

❖ **SPORT AND PERFORMANCE****THE RELATIONSHIP BETWEEN COMPETITION STRESS AND BIOLOGICAL REACTIONS IN PRACTICING PERFORMANCE IN ATHLETICS****ALEXE CRISTINA IOANA¹, GRIGORE VASILICA², LARION ALIN³, ALEXE DAN IULIAN⁴****Abstract**

Purpose. Among the factors conditioning sport performance in athletics, competition stress it is one of the most “active” with high bio-psycho effects, especially in competition season. We set highlighting certain biological reactions determined by induction of “start condition”, as competition stress factor to athletes, specialized on medium or long events.

Methods. The research implied 10 subjects with different “age” in athletics and in specialty of the event practiced. The athletes were subjected to two tests, in two different days, in a week that finalized with an important competition. (testings made with 7 days, respectively one day before).

Results. The analyses of the values to the variables subjected to research (lactic acid, hemoglobin, glucose and magnesium) show modifications in competition stress situations, at the subjects researched, in the purpose of rising some of the values to some variables and the decrease of other values, to other variables.

Conclusions. The stress in the competition season determines biological modifications to the professional athletes, specialized on medium-long events.

Key words: sports performance, stress, competition, athletics, biological reactions.

Introduction

Reaching designed sports performance depends in any discipline of athletics on many factors (Fig. No. 1), which may enhance or limit the expression of the various skills of the athletes involved. Among these factors, stress is one of those that have strong effects on the athletes’ behavior both in training but especially in competition.

Due to the specific effort and complexity of the stimuli involved, athletes react differently to the influences exerted by stress, especially close to competition or during the actual start, knowing that “the highest stress level varies according to the specifics of each discipline and each may cause a different degree of stress”, some high performance athletes seek this type of stress in order to outdo themselves. (R. Thomas, 1993).

These reactions to stress can be mobilizing, leading to an increase in athlete combativity or they can be “destructive”, leading to a demobilization of the athlete, an inability to concentrate and actively participate, a lack of adaptation to the specific conditions of the competition.

According to some authors, not every solicitation implies stress, but only those whose duration or intensity exceeds the capacity of individual adaptation (M. Epuran, I. Holdevici, F. Tonița, 2001).

The synthesis of various studies and research papers in sports psychology and biochemistry concerning athlete behavior, especially in competition, showed that an athlete's skills and capabilities may be influenced by stress:

- either through its influence on “the increase of vigilance directly reflected by an increase in the level of activation of the nervous system” (A.F. Sanders, 1983), activation is not always responsible for
- improving sports performance (R. Martens, R. 2004).
- either through their personal perception of stress-provoking situations.

Stressful and anxiety states (in our opinion, complementary process of competitive stress in sports) occur for most athletes especially before and during competition (given the social, professional and emotional “stake” involved in achieving good results).

Knowing that nowadays people have the capacity to memorize certain stressful states and activate responses to stress as a result of circumstances interpreted as cognitive elements (as may activate an entire complex of stress generated reactions just by remembering and mentally re-living specific stressful situations - D. Marza, 2005), sport

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psychology professionals recommend that approach in terms of competition control on the level of competitive stress modeling aim some time before these special conditions (M. Niculescu, 1999).

As reflected in the title of this article, our research focuses on the biological component of stress which affects high performance athletes. A theoretical approach on the biological changes resulting from stress in humans, has no purpose in this article, as long as previous research has clarified the fact that stress affects many parts of the nervous and hormonal system, which:

- triggers secondary mutations of the functions and activity of most bodily organs "(S. Shivapremananda, 1997);

- „increases thyroid hormones production, stimulating mental processes and actions of most endocrine glands" (A.C. Guyton, Jh.E.Hall, 2006) which in our view affects the majority of biological processes and reactions that are activated in the body at that time.

The competition, a unique event with an exceptional financial and social stake which requires the activation of all bio-psycho resources of the athlete (Ş.Tüdös, 2000) is, by its specificity, a stressful event, which can have positive or negative effects on the behavior of the subject involved.

Hypothesis

Physiological changes caused by competition stress typical for the „start mood" on athletes specialized in middle and long distance run events are emphasized by biological parameters in the competition stage.

Research instruments and procedure.

For testing and evaluation we have used as a research instrument the dry biochemistry analyzer SPOTCHEM (EZ SP-4430 – capillary blood sample processing through an automatic system of centrifugation, pipetting, reactive identification and optical measurement.

The subjects of our research are 10 athletes, specialized in semi-fund disciplines, with ages between 19 and 35, with 5 to 20 years of experience in practicing athletics and which have a minimum of 4 years experience in medium or long events (the average of the specializing discipline being of 7.3 as per table no.1)

Table no.1

Research subjects

Subjects	Age	Experience in athletics	Experience in the discipline
I. Z.	27 y.o	16 years	12 years
C.V.	25 y.o.	8 years	7 years
C. I.	25 y.o.	11 years	8 years
D.C.	23 y.o.	8 years	5 years
V.C.	19 y.o.	7 years	5 years
S.A.	20 y.o.	5 years	4 years

A.G.	21 y.o.	11 years	8 years
B.S.	25 y.o.	9 years	6 years
S.C.	35 y.o.	20 years	14 years
D.S.	20 y.o.	6 years	4 years

The sports performance of the subjects range from good to very good (from national medalists to multiple national and balcanic participants and medalists in various international competitions.

The research was unfolded in 2010 (May-June) following the biological alterations occurring in the samples taken from the above-mentioned subjects (their participation was confirmed with a compulsory written agreement).

Two testing sessions were run, in two different days, in a week when a high level competition has ended (test were done with 7 days and respectively one day before)

Knowing that the biological parameters that competition stress affects on high performance athletes are: Cho (cholesterol), AL (lactic acid), Ca⁺ (calcium), Mg (magnesium), GLU (glucose), T.A.(blood pressure), TG (triglycerides), Hb (hemoglobin), F.C.(cardiac frequency), the present research limited itself to the study of the alterations occurring in the following parameters:

- *AL (lactic acid)* – caused multiple controversies in sports-related researches and is still considered to be the cause of many positive and/or negative effects on the muscular activity of athletes. This parameter was measured in the morning, before breakfast when the athlete woke up. Under stressful conditions the corticoadrenal releases high quantities of glucocorticoid hormones, thus accelerating the degradation processes of glycogen (glycogenolysis) and the increase of the lactate concentration (A.I. Baba, R. Giurgea, 1993);
- *Mg (magnesium)* – was measured in the morning when the athlete woke up. Stress causes alterations of the Magnesium level downward its concentration in the body;
- *Hb (hemoglobin)* – was measured in the morning, before breakfast, when the athlete woke up. According to the specialists this parameter modifies under stress conditions, due to the increase of the level of glucose in the blood;
- *GLU (glucose)* - was measured in the morning, before breakfast, when the athlete woke up. According to biochemists, this parameter modifies under stress conditions, respectively it increases;

The data of the biological parameters tested were harvested twice, during the summer competition season of 2010, as follows:

- *first testing* (T1) – 7 days before the competition (Romanian National Championship, Constanța, June 4th, 2010);
- *second testing* (T2) – one day before the competition;

The harvest of the data was done in the morning (7:00-8:00) right after the athletes woke up by two specialists: a doctor on the national athletes squad and his assistant.

Sample processing, the usage of the dry biochemistry analyzer and primary result interpretation of biological parameters which interest us were done by a different medical specialist.

Further, there has been a constant collaboration with the doctor during the process of final interpretation of results in order to clarify the medical aspects of the changes occurring as a result of competition stress.

Also, unfolding the research implied collaborating with one of the national athletics squad psychologists which has been constantly close to us, guiding and argumenting our observations on athletes attitudes both i training as well as before the competition.

We also mention that the athletes training between the two testing sessions (last 6 days before the competition) did not include high levels of intensity or volume. Athletes performed standard training, specific to the week before the competition, training which did not require the organism to adapt to new stimuli and which focused on the regular active rest routine, maintaining an optimum level of the general tonus and on the psychological and tactic preparation of the competition.

The competition referred to in the present research is the second one in the open-air competition season of the year 2010 and this allowed us to exclude the option of a „relaxed” or „cramped” behavior on athletes (behavior which usually occurs on the first competition from the new season). We also mention that the competition in question was not an objective important one for our subjects.

Statistically, due to the small number of subjects (aspect determined by the entire number of high-performance athletes existing in our country) we calculated: the arithmetic average, the standard deviation (for spreading the values referred to the average, homogeneity), the variability coefficient (homogeneity), the minimum and maximum values as well as the percentages for each biological parameter studied.

Results

To highlight the differences between the two testing sessions while taking into account the small number of subjects (although referring to the numbers specific to high performance athletics in our country, 10 athletes specialized in medium or long athletic events is an optimum number for such a research) we applied to descriptive and comparative analysis of the data (table no. 2)

Calculations have indicated the following:

- referring to the glucose (GLU) values, these stay within standard limits for both tests but there is an increase (table no. 2) on all subjects, with values ranging from 1 to 9 mg % ml. Thus, the difference between the average T1 value and the average T2 value is of 3.9 mg % ml.
- the values of the variability coefficient (Cv) calculated for the variable GLU on both tests are under 10% (table no.2) which indicates a high level of homogeneity on the athlete squad. Also, the values of the standard deviation (S) calculated for the GLU variable indicate that data spreading is limited, the arithmetic average being a representative one.
- as the standard deviation measures the dispersion of certain values from the average considered value and since the calculated data is small, we consider that the homogeneity of the athlete squad is confirmed also by the values of the standard deviation values (the standard deviation through its significance indicates the level of homogeneity of a group of values - M.Niculescu, 2002);
- the values of the variability coefficient (Cv) calculated for the variables Hg and Mg (table no.2), on both tests, are under 10%, which indicates a high level of homogeneity of the athlete squad. On the other hand, the value of the lactic acid (AL) indicates a medium homogeneity with values between 15% and 30% (16,26% on T1 and 18,71% on T2), the average value however representative enough;
- the values of the standard deviation (S) calculated for the variables Hg, Mg and AL on both tests, indicates a small spreading of data with values between 0.15 and 0.41, which reveals a representative arithmetic average for the values registered on all 10 subjects (table no. 2). Since standard deviation measures the dispersion of certain values from the average considered value and since the calculated data is small, we consider that the homogeneity of the athlete squad is confirmed again from the point of view of magnesium, hemoglobin and lactic acid;
- the values of the variability coefficient (Cv) and of the standard deviation (S) registered by our subjects on the researched parameters indicated a high level of homogeneity of the athlete squad. We consider this to be beneficial for increasing the level of objectivity and precision on future interventions and for the results of our research;
- the value analysis on the *Hb* (hemoglobin) variable indicates a 0.1 g% decrease in value on 4 of our subjects, a 0.1 g% increase in value on 2 of our subjects and stable value for the other 4 subjects. The calculations lead to a 0,02 mg% average decrease on the day before the competition (graphic no.1);
- the value analysis on the *Mg* (magnesium) variable indicates a decrease in value on the second test compared to the first one on all

subjects (graphic no. 2). These alterations range between 0.01 and 0.10 mg %. The calculations lead to a 0,04 mg% average decrease on the day before the competition (graphic no.1);

- the value analysis on the *Mg* (*magnesium*) variable indicates an increase in value on the second test compared to the first one on all subjects (graphic no.3). These alterations range between 0.1 and 0.4 mmol/l. The calculations lead to a 0,21 mmol/l average increase on the day before the competition (graphic no.1);

Discussions and conclusions

Data processing and interpretation as well as our personal experience in this area of expertise allow us to synthesize the following:

- the analysis of the biological parameters (Hb, Mg, GLU, AL) in a medium competition stage, on athletes specialized in medium or long athletic events reveals physiological alterations induced by competition stress also known as „the start mood”. These alterations, in spite of being small on some of the researched variables are clear indicators of competition stress effects on the biological processes of athletes (taking into account the constant and objective testing conditions, confirming thus the research hypothesis);

- if the difference between T1 and T2 appears on just a few subjects, then the stress factor determined by the approach of the competition would not be taken into consideration; however the increase even with a few units of the level of glucose in the blood on all athletes led us to conclude that the proximity of the competition is causing the sanguine glucose changes;

- the increase of 0,21 mmol/l of lactic acid between the two tests, taking into account that the training done during the 6 days between test was only meant to maintain muscular tonus, indicates the fact that switching to „start mood” as a stress factor determined by the approach of the competition, affected the biological component of subjects thus determining notable changes;

- we can affirm that, as long as the recovery was respected, the training was not demanding and sleep was optimum (data collected by discussing with subjects) the increase of the level of lactic acid on the athletes practicing medium or long athletics events is caused by the stress mood determined by the approaching competition;

- the analysis of the GLU (glucose) variable confirms the increase of lactic acid since it is a known fact that these two biological parameters are in a strong dependency relation: the increase of lactic acid determined the increase of glucose in the blood;

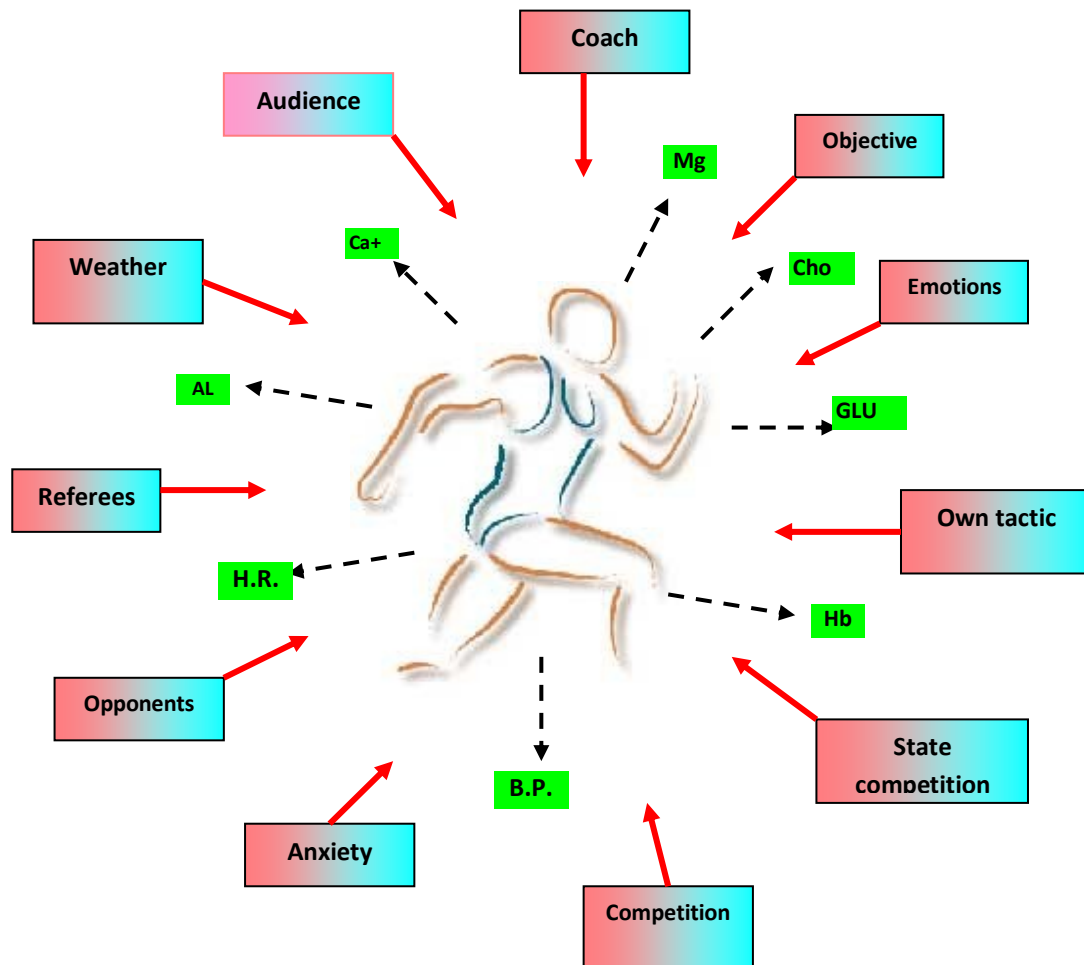
- for the purpose of objectivity and a consistent argumentation of our research, future analysis will focus on the effect of stress during competition – on objective important competitions where the demands, interests and motivation of athletes as well as their expectations are considerably stronger and thus the level of stress and its effects are as well stronger.

Due to the particularities of high performance athletes, the specific of medium or long athletic events, the particularities of competition situations and the variation of stressful stimuli (different levels of intensity and duration, abruptness etc) it's not enough to be familiar with stress reactions in a specific moment, as long as other indicators involved in the process which control and orientate the behavior and reactions of athletes in critical or stimulatory situation remain unknown. That is why, researches should be orientated on testing and evaluating athletes specialized on medium or long events on a longer period of time, in different moments of their training or competition activity and from the point of view of the biological as well as psychological component of stress.

Furthermore, our recommendation aims at a future training of athletes focusing on the psychological aspects shaped by the biological reactions on systematic evaluations of biochemical and physiological parameters and also depending on the importance of the competition (either the target objective, implying special tactical situation or either the performance objective implying complex volitional and motivational processes).

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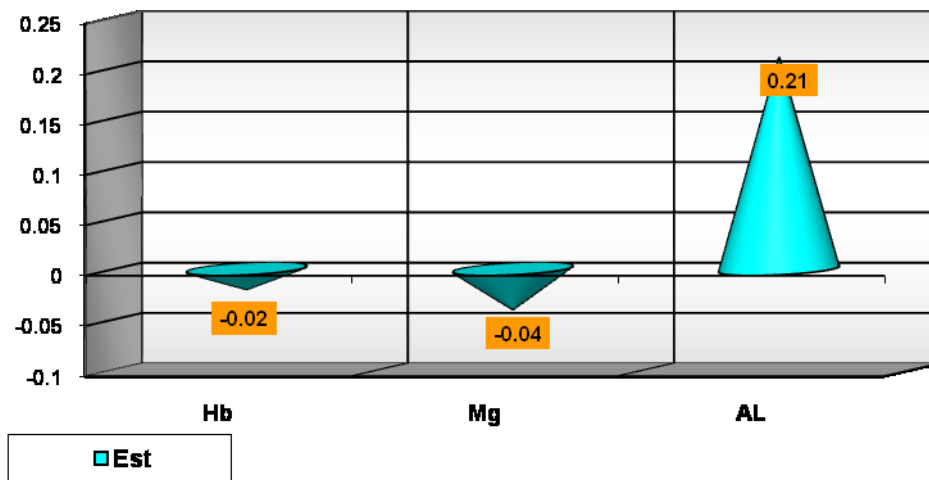
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Fig. no.1 – Biological reactions to stress agents proceedings before a sports competition**Table no.2** - Research results from the two tests for the three variables

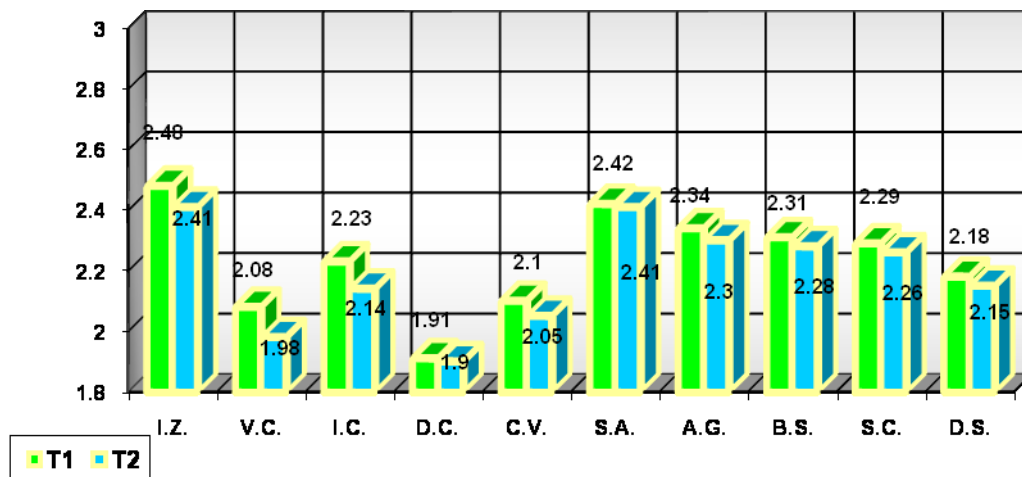
No.	Subject	Hb			GLU			Mg			AL		
		T1	T2	d	T1	T2	d	T1	T2	d	T1	T2	d
1	I. Z.	15,7	15,7	0	73	75	2	2,48	2,41	-0,07	1,3	1,4	+0,1
2	V.C.	15,8	15,7	-0,1	75	84	9	2,08	1,98	-0,10	1,5	1,8	+0,3
3	I.C.	15,9	16,0	+0,1	74	80	6	2,23	2,14	-0,09	1,6	2,0	+0,4
4	D.C.	15,2	15,1	-0,1	78	82	4	1,91	1,90	-0,01	1,8	2,1	+0,3
5	C.V.	16,2	16,2	0	86	90	4	2,10	2,05	-0,05	1,9	2,2	+0,3
6	S.A.	15,7	15,6	-0,1	77	78	1	2,42	2,41	-0,01	1,4	1,5	+0,1
7	A.G.	16,1	16,2	+0,1	85	87	2	2,34	2,30	-0,04	1,6	1,7	+0,1
8	B.S.	15,2	15,1	-0,1	80	86	6	2,31	2,28	-0,03	1,8	2,0	+0,2
9	S. C.	16,0	16,0	0	82	83	1	2,29	2,26	-0,03	1,1	1,2	+0,1
10	D.S.	15,4	15,4	0	82	86	4	2,18	2,15	-0,03	1,4	1,6	+0,2
Minimum		15,20	15,10	-0,1	73	75	2	1,91	1,90	-0,01	1,10	1,20	+0,1
Maximum		16,20	16,20	0	86	90	4	2,48	2,41	-0,07	1,90	2,20	+0,3
Average (M)		15,72	15,7	-0,02	79,2	83,1	3,9	2,23	2,19	-0,04	1,54	1,75	+0,21
Std. dev. (S)		0,36	0,41		4,54	4,51		0,17	0,17		0,25	0,33	
Cv %		2,26	2,60		5,73	5,42		7,68	7,97		16,26	18,71	

T1 – testing nr.1, T2 – testing nr.2, d – difference between T1 și T2

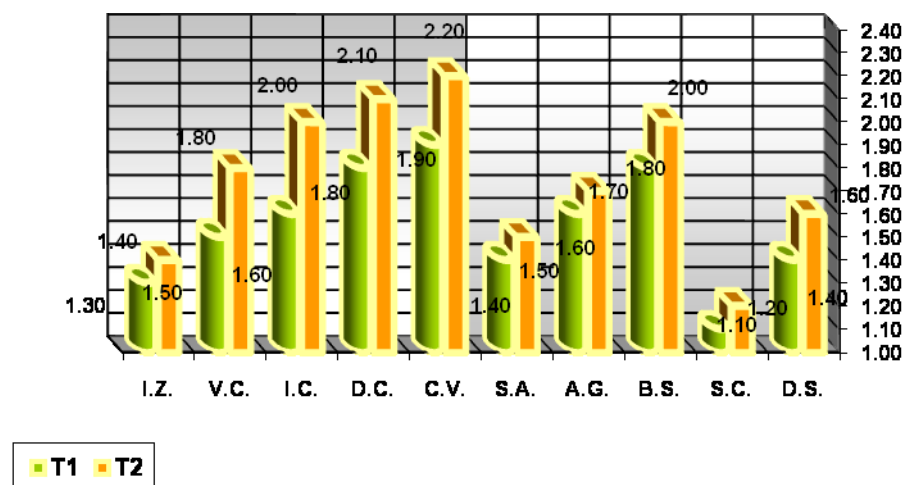
Graphic no.1 - The average difference at the variables Hb, Mg, AL in the both test



Graphic no.2 - Values of Mg in the two tests for the 10 subjects



Graphic no.3 - Values of AL in the two tests for the 10 subjects



IMPACTS OF TRAINING PROGRAM ACCORDING TO BIOMECHANICAL VARIABLES IN 200 m SPRINT

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Abstract

Purpose. The purpose of the present study was to identify the biomechanical systems which affecting the improvement of the record level for the 200-meter race and after that Design a training program proposal.

Methods. Three high level players in the competition of 200 meters, members of Al-Ahly club, where three players to perform competition 200 meters, the sprint of all players inside the lane in the area were selected out of the blocks start and the three first strides, three strides in a straight line and the curve for the analysis of motor (9 attempts) to stand the problems of the sprint to legalize the program and place it on an objective scientific basis.

Results. The training program according to biomechanical variables in 200m sprint affected and improvement of the record level of 200m sprinting race

Conclusions. The application of the proposed program.

