Average Growth	Low	Very low
Weight	44.980	41.410	34.260	34.250	30.680
	52.110	44.970	41.400	30.690	23.550
Length	149.225	145.680	138.580	138.570	135.025
	156.305	149.215	145.670	135.035	127.945
Arm length	62.950	60.970	57.000	56.990	55.010
	66.900	62.940	60.960	55.020	51.060
Humerus length	28.580	27.500	25.330	25.320	24.240
	30.730	28.570	27.490	24.250	22.090

Forearm length	24.380	23.375	21.355	21.345	20.340
	26.380	24.370	23.365	20.350	18.340
Leg length	86.250	84.060	79.670	79.660	77.470
	90.620	86.240	84.050	77.480	73.100
Thigh length	43.850	42.315	39.235	39.225	37.690
	46.910	43.840	42.305	37.700	34.630
Foot length	24.930	24.135	22.535	22.525	21.730
	26.510	24.920	24.125	21.740	20.150
Chest diameter	76.520	73.600	67.750	67.740	64.820
	82.350	76.510	73.590	64.830	58.990
Abdomen diameter	72.110	68.685	61.825	61.815	58.390
	78.950	72.100	68.675	58.400	51.550
Humerus diameter	24.000	22.730	20.180	20.170	18.900
	26.530	23.990	22.720	18.910	16.370
Thigh diameter	44.600	42.420	38.050	38.040	35.860
	48.950	44.590	42.410	35.870	31.510
Leg diameter	34.370	32.305	28.165	28.155	26.090
	38.490	34.360	32.295	26.100	21.970
Thickness of skin bend at the iliac fold	16.472	13.353	7.107	7.097	3.978
	22.698	16.462	13.343	3.988	-2.248
Thickness of Skin Fold beneath Shoulder Blade	15.211	12.036	5.674	5.664	2.489
	21.552	15.201	12.026	2.499	-3.852

According to the net of the profile at figure (1), the researcher drew the profile for practitioners and non-practitioners of sport activity:

For non-practitioners	For sport practitioners	Very low	Low	Average growth	High growth	Very high growth	**Anthropometric Measurements**
39.875	41.5						Weight
142.45	145.8						Length
59.25	58.725						Arm length
25.420	27.7						Humerus length
21.275	23.85						Forearm length
81.4	82.325						Leg length



40.55	41						Thigh length
22.8	23.875						Foot length
67.591	72.3						Chest diameter
68.3	61.2						Abdomen diameter
22.675	23.225						Humerus diameter
40.05	42.425						Thigh diameter
31.725	32.75						Leg diameter
15.5	5.95						Thickness of skin bend at the iliac fold
12.7	4.75						Thickness of Skin Fold beneath Shoulder Blade

Figure (1) shows:

Practitioners of sport activity =

Non-practitioners of sport activity =

Figure (1) shows that average measurement for practitioners of sport activity is distinguished from non-practitioners of sport activity at most anthropometric measurements (length, weight, humerus length, forearm length, chest diameter, humerus diameter, thigh diameter, leg diameter, abdomen diameter, Thickness of skin bend at the iliac fold and Thickness of Skin Fold beneath Shoulder Blade). However, practitioners and non-practitioners of sport activity came at the same level due to net profile at the following anthropometric measurements: (arm length, leg length, thigh length and foot length).

Discussing Results:

Through the figure of net profile, results of anthropometric measurements were discussed which practitioners of sport activity were distinct at. Therefore, we find that in results related to body weigh practitioners' weight came at a high level, while non-practitioners came at average growth of the net, so general result refers to an increase in practitioners' mass and weight. Body weight related to strength is one of the most important standards of anthropometric features that a sport practitioner should have (Othman, 1990: 464). As for results of body length, we find that practitioners are distinct with bigger anthropometric measurements than non-practitioners of sport activity at body length and size due to selection process (Hussein, 1979: 180). Concerning body diameters, there is an absolute increase in practitioners at diameters which means as increase in athlete's body mass as well as it is an increase in the horizontal sector that is beneficial as muscular strength is directly related with the anatomic sector of the muscle and with the size of the muscle (Radwan, 1997: 144 – 148). As for skill fold thickness and abdomen diameter, we can find that practitioners lie at the level of the net in low and very low growth as it is known that adipose increase affects the muscle capacity to contract as fats in muscular tissues helps in muscle contraction with internal fracture affecting the efficiency of the operating muscle at movement (Allawi & Radwan, 1994: 222 – 223). Results of multiple studies proved that there is an inverse relation between fat percentages in the body and sport activities. The more fat percentage in the body is, the less athletic performance will be. This is true for all sport activities that require body movement whether vertically or horizontally during playing. (Abdelfatttah & Hassanin, 1997: 380).

4. CONCLUSIONS:

1- The growth in length and weight of sport activity practitioners is higher than in non-practitioners.
2- There is a high growth at most body diameters for the sake of practitioners than non-practitioners of sport activities.
3- There is a lower growth at thickness of skin folds (fats thickness) for practitioners than for non-practitioners of sport activities.
4- There is a higher growth for abdomen diameter for practitioners than for non-practitioners of sport activities.

5. RECOMMENDATIONS:

1- The possibility of make similar research at other age classes and on females.
2- Conducting a comparative study for profile net among practitioners of individual and team sport activities.
3- Good guidance of schools towards anything related to body building of individuals.
4- The possibility to conduct comparative studies between body formation between athletes and non-athletes.

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