Key words: sprinting, biomechanics .training .200msprinting

Introduction:

Sprinting can be defined as the ability to run at maximum speed for a short duration. Maximum running speed is an important factor for success in many sports. (J .Leblanc, & P. Gervais, 2004)

Sprinting is associated primarily with power and speed, whereas distance running is focused on efficiency and smoothness of movement. This major difference is easily observed at a track meet or practice where both groups are competing. As the distance team runs lap after lap, their ease of movement and smoothness of stride is apparent. They appear collected and controlled in their actions, delaying the onset of fatigue with their methods of minimizing the energy expenditure. The sprinters, on the other hand, demonstrate high speed and explosive movement. They showcase their power with quick, forceful motion as they speed down the track. (D. Tyler., 2004)

The development of performances in the 200 m sprint has been affected by its intermediate position between the 100 m and 400 m. All efforts to describe a statistical relationship between either the 100 m or 400 m distance with the 200 m have been unsuccessful. There are successful double-starters from both disciplines: Hence the running style of each individual is very specific. However, there are general modeling laws that determine optimal running stride, and these are important starting points in the teaching and improving young runners' running technique. (R. Corn, & D. Knudson., 2003)

The sprinter's goal is to develop the highest possible horizontal velocity. As an example this velocity is developed in the 100m sprint within 43 - 46 strides (men) and 47 - 52 strides (women). A stride consists of a stance and a flight phase. The sprinter's horizontal propulsion is only produced during the stance phase. The push-off leg presses against the resistance of the floor in a backward-downward direction ("action") and the interactive forces result in

the horizontal propulsion of the body in a forward-upward direction ("reaction"). The stance phase is prepared during the flight phase. It is important that all forces acting against the running direction (e.g. resisting movements) are minimized. During the flight phase the legs must actively swing downwards - backwards because from a subjective point of view it seems to the sprinter that the ground is coming towards him. (O. Mohamed ., 1993)

The sprinting velocity is mathematically determined by the product of stride length and stride rate. These two factors interact: after they have reached a certain level after a phase of mutually increasing (in the first 50 m) an increase in either parameter will result in a corresponding decrease of the other, i.e. if the sprinter increases his stride length after 50 m then the stride rate must decrease and vice versa. The extent of these changes varies individually depending upon physical capabilities, training level, form of training and body build.

The purpose of the present study was to identify the biomechanical systems which affecting the improvement of the record level for the 200-meter race and after that Design a training program proposal, according to some indicators associated with biomechanical stage (response and reaction speed in the beginning, the sprint in the curve, the sprint in the Straight line) to improve the record level for the 200-meter race. And Identify the impact of the proposed training program to improve the record level for the 200-meter race.

Methods.

The researcher used the descriptive and experimental methods in this study , Three high level players in the competition of 200 meters, members of Al-Ahly club, where three players to perform competition 200 meters, the sprint of all players inside the lane in the area were selected out of the blocks start and the three first strides, three strides in a straight line

and the curve for the analysis of motor (9 attempts) to stand the problems of the sprint to legalize the program and place it on an objective scientific basis, and a table (1) shows the statistical description of the sample.

Tools and devices used in data collection are:

1 - hardware and tools for imaging video

- Form for data collection
- Restmeter to measure the length of the sample
- A video camera and one to film the performance and returns the physical picture of the movement operating at 25 cadre / sec
- A computer program for the provider to display an image, and image analysis program motor (Motion Track)
- Video + tripod + and calibration unit
- Balance of medical standards for measuring the weight
- Stopwatch to measure time


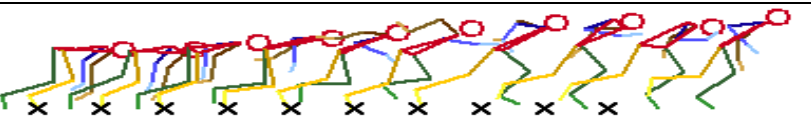
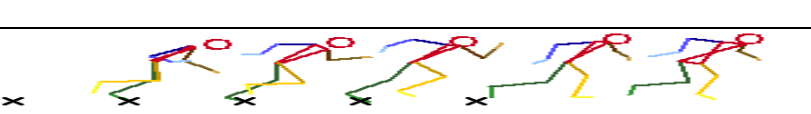

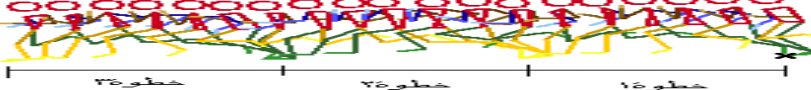

Results.

Table 1: Anthropometric Characteristics and Training experience of the Group (Mean \pm SD)

Variables	Mean	\pm SD
Record level (200m) [Seconds]	22.77	0.25
Age [years]	24.00	1.00
Training experience[years]	8.00	2.65
Height [cm]	181.33	7.51
Weight [kg]	68.67	3.51


Table 1 shows the age and anthropometric characteristics of the subjects. There were no significant differences were observed in the anthropometric characteristics and Training experience for the subjects in the experimental group.





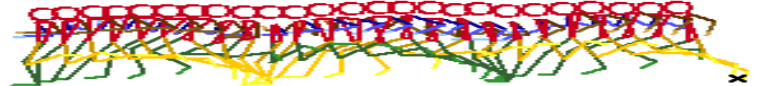
Table 2: The biomechanical variables for sprinter one .

Stage of starting blocks	
Responding 1-5 (0.20 second)	
Push until the first stride 6-15 • Time out of the blocks (0.56 S) • Time of the first stride (0.40 S) • Stride length (2.9 rate/second)	
the second stride 16-20 • Time of the stride (0.20 S)	
the third stride 21-27 • Time of the stride (0.28 S)	
Stage of sprinting in the curve • Time of the stride (0.28 S)	
Stage of sprinting in the Straight line • Time of the stride (0.28 S) • Stride length (2.9 rate/second) • Stride rate (4.1 meter)	

Is clear from Table (2) Reaction Time (0.20 seconds), and Time out of the Blocks (0.56 seconds), and Time Stride (0.28 seconds), and stride length (2.9 m), and Stride rate (4.1 meter).







Table 3: The biomechanical variables for sprinter two .

Stage of starting blocks	
Responding 1-6 (0.24 second)	

Push until the first stride 7-14 <ul style="list-style-type: none"> • Time out of the blocks (0.52 S) • Time of the first stride (0.32 S) • Stride length (1.014 rate/second) 	
the second stride 16-20 <ul style="list-style-type: none"> • Time of the stride (0.28 S) 	
the third stride 21-27 <ul style="list-style-type: none"> • Time of the stride (0.28 S) 	
Stage of sprinting in the curve <ul style="list-style-type: none"> • Time of the stride (0.32 S) 	
Stage of sprinting in the Straight line <ul style="list-style-type: none"> • Time of the stride (0.36 S) • Stride length (2.89 rate/second) • Stride rate (3.12 meter) 	

Is clear from Table (3) Reaction Time (0.24 seconds), and Time out of the Blocks (0.52 seconds), and Time Stride (0.36 seconds), and stride length (2.89 m), and Stride rate (3.12 meter).

Table 4: The biomechanical variables for sprinter three .

Stage of starting blocks	
Responding 1-5 (0.24 second)	
Push until the first stride 6-15 <ul style="list-style-type: none"> • Time out of the blocks (0.52 S) • Time of the first stride (0.32 S) • Stride length (0.89 rate/second) 	
the second stride 16-20 <ul style="list-style-type: none"> • Time of the stride (0.24 S) 	
the third stride 21-27 <ul style="list-style-type: none"> • Time of the stride (0.16 S) 	
Stage of sprinting in the curve <ul style="list-style-type: none"> • Time of the stride (0.32 S) 	
Stage of sprinting in the Straight line <ul style="list-style-type: none"> • Time of the stride (0.36 S) • Stride length (2.27 rate/second) • Stride rate (3.26 meter) 	

Is clear from Table (4) Reaction Time (0.24 seconds), and Time out of the Blocks (0.52 seconds), and Time Stride (0.36 seconds), and stride length (2.27 m), and Stride rate (3.26 meter).

Table 5: Itinerary of the body's center of gravity for the three players

Stages	Image number	Time	Itinerary of the body's center of gravity	
			Y	X
Stage of starting blocks	1	0	0.57	0.34
	2	0.04	0.56	0.33
	3	0.08	0.56	0.34
	4	0.12	0.58	0.33
	5	0.16	0.59	0.34
	6	0.2	0.66	0.41
	7	0.24	0.67	0.45
	8	0.28	0.70	0.48

	9	0.32	0.72	0.55
	10	0.36	0.76	0.63
	11	0.4	0.78	0.71
	12	0.44	0.80	0.83
	13	0.48	0.83	0.99
	14	0.52	0.82	1.08
	15	0.56	0.81	1.17
	16	0.6	0.81	1.34
	17	0.64	0.83	1.48
	18	0.68	0.85	1.60
	19	0.72	0.86	1.78
	20	0.76	0.87	1.92
	21	0.8	0.86	2.09
	22	0.84	0.85	2.27
	23	0.88	0.86	2.48
	24	0.92	0.87	2.64
	25	0.96	0.94	2.11
	26	1	0.94	2.23
	27	1.04	0.96	2.42
	28	1.08	0.93	2.19
Stage of sprinting in the curve	1	0	1.06	0.13
	2	0.04	1.03	-0.21
	3	0.08	1.06	-0.56
	4	0.12	1.08	-0.90
	5	0.16	1.07	-1.24
	6	0.2	1.04	-1.60
	7	0.24	1.02	-1.92
	8	0.28	1.02	-2.26
	9	0.32	1.01	-2.59
	10	0.36	0.99	-2.90
	11	0.4	0.99	-3.23
	12	0.44	0.98	-3.53
	13	0.48	0.96	-3.88
	14	0.52	0.94	-4.19
	15	0.56	0.92	-4.50
	16	0.6	0.92	-4.82
	17	0.64	0.91	-5.13
	18	0.68	0.88	-5.78
	19	0.72	0.87	-6.11
	20	0.76	0.81	-6.19
	21	0.8	0.80	-6.49
Stage of sprinting in the Straight line	1	0	1.15	-0.13
	2	0.04	1.19	-0.46
	3	0.08	1.21	-0.77
	4	0.12	1.19	-1.09
	5	0.16	1.19	-1.43
	6	0.2	1.15	-1.75
	7	0.24	1.09	-2.06
	8	0.28	1.07	-2.38
	9	0.32	1.09	-2.67
	10	0.36	1.13	-2.97
	11	0.4	1.15	-3.30
	12	0.44	1.14	-3.59
	13	0.48	1.16	-3.90
	14	0.52	1.11	-4.21
	15	0.56	1.08	-4.53
	16	0.6	1.01	-4.82

	17	0.64	1.03	-5.11
	18	0.68	1.04	-5.42
	19	0.72	1.06	-5.72
	20	0.76	1.10	-6.02
	21	0.8	1.06	-6.31
	22	0.84	1.04	-6.63
	23	0.88	1.01	-6.94
	24	0.92	0.96	-7.23
	25	0.96	1.06	-8.15

Is clear from Table (5) Average displacement of the center point of the body weight in moments of the start and the sprint in the curved and straight for the three players.

Table 6: means of the body angles for the three players

Stages	Image number	Time	Trunk	Right elbow	Left elbow	Right knee	Left knee	Right ankle	Left ankle
Stage of starting blocks	1	0	0.00	170.99	170.32	103.43	90.79	96.26	90.49
	2	0.04	-17.01	173.93	170.32	103.70	94.03	96.74	62.78
	3	0.08	-8.35	169.05	170.00	110.12	91.10	100.97	102.60
	4	0.12	-31.59	166.36	174.45	108.54	96.61	101.45	96.35
	5	0.16	50.37	172.15	177.81	119.09	104.56	102.41	94.57
	6	0.2	44.36	159.61	151.66	116.93	114.12	116.29	93.87
	7	0.24	11.55	158.91	166.29	114.53	114.29	115.70	108.06
	8	0.28	-6.89	150.05	128.39	96.94	115.63	106.40	96.75
	9	0.32	18.27	155.55	120.52	87.56	118.07	99.04	104.57
	10	0.36	25.67	137.30	93.66	80.11	130.42	88.35	106.08
	11	0.4	11.07	117.56	83.00	83.64	139.74	76.37	102.32
	12	0.44	2.97	115.14	117.64	92.31	142.89	80.03	112.81
	13	0.48	13.34	127.11	103.25	107.65	141.91	85.38	118.75
	14	0.52	-6.98	126.83	98.86	112.48	118.02	84.64	120.65
	15	0.56	1.63	128.51	98.03	122.20	98.22	78.46	107.04
	16	0.6	-1.86	97.68	119.96	127.87	71.09	67.47	106.80
	17	0.64	4.87	78.59	119.59	145.65	74.58	68.24	86.18
	18	0.68	10.06	75.31	129.75	156.00	87.36	100.48	90.63
	19	0.72	5.31	106.34	106.62	143.58	110.82	122.45	66.66
	20	0.76	2.48	108.25	97.08	116.62	120.90	119.04	84.21
	21	0.8	-3.84	128.17	108.39	96.02	136.92	119.43	78.77
	22	0.84	-0.54	134.40	95.12	76.76	130.94	107.50	83.12
	23	0.88	3.65	105.07	71.84	87.19	147.87	102.94	78.34
	24	0.92	3.09	107.05	67.19	98.07	151.46	94.82	103.63
	25	0.96	13.74	85.33	44.51	100.92	164.81	87.05	118.48
	26	1	1.33	95.74	101.83	107.86	136.04	80.57	113.68
	27	1.04	3.41	107.91	119.71	126.69	101.52	86.59	108.15
	28	1.08	-6.10	68.11	150.89	136.62	96.68	69.91	133.34
Stage of sprinting in the curve	1	0	-66.67	82.67	106.71	109.61	72.51	93.51	99.76
	2	0.04	-76.67	71.85	100.00	104.16	86.68	90.23	83.62
	3	0.08	-26.00	60.82	75.46	115.44	109.72	122.32	100.47
	4	0.12	-26.67	53.93	76.34	109.01	141.68	111.26	111.54
	5	0.16	-26.00	72.74	69.36	97.99	148.89	118.57	98.31
	6	0.2	-78.33	88.91	65.92	88.88	141.61	110.27	102.38
	7	0.24	-82.67	94.52	82.28	70.67	125.25	103.01	86.67
	8	0.28	-70.67	84.65	77.72	80.92	104.70	88.61	78.62
	9	0.32	-70.33	73.06	69.24	103.32	104.37	91.12	107.75
	10	0.36	-75.67	86.36	68.56	117.77	98.96	85.67	115.95
	11	0.4	-20.00	82.72	44.34	140.61	84.68	100.20	96.94
	12	0.44	-22.67	71.85	80.20	149.80	68.31	109.86	111.99
	13	0.48	-23.33	66.99	85.37	150.60	71.64	102.43	111.39
	14	0.52	-21.67	56.39	104.95	134.87	75.41	100.42	111.68
	15	0.56	-25.00	48.23	97.01	123.46	91.33	93.79	108.43

Stage of sprinting in the Straight line	16	0.6	85.67	58.99	81.89	108.86	113.81	107.88	127.96
	17	0.64	-22.00	42.44	73.82	94.32	129.58	117.08	89.62
	18	0.68	3.50	37.59	88.30	97.73	141.53	116.79	104.20
	19	0.72	-84.00	43.18	69.08	73.18	153.63	112.44	99.33
	20	0.76	89.00	62.08	103.10	58.06	160.60	111.06	101.27
	21	0.8	-82.00	92.05	114.30	34.17	145.81	105.34	81.60
	1	0	-82.00	84.91	90.05	99.38	74.04	82.20	106.95
	2	0.04	-82.67	58.30	89.59	121.39	85.12	93.11	107.95
	3	0.08	-82.33	52.03	76.58	140.46	101.94	119.48	109.57
	4	0.12	33.00	29.91	74.75	138.08	120.70	113.47	113.95
	5	0.16	30.67	44.68	81.78	117.19	129.09	118.81	101.89
	6	0.2	31.33	76.89	84.70	101.04	117.31	124.67	98.54
	7	0.24	32.67	84.03	92.46	77.60	101.06	111.69	96.48
	8	0.28	-81.67	97.85	91.34	83.16	99.58	106.49	105.94
	9	0.32	-24.00	88.19	72.96	96.01	103.75	106.16	108.57
	10	0.36	-28.00	79.24	60.06	118.41	108.01	115.18	103.77
	11	0.4	-23.67	82.23	60.41	132.05	108.88	101.03	115.22
	12	0.44	-26.00	81.88	69.00	136.23	108.61	109.61	117.34
	13	0.48	-79.33	67.57	76.41	127.60	93.39	93.39	125.19
	14	0.52	-24.00	75.56	79.49	121.12	96.02	96.26	106.93
	15	0.56	26.00	78.81	75.40	118.38	98.04	106.79	104.26
	16	0.6	-30.33	60.75	82.76	106.19	93.69	95.36	90.11
	17	0.64	-21.00	60.54	71.62	102.33	102.26	103.83	98.94
	18	0.68	-26.33	59.39	80.03	94.61	115.91	110.76	89.26
	19	0.72	89.67	52.67	74.36	108.04	135.75	113.23	108.19
	20	0.76	86.00	58.33	53.19	131.40	127.67	120.93	116.21
	21	0.8	0.00	28.51	56.80	133.78	135.77	115.29	112.45
	22	0.84	-85.50	53.15	51.40	127.22	132.57	121.58	112.23
	23	0.88	88.00	64.42	73.70	120.52	113.84	120.13	131.60
	24	0.92	4.50	74.21	75.25	95.54	97.15	113.23	100.04
	25	0.96	-180.00	72.62	65.75	142.32	41.16	75.55	130.14

Table 7: The average value of instantaneous speed of the body , the left and right ankle and the left and right Instep for the three players

Stages	Image number	Time	instantaneous speed m/s				
			Body	Right ankle	Left ankle	Right instep	Left instep
Stage of starting blocks	1 -> 2	0	0.35	0.44	0.45	0.29	0.62
	2 -> 3	0.04	0.42	1.14	0.46	0.33	0.48
	3 -> 4	0.08	0.48	0.74	0.44	0.30	0.00
	4 -> 5	0.12	0.48	0.79	1.15	0.21	0.34
	5 -> 6	0.16	2.64	1.50	0.00	0.34	0.00
	6 -> 7	0.2	1.33	2.36	1.85	2.03	0.27
	7 -> 8	0.24	1.32	3.03	1.47	2.85	0.43
	8 -> 9	0.28	1.89	4.13	1.66	4.69	1.01
	9 -> 10	0.32	2.27	4.82	1.13	6.28	0.55
	10 -> 11	0.36	2.28	5.14	0.79	7.18	0.61
	11 -> 12	0.4	3.12	5.52	2.11	5.43	0.77
	12 -> 13	0.44	3.95	4.34	4.70	4.79	3.13
	13 -> 14	0.48	2.47	1.93	4.16	1.90	3.08
	14 -> 15	0.52	2.23	1.84	5.91	0.83	6.96
	15 -> 16	0.56	4.17	0.71	10.55	0.29	10.91
	16 -> 17	0.6	3.55	1.28	7.18	0.49	9.85
	17 -> 18	0.64	2.96	3.18	6.54	1.09	6.93
	18 -> 19	0.68	4.59	4.64	7.86	2.40	8.98
	19 -> 20	0.72	3.57	5.06	3.63	3.74	3.34
	20 -> 21	0.76	4.34	9.17	1.24	8.63	0.86
	21 -> 22	0.8	4.45	8.54	1.62	10.60	0.47

	22 → 23	0.84	5.18	12.30	1.51	14.27	0.29
	23 → 24	0.88	4.08	6.51	3.37	8.41	0.93
	24 → 25	0.92	3.55	6.74	1.34	8.40	0.22
	25 → 26	0.96	4.06	5.38	4.63	5.67	2.90
	26 → 27	1	6.54	2.74	12.38	3.76	9.86
	27 → 28	1.04	5.17	3.06	9.35	2.19	9.10
Stage of sprinting in the curve	1 → 2	0	8.72	5.39	8.66	5.38	11.36
	2 → 3	0.04	8.64	8.29	12.18	6.12	12.77
	3 → 4	0.08	8.76	11.17	11.97	11.29	11.66
	4 → 5	0.12	8.44	12.43	9.24	13.25	9.86
	5 → 6	0.16	8.90	14.00	6.48	13.14	6.76
	6 → 7	0.2	8.23	11.30	5.90	11.96	4.81
	7 → 8	0.24	8.51	9.74	5.38	13.28	5.11
	8 → 9	0.28	8.05	10.34	7.51	11.41	4.58
	9 → 10	0.32	8.01	9.49	7.94	11.31	6.84
	10 → 11	0.36	8.16	9.85	10.13	8.40	10.71
	11 → 12	0.4	7.58	7.43	14.05	6.43	14.19
	12 → 13	0.44	8.69	4.96	12.66	4.31	13.89
	13 → 14	0.48	7.81	5.55	12.15	4.14	12.29
	14 → 15	0.52	7.94	4.71	10.78	3.90	13.97
	15 → 16	0.56	7.96	8.03	10.87	6.07	11.42
	16 → 17	0.6	7.77	9.13	8.54	7.80	10.70
	17 → 18	0.64	8.85	11.61	9.94	9.91	11.38
	18 → 19	0.68	8.17	11.40	6.66	12.28	6.73
	19 → 20	0.72	7.73	13.00	6.20	11.75	5.72
	20 → 21	0.76	7.31	11.98	1.87	11.63	2.12
Stage of sprinting in the Straight line	1 → 2	0	8.72	7.96	10.98	7.04	12.14
	2 → 3	0.04	8.99	8.01	15.32	7.96	17.22
	3 → 4	0.08	8.64	11.32	14.10	9.21	15.35
	4 → 5	0.12	9.08	12.60	11.42	10.69	11.03
	5 → 6	0.16	8.81	10.44	7.65	11.25	8.27
	6 → 7	0.2	8.48	9.48	6.84	9.83	7.51
	7 → 8	0.24	8.43	7.81	3.77	10.06	3.65
	8 → 9	0.28	8.29	9.26	5.82	10.67	4.79
	9 → 10	0.32	8.70	12.21	8.61	12.60	10.09
	10 → 11	0.36	8.68	10.32	12.19	12.28	11.00
	11 → 12	0.4	8.34	9.57	11.87	8.70	11.50
	12 → 13	0.44	8.46	7.90	13.13	8.46	11.85
	13 → 14	0.48	8.50	7.50	9.63	6.03	13.16
	14 → 15	0.52	7.94	7.43	10.79	6.69	12.28
	15 → 16	0.56	8.21	5.56	10.08	5.67	11.14
	16 → 17	0.6	10.14	8.41	9.69	8.15	9.65
	17 → 18	0.64	8.24	10.74	8.18	9.76	9.70
	18 → 19	0.68	8.52	10.05	8.62	10.70	7.36
	19 → 20	0.72	7.69	10.95	10.34	10.00	11.19
	20 → 21	0.76	7.39	9.10	10.44	10.38	11.13
	21 → 22	0.8	7.86	13.78	9.23	10.87	8.78
	22 → 23	0.84	7.63	7.21	8.02	8.76	7.62
	23 → 24	0.88	7.60	8.45	6.37	10.18	5.75
	24 → 25	0.92	7.36	0.00	10.60	0.96	11.53

Table 8: Value of the power of the body of the three players

Stages	Image number	Time	Power of the body (Newton)		
			X	Y	XY
Stage of starting blocks	1 → 2	0	35.71	-19.25	54.96
	2 → 3	0.04	15.18	1.37	11.87
	3 → 4	0.08	12.44	-21.53	33.64
	4 → 5	0.12	0.92	-0.83	-0.02

	5 → 6	0.16	712.00	-572.08	1271.54
	6 → 7	0.2	-140.99	149.36	-295.09
	7 → 8	0.24	19.14	2.68	-0.07
	8 → 9	0.28	334.50	-10.09	292.62
	9 → 10	0.32	105.28	-184.33	258.52
	10 → 11	0.36	129.16	5.80	-1.31
	11 → 12	0.4	1098.12	-131.86	1207.85
	12 → 13	0.44	697.55	-32.90	723.65
	13 → 14	0.48	-584.45	27.97	-622.87
	14 → 15	0.52	86.26	-17.18	84.94
	15 → 16	0.56	1724.20	7.75	1691.61
	16 → 17	0.6	-429.62	-2.07	-432.58
	17 → 18	0.64	-218.14	-34.29	-198.82
	18 → 19	0.68	1877.22	12.20	1853.39
	19 → 20	0.72	-408.15	5.29	-419.35
	20 → 21	0.76	586.29	-24.13	606.18
	21 → 22	0.8	886.02	-9.17	892.71
	22 → 23	0.84	1842.23	-1.54	1841.42
	23 → 24	0.88	-720.33	-0.81	-732.26
	24 → 25	0.92	-9.10	-99.21	44.06
	25 → 26	0.96	413.92	8.73	348.76
	26 → 27	1	3718.09	-68.60	3770.44
	27 → 28	1.04	962.24	-47.89	994.96
Stage of sprintin g in the curve	1 → 2	0	1512.83	-137.69	1526.98
	2 → 3	0.04	-23.51	-16.53	-14.89
	3 → 4	0.08	33.69	37.53	17.32
	4 → 5	0.12	-53.29	69.48	-58.91
	5 → 6	0.16	77.48	-93.01	85.80
	6 → 7	0.2	-110.53	88.63	-118.11
	7 → 8	0.24	47.67	1.35	47.34
	8 → 9	0.28	-80.29	-28.49	-77.60
	9 → 10	0.32	-20.80	-85.67	-10.73
	10 → 11	0.36	40.26	95.77	28.28
	11 → 12	0.4	-99.78	33.92	-101.23
	12 → 13	0.44	181.01	-156.31	192.97
	13 → 14	0.48	-143.27	118.05	-152.72
	14 → 15	0.52	23.80	3.95	22.84
	15 → 16	0.56	1.29	-8.44	3.34
	16 → 17	0.6	-35.92	-61.55	-31.03
	17 → 18	0.64	125.02	-67.33	133.96
	18 → 19	0.68	-105.85	136.46	-119.59
	19 → 20	0.72	-127.60	-135.21	-114.01
	20 → 21	0.76	-55.01	154.83	-69.21
Stage of sprintin g in the Straight line	1 → 2	0	1524.50	-120.91	1530.50
	2 → 3	0.04	53.15	50.73	48.93
	3 → 4	0.08	-65.95	-16.55	-63.99
	4 → 5	0.12	77.38	65.87	73.85
	5 → 6	0.16	-65.62	-221.45	-44.40
	6 → 7	0.2	-54.89	102.78	-61.64
	7 → 8	0.24	1.60	35.15	-6.69
	8 → 9	0.28	-23.88	-18.46	-23.41
	9 → 10	0.32	74.80	1.65	75.03
	10 → 11	0.36	-5.23	19.79	-8.88
	11 → 12	0.4	-59.37	-4.70	-57.65
	12 → 13	0.44	23.49	5.30	22.51
	13 → 14	0.48	-0.39	-57.66	5.08
	14 → 15	0.52	-212.71	-252.97	-97.74

15 -> 16	0.56	142.00	194.32	40.50
16 -> 17	0.6	334.80	-116.91	349.57
17 -> 18	0.64	-303.07	274.81	-339.43
18 -> 19	0.68	33.52	-132.94	49.71
19 -> 20	0.72	25.83	-12.63	19.47
20 -> 21	0.76	-47.42	38.50	-51.69
21 -> 22	0.8	83.83	17.62	82.82
22 -> 23	0.84	-44.21	17.81	-45.84
23 -> 24	0.88	-15.73	-134.43	2.38
24 -> 25	0.92	-63.57	315.61	-99.67

Through the presentation of the results tables (2,3,4), which shows the times out of the blocks for the three players have shown the reaction times are (0.20-0.24- 0.24) second. and the researcher believes that the three players times as high as the appropriate reaction time which less than (0.12) because it is a time limit to the normal processing of information from the ears to the muscles, so that the three players need to shorten the reaction time and should hone the muscular and nervous system significantly, and there is a significant correlation between the speed of the sprinting and the reaction time. (S. Ibrahim , 1998)

The table (6) shows the angles of the body for a moment getting ready for each of the three players.

Accordance with the decision of each of (H. Talha.,1993) and (M. Coh, et al. 1998) are corners of links as follows: angle of detailed feet hind leg of 80 - 85 °, corner joint made man the front of the 120 - 140 °, angle of knee hind leg of 120-140 °, angle of knee man front of 90 - 96 °, and in the development take place, the main goal is to focus full of muscular and nervous system and secure payment of the feet and in getting ready to take the best conditions that enable him to rush the maximum power and speed of the MAM and the center of gravity in the most appropriate .the pre-departure (I. Mufti.,2001) and the researcher believes that the angles of the ankle forward and backward and the knee needs to correct and to reduce the angle of the knee is rounded cubic starting forward, and to increase the angle of the knee is retraction of the cube to start getting ready behind the development.

(A. khaled , 2006) biomechanical analysis of the stride is the landing phase in the first stride, in which one foot landing lightly in front of the body at about 6-12 inches unfolded and the angle of the knee 150-160 ° almost foot 90 ° almost two feet and the stage of damping in the stride and the angle of inclination trunk 7-11 ° angle of 80-85 ° foot and knee angle 145-156 ° angle of the knee and the free and the stage of 36-40 ° coverage in the stride and the angle of the foot from 80-85 ° and the angle of the knee to knee Free 45-50 ° start-up phase in the stride and the angle foot of 25 ° (38:4), he sees, Mohammed Suleiman Peace (2009 m) the average angle of the front knee be based (130,7 °), the researcher believes have not set the angles of the elbow, knee and ankle, both in running straight or curved.

Discussion and conclusion

Table 9: Pre-post measurements of Record Level of (200 m) sprinting race and the rate of improvement for the three players

Play er	Pre- measurement	Post- measureme nt	Improve ment rate
1	23.8	22.00	7.56%
2	23.9	22.3	6.7%
3	22.5	21	6.7%

Seen from the table (9) rates improved measurements posteriori for tribal for the three players, namely, (3.51, 3.8, 3.23%) and show improvement in the players and their response to the proposed program to improve the digital race (200 m) the sprint, and the researcher believes that the program has improved digit level as a result of improved start like the status and thus its speed and is in line and the opinion of (I. Mufti.,2001) in that the training program proposed regular lead consistent performance level and non-oscillating in attempts to performance with the flow and not to cut the performance and make less effort as possible during the performance with a higher excitability of the motivation and access to the degree of automation with low degree of muscle tension and to adapt to the circumstances surrounding (134:12) and in accordance with the opinion of (O. Mohamed., 1993) in that the development take place, the main goal is the total concentration of the two muscular and nervous system and secure payment of the feet and in the development getting ready to take the best conditions that enable him to rush the maximum power and speed forward and the center of gravity in the most appropriate conditions leading up to the starting .

According to (B. Sharkey, S. Gaskell., 2006) that can train and improve the speed of reaction time training and learning that when the send signal to the brain (interesting) It sends the response to the nerves of the muscles to initiate movement, and time spent in operations and the movement called the time of the reaction, and we likely cannot change the time of the move, but with training and experience can improve operations cortex to improve the classification of information is the most important, and depends on muscle strength and genes (FG-FOG) in the muscle fibers, the use of muscle fibers driving appropriately for the best relay motor, the best production of muscle by training, experience and learning and thus the possible development of reaction speed through

education and training, and can improve the speed of reaction in the upper levels better than others, and confirms the (A. Mero, et al.1992) that the first steps after leaving the cube be short and very fast on the comb and that the speed of a starting player at the beginning of the race have influenced the psychological to the rest of the contestants, as they pay the rider to maintain what we achieved at the beginning of the race, it is not necessary to be linked to the speed of the reaction the rest of the types of speed other than the development of the type and measure is the best way to develop this kind of speed (A. Aboelela & N. Ahmed,2003) and training programs with resistors high through the crunch constant intensity lead to the improvement of reaction time by 13%. (G. Abdelstar., 2000) when you hear the shot gun requires starting fast and leave the earth, which depends on the payment feet and arms for the runners sprint to respond to the shot gun, and adds to the hostility which trained constantly on the voice of the gun become the fastest runners of cubes and stop the development speed of the reaction to the case of training has reached the player and the associated speed and training to shorten the time of response must sharpen the muscular and nervous system to a high degree of sensitivity and very stressful, and there is a significant correlation between the ability of the sprint and the reaction time. (S. Ibrahim.,1998) and exercises initially linked to training to improve speed and reaction and compatibility neuromuscular and balance (I. Mohamed ., 2006), and the development of performance skills to start low to get players to the highest degree possible so as to lead the highest degree of automation and accuracy, flow and motivation allowed by the capacity of players to achieve the best results with the economy in an effort , can be expected to improve in 8 to 12 weeks (F. Kugler., et al. 2010)

The components of elements of fitness-related skills that enable players to succeed in track and field by achieving performance automation and access to upper levels consist of fitness, balance, consensus neuromuscular, the ability, muscle reaction time, speed. (W. Hoeger & S. Hoeger.,2006)

an increase will lead to a reduction similar to the last, in the event of increased hostility to him After extensive length of 50 m and then a wide and must be that the rate of decline and vice versa, the extent of these changes individually and vary depending on their material, and training at the level of the form of training and body building, if the reaction was less than the time 0.12 s appropriate because it is supposed that this represents a natural limit to process information from one ear to the muscles, (A. Zafeiridis, et al. 2007).

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EFFECT OF AEROBIC TRAINING ON METABOLIC PROFILE AND CRP IN NON-ATHLETIC ADULT FEMALE

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Abstract

Purpose . The purpose of this study, aerobic training effect on metabolic profile and CRP in women were adult non-athletes.

Methods . For this purpose, 20 healthy women and disabled adults as volunteers were selected . they randomly divided into two groups of ten : aerobic exercise group (mean age 34.2 ± 4.91 years, height 158.4 ± 1.95 cm, weight 62.3 ± 4.47 kg , BMI 22.48 ± 1.96 kg m and fat 12.97 ± 2.16 percent) And control group (mean age 32.8 ± 3.25 years, height 162.4 ± 3.43 cm , weight 63.42 ± 6.60 kg , BMI 22.7 ± 2.28 kg m square and fat 13.3 ± 2.32 percent) subgroups. From all subjects after fasting for 12 hours in two stages (before and after exercise) and in the same conditions, were bled . Experimental group and 12 weeks of aerobic training three sessions per week were . Aerobic training program included running 60 to 80 percent of the maximum heart rate .

Results . Data analysis using T test showed no significant effect on aerobic exercise variables BMI and triglycerides does not , However, this exercise significantly reduced weight variables, total cholesterol , LDL-C , HDL-C , CRP and percentage body fat is.

Conclusions . Aerobic exercise can be said to have helped improve the metabolic profile And also reduce inflammation and indices Perhaps the risk of future cardiovascular events in non-athletic adult women decreased.

Keywords : exercise , metabolic profile , CRP.

Introduction

The modern extensive progresses in technology have affected life style in many societies.

This impact is more observable in various dimensions due to machinism of life and overall advancements in technology and manufacturing several equipment.

At present, the low mobility and little activities life style have affected those countries and the side effects of this life style are seen in prevalence of coronary heart disease (CHD) that cause pre-term death in those societies. (S.H. Sohaily, 2010)

The coronary heart disease (Atherosclerosis) is not caused by a single factor and there are several factors that independently and in a complex that act as risk factor in this complication .

Factors that play roles in coronary heart diseases could be divided into two classes of adjustable and non-adjustable.

Among adjustable factors, cigarette smoking , lack of sufficient physical activities and unhealthy diet has more effects in CHD.

Various studies show that physical activities and aerobic pollution lower risks of cardiovascular diseases. There is a reverse relationship between degree of physical activities and CHD (H. Gohlk, 2004); therefore, inactive people are more in risk of CHD .(K.M. Anderson, 1991)

In the past decade, it has been known that

inflammatory indexes play important role in the pathogenic processes of several chronic diseases including CHD. (G.K.Hanson,2005)

Studies show that those indexes are important as predicting signs of CHD independent from traditional pathogenic factors. (P.M.Ridker, 2003)

Among those indexes, one may note C-Reactive Protein (CRP), C-serum, as included among the acute phase reactive. (B.G. Niklas, 2005) Increase in amount of CRP increases the risk of cardiovascular incidents 2 to 5 times. CRP is an inflammatory respond and is no specific index of CHD infliction; however, it shows infection and unhealthiness .(N.F. Chu, 2003)

Thus, it could be said that any intervention such as exercise activities could lower inflammatory indexes and contribute in decreasing the cardiovascular incidents. (L. Zraggen, 2005)

The impact of exercise on CRP level has been studied in various researches .(E.S. Rawson, 2003)

In some researches, there has been reverse relationship between CRP and degree of proportion of cardiac respiratory in men and women . (T.S. Church, 2002)

In addition, results of research show that the relationship between exercise differs by variation in CRP blood circulation levels. (J.J. Varo, 2003)

The recent studies show that resistance exercise decreases CRP .(E.Goldhammer,2005)

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Okita et al showed that eight weeks resistance exercise significantly reduces inflammatory indexes in older women. (K.H.Okita,2004)

Kelley et al showed that resistance exercises did not change the CRP of blood circulation significantly. (G.A.Kelley,2006)

Those researches provide evidences regarding reduction of inflammatory indexes due to resistance exercises; however, results of some of them differ and in addition, there have been limitations in terms of weight adjustment, actual amount of regular physical activities....Therefore, determining resistance exercise with specific intensity and duration is of special importance in providing a suitable model for non-athlete women.

This paper plans to answer following questions: How resistance exercises with specific intensity and duration could affect CRP and pathogenic risk factors in cardio-vascular diseases in non-athlete women?

Method

This study is an empirical type based on classic tests method. The statistical society was non-athlete adult females in Islamic Azad University Parand Branch with no specific sports activities.

In order to select statistical samples, first a public call was announced and approximately 50 candidates informed their preparation to participate in the research.

Public health questionnaires were distributed among them and were completed. Individuals with history of illness, regular drug use and non-conformity with the time of research performance were omitted and ultimately 20 subjects were selected to participate in research program.

The subjects were divided into two groups (exercise and control) groups and the anthropometric and physiologic measurements were performed.

The blood sample with 12 hours fasting was taken from subjects one day before starting the exercise.

The exercise group participated in a sport program 12 weeks, three sessions per weeks for a specific time. After exercises, those measurements with the same conditions prior to exercise performance were repeated.

Blood sampling and tests

In order to specify the initial levels of CRP of subjects and traditional pathogenic factors of CHD after minimum 12 hours fasting in two stages (before exercises and after twelve weeks exercise) and in specific time, 5 ml of the arm vein blood sample was taken from subjects.

The collected samples were immediately centrifuged (3000 rpm for 15 minutes in 4 centigrade degree).

The CRP measurement was performed by using special kit and using ultra-sensitive Elisa. The cholesterol and tri-glycoside were measured in enzyme method; LDL was measured by testing its deposit by sulfate polyvinyl and HDL by testing the sediments by magnesium chloride. The measurements were repeated 24 hours after exercises.

Exercise protocol

The aerobic exercises included twelve weeks sessions, 3 sessions per week. Each exercise session consisted 15 minutes warming up by using stretches for 5 minutes and 10 minutes jogging.

The subjects then had to run with 60-80 percent heart bits. The previous heartbeat was calculated by age -220 formula.

The program was run in a way that the first session consisted 10 minutes running and 1 minute was added to the exercise time in next session.

At the end of session, the cool out was performed for five minutes. The stretching, jogging and cooling were fixed in each session.

The descriptive statistical indexes (mean average, standard deviation, and percentage) were used to describe measurement factors.

The "t" test was used for comparing the post-test results of the control and test groups for research hypothesis testing.

The hypotheses were tested in $P < 0.05$ significant level.

Calculations were performed by using s.p.s.s. v16 statistical software.

Results

The descriptive data of the subjects is listed in table 1 based on age and height variables prior to the exercises.

The results of independent T statistical tests in all indexes between the two aerobic exercise and control groups prior to exercises showed significant differences between the groups based on indexes subject of study.

Those results show homogeneity of groups in terms of characteristics subject of study and homogeny and random distribution of individuals in groups.

The physical, physiological and biochemical indexes of the test and control groups prior to sports exercises are listed in table 2.

The results of independent T- test on triglyceride variables ($P=0.191$) and body mass index ($P=0.375$) showed no significant differences between the two groups; that is, the aerobic exercises did not significant effects in reducing the

mentioned variables and both the test and control groups acquired almost similar results in both factors.

The physical, physiological and biochemical indexes of test and control groups after exercises are listed in table number 3.

The results of independent T- test on differences in pathogenic and risk factors of CHD due to aerobic exercises in both test and control groups showed that they had significant differences in terms of weight, cholesterol, HDL, LDL, CRP and body fat percents.

Discussion and conclusion

The main findings of the research were that, performing aerobic exercises significantly reduced some cardiovascular risk factors in inactive adult females including impacts on their cholesterol, LDL, CRP, fat percentage and weight. By making comparisons among above-mentioned indexes in pre and post tests in test group, it was shown that there has been 26.4 percent reduction in cholesterol, 22 percent in LDL, 25 percent in CRP and 13 percent in fat mass.

Those findings agrees with the results of researches conducted by Mattusch et al .(F.D.Mattusch, 2000)

They claimed that 9 months of marathon exercise in 12 male athletes caused 31 percent reduction in CRP. Kohut et al (D.A.Kohot,2006) stated that three session aerobic exercises per week, 45 minutes per session with 50 to 60 percent maximum aerobic power in 10 months might cause significant reduction of CRP in +64 year old male and females. Huffman (K. Huffman, 2006) in his research on 193 men and women in various ages claimed that 6 months aerobic exercises did not cause significant changes in CRP unless through making major changes in diet. In another word, Huffman believes the aerobic exercises have impacts on CRP lowering through food diet; while in the present research, no particular food diet had been considered for subjects.

Selvin et al in their research showed that lowering weight leads to lowered CRP. With respect to the significant lowering o CRP and weight due to aerobic exercises, the possible relationship, by considering the results of research of Selvin et al, is that, aerobic exercises cause lowering weight and that in turn leads decrease in CRP.

Those findings agree with the results of research performed by Soheili et al .

They found out that in resistance exercises, the lowering weight and body mass index was not

significant; however, the percent of fat mass and weight of body fat significantly showed reduction, associated with significant lowering of CRP.

They related that situation to increase in muscle mass of subjects due to sports exercises as a result of which, no significant decrease was found in weight and body mass index.

Haqiqi et al (A.Haghighi,2010) claimed that resistance exercises decrease full cholesterol, triglyceride and LDL and increases serum HDL.

To justify those results, they stated that resistance exercises in the research were circle and the intensity of exercise, resting distance between stations and circles were in a form that in addition to reinforcing resistance, improved the aerobic capacity of subjects as well . (K.A.Harris,1987 and M.A.Williams,2007)

In present research, a significant decrease was found in cholesterol and HDL and in turn, an increase in serum HDL was recorded.

On the other hand, triglyceride did not decrease significantly which could be due to the difference in length, intensity, duration of exercises or even small size of samples.

Those findings agree with the results of Hanckola (A.Honkola,1997) and Wallace .

In general, different researches might give different results on this matter and the reasons could be attributed to variety of exercise methods (resistance, marathon...), using food diet as a sole factor associated with exercise methods, using mixed exercises, type of subjects (ill, healthy...) and time table of measuring research indexes after the last stage of exercise (that might exhibit an exercise free respond). (E.T.Poehlman, 2000 and B. Rice,1999).

Reduction in LDL and increase in HDL in this research agrees with the results of research conducted by Suanami et al .(Y.Sunami,1999)

They claimed that aerobic exercises in low intensity increases HDL in aged people and the duration of exercise should be particularly noted.

Referring to this view, one may explain in this paper the reason of increase in HDL in subjects during their exercises.

In conclusion, one may claim that aerobic exercise is an effective and suitable method for improving risk factors in cardiovascular diseases and lowering risk factors to weight-associated long term symptoms. This indicates the anti CRP characteristics of exercises that could lead to inflammatory reduction in exercise.

table 1 . The descriptive data of the subjects

control	exercise	Index GROUP
162.4 ± 3.43	158.4 ± 1.95	Hiegh (cm)
32.8 ± 3.25	34.2 ± 4.91	age

Table 2 . The physical, physiological and biochemical indexes of the test and control groups prior to sports exercises

Indexes	exercise	control	P
Weight (kg)	62.3 ± 4.47	63.42 ± 6.60	0.209
Percentage fat	12.97 ± 2.16	13.3 ± 2.32	0.269
BMI (kg/m ²)	22.48 ± 1.96	22.7 ± 2.28	0.516
Cholesterol (mg/dl)	208.82 ± 32.82	205.48 ± 26.7	0.362
Triglyceride (mg/dl)	125.28 ± 73.8	124.8 ± 28.66	0.287
LDL (mg/dl)	103 ± 20.15	105.4 ± 15.85	0.771
HDL (mg/dl)	47.14 ± 11.04	48.8 ± 10.88	0.472
CRP(mg/l)	4 ± 0.87	3.94 ± 1.06	0.892

Table 3 . The physical, physiological and biochemical indexes of the test and control groups after sports exercises

Indexes	exercise	control	P
Weight (kg)	60.2±4.37	63.92±6.05	0.044
Percentage fat	11.22±1.82	13.63±2.65	0.019
BMI (kg/m ²)	22.06±1.62	23.2±2.45	0.375
Cholesterol (mg/dl)	153.4±21.03	198.6±34.21	0.003
Triglyceride (mg/dl)	88.06±28.12	116±16.79	0.191
LDL (mg/dl)	80.44±17.63	114.8±18	0.004
HDL (mg/dl)	57.5±9.26	47.2±4.13	0.035
CRP(mg/l)	2.96±0.732	4.28±0.518	0.001

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ASPECTS ON MUSCULO-SKELETAL TRAUMA INCIDENCE IN COMPETITIVE SPORTSMEN. A COMPARATIVE STUDY OF ATHLETES AND FOOTBALL PLAYERS – PART II

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Abstract

Traumas occur frequently in the competitive sportsman's life. The causes and the mechanisms of musculo-skeletal traumas vary with every sport.

The aim of this study is to compare the frequency and location of musculo-skeletal traumas in competitive athletes and football players between period I August 2006 -July 2008 and period II August 2008- July 2009 within the same sport branch and between branches;

The comparison was based the track and field event and the player's position on the football ground.

Material and method

The study was performed on 27 football players from League A1 and A2 and 12 athletes (sprint and hurdles) aged between 13 and 26 and with 4-17 years time spent in training. The sportsmen were monitored both while training and during competitions through video recordings, questionnaires, observation and conversation conducted by coaches, medical sportsmen and kinetic therapy experts.

The injured sportsmen were examined clinically and imagistically (radiology, ultrasound scan and in severe traumas also MRI).

Results

Two batches were studied: batch one consisted of 12 male athletes and batch two consisted of 27 male football players. The musculo-skeletal traumas occurred in 11 body segments: forearm, thigh, elbow, spine, face, calf, knee, ankle, hand (palm, fist), foot and shoulder.

The comparison of the trauma percentages in the two batches was based on the affected body segment, the player's position on the ground and the track and field event .

The results of the comparison between the injuries occurring in each body segment separately in the two periods are significant (the Z-test was used and the significance threshold was $\alpha = 0.05$).

The comparison between trauma percentages in athletes and football players had the following significant results:

- elbow ($p = 0.016$; $\alpha = 0.05$)
- spine ($p = 0.032$; $\alpha = 0.05$)
- calf ($p = 0.011$; $\alpha = 0.05$)
- knee ($p < 0.001$; $\alpha = 0.001$)
- foot ($p = 0.027$; $\alpha = 0.05$)
- shoulder ($p = 0.002$; $\alpha = 0.01$)

Trauma incidence was considerably reduced in football players than in athletes.

Conclusions

The results of our study, validated in sports-related literature, indicate that trauma incidence is higher in athletes, especially those participating in more events such as hurdling.

Key words: traumas, competitive sportsmen, track and field events, football

Introduction

This study deals with specific traumas in athletes and football players. *Compared with the data found in sports-related literature*, trauma incidence is very high in these sportsmen. For this reason, the authors of the study have tried to identify trauma causes and to establish methods meant to prevent injuries in sportsmen.

Hypothesis

Trauma incidence in sports varies with sex, age, time spent in training and affected body segments. The authors have assumed that following a comparative study on trauma incidence in training and

competitions, specific means can be selected and applied as injury prevention methods and rehabilitation therapy.

Objectives

1. To determine the main musculo-skeletal height, weight, BMI, the maximum number of traumas per segment and the total number of traumas in the studied periods;
2. to determine the main musculo-skeletal traumas based on the position of the football player on the ground and the track and field event;
3. to develop and use preventive training protocols;

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4. to evaluate and compare the results obtained within the same batch and between the two batches in the two periods

Material and method

The study was performed in order to obtain information on 12 athletes from the Banatul Sports High School and 27 football players from Timisoara playing in League A1 and period A2, all aged between 13 and 27 and with 4-17 years time spent in training. The study extended over three years: Period I August 2006-July 2008 and period II August 2008-July 2009.

Starting with august 2008, the sportsmen followed a complex and coherent programme of exercises focused on muscle groups and joints that are usually overstressed while training or during competitions. The exercises were chosen so as to increase muscular balance and joint mobility and to improve muscle and ligament flexibility (major factors in trauma prevention)(C. Baci, 1972; D.V. Poenaru, P.L. Matusz, 1994; E.T. Rinderu, I. Ilinca, L. Rusu, A.M. Kesse, 2004; E.T. Rinderu, I. Ilinca, 2005).

The following research methods were used: scientific documentation, observation, experiments, conversations, questionnaires, MRI, CT, statistic and graphic methods (Z. Pasztai, 2001, I. Borza, et al., 2009).

The sportsmen were monitored both while training and during competitions through video

recordings, questionnaires, observation and conversation conducted by medical sportsmen and kinetic therapy experts.

The injured sportsmen were examined clinically and imagistically (radiology, ultrasound scan and in severe traumas also MRI).

The statistical processing included:

- the comparison of the average values: the "t" (Student's) test was used for pairs of independent batches and a significance (risk) level of 0.05 (5%); the "F" test was used to compare more than two batches (the ANOVA model) (A. Gagea, 1996; A. Gagea, 1999)

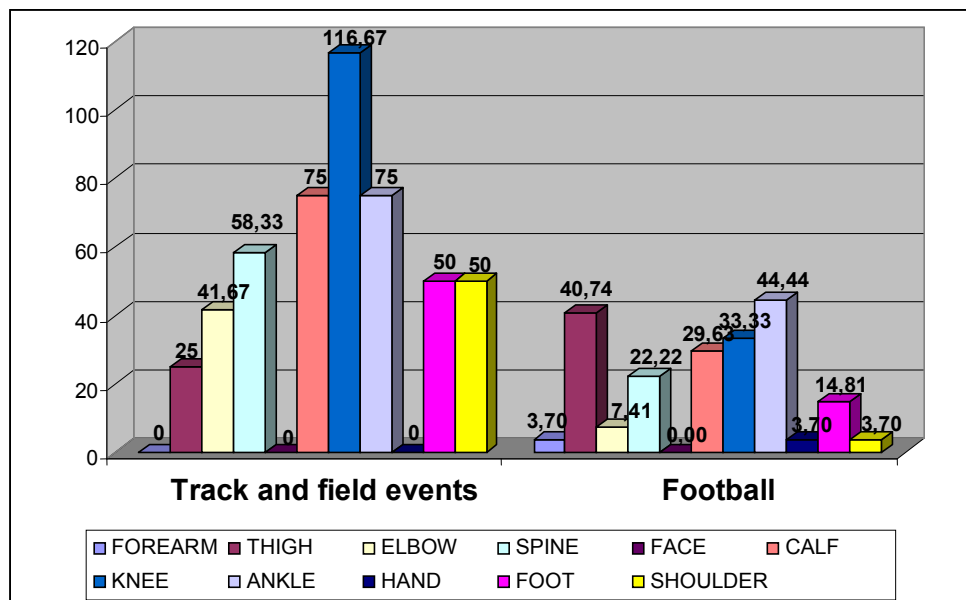
- regression and statistic correlation: linear regression and the Pearson coefficient;

- the Z test (T. Baron, C. Anghelache, E. Titan, 1995; A.C. Rettig, 2002).

The mean, the standard deviation and the standard error of the mean were calculated for all numerical parameters: age, time spent in training, height, weight, BMI, maximum number of traumas per body segment and total number of traumas. the comparison was based on the track and field event and the football player's position on the ground (T. Baron, C. Anghelache, E. Titan, 1995; A.C. Rettig, 2002).

(See Part I of this study, **Aspects on Musculo-Skeletal Trauma Incidence in Competitive Sportsmen. A Comparative Study of Athletes and Football Players.**)

Data presentation and analysis Comparison of trauma distribution on the 11 body segments in athletes and football ayers



Graphic 1

Table 1

BODY SEGMENTS	Track and field 12 athletes	Football 27 players
---------------	-----------------------------	---------------------

FOREARM	0	3.70
THIGH	25	40.74
ELBOW	41.67	7.41
SPINE	58.33	22.22
FACE	0	0.0
CALF	75	29.63
KNEE	116.67	33.33
ANKLE	75	44.44
HAND	0	3.70
FOOR	50	14.81
SHOULDER	50	3.70

The values in the table represent the total number of segment injuries per the number of athletes and football players.

The Z test was used to compare the percentages and the results (p values and significance) are shown in.

Table 2

BODY SEGMENTS	Athletes vs. football players
FOREARM	0.336 ^{ns}
THIGH	0.279 ^{ns}
ELBOW	0.016 ^s
SPINE	0.032 ^s
FACE	0.99 ^{ns}
CALF	0.011 ^s
KNEE	< 0.001 ^s
ANKLE	0.078 ^{ns}
HAND	0.336 ^{ns}
FOOR	0.027 ^s
SHOULDER	0.002 ^s

The comparison between trauma percentages in athletes and football players had the following significant results:

- elbow – significantly reduced traumas in football players ($p = 0.016$; $\alpha = 0.05$)
- spine – significantly reduced traumas in football players ($p = 0.032$; $\alpha = 0.05$)
- calf – significantly reduced traumas in football players ($p = 0.011$; $\alpha = 0.05$)
- knee – significantly reduced traumas in football players ($p < 0.001$; $\alpha = 0.001$)
- foot – significantly reduced traumas in football players ($p = 0.027$; $\alpha = 0.05$)
- shoulder – significantly reduced traumas in football players ($p = 0.002$; $\alpha = 0.01$)

Trauma incidence was considerably reduced in football players than in athletes.

Average sportsmen's age:

athletes 17.25; --- football players 20.11

Height: athletes
179.42; --- football players 182.15

Weight: athletes
71.75 kg; --- football players 74.81 kg

BMI: athletes
22.6; --- football players 22.48

Time spent in sport practising:
athletes 8 years; --- football players 11.3 years
The average age of the athletes is considerably smaller than that of the football players ($p = 0.006$; $\alpha = 0.01$).

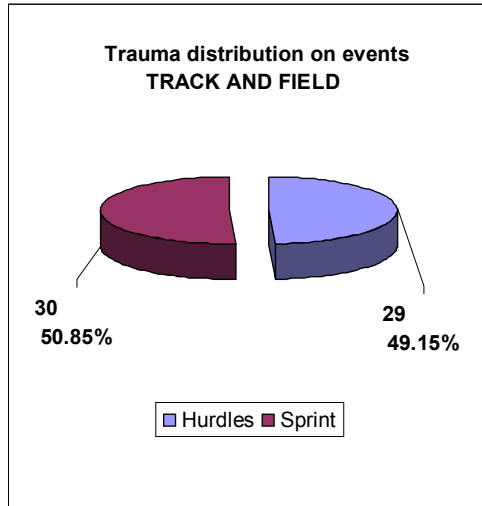
The time spent in sport practising is shorter in the case of the athletes ($p = 0.039$; $\alpha = 0.05$)

Height: no significant differences

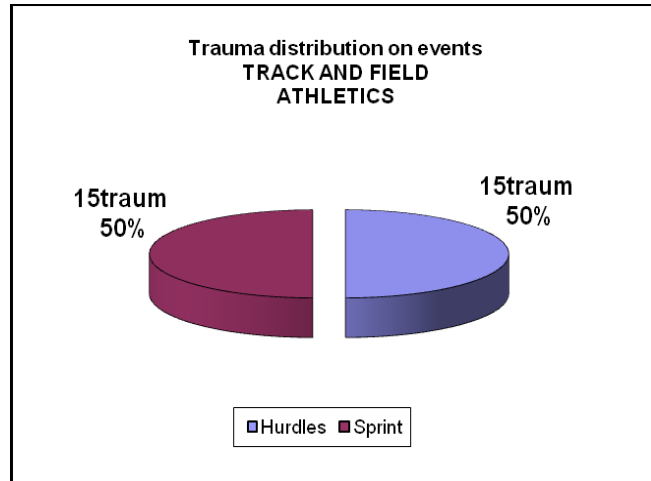
BMI values are optimal and indicate no major differences.

The average of the maximum trauma number per sportsman on one body segment: no significant differences between athletes (1.42%) and football players (1.15%).

The average of the maximum trauma number per sportsman on all body segments is higher in athletes than (4.33%) than in football players (2.07%) ($p < 0.001$; $\alpha = 0.001$)

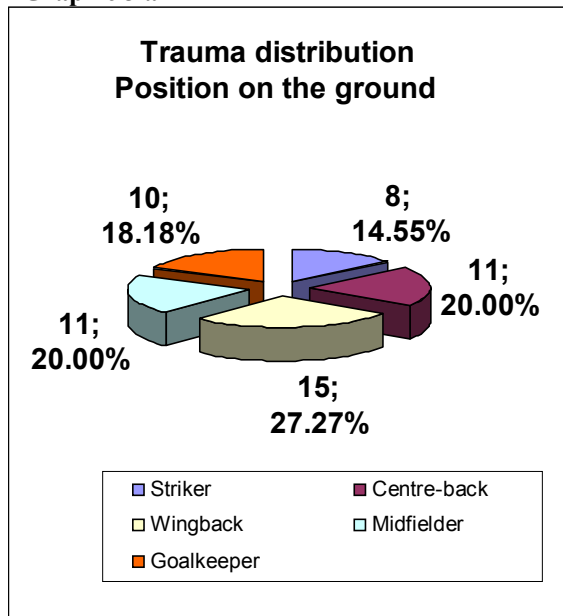
Trauma distribution in relation to the track and field event and the player's position on the ground**Track and field events - 12 athletes, 6 sprinters (100 -200 m) and 6 hurdlers (110 m)****Graphic 2 a**

period I

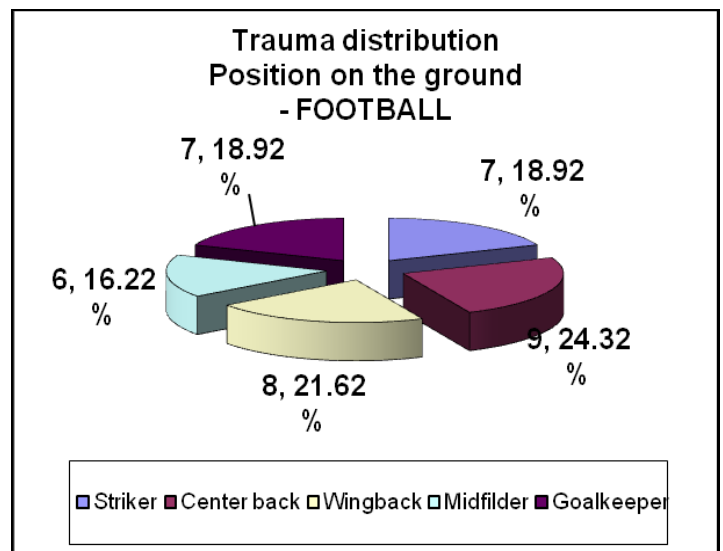
2 b

period II

No major differences were found in trauma distribution between sprinters and hurdlers. The number of traumas was close or the same in both periods. The comparison of the two periods showed that the total number of injuries was reduced with 50%.

Football 27 male players**Graphic 3 a**

period I

3 b

period II

As indicated in the graphics above, in the second period, the number of traumas was smaller, but not significantly smaller. Also there is no considerable difference between the numbers of traumas per players in relation to their positions. In the first period, **august 2006 – july 2008**, the number of traumas varied between 15 (27.27%) in wingbacks and 8 (14.55%) in strikers.

In august 2008-july 2009, the number of injured players decreased from 55 to 37. The number of traumas varied from 9 (24.32%) in centre-backs to 6 (16.22%) in goalkeepers.

Discussions

The overtraining imposed by competitiveness and the imbalance between the mechanic overstress and the functional resistance of the tissues are the causes of the high incidence of joint traumas in the studied batches.

Each track and field event is typical in nature and affects certain body segments.

Accident incidence is higher in athletics than in football, as shown in our study and confirmed in the athletics-related literature, according to which most lesions occur in athletes, especially in hurdlers (S. Roy, R. Irvin, 1983)

The comparison between trauma percentages in athletes and football players had the following significant results:

- elbow – ($p = 0.016$; $\alpha = 0.05$)
- spine – ($p = 0.032$; $\alpha = 0.05$)
- calf – ($p = 0.011$; $\alpha = 0.05$)
- knee ($p < 0.001$; $\alpha = 0.001$)
- foot – ($p = 0.027$; $\alpha = 0.05$)
- shoulder ($p = 0.002$; $\alpha = 0.01$)

Trauma incidence was considerably reduced in football players than in athletes

- **Track and field events:** tendon and muscle lesions and joint injury
 - Sprains, strains, tendon and muscle lesions: at ankle and knee joint caused by overstress;
 - muscle lesions: contraction, strains and partial or total ruptures that affect leg muscle groups, thigh and calf.
- **Football:** most traumas affected the lower limbs: knee and ankle sprains, meniscus ruptures; shoulder separations
 - Muscle injuries: contraction, strains and partial or total ruptures that affect leg muscle groups, thigh and calf

The most affected segment is the **ankle**: 40.74% in the first period and 44.44% in the second. Football-related literature also indicates 31% ankle injuries.

Ankle sprain is the most frequent sports injury, accounting for 40% of all injuries. In the USA, 23,000 (28,29%) ankle sprains occur every day (10).

Conclusions

Knowledge of trauma and the identification of its causes, prevention and rehabilitation is the key to future competitiveness.

Overstress accidents in the studied batches were reduced as a result of the trauma prevention programme that included joint exercises, massage, stretching, and exercises to increase muscle strength.

As far as the number of traumas and affected body segments is concerned, in both periods the athletes suffered from more injuries and affected body segments than the football players. This is a result of overstress, bad running track and the technical difficulties of the sprint races, especially the hurdle races that overstress the osteoarticular system and require returning to training before the complete rehabilitation of injured athletes.

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AGGRESSION IN ATHLETICS: A COMPARATIVE STUDY

RAKESH TOMAR¹, RAHUL SINGH²

Abstract

By nature human beings are competitive and ambitious for the excellence in all athletic performances. Not only every man but every nation wants to show their supremacy by challenging the other nation. Thus these challenges stimulates, inspires and motivates all the nations to sweat and strive to run faster, jump higher, throw further in present competitive sports world. Aggression has long been a part of the sports domain. Outside of wartime, sport is perhaps the only setting in which acts of interpersonal aggression are not only tolerated but enthusiastically applauded by large segment of society. In fact Lorenz advocates that sport ought to be substitute for war. In other words, because all competitive sports situations hold some degree of hostility between opponents, participants in them allows aggression to be dissipated in an acceptable manner.

Objectives. The purpose of the study was to compare the level of aggression between Jumpers and Throwers of all India Inter University.

Research Hypothesis

There would be a significant difference between the Throwers and Jumpers on the degree of aggression.

Methodology. For the purpose of present study twenty five thrower's and twenty five jumpers from 65th All India Interuniversity Athletic Meet 2004-2005 held at Acharya Nagarajuna University, Guntur from 28th December 2004 to 1st January 2005 were selected randomly as the subjects for the study. The age of the subjects were ranging from 18 – 25 years.

The criterion measure chosen to test the hypothesis was the scores obtain in sports aggression inventory by Anand Kumar and Prem Shankar Shukla. Sports Aggression Inventory consists of 25 items in which 13 items are keyed "YES" and 12 are keyed "NO". The aggression questionnaire was distributed to throwers and jumpers of 65th All India Interuniversity Athletic Meet 2004-2005 held at Acharya Nagarajuna University, Guntur from 28th December 2004 to 1st January 2005. To ensure maximum cooperation from the subjects the research scholar had a meeting with selected subjects in presence of their respective coaches. Subjects were oriented and explained regarding the purpose and the procedure of the questionnaire. For the purpose of analysis of data 't' test was employed to compare the degree of aggression between throwers and jumpers.

Results and Findings. The mean value (13.72) of throwers on aggression was found to be higher than the jumpers of 65th All India Interuniversity athletic championship, which revealed that throwers were more aggressive in comparison to the jumpers. Scholar was unable to locate the literature to support the above finding however reasons for throwers being more aggressive would be use of implements. Furthermore the physique and body structure of throwers would be other reasons for aggressiveness. Within the limitations of the present study following conclusions may be drawn; (1) In regard to aggression there was a significant difference between the means of University level throwers and jumpers. (2) The aggression level of throwers was found to be higher than the jumpers.

Key Words: aggression, jumpers, throwers.

Introduction

By nature human beings are competitive and ambitious for the excellence in all athletic performances. Not only every man but every nation wants to show their supremacy by challenging the other nation. Thus these challenges stimulates, inspires and motivates all the nations to sweat and strive to run faster, jump higher, throw further in present competitive sports world. This can only be possible through scientific, systematic and planned sports training as well as channelizing them into appropriate games and sports by finding out their potentialities (C.E. Kalfs, C.D. Arutheim, 1969).

The acquisition of new knowledge, for betterment of performance of the human organism in relation to physical, motor, and physiological qualities in process of saturation to strive for still better is a million dollar question to the expert of sports. In the

process they explore the field of psychology and enlist psychological parameters which do influences sports performance. Psychology as a behavioural science has made its contribution for improving sports performance. It has helped coaches to coach more effectively and athletes to perform more proficiently. This psychological aspect of sports is gaining much attention among sports administrators (K.C.Kocher, V. Pratap, 1972).

The word Aggression comes from the Latin work aggress, 'ad' (to or toward) and greater (walk). Literally then the word means to "to work towards or approach". Aggressive act can be defined as those which the athlete (1) is highly motivated (2) demonstrate the great realize of physical energy, and / or (3) is not inhibited by fear of potential fracture or injury (J.M. Silva et al, 1984).

Sports competition without "aggression" is a body without soul, competition and aggression are

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twins. There is clear evidence that, in general aggression is more boisterous games, may help performance because it arouses players overly to put in harder effort, and “do or die” for the success of the team. Contrarily there is also indication, and valid too, that aggression committed by players in certain contexts situation or position may impels performance of individual skill as well as success of the team (M.L. Kamlesh, 1984).

Most aggression in sport results from frustration. This frustration is the result of various motives being blocked. Those motives which are predominant in sport and which generate aggression when wasted, they revolve around achievement dominance power, recognition, prestige and excellence. If a boy places high incentive value on one or a combination of these motives and the incentive systems are blocked from attaining or satisfying them, he becomes frustrated. In essence aggression is primarily a learned behavior which is the result of an individual's interaction with his or her social environment over time. Aggression occurs in sports where an athlete's generalized expectancies for the re-inforcement for aggressive behavior are high (e.g.: receiving praise from parents, coaches, peers) and where the reward value outweighs punishment value (e.g.: gaining a tactical and psychological advantage with a personal foul, a yardage penalty in American Football). This is deemed an appropriate time to exhibit aggression (Leches & Nation, 1987).

The nature of aggression in sport should be considered the degree of ambiguity regarding aggression in sports. That is in some sports direct aggression in the form of physical acts against the person of another player is encouraged within rules. (American football, Boxing and Wrestling) whereas in other sports the directions, amount and indices of aggression are highly subjective and dependent on the degree of aggression tolerated by the fans, officials and team mates, (Basketball, Ice Hockey, Team Handball, Water Polo) (B.J. Cratty, 1983).

Aggression is a term that is used extensively in sports. Coaches were surveyed and ask to identify the characteristics of successful athlete; aggression would be high on the list. What is meant by aggression in sport? Aggressive players are used in football, for example, when the defense executes a fierce tackle. In basketball, good rejoinders, good defensive players, and the players who constitutently drive to the basket are all described as aggressive. Aggressive tennis player reach to the net at every opportunity. The volleyball player who dives to the floor to attempt an apparently impossible save is playing aggressively. In the another examples from sports, aggressive act can be defined as those in which the athlete (1) is highly motivated (2) demonstrate the great realize of physical energy, and/or (3) is not inhibited by fear of potential fracture or injury. In recruiting athletes, coaches often describe the desirable athlete as one who is “hungry aggressive and a competitor.” The legendary football coach of Florida A M University Jack Gaiter, often

said that he wanted athletes, who were mobile, agile, and hostile.” Aggressive athlete seems to be desirable athletes (J.H.L., Lewellyn, J.A. Bucker, 1987).

Aggression has long been a part of the sports domain. Outside of wartime, sport is perhaps the only setting in which acts of interpersonal aggression are not only tolerated but enthusiastically applauded by large segment of society. In fact Lorenz advocates that sport ought to be substitute for war. In other words, because all competitive sports situations hold some degree of hostility between opponents, participants in them allows aggression to be dissipated in an acceptable manner (Glyn C.R. et. al, 1986).

According to Reusse while analyzing he aggressive and non-aggressive behavior of a college basketball coach found that the subject did not become more aggressive while losing as opposed to winning. More aggressive behavior was exhibited during home games when compared to away games. The subject became more aggressive when first and second halves were compared and became less aggressive as the season progressed. The subject was silent for more extended period of time and emitted more directive behavior as the season progressed (J.K. Reusser, 1987).

Aggressive behavior is an overt verbal or physical act that can psychologically or physically injures another person or oneself. Aggressive behavior against another person is called extropunitive behavior. Aggressive behavior is non-accidental, the aggression or intends on injury and the behavior selected for this is under his or her control (Silva and Weinberg, 1984).

Winning has become an essential part of sport and increased professionalism breeds on atmosphere of winning at all costs. The traditional cause of sport engagement such as fun and fair play appears to have been decreased. Subsequently, research has shown that when athlete places a strong emphasis on beating others (in contrast to focusing on personal improvement and their own performance) they are more likely to endorse heating and perceives intentional injuries. Unfortunately some coaches and athletes take this state of affairs to the extreme and suggest that the use of aggression is necessary in order to win. Moreover, when an athlete is frustrated and focused on inflicting harm to others, he or she is not concentrating on the task at hand and thus cannot perform optimally. The heightened state of arousal that usually coupled with frustration should also result in performance improvement (T. Gershon et. al., 1987).

Historically, some argued that sport developed as a constraint on aggression, or at least as a means to channel aggression into culturally acceptable forms. Others have contended that sports do not necessarily increase aggression, but rather reflect and enhance the dominant values and attitudes of the broader culture. Yet another school of thought has proposed that sport creates a separate moral sphere, distinct from the real world, in which the goal of winning is more important than the rules of the game. Others consider that when athletes are overly aggressive; they are over

conforming to what they see as acceptable within the sport. Research also shows that aggression may give players an edge when used early in a contest, or they may show aggression if they fail in the sport. Other factors also influence aggression during sports events. For example, the presence of officials in organized sports increases the number of fouls since the athletes assume it is the referees' job to control inappropriate aggression. The relationship between sport and aggression has been studied extensively for decades, yet investigators still have only an incomplete understanding of the link between the two. That there is a link seems certain, and researchers in various disciplines continue trying to refine their understanding of it in ways that will illuminate both sport and society.

Objectives

The purpose of the study was to compare the level of aggression between Jumpers and Throwers who participate in 65th All India Inter University Athletic Championship.

Research Hypothesis

There would be a significant difference between the Throwers and Jumpers on the level of aggression.

Methodology

Selection of Subjects

For the purpose of present study 50 athletes were selected as the subjects. There were twenty five throwers and twenty five jumpers. All the subjects were selected randomly from 65th All India Interuniversity Athletic Meet 2004-2005 which was held at Acharya Nagarajuna University, Guntur, India from 28th December 2004 to 1st

January 2005. The age of the subjects were ranging from 18 – 25 years. Subjects were divided into two groups. Group A for throwers and group B for jumpers.

Criterion Measure

The criterion measure chosen to test the hypothesis was the scores obtained in sports aggression inventory by Anand Kumar and Prem Shankar Shukla.

Description of Aggression Test

Sports Aggression Inventory consisted of 25 items. Out of these twenty five items 13 items were keyed as "YES" and remaining 12 were keyed as "NO". The statements which were keyed "YES" are 1,4,5,6,9,12,14,16,18,21,22,24 and 25 and the statements which were keyed "NO" are 2,3,7,8,10,11,13,17,19,20 and 23.

Administration of Test

The Sports Aggression Inventory questionnaire was distributed to throwers and jumpers who took part in the 65th All India Interuniversity Athletic Meet which was held at Acharya Nagarajuna University, Guntur, India from 28th December 2004 to 1st January 2005. All the throwers and jumpers were approached by the research personally to ensure maximum cooperation from the subjects, further more the research scholar had a meeting with each selected subjects. To explain the process and make sure data was collected effectively, the coaches and managers of respective throwers and jumpers were requested to be present during the meeting. Subjects were oriented and explained regarding the purpose and the procedure of the questionnaire.

Scoring of Questionnaire

Maximum score for each statement was one. Scores obtained for each statement was added up which represent an individual's total score on aggression.

Statistical Method

For the purpose of analysis of data 't' test was employed to compare the level of aggression between throwers and jumpers. SPSS (Statistical Package for Social Sciences) for Microsoft windows version 11 was used to employ the t-test.

Results and Findings

The data was analyzed by using "t" test. The significance of mean difference was found between scores obtained on aggression by throwers and jumpers of All India Inter University Athletic Meet has been presented in Table - 1

TABLE -1
SIGNIFICANT DIFFERENCE OF MEAN ON AGGRESSION BETWEEN UNIVERSITY LEVEL
THROWERS AND JUMPERS

Variable	Group Mean		Mean Diff.	Dm	t-Ratio
	Throwers	Jumpers			
Aggression	13.72	11.20	2.52	.77	3.26*

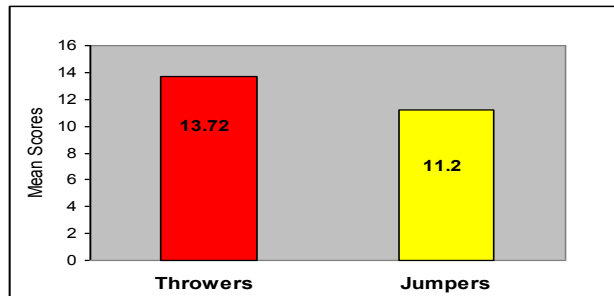
*Significant at .05 level of confidence $t_{.05}(48) 2.01$

It was evident from Table-1 that there was a significant difference between the means of throwers and jumpers on the scores of aggression since the obtained value of 't' (3.26) was higher than the tabulated value of 't' (2.01) which was required to be significant at (48) degree of freedom with 0.05 level of confidence.

The Graphical representation of the data pertaining to this has been presented in fig. 1

Figure 1

COMPARISON OF MEAN SCORES BETWEEN THROWERS AND JUMPERS ON AGGRESSION



Discussion of Findings

Although both events have some resemblance in term of characteristics of athletes and skill required, yet there was significant difference found in terms of aggression among throwers and jumpers. The mean value of throwers on aggression was found to be quite a bit higher than the jumpers who participated in 65th All India Interuniversity athletic championship 2004. The analysis revealed that throwers were more aggressive in comparison to the jumpers. In some sports there seems to be a positive relationship between aggressive behavior, anger management and successful performance. J.F. McCarthy and B.R. Kelly (1978) also found a significant relationship between aggression and successful performance. This relationship can be rewarding and can positively reinforce aggressive behaviors both in a player and the team. In case of throwers and jumpers, there could be number of reasons for more aggressiveness of throwers than jumpers, but the main reason for throwers being more aggressive could be the use of implements in all the throwing events which might create more aggression in athletes as compared to jumpers. Further, the physique and body structure of throwers could be other reasons for aggressiveness in throwers than in jumpers.

Discussion of Hypothesis

The hypothesis that there will be a significant difference on aggression between University level throwers and jumpers is accepted.

Conclusions and Recommendations

Within the limitations of the present study following conclusions may be drawn:

1. In regard to aggression there was a significant difference between the means of University level throwers and jumpers.
2. The aggression level of throwers was found to be higher than the jumpers.

In the light of the conclusions drawn, the following recommendations were made:

1. It is recommended that a similar study may be undertaken on female Throwers and Jumpers.
2. Similar study may be conducted on the school levels.

3. A similar study may be conducted using subjects from different age groups.

The results of the study will help to compare the level of aggression between Throwers and Jumpers.

2. The results of the study will give an insight to physical educators & coaches to understand the role of aggression between Throwers and Jumpers.
3. The result of the study will be helpful for the coaches of various games in assessing the aggressing of their player and accordingly preparing training programme.
4. The study will be helpful for the coaches in molding the required personality, traits of Throwers and Jumpers as per suitability of the event.

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❖ PHYSICAL EDUCATION AND SPORT

STUDY REGARDING THE INFLUENCE OF MOTION GAMES ON MOTRIC CAPACITIES IN PRE-SCHOOL EDUCATION LEVEL

DEACU MARCEL¹

Abstract

Purpose. The purpose of this research is to emphasize the efficiency of motion games on the evolution of pre-school pupils' motric capacities, within activities of personal development, respecting the demands of the new syllabus for premature education.

Methods. This paper aims to prove that certain approaching strategies of the instructive-educative process are efficient. In the respective process, motion games are promoted, having the purpose of strengthening and perfecting motric capacities of pre-school children, benefactors of this program within their kindergarten.

Results. Comparing the results obtained by the experimental group at the initial and final tests of this research, we can observe a positive evolution, significant for the assimilation level of the tested motric capacities (70,9% of the children obtained a VG grade at the initial test, at the final test, the percentage being 82,9%,).

Conclusions. As a result of the implementation of the systematic program for motion games within activities of personal development, the result obtained by the experimental group proved their positive influence. We can notice signs of strengthening children's motric capacities, a correction of the recorded mistakes at initial tests, and an evolution of their motric behaviour. Furthermore, one can clearly notice a harmonious physical development for pupils, as compared to the results obtained by the control group, where mandatory games were introduced, apart from the Physical Education activity existing in the syllabus for premature education. In addition to this, we have seen an improvement of inter-social relations, a better collaboration and a better group communication between children, and the development of the fair-play spirit.

Key words: Pre-school period, motric capacity, motion game

Introduction

The preschool period is period of the most intensive responsiveness, mobility and mental capabilities, a period of remarkable progress in all areas. The child experiences the knowledge stage through the expansion of its contact with the social and cultural life, from which he/she assimilates models that enable and determine his/her ever active integration in the human condition (Gh. Tomşa, N. Oprescu, 2007).

The concept which states that the child is a whole has at its basis the accepted principle that all areas of growth and human development are interrelated. None of the aspects regarding human development does occur independently, and all skills, no matter how simple or complex should be, reflect the intertwining of abilities.

Motric skills are essential, but also specific components of different motric acts, which, if harmoniously combined, ensure the performance of certain motric tasks (M. Deacu, M. Finichiu, 2010).

The game is the most important source of learning for children, is an activity that helps them most and more effectively to learn. Through play children learn to interact with others, to explore the environment, to find solutions for problem situations, to express their emotions, acquire knowledge and skills that will be necessary for their adaptation to school requirements (M. Deacu, 2008).

The motion game is a physical exercise and a primary means of harmonious development of preschool children; it is primarily a bodily action, performed systematically and consciously in order to improve the physical development and motric skills.

The game is an ideal way of education and satisfies at the highest level, the need for movement and action. The game satisfies the child immediately, according to possibilities, their own desires, consciously and freely acting in the imaginary world he/she creates himself.

The psycho-motric field syllabus for pre-school education covers coordination and control of body motion, general mobility and physical strength, motric ability and elegant handling, as the elements, linked especially to human anatomy and physiology.

Activities through which pre-school children can be put in contact with this field are those which involve physical motion, competition between individuals and groups, concerning psycho-motric skills as objectives, as well as activities that can have as result a better resistance, strength or flexibility (St. Antonovici, 2010).

In the new early education syllabus it is mentioned to have a Physical Education activity per week, the teacher having the freedom to plan in the daily schedule complementary activities for the fulfillment of Physical Education objectives; at different times of day the teacher may propose to children different ways of competing, between two static activities (V. Tudor, 2005).

Psychological development is based on incorporations and creating new attitudes and behaviors, for the formation of increasingly complex adaptation tools and for the formation of satisfying modalities for certain needs, and formation of new needs and means of satisfying them.

Development involves changing the balance between assimilation of the reality and accommodation

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to the subjective and circumstantial, concrete conditions of life. In other words, development implies complex changes for the bio-psycho-social aspects of the individual, ranked in time.

Quantitative and qualitative transformations that define the development can be classified into three main categories, depending on the specifics of development: physical, mental and social. There are strong correlations between the types of development, but their evolution is relatively independent of each other.

Purpose

The purpose of this research is to emphasize the efficiency of motion games on the evolution of pre-school pupils' motric capacities, within activities of personal development, respecting the demands of the new syllabus for premature education.

For younger children, the physical, social, emotional, cognitive or language development is achieved at the same time, being inter-conditioned. Children learn holistically, so that every area of development affects the other, and none operates independently. Physical development may influence children's contribution to the achievement of various tasks or when attempting to obtain certain group performances, to which he/she belongs. The success or failure largely affects the child's self image and self-esteem.

Research methods and procedures

Objective of research

This paper aims to investigate the effectiveness of certain developed strategies of approaching the instructive-educative process, where motion games are promoted, in order to strengthen and improve the motric skills of preschool, benefactors of this process within the kindergarten.

Subjects of research

This research has been undertaken on a group of preschool children, aged 6 to 7, enrolled in a kindergarten. The syllabus for premature education mentions a compulsory Physical Education activity, done once a week within the psycho-motric field (30 – 35 min. for the second age level); the teacher has the possibility to plan various motion games in various moments of the daily program (for free-chosen activities, for transition activities and for activities of personal development).

Although groups are heterogenous, we have chosen for the experimental research, children aged 6 to 7, who have constantly frequented kindergarten for 3 years (the experimental group named within the kindergarten the "Group of Ladybugs", and a control group, named the "group of the Little Bears").

Tests description

Both groups were subjected to initial tests applied at the beginning of school year 2009 - 2010, we also recorded data regarding the physical development of children both at the beginning and the end of the experiment.

TASK No. 1 *Applicative track*: Walking on the tip of the toes – 10 m; running between poles – 15 m; walking in balance on the gymnastic bench; walking on

heels – 10 m; crawling on ell-bows and knees – 5 m; Walking in balance on a line – 10 m.

Evaluation:

- **VG** – performs the walk, the run between poles correctly, maintains balance and a correct body position, performs the crawling correctly.

- **G** – body position is incorrect while walking (head bent over, lifted shoulders), the lack of limbs coordination while running, losing balance 1 - 2 times during the exercise, lifting the torso or the head while crawling.

- **S** – lack of limbs coordination while walking, body swinging, touching the sole on the ground and an exaggerated motion of the arms while running; an incorrect position of the body while walking in balance, looking down, a lack of limbs coordination while crawling.

TASK No. 2 *High jump*: "Touch the baloon!"; **Long jump** : "Little frogs jump in the lake".

Evaluation:

- **VG** – performs both of the jumps correctly, following the stages;

- **G** – lack of control over the feet position in the air; incorrect landing (feet position);

- **S** – incorrect impetus or lack of it; incorrect landing (on the heels or with spread feet).

TASK No. 3 *"The relay"*: Throwing the ball at the target; carrying weight – 10 m; climbing on a leaned plan; slow run; throwing and catching the ball.

Evaluate:

- **VG** – performs the throwing correctly, hitting the target, carries the toy sack to the fixed point, pushes the chair, performs the throwing and the catching of the ball correctly;

- **G** – does not estimate correctly the distance and misses the target, the body position is incorrect while carrying the sack, does not throw the ball correctly (direction deviation);

- **S** – deviates the track of the ball away from the target, the body position is incorrect while carrying the sack (humped back, looking at the ground), the ball throwing is incorrect due to the rigid body position.

Research results

As a result, after the comparative analysis of the obtained data (the period 30 May – 05 June 2010), we have observed the following:

- Comparing the results obtained at task no. 1 by the experimental group at the beginning and at the end of the experiment, we may notice a positive evolution, significant for the level of assimilating the tested motric skills, (the Very Good mark was obtained by 70,9% of the children at the initial test, and at the final test the percentage was 82,9%, 3 children perfecting their level of motric skills assimilation); for the control group, only one child managed to improve the level of motric skills assimilation (from S to G).

- For task no. 2 the results obtained by experimental group emphasize a positive evolution,

significant for the level of assimilating the tested motric skills (18 children had the VG mark, 5 more than at the initial test, 1 of the children with S receiving the B mark); 16 children from the control group received VG (14 at the initial test), 3 children perfecting their level of motric skills assimilation (2 from G to VG, and 1 child from S to G);

- The results of the third task emphasize the following aspects for the experimental group: 3 children have perfected the tested motric skill (obtaining VG at the final test), and 2 children have

consolidated and corrected the tested motric skills (obtaining G at the final test); the results of the control group have recorded no significant progress (1 child managed to to improve the level of motric skills assimilation from S to G at the final test).

We will present a comparative recording of the data, differentiated for the two groups, the results of the initial test with those of the final test.

Table 1: Results obtained at the initial test – control group (the “Little Bears” group)

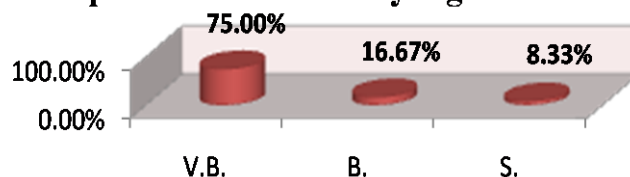
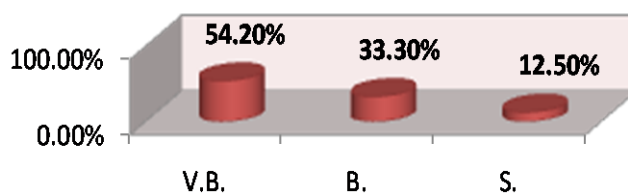
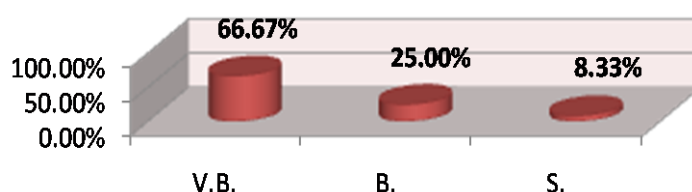
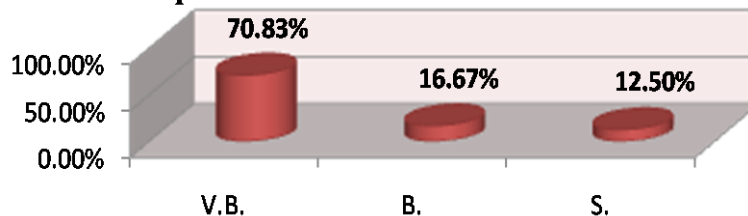
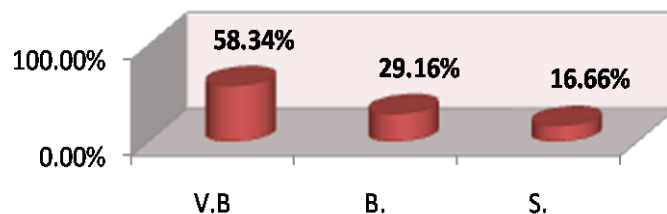
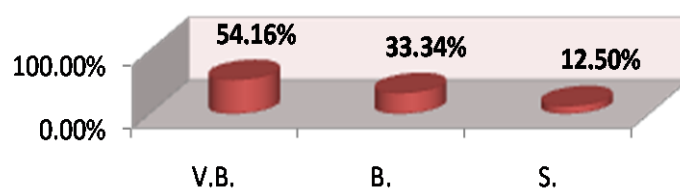
No.	Subjects	Age	Task 1	Task 2	Task 3
1.	A.E.F.	6 years	B	B	B
2.	A.A.	6 years	FB	FB	FB
3.	A.S.A	6 years	FB	FB	FB
4.	B.Ş.I	6 years	B	B	B
5.	C.A.	6 years	FB	FB	B
6.	C.A.M	6 years	FB	B	FB
7.	C.C.V.	6 years	FB	FB	FB
8.	C.C.G.	6 years	FB	FB	FB
9.	D.I.B	6 years	B	B	B
10.	D.S.	6 years	FB	FB	FB
11.	D.A.N	6 years	FB	FB	FB
12.	D.V.	6 years	FB	FB	FB
13.	E.D.A.	6 years	FB	FB	B
14.	E.C.E	6 years	FB	B	B
15.	I.M.	6 years	S	S	S
16.	I.A.E	6 years	S	S	S
17.	J.M.C	6 years	FB	FB	FB
18.	M.I.A	6 years	FB	FB	B
19.	M.P.C.	6 years	B	B	S
20.	N.R.F.	6 years	FB	FB	FB
21.	P.C.M	7 years	FB	FB	FB
22.	S..P.T.I	6 years	FB	FB	B
23.	S.D.M	6 years	S	S	S
24.	T.R.M..	6 years	FB	B	FB

The subjects of the control group recorded after the application of the initial tests the following results: for task 1, 17 children (70.83%) obtained VG; 4 children (16.66%) obtained G; 3 children (12.5%) obtained S; task 2, 14 children (58.34%) obtained VG, 7 (29.16%) obtained G, 4 children (12.5%) obtained S; task 3, 13 children (54.16%) obtained VG, 8 children (33.34%) au obținut calificativul G, 3 children (12.5%) obtained S.

Table 2: Results obtained at the initial test – experimental group (“group of Ladybugs”)

No.	Subjects	Age	Task 1	Task 2	Task 3
1.	A.B.M.	6 years	FB	FB	B
2.	A.Ş.	6 years	B	B	FB
3.	C.M.E.	6 years	B	S	B
4.	C.L.V.	6 years	FB	FB	FB
5.	C.C.I.	6 years	FB	FB	FB
6.	D.B.A.	6 years	FB	FB	FB
7.	.F.C.	6 years	FB	B	FB
8.	G.D.C.	6 years	B	B	B
9.	G.B.A.	6 years	FB	FB	B
10.	I.E.A.	6 years	FB	B	FB
11.	I.M.R.	6 years	FB	FB	FB
12.	M.I.G.	6 years	FB	FB	FB
13.	M.M.S.	6 years	FB	B	B
14.	N.A.I.	6 years	FB	FB	S
15.	P.T.M.	6 years	S	S	S
16.	P.C.A.	6 years	S	S	FB
17.	P.E.	6 years	FB	B	B
18.	S.D.M.	6 years	FB	FB	B
19.	S.D.A..	6 years	FB	B	FB
20.	S.D.F.	7 years	FB	FB	FB
21.	T.M.	6 years	FB	FB	FB
22.	T.M.	6 years	FB	FB	FB
23.	U.A.M.	6 years	FB	B	FB
24.	D.A.G.	6 years	B	FB	FB

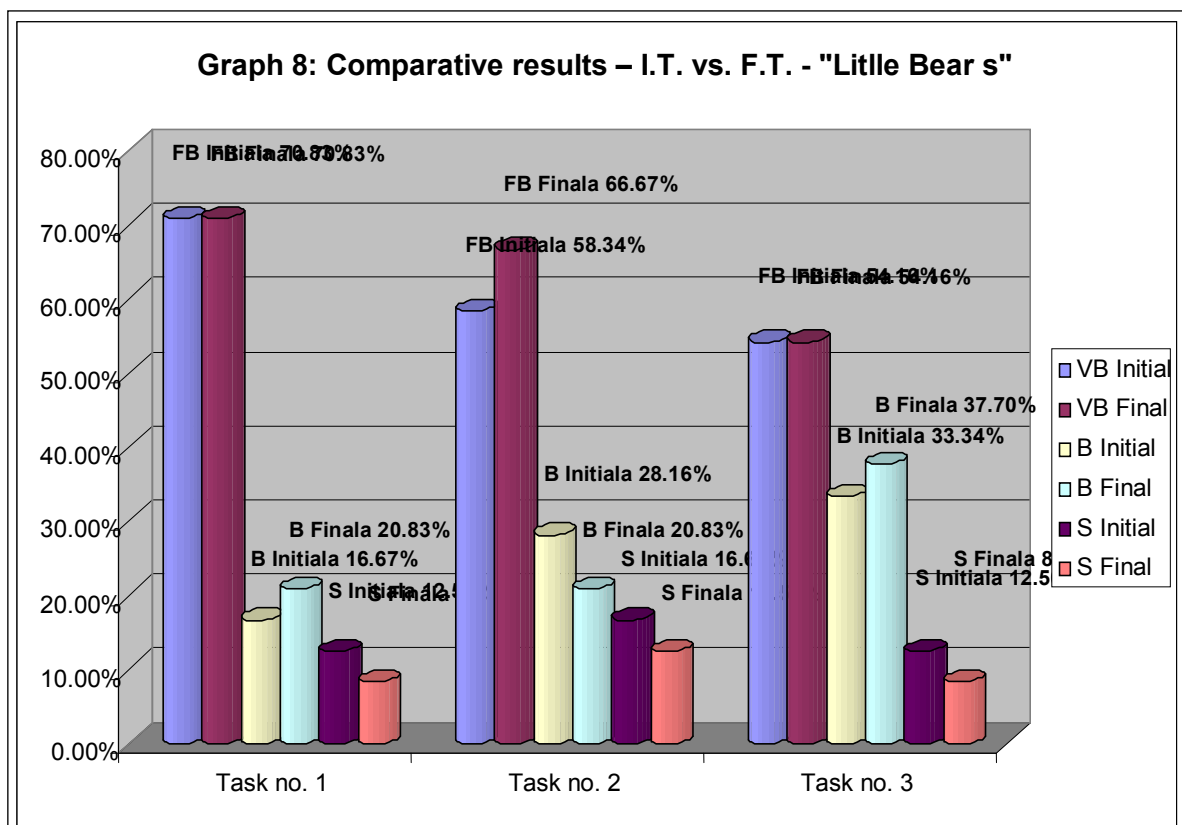
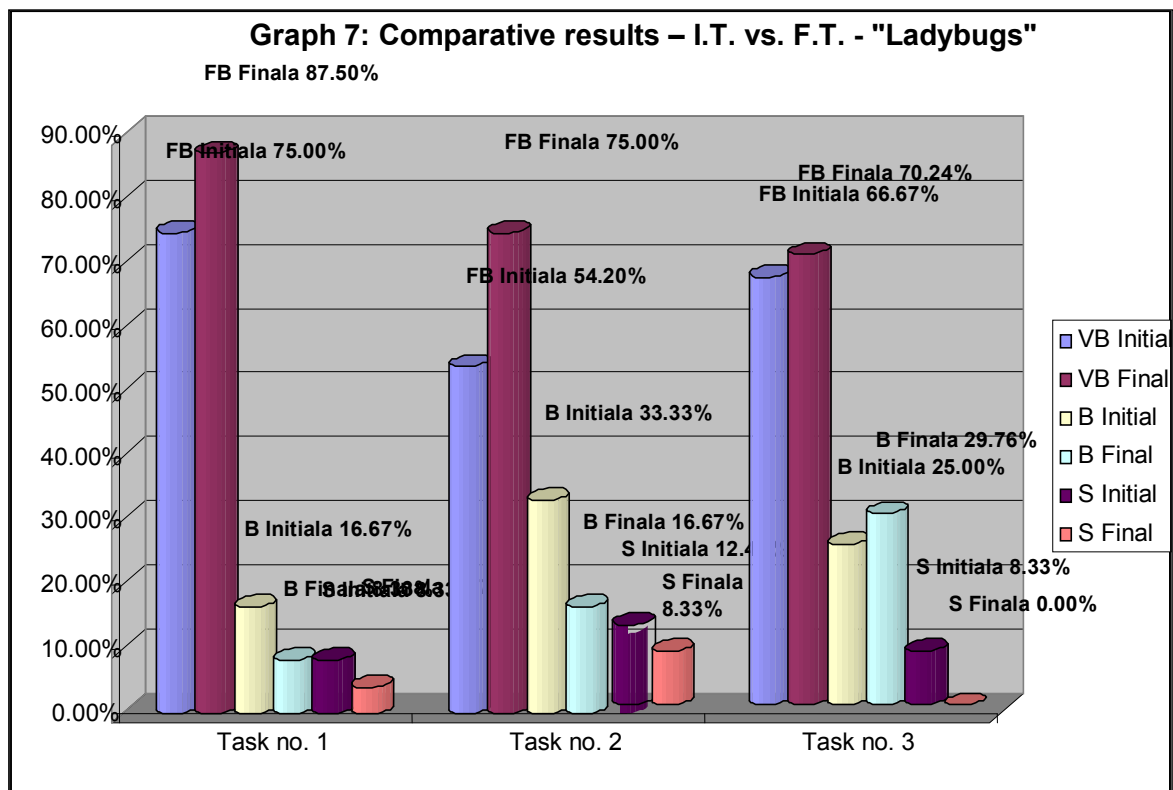
The subjects of the control group recorded after the application task 1 obtained the following results: 18 children (75%) obtained VG; 4 children (16.66%) obtained G; 2 children (8.33%) obtained S; task 2 had the following results: 13 children (54.2%) obtained VG; 8 children (33.3%) obtained G; 3 children (12.5%) obtained S; task 3 had the following results: 15 children (66.6%) obtained VG; 7 children (25%) obtained G, and 2 children (8.33%) obtained S.

Graph1: Marks for "Ladybugs" - Task No. 1**Graph 2: Marks for "Ladybugs" - Task No. 2****Graph 3: Marks for "Ladybugs" - Task No. 3****Graph 4: Marks for "Little Bears" - Task No. 1****Graph 5: Marks for "Little Bears" - Task No. 2****Graph 6: Marks for "Little Bears" - Task No. 3**

After the results analysis we established an annual planification for the Physical Education activity (1 activity/week), common for both of the groups.

For the experimental group, we have elaborated a different program of motion games, program applied in the stage of personal development activities (PDA),

developed during the period 1 October 2009 – 15 May 2010. Through the exercise and consolidation of motric skills and abilities, basic and utilitarian, in the conditions of their concrete application, we aimed to, along with their correction and improvement also to have the enlargement of the motric experience.



Results interpretation. As a result, after the comparative analysis of the obtained data (the period 30 May – 05 June 2010), we have observed the following:

Comparing the results obtained at task no. 1 by the experimental group at the beginning and at the end of the experiment, we may notice a positive evolution, significant for the level of assimilating the tested motric skills, (the Very Good mark was obtained by 70,9% of the children at the initial test, and at the final test the percentage was 82,9%, 3 children perfecting their level of motric skills assimilation); for the control group, only one child managed to improve the level of motric skills assimilation (from S to G).

- For task no. 2 the results obtained by experimental group emphasize a positive evolution, significant for the level of assimilating the tested motric skills (18 children had the VG mark, 5 more than at the initial test, 1 of the 3 children with S receiving the B mark); 16 children from the control group received VG (14 at the initial test), 3 children perfecting their level of motric skills assimilation (2 from G to VG, and 1 child from S to G);

- The results of the third task emphasize the following aspects for the experimental group: 3 children have perfected the tested motric skill (obtaining VG at the final test), and 2 children have

consolidated and corrected the tested motric skills (obtaining G at the final test); the results of the control group have recorded no significant progress (1 child managed to improve the level of motric skills assimilation from S to G at the final test).

Conclusions

Starting from the need to move of the preschool child, the need to alternate the static and dynamic activities, and to respect the differences in age and individual, we believe that using motion games in various stages of the day may influence the consolidation and improvement of motric skills. In the same time, passing from one activity to another is made enjoyable for children, aiming to fulfill the proposed objectives.

The data obtained after the implementation of the initial evaluation, proves that, at the beginning of the school year 2009/2010, the level of ownership of motric skills of children from both groups is almost the same, with insignificant differences.

After applying a systematic program of motion games within activities of personal development, the results obtained by the experimental group certify their positive influence.

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❖ KINETOTHERAPY

EFFECTS OF PILATES ON LOW BACK PAIN AND URINE CATECHOLAMINE

MOHAMED AMIN ZEADA¹**Abstract**

Purpose. The popularity of the Pilates method created by Joseph H. Pilates in the early 1920s has increased worldwide in the last decade, confirming the fact that Pilates is much more than a fitness fad. According to a survey conducted by American Sports Data Inc, more than 10.5 million Americans participated in a Pilate's class in 2004. The aim of this study was to determine effectiveness of Pilate's protocol in decreasing of low back pain and urine catecholamine levels.

Methods. Twenty athletes. Recruited for the study were between the ages of 22 and 25 years old, with a mean age of 24 years. Divided into two groups, experimental group consisted of (10) athletes. Control group consisted of (10) athletes. All two groups had chronic low back pain. Pilate's exercises were eight-week period for experimental group. 4 days weekly.

Results. The experimental group showed improvement increase in lumbar spine flexion and extension but not significant between the pre and Post measurement. Significant differences between two groups in the urine catecholamine levels.

Conclusions. Urine catecholamine can be used an indicator to sports injury.

Key words: Pilates, low back pain, urine catecholamine.

Introduction:

Low back pain (LBP) is a major cause of disability in many societies (G. Waddell, 1998) and is the most common diagnosis for patients treated in outpatient physiotherapy settings (A. Jette & K. Davis, 1991). Approximately 10-20% of sufferers of LBP develop chronic LBP (CLBP), which is described as pain and disability persisting for more than three months (C. Maher, et al. 1999). The origins and predisposing factors of chronic low back pain are unclear, but it appears that muscular dysfunctions have an important role to play in the aetiology of low back disorders. (W. Kirkaldy-Willis & H. Farfan, 1982).

Treatment for low back pain varies from over-the-counter anti-inflammatory to surgery. Because of the invasive nature of surgery, side effects, and low success rate many patients and their healthcare providers chose to turn to more conservative options if they are able. Exercise is an intervention that has been shown to play a major role in the successful management of CLBP (C. Maher, 2004, M. van Tulder, et al. 1997). One exercise approach, Pilates is one of those options and has been shown to be effective in the treatment of low back pain.

There is little doubt that back pain can start as a physical problem in the back. It has been argued that non-specific LBP arises from dysfunction or physiologic impairment (G. Waddell, 2004).

Dysfunction depends on the level of demand or stress, and the capacity of the musculoskeletal system to respond to physiological and biomechanical demands or stresses. Any position that increases the physical

stress to the joints may be called "faulty posture" (F. Kendall, 1983).

Mechanical factors are frequently reported to be associated with the initial onset and recurrence of LBP (P. O'Sullivan, 2005). There are multiple risk factors associated with the occurrence of LBP, some of these factors are; repetitive motion; curvature and torsion of the spine; pushing and pulling activities; stumbles; falls; and static or sitting work posture (J. Cholewicki & S.M. McGill, 1996). However the presence of these does not necessarily lead to the occurrence of back pain, and absence of these factors does not necessarily prevent LBP from occurring.

Exercise is an intervention that has been shown to play a major role in the successful management of CLBP (C. Maher 2004, M. van Tulder, et al 1997). One exercise approach, referred to as Pilates, has in recent years become a popular trend in rehabilitation, with over five million registered practitioners in the United States (Chang 2000).

Pilates is growing rapidly. Joseph Pilates developed it in the early 1900's as a rehabilitation technique for bed-ridden patients. Pilate's exercises can be performed on the floor or with the use of specialized Pilate's equipment. Regular Pilate's workouts improve flexibility and core strength. The increase in core strength achieved through Pilates is one of the main reasons for its success with people with low back pain.

Physical exercise can impose a significant stress on the organism, and the extent of the response depends on several factors such as exercise intensity and duration and training status of the individual (D.A. Péronnet, et

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al. 1981; R.S. Mazzeo, 1991).

Catecholamines are both neurotransmitters and hormones, and play a dominant role in helping the individual respond to the stress of exercise.

Currently there are several different styles of Pilates, and these can be conveniently divided into two main schools: the repertory approach (sometimes labelled 'traditional' or 'classical Pilates'), and 'modern Pilates' (P. Latey, 2001). The repertory approach follows closely the 34 traditional mat exercises described in Return to Life (J. H. Pilates, & W. J. Miller, 1945). The exercises are vigorous with a fast, dynamic rhythm and are difficult to execute correctly, particularly for people with musculoskeletal impairments. To do these exercises requires substantial muscular strength and a "good to high level of flexibility" (P. Latey, 2002). The repertoire is designed to challenge and strengthen the abdominal or trunk muscles referred to as the "powerhouse", by maintaining a "flat back" or 'imprinted spine', where the lumbar spinal curve is pressed to the floor, whilst locking or holding of the upper abdominals, hip flexor origins, and glutei muscles (P. Latey, 2002). This approach has been criticised (P. Latey, 2002) in light of research that has identified the muscle function and connections of the lower abdominal muscles and the pelvic floor.

The main catecholamines are epinephrine (adrenaline), nor epinephrine (noradrenalin), and dopamine. They break down into vanillylmandelic acid (VMA) and metanephrine, which are passed in the urine. (KD. Coutts, et al.1983)

In recent years, some studies have been conducted to evaluate the relationship between urine catecholamine responses and severity of sports injury in athletes. (Hamza, 2004)

According to (Bloomfield, et al.1994) It is unknown whether the catecholamine (CAT) response to acute exercise and prolonged training in humans with spinal cord injury (SCI) is similar to that of neurologically intact man.

Unfortunately, the increasing numbers of Pilates Method's clients and practitioners have not been accompanied by a concomitant development of research. For example, only 13 results. of those, only two studies utilized interventions, one quasi-experimental study whose outcome measure was leaping ability and one experimental study in which the intervention was resistance exercise (Pilates based but not precisely Pilates exercises) and primary outcomes measures were adherence and participation. In a review investigating physical treatment for chronic low back pain, C. Maher (2004) considered Pilate's therapy an unevaluated treatment in which efficacy is unknown. The authors are also not aware of any descriptive study focusing on Pilates clients' characteristics.

Spinal stability exercise has been shown to improve pain and disability in CLBP. (Ferreira, et al.2006)

The research in trunk control has been an important contribution to the understanding of neuromuscular

reorganisation in back pain and injury. As long as four decades ago it was shown that motor strategies change in injury and pain (M.A., Freeman, et al. 1965).

Low back pain and its associated disability poses an economic burden to society, mainly in terms of the large number of work days lost (indirect costs) and to a lesser extent by direct treatment costs (M. Krismer et al., 2007; S. Dagenais, et al. 2008). In New Zealand it is estimated that 20 – 25% of all workplace injuries are related to LBP (H. Firth, et al. 2002). With the total cost to New Zealand's society (including indirect costs) estimated to be NZD \$500 million annually (D. McBride, et al. 2004). In Australia, the total cost of LBP has recently been estimated to be more than AUD\$9 billion per year, with a national prevalence of 65% annually (S. Dagenais et al., 2008).

Pilate's exercises have many similarities to stability exercises but lack strong research evidence of effectiveness. The knowledge of Pilates and degree of training under taken for its use in the management of chronic low back pain (CLBP) amongst Irish physiotherapists is currently unclear. Hence, the aim of this study was to determine the Effect of Pilate's exercises in decreasing of low back pain and urine catecholamine levels.

Methods.

Twenty patient athletes recruited for the study were between the ages of 22 and 25 years old, with a mean age of 24 years. Divided into two groups, experimental group consisted of (10) patient athletes. Control group consisted of (10) patient athletes. All two groups had chronic low back pain. Pilate's exercises were eight-week period for experimental group.4 days weekly. There were no drop-outs as all 10 patient athletes in each group completed the study. In Table (1): the mean and standard deviation values of height, weight, age and duration of pain and baseline scores of the Roland Morris Disability Questionnaire for each group are presented.

Selection of the sample:

The subjects volunteered to be part of the study. Those who complied with the selection criteria were randomly allocated to the Pilates or control group using a process of concealed random allocation.

Inclusion criteria:

- Recurrent low back pain for longer than three months with no sign of abating.
- With or without pain into the lower limbs.
- The subjects fell into the age group of 20 to 65 years.

Exclusion criteria:

Subjects were excluded for the following reasons:

- Previous spinal surgery
- Diagnosed inflammatory joint disease
- Red flag signs and symptoms. These patients were sent for further investigations.
- Motor or sensory neurological signs
- No informed consent

- Inability to adhere to the exercise programme. These were subjects that were excluded as they anticipated that attendance would be problematic or difficult.
- Previous or current participation in a Pilates or back class program.

Procedures:

One examiner who had previously been instructed made the measurements about how to carry out the tests. The examiner, using a simple goniometer, such that all the volunteers performed each movement, obtained the flexion and extension measurements on the lumbar spine consecutively twice. To avoid the variations, consecutive measurements were made during the same period of the day by same examiner.

The evaluations on the flexion and extension range of motion of the lumbar spine were made using a simple goniometer after instructing the volunteer regarding positioning and the correct way of doing the test. The individuals began the test in an upright standing position, with the knees completely extended and arms in front of the body. Then, upon a verbal command from the examiner, they made slow and gradual movements for flexion and extension as far as the maximum amplitude, at which point the goniometer measurement was made. To evaluate lumbar flexion, the arms had to be flexed at 90 degrees, and to evaluate lumbar extension, the arms had to be kept fixed behind the neck. For these measurements, the iliac crest was taken as the fixed reference point, while the mobile point used was the axillaries line collateral to the iliac crest interiorly, such that the fixed arm of the goniometer remained central in the lateral region of the trunk. (Carla, et al. 2010)

Sorensen's Test

This test measures the time a subject can keep the unsupported trunk (from the upper border of the iliac crest) horizontal while lying prone on an examination table until they can no longer control the posture, or can no longer tolerate the procedure or until symptoms of fatigue are reached. (Moreau et al. 2001) Of the assessment strategies available, isometric endurance testing seems to be cost-effective and requires little or no equipment at all.

The procedure was carried out as follows:

- The patients had to lie prone on a plinth with the trunk (from the upper border of the iliac crest) unsupported, with the hands either behind the head or placed across the chest
- The researcher held down the patients' legs with the researcher's body weight. This was done to reduce time in the patient set-up when performing the test
- The patients were required to extend the trunk until the back was in line with the rest of the body
- This position was to be maintained until the posture could no longer be controlled, or no more tolerance for the procedure or symptoms of fatigue are reached

Results

The examiner recorded the time held by each patient (in seconds) for the test. A Swatch Irony watch was used to record the times for all 20 patient athletes to maintain continuity.

Pilates Training protocol.

A Pilate's mat was used during training sessions for subject comfort. The exercises used in the Pilates core training program included: standing footwork, the hundred, articulating bridge, the plank, reverse plank, rolling like a ball, and side plank. These exercises were developed in the 1920s by Joseph Pilates.

Standing Footwork. This exercise was used as a warm-up. It focused on lower body strengthening, flexibility and core stability. It strengthened the muscles of the legs and pelvis, increased hip flexibility, strengthened the core, and improves balance.

Hundred. This exercise is used as a warm-up. It focuses on core strengthening and stability. The hundred increased circulation and prepared the body for additional exercises. It strengthened abdominal muscles and increased spinal flexibility.

Articulating Bridge. The articulating bridge was used as a warm-up exercise. It focused on core strengthening and lumbar flexibility. It increased spinal flexibility and strengthened the abdominal muscles, lower back muscles, gluteals, and hamstrings.

Plank. This exercise focused on the upper body, core strength, core stability, and lower body flexibility. It strengthened the shoulders, upper back, and arms, increase stability and strength to the core, as well as increasing flexibility at the hips.

Reverse Plank. This exercise focused on core and lower body strengthening, upper body flexibility and strengthening. It strengthened the abdominals, back, hip extensors, and upper extremity.

Rolling Like a Ball. This exercise focused on core strength, core stability and spinal flexibility. It strengthened the abdominal muscles, improved balance, and increased spinal flexibility.

Side Plank. This exercise focused on core and upper body strength and stability. It strengthened the core, arm, and superior back muscles, the exercise also increased strength specifically in the quadratus lumborum, gluteus medius, rotator cuff, as well as increasing stability to the shoulder.

Statistical analysis

All statistical analyses were calculated by the SPSS statistical package. The results are reported as means and standard deviations (SD). Differences between two groups were reported as mean difference $\pm 95\%$ confidence intervals (mean-diff $\pm 95\%$ CI). Student's t-test for independent samples was used to determine the differences in fitness parameters between the two groups. The $p < 0.05$ was considered as statistically significant.

Table 1. Mean \pm SD values of age, height, weight and duration of pain and baseline scores of the Roland Morris Disability Questionnaire (RMDQ) for each group

	Groups	Age (years)	Height (cm)	Weight (kg)	Duration (months)	RMDQ (deg)
Mean \pm SD	Pilates	23.45 \pm 2.4	171.05 \pm 5.5	70.76 \pm 8.4	15.78 \pm 8.4	7.4 \pm 1.2
Mean \pm SD	Control	26.22 \pm 3.6	168.32 \pm 7.3	68.11 \pm 11.2	17.65 \pm 10.5	6.5 \pm 0.9
p value		0.232	0.547	0.332	0.475	0.651

The p value for all variables between the two groups not differed significantly in this regard.

Table 2. Mean \pm SD and the significant for Goniometer flexion, Goniometer extension, Sorensen's Test and (RMDQ) between the pre-post measurements for experimental group.

Variables	Experimental group			Sig.
	pre	post	change%	
Goniometer flexion	109.7 \pm 9.13	117.25 \pm 8.58		Sig.
Goniometer extension	37.65 \pm 3.54	44.23 \pm 6.32		Sig.
Sorensen's Test	41.76 \pm 7.98	52.27 \pm 9.64		Sig.
RMDQ	7.41 \pm 1.2	4.65 \pm 2.8		Sig.

Is clear from Table (2) the post tests for experimental group had significantly higher than the pre tests in all variables and Significant improvements were observed in RMDQ

Table 3. Mean \pm SD and the significant for Goniometer flexion, Goniometer extension, Sorensen's Test and (RMDQ) between the pre-post measurements for control group.

Variables	Control group			Sig.
	pre	post	change%	
Goniometer flexion	110.21 \pm 10.15	112.38 \pm 7.87		No Sig.
Goniometer extension	38.64 \pm 6.68	40.11 \pm 5.45		No Sig.
Sorensen's Test	40.11 \pm 4.91	42.59 \pm 4.38		No Sig.
RMDQ	6.5 \pm 0.9	6.35 \pm 1.3		No Sig.

Is clear from Table (3) no significant differences between the post tests and pre tests for control group in all variables .

Table 3. Mean \pm SD and the significant for Goniometer flexion, Goniometer extension, Sorensen's Test and (RMDQ) between the post measurements for experimental and control groups.

Variables	Control	Experimental	Sig.
	post	post	
Goniometer flexion	112.38 \pm 7.87	117.25 \pm 8.58	Sig.
Goniometer extension	40.11 \pm 5.45	44.23 \pm 6.32	Sig.
Sorensen's Test	42.59 \pm 4.38	52.27 \pm 9.64	Sig.
RMDQ	6.35 \pm 1.3	4.65 \pm 2.8	Sig.

Baseline results showed that: The experimental group had significantly higher than the control group in all variables and Significant improvements were observed in RMDQ for the experimental group when comparative with the control group.

Discussion and conclusion

In this study, it was observed that flexion and extension of trunk presented higher values among individuals who practiced Pilates. This has importance in detecting spinal diseases, and in the response among individuals undergoing treatment.

Pilates Exercise For Low Back Pain is a great exercise for low back pain because it emphasizes movement by core muscles, those closest to the spin. Instead of performing more reps, Pilates focuses on performing fewer, more precise movements that require concentration, control, and proper form. Due to its

focus on developing the core muscles as well as postural awareness, Pilates is especially successful at alleviating back pain. By integrating the trunk, pelvis, and shoulder girdle Pilates enables you to develop a strong core. Adding to Pilates exercises are very smooth and controlled movements, so there is little danger of getting injured while exercising.

In recent years, there has been a growing number of reports on the benefits of Pilates-based exercises for low back pain. (M. Bryan, S. Hawson. 2003; A. Dolan et al. 2001; S. Donzelli et al. 2006; V. Gladwell et al.

2006; L. Herrington & R. Davies 2005; C. Lange et al. 2000; J. Schroeder et al. 2002)

Concomitantly, an increasing number of healthcare practitioners are using the Pilates-based approach for rehabilitation. (B. Anderson and A. Spector 2000) Despite the limited number of randomized controlled trials investigating this exercise approach, proponents have claimed improved torso or core strength, with mentions of greater range of motion, muscle symmetry, flexibility, (J. Schroeder et al. 2002) spinal and joint mobility, and proprioception, balance, and coordination. (M. Bryan, S. Hawson. 2003)

In a previous systematic review, (La Touche, et al. 2008) highlighted the importance of distinguishing Pilates-based exercises from the classic Pilates Method. The Pilates Method is an exercise form that has been popular for decades among choreographers and dance instructors in the field of dance medicine, (B. Anderson and A. Spector 2000) which addresses the causes of dance injuries, promotion of care, prevention, as well as safe postrehabilitation return to dance. (C. Miller, 2006) The neuromuscular demands of the traditional Pilates Method can be high, and, therefore, its application to physiotherapeutic interventions necessitates modifications. (R. Rydeard, et al. 2006) As such, the Pilates-based exercises, as described in the current literature, are adapted and simplified from the traditional Pilates Method, when used for rehabilitation purposes. (V. Gladwell, et al. 2006) The modified Pilates Method was designed with the intent to improve posture and control of movement via neuromuscular control techniques believed to improve lumbar spine stability through targeting the local stabilizer muscles of the lumbar-pelvic region or "core muscles." (V. Gladwell, et al. 2006)

In addition to Pilates exercises that achieve stability, which are aimed at retraining transversus abdominis and lumbar multifidus (C. Maher, 2004). Patients are taught how to activate these muscles independently from the more superficial trunk muscles in isolation first, then during more functional tasks (C.A. Richardson, et al. 1995). Pelvic floor activation and breathing control exercises are commonly included in these protocols (C. Maher, et al., 2005).

Stabilization exercises can promote muscular control around the lumbar spine. The knee stretch exercises from the Pilates method have been used in clinical practice to increase lumbar stability. (Bergson et al. 2009)

P. O'Sullivan, et al. (1997) demonstrated effectiveness of a specific stabilisation exercise approach in a CLBP population with a specific diagnosis of spondylolisthesis or spondylolysis.

Within the group who received specific exercise (SEG, specific exercise group) a significant reduction in pain intensity ($p=0.0006$, effect sizes: CG $d=0.21$ 'trivial'; SEG $d=1.78$ 'very large') and functional disability levels (ODI) ($p=0.0001$, effect size CG $d=0.06$ 'trivial', SEG $d=0.88$ 'large') was observed, with maintenance of this effect at 30-month follow up. No significant changes were seen in a control group

receiving usual care. However, despite being often cited this study has not been replicated to date.

Another important result of our study is the significant reduction in the 24-h urine vanillylmandelic acid secretions after the training program; these findings show the quality of the training program design.

Several mechanisms may contribute to decrease of urine vanillylmandelic acid secretions followed 8-week of the Pilates training program. Concerning the adaptations to strength and power training, (RS. Mazzeo, 1991) main factors are referred to in the literature: neural and hypertrophic. (J.H. Green, 1990)

According to the results :

Pilates-based exercises are superior to minimal intervention for reduction of pain in individuals with nonspecific low back pain. However, Pilates-based exercises are more effective to reduce pain. In addition, Pilates exercises are more effective than minimal intervention or other exercise interventions to reduce disability related to chronic low back pain. To have a more accurate representation of the extent of pain or disability reduction in such musculoskeletal pain condition, studies with better methodological qualities are needed.

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❖ MANAGEMENT IN SPORT

EVALUATION OF SPORTS MARKETING EFFICIENCY IN ARAB COUNTRIES

GEBRIL MOHAMED R.¹

Abstract:

Purposes of this Study are evaluating the efficiency of sports marketing in the organizations of some Arab countries through the following sub-goals:

- 1-Identify the philosophy of sports organizations towards sports marketing.
- 2- Identify the extent and existence of an organizational unit to perform specialized functions for sports marketing activity.
- 3- Determine the extent of the use effective marketing methods in sporting organizations in order to get the material and technical support required to implement the plans and programs.

Research sample consisted of officials, members of boards of directors, and managers of sports bodies' in some Arab countries (Egypt, United Arab Emirates, Bahrain, and Qatar). Two hundred forty Seven board members from Egypt (N 101), United Arab Emirates (N 76), Bahrain (N 40), and Qatar (N30) were involved in the investigation. The Subjects were administered a Questionnaire developed by the researchers.

The most important results are Research sample differed (clubs -sporting associations - the Olympic Committee) Arab countries (Egypt - Emirates - Bahrain - Qatar) in philosophy toward sport marketing. Sample search (clubs - sporting associations - the Olympic Committee) Arab countries (Egypt - Emirates - Bahrain - Qatar) agree on the sport marketing methods used sporting organizations. There are a difference among sample search sports organizations (clubs - Olympic Committee) in Arab countries (Egypt - Emirates - Bahrain - Qatar) and there are agreement by the sports federations in marketing efficiency.

The most importance Recommendations are :

1. Need to add sports fields of investment to create the appropriate field to become sports areas for attracting investment.
2. Guarantee the right of return sporting bodies in competitions organized through the radio and television.
3. Establishment channels of sports economic.
4. Exempt contributions businessmen and sponsor and the players from taxes.
5. Use the name and logo and flag sporting organizations as a self-financing and registration rights with the moral and intellectual property law.
6. Contracts with companies specializing in advertising.
7. Establishment of a database within the sports bodies including easy care and investors work in the sport.
8. The administration of sports events in order to obtain financial resources in all sports.
9. Printed Manual athlete each sporting Organization shows the name, emblem and Organization build all data sporting Organization to facilitate the investors how to select the Organization that will be sponsored investor or player, which sponsored and carries aids.

Key Words: evaluation, sport marketing, the efficiency

Introduction

Sports has evolved remarkably sophisticated, and therefore, they have become a means of attracting the attention of millions of viewers who wanted to watch the activities of multinational and enjoy with all competitors from different creative skills. Sports have also become one of the most important activities that give businesses a great interest and allocated large amounts of funds to

promote their products as one of the most important areas to receive marketing of unprecedented public demand.

Sports in Arab countries generally troubled sectors since sports coverage can not meet the basic needs of the sport. Sport in most Arab countries dependent on government funding it is not enough to meet all their needs, so it must sports organization management policy based on sound scientific

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method to address that problem. So that they can meet their obligations and needs, By the search for a variety of sources to increase revenues vitae, and the most important sources of sports marketing of the products, sport sector consumes not achieve profits and tangible results and needs to be cost prohibitive material so that it can achieve its goals

Good sports marketing will necessarily lead to the achievement of the desired objectives, therefore, must take into account that the consumer is the essential foundation which built marketing policy of the Commission, des marketing process must identify the needs of consumers efficiently, and appropriate marketing methods. In spite of the fact that many companies in Arab countries to support economic and Sponsorship for sports activities, through advertising their products through events and sporting events only Arab sport continues to suffer from many problems, most notably with regard to the physical side, with the inability of some sports organization in Arab countries to meet their requirements for the physical limitations of its budget, which affects their obligations in terms of the use of professional instructors, and contracting with the players, and the establishment of internal and external camps and so on.

The importance of sports marketing, researcher have addressed the subject of evaluating the efficiency of sports marketing organizations efficiency Arab countries where it did not take sufficient attention to the Arab countries as is the case in developed countries, which have risen rapidly in this area and by reflecting on the evolution of sport in those countries. Arab countries in dire need of attention because of the sports marketing that the best way to provide financial requirements needed by the sport for advancement in line with international standards.

Government sport sector:

In general, governments get involved in sport because of its potential for social, economic and political benefits. For example, sport can provide health benefits for participants as well as social cohesion. It can also stimulate economic activity and bolster civic pride. For some governments, sport is advantageous because it can cultivate national identity and solidarity, which tends to be helpful for re-election and general national spirit. Although the policy approach taken by a government towards sport can change radically depending on its ideological orientation, all governments influence sport in at least four ways. First, governments at various levels provide funding and facilities for sport. This includes funding for national sport organisations and Olympic campaigns, and the construction and maintenance of major and local sport, recreation and leisure facilities. Second, governments can be directly involved in the

development of sport via training institutes and elite testing facilities. Third, governments can deliver sport-, health- or physical activity related programs, or just promote lifestyle campaigns. Finally, governments can take responsibility for aspects of sport compliance, like anti-doping, as well as the composition of the general regulatory environment. The term regulatory environment refers to the nature of competition within an industry. Unlike more traditional industries, the sport industry is often allowed by government to pursue anti-competitive practices, including significant restrictions on the rights of players. This occurs because many governments accept that sport performs poorly under normal market conditions. As a result, although league regulation may be anti-competitive, it is generally not considered unreasonable, or against the public interest. While member teams are highly competitive and concerned with on-field dominance, they also understand that their long-term viability depends on a high-quality and well balanced competition where teams are of comparable strength and ability.

Governments regularly employ marketing principles to support their sport objectives. Typically, governments do not get directly involved in marketing sport, but often spend considerable money on promoting the benefits of sport or its locations. For example, governments use marketing to attract large sport events to specific cities. They also employ marketing to promote the social and health benefits of sport participation or an active lifestyle. (C.T. Aaron Smith, 2008).

Gains of sports marketing for States:

The size of the sport industry can be measured in a number of ways. For example, one way is to count how much money is spent on sport, such as sporting goods, the building of venues and organised sporting activities. Another approach is to determine how much money government and private organisations like corporations contribute to sport, such as grants and sponsorships. Another approach still would be to examine how much consumers spend on sport-related products and services per year, how many people participate in sport, how many people are employed in the sport industry and even how many volunteers provide their services. However, it is extremely difficult (if not impossible) to calculate accurate statistics on these aspects of sport. The sport industry is just too large, and it is also so fragmented that it is not practical to locate and study them all. It is possible, however, to consider estimates, or approximate calculations. These provide a hint of how large and significant the sport industry is both from an economic and social viewpoint. In Australia, it was estimated that during 2003–2004 Australians households spent an average of AUS\$887 per week on sport and physical

recreation goods and services (National Centre for Culture and Recreation Statistics, 2004) In Europe it has been suggested that in each European Union member state, sport represents between 1.6 per cent and 2.5 per cent of each country's gross domestic product, or the sum of what they produce in a year (Vocasport, 2004). The entire US sport market has been estimated at \$390 billion in 2006 (Plunkett Research Limited, 2007), including \$5.6 billion in National Football League revenue and \$61 billion in sales of sporting apparel and shoes. The golf market in the United States in 2002 was estimated to be worth \$62.2 billion (SRI International, 2002), Future, SRI International, California. with 502.4 million rounds of golf played per year (National Golf Foundation, 2003).

In terms of sport participation in England, it has been estimated that 21 per cent of the adult population (around 8.5 million people) take part in sport at least three days per week (Sport England, 2006). It is also estimated that 4.7 per cent of the adult population (around 1.9 million people) give at least one hour of their time a week to volunteering in sport. In Australia, it was estimated that 9.1 million adults participated in physical activities for recreation, exercise or sport (The Australian Bureau of Statistics, 2006). The Australian Bureau of Statistics also found that seven million people (49.2 per cent of the adult population) attended at least one sport event during the same year, and at the end of June 2001 there were approximately 90,000 people working for organizations in the sport industry (excluding government, manufacturing and sales). Research in Europe supported by the European Commission estimated that nearly one million employees work in sport as their main professional activity (Vocasport, 2004). The Vocasport project also suggested that there are almost 10 million volunteers in sport-related organisations in the European Union.

Purposes of this Study:

Purposes of this Study are evaluating the efficiency of sports marketing in the organizations of some Arab countries through the following sub-goals:

Table 1. ANOVA among Arab countries (Egypt- Emirates-Bahrain-Qatar) in a sample sports club n= 96

Factors	Source	Sum of squares	d f	Mean squares	f
The philosophy of sports organizations	Between	2.542	3	.847	8.900*
	Within	8.759	92	.0521	
	Total	11.301	95		
Marketing methods	Between	.169	3	.626	.406
	Within	12.754	92	.139	
	Total	12.922	95		
Evaluation of marketing efficiency	Between	5.509	3	1.836	5.811*
	Within	39.834	102	.316	
	Total	41.301	105		

1-Identify the philosophy of sports organizations towards sports marketing.

2- Identify the extent and existence of an organizational unit to perform specialized functions for sports marketing activity.

3- Determine the extent of the use effective marketing methods in sporting organizations in order to get the material and technical support required to implement the plans and programs.

Methodology

Subjects:

Research sample consisted of officials, members of boards of directors, and managers of sports bodies' in some Arab countries (Egypt, United Arab Emirates, Bahrain, and Qatar). Two hundred forty Seven board members from ARE (N 101), UAE (N 76), BAH (N 40), and QA (N30) were involved in the investigation. The Subjects were administered a Questionnaire developed by the researcher.

Results

There is difference statistically significant sample responses between sports clubs in Arab countries (Egypt - Emirates - Bahrain - Qatar) in philosophy towards sports marketing, and marketing competency assessment, and the lack of statistical significance (marketing methods), which refers to the sample search marketing techniques. There was agreement by the same sports clubs on marketing techniques are almost invariably in all sports bodies, but rates vary from application to the other.

$$) * 0.05 \geq \alpha \leq ($$

Difference among the responses of a sample sports clubs in Arab Countries to the philosophy of sports organizations towards sports marketing, results were as follows:

- 1- there are Differences between the Arab Republic of Egypt and the United Arab Emirates, for the benefit of the Arab Republic of Egypt.
- 2- There are Differences between the Arab Republic of Egypt and the Kingdom of Bahrain, for the benefit of the Arab Republic of Egypt.
- 3- There are Differences between the Arab Republic of Egypt and Qatar, for the benefit Qatar.
- 4- There are Differences between the United Arab Emirates and Qatar, for the benefit Qatar.
- 5- There are differences between the Kingdom of Bahrain and Qatar, for the benefit Qatar.



Figure 1. Differences among Arab countries in the philosophy of sports organizations

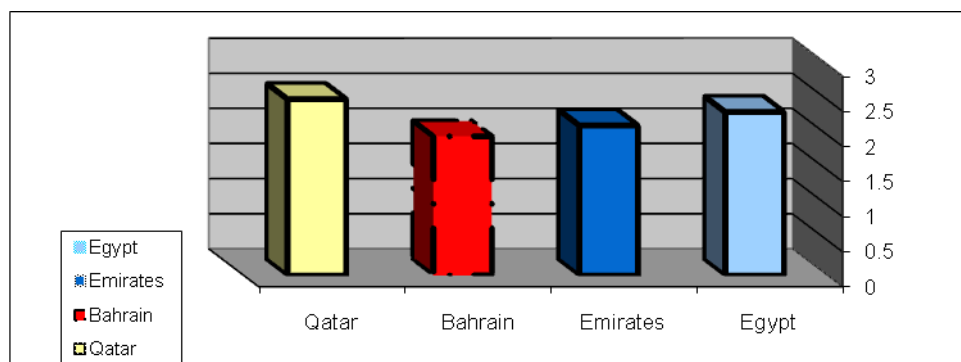


Figure 2. Differences among Arab countries in Evaluation of the efficiency of marketing

There is Difference among the responses of a sample sports clubs in Arab Countries to evaluate the efficiency of marketing, results were as follows:

- 1- There are Differences between the Arab Republic of Egypt and the Kingdom of Qatar, for the benefit Qatar.
- 2- There are Differences between the United Arab Emirates and the Kingdom of Bahrain, in the interest of the United Arab Emirates.
- 3- There are differences between the Kingdom of Bahrain and Qatar, for the benefit Qatar.

The presence of a statistically significant discrepancy among the responses of sample sports

federations in Arab countries (Egypt-UAE-Bahrain-Qatar) in the philosophy of sports clubs towards sport marketing. No statistically significant in (marketing methods), (Evaluation of marketing efficiency), which refers to the study sample unions for their sports.

It is clear from the foregoing that each sports federation Arab countries have special philosophy towards sports marketing, and there is an agreement by the same sports clubs to special marketing techniques are almost invariably in all sports organizations, but the ratios differ from the application of consistent standards and other competency assessment.

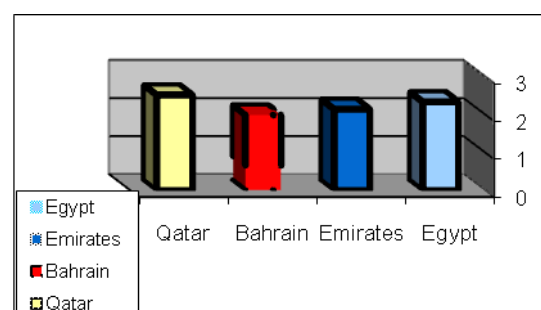
Table 2. ANOVA among Arab countries (Egypt- Emirates -Bahrain-Qatar)In a sample sports federation n= 106

factors	Source	Sum of squares	d f	Mean squares	f
The philosophy of sports organizations	Among the groups	1.174	3	.391	4.663*
	Within groups	8.557	102	.00425	
	Total	9.730	105		
Marketing methods	Among the groups	.492	3	.164	1.386
	Within groups	12.058	102	.118	
	Total	12.549	105		
Evaluation of marketing efficiency	Among the groups	1.467	3	.489	1.252
	Within groups	39.834	102	.391	
	Total	41.301	105		

)*0.05 ≥ χ (

There is difference among the responses of a sample sports federations in Arab countries toward the philosophy of sports organizations and sport marketing, results were as follows:

- 1- there are Differences between the Arab Republic of Egypt and the United Arab Emirates, for the benefit of the Arab Republic of Egypt.
- 2- There are Differences between the Arab Republic of Egypt and the Kingdom of Bahrain, for the benefit of the Arab Republic of Egypt.
- 3- There are differences between the Kingdom of Bahrain and Qatar, for the benefit of Qatar.

**Figure 3. Differences among Arab countries in the philosophy of sports associations**

There are variation of a statistically significant sample of responses Olympic committees in Arab countries (Egypt- Emirates -Bahrain-Qatar) in the philosophy of sports clubs towards sports marketing, No statistically significant in (marketing methods), which refers to the sample study on the Questions of sports unions marketing methods.

It is clear from the foregoing that each Arab Country, Olympic Committee has the marketing philosophy of sports depending on the philosophy of the country, and that there is agreement by the same Olympic Committees on marketing tactics are almost invariably in all sports organizations, but rates vary from application to the other.

The researcher used the differences of the least significant moral difference the researchers used (LSD) to clarify the differences.

Table 3. ANOVA among Arab countries in a sample Olympic Committee n= 45

factors	Source	Sum of squares	d f	Mean squares	f
The philosophy of sports organizations	Among the groups	.402	3	.134	5.042*
	Within groups	1.089	41	0.0565	
	Total	1.491	44		
Marketing methods	Among the groups	0.002145	3	0.02564	.274
	Within groups	4.537	41	.111	
	Total	4.628	44		
Evaluation of marketing efficiency	Among the groups	13.306	3	4.435	18.267*
	Within groups	9.955	41	.243	
	Total	.402	3		

$$) * 0.05 \geq \chi ($$

Figure 4. Differences among Arab countries in the philosophy Olympic Committee

There are difference among Olympic Committees sample the responses in the philosophy of sports organizations toward sports marketing results were as follows:

1- There are Differences between the Arab Republic of Egypt and the United Arab Emirates, for the benefit of the Arab Republic of Egypt.

2- There are Differences between the Arab Republic of Egypt and the Kingdom of Bahrain, for the benefit of the Arab Republic of Egypt.

Emirates - Bahrain - Qatar) in philosophy toward sport marketing.

2 - Sports organizations sample in Arab Republic of Egypt agree in philosophy toward sports marketing.

3 - There is agreement by the sports organizations Sample in United Arab Emirates philosophy toward sports marketing.

4 - Sports organizations Sample in the Kingdom of Bahrain consistent philosophy towards sport marketing.

5 -There is agreement by philosophy of Qatar sample toward sport marketing.

6- Sports organizations philosophy (clubs - sporting federation -the Olympic Committee) trend sport marketing in Arab countries tend to:

1- toward production: (preparation of the players - services to members - practice sports).

2- toward sales: (profit – selling players - selling matches tickets). 3- There is a lack of orientation towards sport marketing.

2- Sport marketing methods in Arab countries:

1 - Sample search (clubs -sporting associations - the Olympic Committee) Arab countries (Egypt - Emirates - Bahrain - Qatar) agree on the sport marketing methods used sporting organizations.

2- Sport marketing methods (clubs - sporting associations - the Olympic Committee) in Arab countries:

1. Sponsorship for sports events.
2. Sponsorship for players and sports teams.
3. Commercial advertising on sports clothes and during the administration sports events.

3- Sport marketing efficiency in Arab countries:

1-There are a difference among sample search sports organizations (clubs - Olympic Committee) in Arab countries (Egypt - Emirates - Bahrain - Qatar) and there are agreement by the sports federations in marketing efficiency.

2- Sport marketing efficiency in Arab sports clubs:

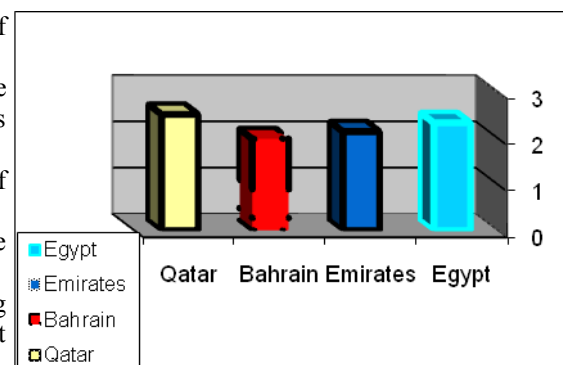
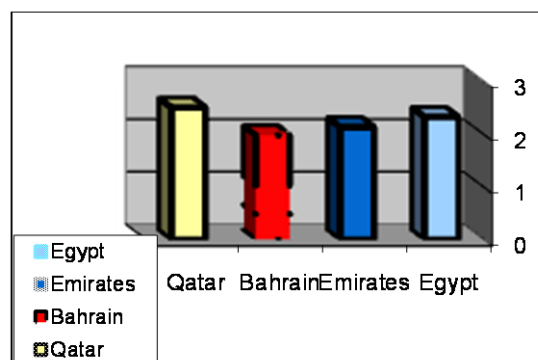


Figure 5. Differences among Arab countries in Evaluation of the efficiency of marketing Olympic Committee

There are differences among the sample responses of Olympic Committees in evaluating efficiency marketing and the results were as follows:

1- there are Differences between the Arab Republic of Egypt and the United Arab Emirates for the benefit of the United Arab Emirates.

2- There are Differences between the Arab Republic of Egypt and the Kingdom of Bahrain, for the benefit of the Kingdom of Bahrain.

3- There are Differences between the Arab Republic of Egypt and the Kingdom of Qatar, for the benefit of Qatar.

4- There are Differences between the United Arab Emirates and Qatar, for the benefit of Qatar.

5- There are differences between the Kingdom of Bahrain and Qatar, for the benefit of Qatar.

Conclusions

1-the philosophy of sports organizations in Arab countries for the sport marketing:

1- Research sample differed (clubs -sporting associations - the Olympic Committee) Arab countries (Egypt -

- 12-Exempt instruments and sports wear and equipment necessary for the exercise of its sports organizations from taxes.
- 13-Insurance products on the human destruction (player-coach---administrative governance rehabilitation and physiotherapy)
- 14-Marketing and administration of sports conferences. Special difference sports.
- 15-None quickly constructed championships or sports games in the cities of pre ensure that they accept the convergence of consumer sports.
- 16-Cooperation among sports organizations (Club-Federation-to-Olympic Committee) to increase efforts with regard to sports marketing.
- 17- A special budget to the sports marketing every sporting Organization.
- 18-Using marketing and promotional most influential the sports consumer.
- 19-Establishing marketing strategy integrated with other strategies in sporting organizations.
1. No specializing managements in sports marketing.
2. There are some of those responsible for marketing in sports clubs, others qualified in this area.
- 3- Some sports clubs use agents or offices specializing in sports marketing.
4. There is no long-term marketing plan in sports clubs.
5. There is no system to recording the views of viewers.
6. No studies for the analysis of the demand for the sports product.
- 7- No clear pricing policies.
- 3- Sport marketing efficiency in Arab sports federations:
- 1- Some sports federations use agents or offices specializing in sports marketing.
2. There are some of those responsible for marketing in sports federations, others qualified in this area.
3. There are no long-term marketing plans sports federations.
4. There is a system of information federation's sports marketing.
5. There is a system to recording the views of viewers.
- 8- Sport marketing efficiency in Arab Olympic committees:
1. Some Olympic Committees use agents or companies specializing in sports marketing.
2. There are some sports marketing officials of the Olympic Committees.
3. No pricing policies Olympic committees in Arab countries.
4. No studies for the analysis of the demand for the sports product.

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Recommendations

- 1- Need to add sports fields of investment to create the appropriate field to become sports areas for attracting investment.
- 2- Guarantee the right of return sporting bodies in competitions organized through the radio and television.
- 3- Establishment channels of sports economic.
- 4- Exempt contributions businessmen and sponsor and the players from taxes.
- 5-Use the name and logo and flag sporting organizations as a self-financing and registration rights with the moral and intellectual property law.
- 6- Contracts with companies specializing in advertising.
- 7- Establishment of a database within the sports bodies including easy care and investors work in the sport.
- 8-The administration of sports events in order to obtain financial resources in all sports.
- 9-Printed Manual athlete each sporting Organization shows the name, emblem and Organization build all data sporting Organization to facilitate the investors how to select the Organization that will be sponsored investor or player, which sponsored and carries ads.
- 10-Activating programs and sports competitions through a new system based on sports marketing and investment.
- 11-Motivate businessmen who donate to support sports activities and find a way to deal with them.

❖ SPORT AND HEALTH

COMPREHENSIVE ASSESSMENT MODULE FOR FIRST AID IN PHYSICAL AND HEALTH EDUCATION

AZALI RAHMAT¹, JULISMAH JANI¹, NORKHALID SALIMIN¹, N.HAZIYANTI M.KHALID¹, OMAR SALLEH¹

Abstract

Purpose. The purpose of this study was to identify students' learning achievement based on cognitive, psychomotor and affective domain through the Comprehensive Assessment Module (CAM) on first aid in Physical and Health Education subject.

Methods. A pre-experimental – one shot case studies design was conducted in eight secondary schools in the district of Larut, Matang and Selama in Perak. The sample consisted of 15 teachers and 447 of Form 2 students who attended the Physical and Health Education class.

Results. The CAM instrument reliability was used to gauge the cognitive domain ($r=.76$), psychomotor domain ($r=.92$) and affective domain ($r=.77$). Questionnaires regarding the usage of CAM on first aids ($r=.92$) was also used in this study. Inter observer agreement among researcher was 70.96 ± 0.83 . Results showed that students' cognitive learning achievement on first aids was good ($6.89 \pm 68.90\%$). The highest achievement of psychomotor learning during teaching session was at developed precision level (438 ± 3.14), and during simulation session was at articulation level (443 ± 4.02). The affective learning achievement was at organization level (443 ± 4.17). The results showed that 90.53% teachers agreed that the use of CAM is to improve students' achievement, 88% agreed that the instrument is to facilitate teaching process, 95.94% agreed that the assessment is to achieve the objectives of teaching, 79.46% agreed that the assessment is compatible with the module assessment and 58.67% agreed that the CAM can be easily implemented.

Conclusions. The study concluded that the CAM is suitable as a standard tool for assessing students' achievement on handball and first aid for the Form 2 Physical and Health Education subject.

Key words. Comprehensive Assessment Module, Physical and Health Education.

Introduction

Physical and Health Education subject serves as a core subject and according to the circular 25/1998 issued by the Ministry of Education Malaysia (1998). Physical and Health Education subject plays a vital role towards developing individual potential through integrated learning experiences. (P.W. Darst, R.P. Pangrazi, 2006; Freeman, 2001; V.P. Daeur, R.P. Pangrazi, 1995).

A well-planned Health Education Curriculum paired with an environment which is conducive for learning will enhance teaching and learning process in order to develop individual self-potential to the utmost level. The environmental cleanliness and safety core involves three topic namely safety, infectious diseases and first aid. Topic for the first aid in Form 2 Health Education syllabus covers The First Aid and TOTAPS Principles and Procedures.

The ratio to determine the grade for Physical Education is 3 : 1, in which the psychomotor domain covers the largest part of the components of assessment; three times

higher as compared to the other two domains. However, schools today rely 100 percent on the cognitive domain in making assessment through the mid-year and final year examination.

The current assessment method is therefore not a holistic and absolute one as there is no such

standardized instrument used to assess students' performance in the subject especially on the aptitude of games. The CAM was carried out in order to identify students' learning performances during the lessons. This research suggests that the CAM should cover the three domains of cognitive, psychomotor and affective on The First Aid in Physical and Health Education subject.

Methodology

This study was carried out in secondary schools located in the district of Larut Matang and Selama in Perak state. The sample population consisted of 15 Physical and Health Education teachers and 443 form two students who undergo the First Aid lesson during their Physical and Health Education class. The choice of subjects among teachers was made based on *purposive sampling*.

The research instrument involved assessment in the form of a rubric scoring based on the level of learning for cognitive domain ($r=.76$), psychomotor domain ($r=.92$) and affective domain ($r=.77$). Questionnaires on teachers' perceptions towards the application of CAM in the first aid lesson ($r=.82$). The percentage for interobserver agreement among teachers on first aid 70.96% ($SD=0.83$) was also taken into account in this study.

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Tanle 1. Scales for the Cognitive Assessment Level on First Aid

Scales	Level
80 and above	Excellent
60 to 79	Good
40 to 59	Moderate
20 to 39	Weak
19 and below	Very Weak

The psychomotor learning assessment on First Aid was carried out by teachers based on instructional and simulation sessions during first aid teaching and learning process under TOTAPS procedures; *Talk (T), Observe*

Table 2. Rubric Scoring for Psychomotor Assessment on First Aid

I Scale	Assesment Criteria
5 Naturalization	Unconscious mastery and related basic skills Adapt and integrate basic skill Develop precision basic skill Manipulation basic skill Imitation basic skill
4 Articulation	Adapt and integrate basic skill Develop precision basic skill Manipulation basic skill Imitation basic skill
3 Develop Precision	Develop precision basic skill Manipulation basic skill Imitation basic skill
2 Manipulation	Manipulation basic skill Imitation basic skill
1 Imitation	Imitation basic skill

The cognitive learning assessment on first aid consisted of 10 questions with the questions specification table is based on the B.S. Bloom's Taxonomy (1956), four questions on knowledge level (40%), one question on comprehension level (10%), two questions on application level (20%), one question on analysis level (10%), one question on synthesis level (10%) and one question on evaluation level (10%). This assessment was carried out based on the B.S. Bloom's (1956) Taxonomy through written test

using the score of cognitive achievement scales as presented in **Table 1**.

Assessment on affective learning for the value of cooperation consisted of two sub-values, namely helping each other and toleration. Based on Krathwohl et al.'s. (*O*), *Touch (T)*, *Active (A)*, *Passive (P)* and *Skill (S)*. This assessment was based on Dave's Taxonomy (1970) through teachers' observations with reference to the level of scales with rubric scoring as presented in **TABLE 2**.

Table 3. Scoring Rubric for Affective Assessment on First Aid

Level Scale	Assessment Criteria
5 Characterize	Adopt value system Organize value system Attach values Participate with value Receive value
4 Organize	Organize value system Attach values Participate with value

	Receive value
3	Attach values
Value	Participate with value
	Receive value
2	Participate with value
Respond	Receive value
1	
Receive	Receive value

The psychomotor assessment on the other hand was divided into two sessions; during teaching and simulation sessions while affective assessment was carried out throughout teaching process. A set of questionnaires on teacher's perception on the application of CAM on first aid was given to 15 Physical and health Education teachers upon completing the whole instructional process on the first aid techniques.

Findings and discussion

From **TABLE 4**, it can be seen that the total achievement level on cognitive domain is good ($M=6.89$, 68.90%), while students' competency level for questions on comprehension level ($M=0.85$, 85.00%), analysis level ($M=0.91$, 91.00%) and synthesis level ($M=0.81$, 81.00%) $M=0.91$, 91.00%) and synthesis level ($M=0.81$, 81.00%) are excellent. Score for questions on evaluation level ($M=0.34$, 34.00%) however suggests a weak achievement. According to B.S. Bloom (1956), to reinforce students' cognitive level in certain skill-based learning, the process should cover students' competency in six different levels following the hierarchy. Other cognitive psychologists like J. Piaget (1972), J. Bruner (1966), shared the same point of view on the importance of variable cognitive structure and process in creating meaningful learning experience in the classroom. The researcher has found that students' overall achievement in every cognitive level in first aid cognitive test involving comprehension, analysis, and synthesis level is excellent. Students' evaluation level is found to be low.

taxonomy (1964), teacher's observation is used with reference to the scoring rubric as presented in **TABLE 3**.

From **TABLE 5**, it can be seen that the total achievement level on psychomotor aspect. The psychomotor learning assessment on first aid during instruction is evaluated based on three levels namely imitation, manipulation and behavioral accuracy. Based on **TABLE 5**, it is evident that the overall students' achievement during instructional process is at manipulation level ($M=2.24$, $SD=0.55$). Psychomotor learning assessment on first aid during simulation session is carried out based on the five levels namely imitation, manipulation, behavioral accuracy, association and natural responses. Students' achievement during simulation session is at behavioral accuracy level ($M=3.43$, $SD=0.90$). Students' highest achievement during instructional process is at

behavioral accuracy level ($n=295$, 67.40%) while the highest achievement during simulation session is at association level ($n=205$, 46.30%). Research findings have shown that students are able to master the behavioral accuracy level during instructional session on *Talk* ($n=336$, 76.40%), *Observe* ($n=302$, 68.50%), *Touch* ($n=327$, 74.50%), *Active* ($n=282$, 64.10%), *Passive* ($n=263$, 59.50%) and *Skill* ($n=251$, 56.80%), while the number of students mastering the natural responses level during the simulation process is as follow; *Talk* ($n=80$, 18.10%), *Observe* ($n=68$, 15.30%), *Touch* ($n=66$, 14.90%), *Active* ($n=42$, 9.50%), *Passive* ($n=29$, 6.50%) and *Skill* ($n=42$, 9.50%).

Through CAM, Students showed excellent achievement including psychomotor aspect during first aid lesson – TOTAPS knowledge. In general, the researcher found that students did not have difficulty in performing TOTAPS' first aid techniques. The result of the study has confirmed that students who have undergone the teaching and learning process are able to understand and perform the task well. B.S. Bloom (1956) agrees that the psychomotor skill is very much associated with the learning outcomes, which achievement is obtained through manipulation aspect involving physical activities. Adding to that, states that any subjects which involve the psychomotor aspect are very much coordination -oriented and the emphasis therefore is put on physical responses. The current research findings also have confirmed students' skill competency level in performing first aid as instructed by teacher.

The psychomotor assessment on first aid for TOTAPS during simulation session is generally at the behavioral accuracy level. This situation might be caused by the feeling of anxiety among students during the simulation session as the assessment process was carried out at the same time. There are many stages students must undergo in order to perform the psychomotor skills. This condition is explained, the psychomotor skills involve six levels; responsive movement, basic movement, integrated movement, physical behaviour, movement efficiency, and clarification of movement. This is also supported by F. Buttler (1972) who explains that psychomotor learning outcomes can be divided into three categories namely *specific responding*, *motor chaining* and *rule using*. At specific responding level students are able to produce responses to physical activities. In motor chaining level, students are able to integrate more than two basic skills into one. At rule using level, students are able to

apply their knowledge in order to perform complex skills.

Table 4. Achievement Level in Cognitive Assessment on First Aid N=437

Level of Achievement	<i>N</i>		<i>%</i>	
Excellent	119		27.20	
Good	273		62.50	
Moderate	37		8.50	
Weak	8		1.80	
Total	437		100.00	
Level of questions	<i>M</i>	<i>SD</i>	<i>% Score</i>	Level of Achievement
Knowledge (4 questions)	2.91	0.53	72.75	Good
Comprehension (1 question)	0.85	0.36	85.00	Excellent
Application (2 questions)	1.07	0.63	63.50	Good
Analysis (2 questions)	0.91	0.29	91.00	Excellent
Synthesis (1 question)	0.81	0.39	81.00	Excellent
Evaluation (1 question)	0.34	0.47	34.00	Weak
Total (10 questions)	6.89	1.28	68.90	Good

Table 5: Students' Psychomotor Achievement in First Aid Skill – TOTAPS

Session	Level	<i>N</i>	<i>%</i>
Instructional Session	Association	295	67.40
	Manipulation	137	31.20
	Imitation	6	1.40
	Total	<i>N</i> =438, <i>M</i> =2.68, <i>SD</i> =0.48	
Simulation Session	Natural responses	44	9.90
	Association	205	46.30
	Accuracy	91	20.50
	Manipulation	102	23.00
	Imitation	1	0.20
	Total	<i>N</i> =443, <i>M</i> =3.43, <i>SD</i> =0.96	

Based on **TABLE 6**, the overall achievement in affective assessment is at characterize level ($M=4.77$, $SD=0.46$) while the highest score is at character building ($n=350$, 79.00%). Analysis on the value of toleration based on gender reveals that the female students ($n=88$, 19.90%) scores higher than the male students ($n=69$, 15.60%) in character building. For character building on the sub value of helping each

other, female students ($n=84$, 19.00%) scores higher than male students ($n=64$, 14.40%). The overall findings on the affective achievement in TOTAPS first aid skill are excellent. Based on the CAM assessment on students' level of affective achievement in TOTAPS first aid test, result has shown that majority of the students have achieved the highest level of affective aspect which is character building.

Table 6. Level of Achievement for Affective Learning Assessment on First Aid

Level	<i>N</i>	<i>%</i>
Characterize	350	79.00
Organize	85	19.20
Value	8	1.80
Respond	-	-
Receive	-	-
Total	<i>N</i> =443, <i>M</i> =4.77, <i>SD</i> =0.46	

Result analysis in **table 7** has indicated that 90.53% of the teachers agreed on the use of CAM in order to improve students' performances, that students became more motivated, and therefore had put more effort to bring out the best and students' participation was found to be very encouraging for the item of improving students' performances. Research finding also reveals that 88.00% of teachers agreed that the use of CAM facilitates teachers in carrying out assessment on students.

95.94% of teachers agreed that the use of CAM helps to achieve the aims and objectives of the physical and health education subject, marking criteria is made easier, clearer and suitable, and submit to learning outcomes for the item of achieving learning objectives. Moreover, 79.46% of teachers agreed that the use of CAM facilitates students' assessment process, is user friendly and not time-consuming and the rubric scoring goes well with the assessment scoring system and procedures which is simple to follow for the item of assessment module specification. Last but not least, 58.67% of the teachers agreed that the assessments on cognitive, affective and psychomotor are easier to carry out, aspects of assessment are found to be appropriate and instructional period does not constrain assessment process for the item of module management.

However, there are studies which have revealed that students favor teaching strategy which emphasizes on affective learning outcomes (J.H. McTeer, F.L. Blanton, 1978). According to T.L. Thompson, J.J. Mintz (2000), teachers who reject affective learning outcomes will diminish students' motivation level especially in skill-based learning. The instructional process for physical and health education subject should therefore emphasize on the affective assessment as the learning outcomes.

The researcher has also analyzed teachers' perceptions on the use of CAM instrument on five elements namely the application of module on students' achievement, teachers' instructional management, learning objectives achievement, module specification and its management aspect through a

survey on teachers' perceptions on the use of first aid CAM. The results are as presented in table 7 below.

Owing to that, assessment will provide a systematic way to evaluate thinking and making inference skills and is able to assess outcomes which cannot be measured through objective and normal essay writing tests. CAM therefore can help teachers to evaluate students' performances and identify weaknesses, and is able to justify students' competency in performing certain skills or activities. It is also aligned with the learning theory advocating the use of open assessment which serves as the basis to learning enhancement. On top of that, the observation method is found to be in line with method suggested by J.L. Lund M.F. Kirk (2002) and M.J. Feuer K.L. Fulton (1993) and agrees with, B.S. Mohnsen (2003) and C.J. Marsh G. Willis (2007) in which assessment technique used is able to foresee the extent to which a teaching and learning process has succeeded.

The CAM specifications are based on performance, longer span of attention, complex skills, application of specific strategy, problem solving, individual-based and the freedom to choose (E.L. Baker et al., 1993). They are also based on standard (R.J. Marzano et al., 1993). The content of the assessment items of CAM is in line with the aims and objectives of form two physical and health education syllabus. The marking criteria are also straightforward and conform to the Bloom's Taxonomy (1956) according to the domains, R.H. Dave's Taxonomy (1970) and D.R. Krathwohl's Taxonomy (1964).

The rubric scales used in this study can be a reference in making an assessment based on skills and checklist to explain the performance at every level and as a guideline or format to be emulated. The design of the rubric scales encompasses specifications as highlighted by W.J. Popham (1997) namely selection criterion, ample justification and marking strategy and specific elaboration on what to be measured (E.S. Quellmalz, 1991). The CAM is therefore found to be user friendly, able to make things simpler for teachers with procedures which are easy to perform.

Table 7. teachers' perceptions on the use of CAM

Item	Agreement Scale			
	<i>f</i>	Agree	Fairly Agree	Disagree
To improve students' performances	74	67 90.53%	7 9.46%	-
To facilitate teachers' instructional management	75	66 88.00%	3 4.00%	6 8.00%
To achieve learning objectives	74	71 95.94%	2 2.70%	1 1.35%
Conform to the specification of assessment module	73	58 79.46%	11 15.09%	2 2.74%
Assessment is easy to carry out	75	44 58.67%	17 22.67%	14 18.67%

Conclusion

Based on the research findings, the CAM instrument is suitable to be utilized by teachers as a standard measurement tool to assess students' learning performances on the first aid topic in physical and health education subject. The use of CAM is more realistic, holistic and able to assess the overall student's performances on the cognitive, affective and psychomotor domains as required by the National Education Philosophy. The CAM also agrees with the school-based assessment and its implementation has verified the 'power of knowledge' and would bring back the 'status quo' of the physical and health education subject in schools all over the country.

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PERCEPTION OVER THE PHYSICAL EDUCATION AND SPORT AND THE NECESSITY OF VOCATIONAL SELECTION OF FUTURE TEACHERS

DULGHERU MIRELA¹

Abstract

Purpose: Training human resources is a priority issue that can influence all social spheres. More often outlines strategies and methods for the selection of students, as well as initial and continuing training systems, training of personnel in education. So I believe at the level of higher education, the specialization of Pedagogic of Primary and Pre-scholar Education a vocational training process, which must have this feature as a starting point in determining the initial training strategies. Main benchmark from which to start the strategy of initial formation of the institutions must be in the future professional space that is the school and of course the new demands arising from pre-school and primary curricula, always changing in recent years. Shaping a milestone enables us to do a hypothetical portrait of the graduate at this specialization. To have a viable strategy, objective, initial training includes a series of requirements for skills, capabilities and competencies. As regards the vocational level, it remains a problem that needs more discussion.

Material and methods: Passing over the inventory referring to the vocational competences, I chose to do a study that has lasted two years on this expertise with female students about their perceptions of physical education and sport and the need of vocational selection of future teachers. The study was conducted by using a standardized questionnaire consisting of 14 items.

Results: Surveyed subjects considered absolutely necessary to include in the curriculum of physical education being aware that physical education is a subject that directly influences the biological side of the personality of the rising generation, fortunately, being present at pre-school to university cycles.

Conclusions: In addition to physical education classes a relatively small percentage practice a sport or physical activity directed or independent. A significant percentage of subjects considered necessary to regularly practice physical exercise despite not practicing for various reasons. Material conditions, quality sporting and its dependencies, convenience and even the attractiveness of the lesson are factors that determine the acceptance of female students to avoid participating in physical education class by avoiding activity often motivated by the presence of chronic diseases.

Key words: perception, physical education, vocational selection.

Introduction

Physical education is a social phenomenon that has been integrated into general education due to its contribution to influence the harmonious development of personality and the individual's physique.

Numerous studies show a fact that over time has been demonstrated, namely the existence of interdependence between the quality of life and provision of various forms of physical activity. Putting into valor this quality by practicing physical activity is made both at the individual level and at the society level in which we live, (*The basic design of the curriculum. Guidelines*, TBP CIM, 1997).

Therefore we believe that teaching physical education and sport in primary schools should not take a "wrong start". The basic organizational form of physical education and sport in schools is the class. From the early age of learning in school, the pupil participates in class and often we wonder to what extent didactic lesson fulfills its educational function and what factors depend on it. From the investigations made resulted that the motor force behind all actions and factors which determine the development of physical education class is the teacher. A major role is held by the structure of mutual relations between the teacher, who teaches the discipline Physical Education and Sport, on the one hand and the student, the working atmosphere on the other hand, etc. The

fundamental mean of activity in the physical education class is movement, often outdoors, movement that raises a genuine and natural tendency to accommodate, which is the source of intense feelings of children and youth, (*School curriculum. I-IV Grades*, Chişinău, 1998).

The relationship between students and the discipline of study shows a high percentage of students who develop strong emotional ties to the study subject, interest in sports. The source of the lack of enjoyment of other students is the poor health status, an exaggerated care of parents, lack of pedagogical skill of the teacher, lack of his vocation, the lack of attractiveness of the class, (Jaroslav Fence, Prague, *Talesna vychova*, no. 4, 1970).

In this paper I wanted to do a study on female students at Primary Education Pedagogy specialization regarding their perceptions of physical education and sport and the need for vocational selection of future teachers, knowing the fact that the training of human resources is a priority issue that can influence all social spheres. More often strategies and methods for the selection of students are formed, as well as initial and continue training systems, of perfecting the personnel in education. So I believe that at the level of higher education, at the specialization of Preschool and Primary Education Pedagogy a vocational training process is under development, which must have as a

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starting point this characteristic in determining the initial training strategies, (M. Vaida, M. Dulgheru, 2007).

Main benchmark from which to start the strategy of the initial training strategy of school teachers and this must be the future professional space that is school and of course the new requirements determined by the new preschool and primary curriculum, always changing in the recent years. Shaping a milestone enables us to do a hypothetical portrait of the graduate at this specialization. To have a viable strategy, objective, of initial training are included a series of requirements for skills, capabilities and competencies, (*Guidelines on the implementation of primary school curriculum*, Chişinău, Science, 1998).

As regards the vocational level, it remains a problem that needs more discussion.

Material and method

Research tasks

Research tasks have as aim the perception of female students from PIP on the discipline of Physical Education and Sport, their way of engagement in the sport activity in college and in their personal lives, outlooks and forecasts on how, how much, and in what manner will them be able to transmit to pupils multiple educational valences of these disciplines.

Research methods

Research methods used were observation and direct investigation, applied on a standardized questionnaire consisting of 14 items. Research has lasted 2 years, at the students from I and II university year, being included in the program a total number of 120 students (40 boys, 80 girls).

Research organization

To this end, we developed a structured questionnaire based on 14 questions of which one open (question No. 3) and also 4 questions to identify subjects (personal variables) that we wanted to determine the social status of female students (gender, age, year of study, group, environment of residence). The survey was conducted in physical education classes. The theme of the questions was centered on three issues: the beneficial effects of physical motion, its perception as a necessity, obligation, sedentary lifestyle reasons, truancy from this discipline, if they believe they have to pay proper attention to this subject from the curriculum or they will replace it abusively with other discipline as mathematics or ABC when they become teachers.

Data processing and interpretation

Processing and interpretation of data from questionnaires was done according to the following variables: gender, year of study and the residence environment [village or city].

Question No. 1 of the questionnaire:

Do you think the practice of systematic exercise is beneficial?

Question no. 2 of the questionnaire:

It is necessary the activity that you develop during the physical education lesson?

Question no. 3 of the questionnaire:

What is your opinion about the attendance at physical education class?

(being a free response, students were asked to say why they like and especially do not like in the unfolding of the class).

Question no. 4 of the questionnaire:

Do you practice a sport in your spare time?

Question no. 5 of the questionnaire:

You would choose the class of physical education if optional?

Question no. 6 of the questionnaire:

How do you prefer to spend your free time?

a) reading a book

b) going into a club

c) sitting in front of the computer

d) to rest

e) Exercising alone or in an organized environment.

Question no. 7 of the questionnaire:

Do you think sports games lead to better social integration and develop interpersonal relationships?

Question no. 8 of the questionnaire:

Do you think that the systematic practice of a sports game or a sustained physical activity would influence the quality of your life?

Question no. 9 of the questionnaire:

For you physical education is important because:

a) it relaxes you

b) maintains you healthy

c) physical modeling

d) prevents deficiencies

e) you socialize

Question no. 10 of the questionnaire:

When you were pupils, it happened to you to want to make physical education class, but the teacher did not respect the program and replaced it with a different class? What did you feel then?

a) anger

b) frustration

c) disappointment

d) joy

e) relief

Question no.1 of the questionnaire:

Do you think the practice of systematic exercise is beneficial?

As you can see, at question no. 1 students, representatives of the male sex in a percentage of 87.5% believe that physical education is good practice, 7.5% are not convinced by these effects, while 4% did not express an opinion, being content with the answer, "I do not know". In the case of years of education the situation is as follows: 84% of the students from I year have answered "Yes", 9.5% "No" and 6.5% "I do not know". For the second year we have students from rural environment at the rate of 92% answered "Yes", 6% do not believe in the beneficial effects of physical exercise, and 2% do not know. Students who come from urban areas considered beneficial exercise - 71.4%, 7% of them answered "No", and 1.4% think that "I do not know".

Question no. 2 of the questionnaire:

It is necessary the activity that you develop during the physical education lesson?

At this question the male sex in 95% believe physical education activities are necessary, 2.5% do not think it is necessary, and 2.5% answered – I do not know.

87% of the girls consider necessary the sport activity, a percentage of 6.25% answered – No -, and 6.25% - I do not know.

In the first year, 88.22% answered - yes- 4, 41% answered - no, and 7.35% have chosen – I do not know.

Referring to the students' residence, the ones in the urban area have answered in a percentage of: 92.85% with -Yes-, 4.28% with - No - and 2.85% with - I do not know.

86% of students residing in rural areas said -yes, 6% were registered with - no -, and 8% -I do not know.

Question no. 3 of the questionnaire:

What is your opinion about the attendance at physical education class?

(being a free response, students were asked to say why they like and especially do not like in the unfolding of the class).

As I stated previously there are in the questionnaire questions with free answer. Students were asked to give reasons in each of the claims. The many reasons to support the claim that they like were:

- maintain our health
- invigorate us
- relaxes us
- we like because we are let to choose a sport discipline
- we socialize

Those who chose to specify that they do not like physical education class exhibited the following reasons:

- the gym is not spacious reported to the number of students at the class
- do not like the effort of training the body
- no aerobic work, strength to the apparatus
- the locker rooms are crowded
- do not have showers

Question no. 4 of the questionnaire:

Do you practice a sport in your spare time?

Those practicing a sport represent 25% if we refer to the boys, the ones that do not practice sport in their spare time in a percentage of 75%.

Only 17.64 % of the students from the year I practice a sport and 11.53% of the students from the II year.

The students from the urban area, that practice a sport are in the percentage of 17.14% and the ones from the rural area at a rate of 12%.

Question no. 5 of the questionnaire:

You would choose the class of physical education if optional?

Male representatives in the rate of 70% would choose this subject if optional, 25% would not choose it, while 5% do not know.

In the case of study the situation is as follows: the first year - 61.76 would opt for this discipline,

29.41% would not choose it, and 5% said that - I do not know. At the second year 96.15% want this discipline, 3.8% would not choose it.

Students who come from urban areas, 74.28% opting for physical education, 14.2% would not choose this class, and 11.42% answered "I do not know".

Students from rural areas, 80% opt for Physical education in, 20% do not choose it.

Question no. 6 of the questionnaire:

How do you prefer to spend your free time?

- a) reading a book (A)
- b) going into a club (B)
- c) sitting in front of the computer (C)
- d) to rest (D)
- e) exercising alone or in an organized environment (E)

Prefer to read a book 5% of the boys, 25% want to go clubbing, 50% prefer to sit in front of the computer, 5% to rest and 15% to rest.

At the level of the first year they prefer:

- to read a book 14.7%
- to go into a club 38.23%
- to sit in front of the computer 29.41%
- to rest 7.3%
- exercising alone or in an organized environment 8.82%

At the level of the second year they prefer:

- to read a book 15.38%
- to go into a club 19.23%
- to sit in front of the computer 34.6%
- to rest 9.61 %
- exercising alone or in an organized environment 19.23%

The students from the urban area wish:

- to read a book 8%
- to go into a club 37.14%
- to sit in front of the computer 35.7%
- to rest 17 %
- exercising alone or in an organized environment 8%

Question no. 7 of the questionnaire:

Do you think sports games lead to better social integration and develop interpersonal relationships?

As you can see at question no.7 students, male representatives in proportion of 87.5% believe that sports games lead to a better social integration and develop interpersonal relationships.

7.5% are not convinced of this, while 4% did not express an opinion, content with the answer "I do not know". In the case of years of education the situation is as follows: 84% of students from the first study year answered "yes", 9.5% - "No" and 6.5% "I do not know". For the second year we have: students from rural area at the rate of 92% answered "yes", 6%, with "no" and 2% "I do not know". 71.4% of students that come from urban areas responded with "yes", 7% of them responded "No", and 1.4% think that "I do not know".

Question no. 8 of the questionnaire:

Do you think that the systematic practice of a sports game or a sustained physical activity would influence the quality of your life?

75% if we refer to boys, support the idea that the systematic practice of a sports game or sustained physical activity would influence the quality of life, those who do not believe this are in a percentage of 25%.

Only 82.35% of the first year students think that a sport would influence their lives and 17.6% are not convinced; the second year students have a rate of 88.46% that answered with "Yes", 11.5% with "no".

Students, who come from urban areas, responded -yes- in a rate of 82%, and those from the rural areas at a rate of 88% responded also – yes.

Question no. 9 of the questionnaire:

For you physical education is important because:

- a) it relaxes you (A)
- b) maintains you healthy (B)
- c) physical modeling (C)
- d) prevents deficiencies (D)
- e) you socialize (E)

At the level of first study year they think:

- it relaxes them 38,23%
- maintains them healthy 14,7%
- physical modeling 29,41%
- prevents deficiencies 7,3%%
- has socializing role 8,82%

At the level of second study year they think:

- it relaxes them 19,23%

- maintains them healthy 15,38%
- physical modeling 34,6%
- prevents deficiencies 9,61 %
- has socializing role 19,23%

The students from the urban area think that physical education:

- relaxes them 37,14%
- Maintains them healthy 8%
- physical modeling 33,7%
- prevents deficiencies 14%
- has socializing role 8%

Question no. 10 of the questionnaire:

When you were pupils, it happened to you to want to make physical education class, but the teacher did not respect the program and replaced it with a different class? What did you feel then?

- a) anger
- b) frustration
- c) disappointment
- d) joy
- e) relief

55% of the boys say that the fact that they did not do physical education produced them anger, 15% felt frustrated, 15% were disappointed, 5% felt joy and 10% did not care. 35% of girls felt anger, 18.75% felt frustrated, 37.5 felt disappointment, 6.25% this decision has made a joy, and the 2.5% did not care.

Students who come from urban areas showed anger at a rate of about 10%, 40% felt frustrated, 30% were disappointed, and 10% chose joy, relief, and 10% did not care.

Tabel 1. Question no.1

YEAR STUDY	YES	NO	I DO NOT KNOW	TOTAL
I Year	60	3	5	68
II Year	48	3	1	52
Total	108	6	6	120

RESIDENCE	YES	NO	I DO NOT KNOW	TOTAL
Urban	65	3	2	70
Rural	43	3	4	50
Total	108	6	6	120

SEX	YES	NO	I DO NOT KNOW	TOTAL
M	38	1	1	40
F	70	5	5	80
Total	108	6	6	120

Tabel 2 Question no.2

SEX	YES	NO	I DO NOT KNOW	TOTAL
M	10	30	-	40
F	8	72	-	80
Total	18	102	-	120

YEAR STUDY	YES	NO	I DO NOT KNOW	TOTAL
I Year	12	56	-	68
II Year	6	46	-	52
Total	18	102	-	120

RESIDENCE	YES	NO	I DO NOT KNOW	TOTAL
Urban	12	58	-	70
Rural	6	44	-	50
Total	18	102	-	120

Tabel 4. Question no.4

SEX	YES	NO	I DO NOT KNOW	TOTAL
M	28	10	2	40
F	56	24	-	80
Total	84	34	2	120

YEAR STUDY	YES	NO	I DO NOT KNOW	TOTAL
I Year	42	20	4	68
II Year	50	2	-	52
Total	92	22	4	120

RESIDENCE	YES	NO	I DO NOT KNOW	TOTAL
Urban	52	10	8	70
Rural	40	10	-	50
Total	92	20	8	120

Tabel 5. Question no.5

SEX	A	B	C	D	E
M	2	10	20	2	6
F	14	26	18	12	10
Total	16	36	38	14	16

STUDY YEAR	A	B	C	D	E
I Year	10	26	20	5	6
II Year	8	10	18	5	10
Total	16	36	38	10	16

RESIDENCE	A	B	C	D	E
Urban	6	26	25	12	6
Rural	10	10	13	2	10
Total	16	36	38	14	16

Tabel 6. Question no.6

SEX	YES	NO	I DO NOT KNOW	TOTAL
M	35	3	2	40

F	66	10	4	80
Total	101	13	6	120

YEAR STUDY	YES	NO	I DO NOT KNOW	TOTAL
I Year	55	10	3	68
II Year	46	3	3	52
Total	101	13	6	120

RESIDENCE	YES	NO	I DO NOT KNOW	TOTAL
Urban	55	10	5	70
Rural	46	3	1	50
Total	101	13	6	120

Tabel 7. Question no.7

SEX	YES	NO	I DO NOT KNOW	TOTAL
M	30	10	-	40
F	72	8	-	80
Total	102	18	-	120

YEAR STUDY	YES	NO	I DO NOT KNOW	TOTAL
I Year	56	12	-	68
II Year	46	6	-	52
Total	102	18	-	120

RESIDENCE	YES	NO	I DO NOT KNOW	TOTAL
Urban	58	12	-	70
Rural	44	6	-	50
Total	102	18	-	120

Tabel 8. Question no.8

SEX	A	B	C	D	E
M	10	2	20	2	6
F	26	14	18	12	10
Total	36	16	38	14	16

STUDY YEAR	A	B	C	D	E
I Year	26	10	20	5	6
II Year	10	8	18	5	10
Total	36	16	38	10	16

RESIDENCE	A	B	C	D	E
Urban	6	26	25	12	6
Rural	10	10	13	2	10
Total	16	36	38	14	16

Tabel 9. Question no.9

SEX	A	B	C	D	E
M	22	6	6	2	4
F	28	15	30	5	2
Total	50	21	36	7	6

RESIDENCE	A	B	C	D	E
Urban	8	28	22	10	8
Rural	8	8	16	4	8
Total	16	36	38	14	16

Conclusions and recommendations

The great majority of the surveyed subjects considered that it is absolutely necessary to include physical education in the curriculum being aware that physical education is a subject that directly influences the biological side of the personality of the growing generation as well and it is a good thing that it is present from preschool to university cycle.

In addition to physical education classes a relatively small percentage practice a sport or physical activity under supervision or independently.

A significant percentage of the surveyed subjects considered necessary to practice physical exercises regularly despite the fact they do not actually practice these activities from various reasons. The material conditions, the quality of the sport gym and its outbuildings, convenience and even the lack of attractiveness of the lesson are factors that determine, according to female students, avoiding the participation in the physical education class by skipping the activity altogether, often motivating the presence of chronic medical conditions "bought" from some doctors lacking professional ethics.

It is noticed that in the second year of studies, our students begin to realize the importance of this object, start to be concerned about their physique, become members of a club where such activities are being practiced. The boys are big fans of sports games, of competition can be more easily engaged in physical activity. The answers provided for question no. 10 have proven to be interesting, as it also had an educational purpose. By remembering this negative feeling is sure to make them think twice before deciding to replace the sports classes with other subject, when they become teachers. The motivations of pleasure or displeasure of coming to the physical education class that are included in the school curricula seem relevant, realistic and instructive for us who teach this subject. It is not by accident that I decided to make this study by

questioning students at Primary Education Pedagogy specialization. They 'start' in the physical and mental development of our children in the school stage and I wanted to show that it is important to have a main reference from which they should start the initial training strategy of school teachers. This must be the future professional space that is school and of course the new requirements indicated by the new preschool and primary curriculum, always changing in the recent years. Shaping a milestone enables us to do a hypothetical portrait of the graduate at this specialization. From the point of view of our discipline that often has the status of 'Cinderella' in the vocational selection of school teachers we need a viable strategy, an objective one, of initial training in which a series of requirements need to be included as to the necessary skills, abilities and competencies. As I have already said the vocational level that a future teacher should have is a problem that needs to be debated furthermore.

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IMPACTS OF MENTAL TOUGHNESS PROGRAM ON 20 km RACE WALKING

FATMA MOHAMED ABDELBAKY¹

Abstract

Purpose. Race walking is a long-distance athletic event. Although it is a foot race, it is different from running in that one foot must appear to be in contact with the ground at all times. Stride length is reduced, so to achieve competitive speeds, race walkers must attain cadence rates. The aim of this study was to determine the Effect of mental toughness program on 20km race walking.

Methods. 20 young athletics players .Subjects were randomly divided into two groups, experimental group (EG; n = 10) and control group (CG; n = 10). Mean age of all the participants ranged from 18 to 20 year. Subjects in experimental group participated in listening training program for 8 weeks, 3 days per week. To develop their psychological skills (concentrate – self-adjustment), record level of 20km race walking, walking length and walking cadence.

Results. mental toughness program that used to development the psychological skills among 20km race walking athletes had positive effects in improvement of all variables.

Conclusions. Success in race walking is related more to the efficiency of technique and mental toughness.

Key words: mental toughness program, 20km Race Walking .

Introduction

In the era of pursuit for success, in the area of competitive sport a necessity is appearing for the acquisition and extension of knowledge on the theory and practice of training. By setting a goal, a competitor strives to achieve it in an optimal way – the best way possible under specified conditions (I. Rygula ,2000, 2005).

Coaches and athletes alike are searching for competitive advantages. This search has typically led to the development of physical or technical training programs. Many coaches and athletes have become aware of the importance of mental skills in sport and are placing more emphasis on the development of these skills. The development of these mental skills is not only important for those with the desire to win, but for those with a desire to become more consistent performers. This is also true within the world of track and field as coaches and athletes have become interested in enhancing their athletes' psychological skills (D. Caudill, et al., 1983; S. Ungerleider & J. Golding, 1991). For instance, articles appearing in Track Coach have discussed the importance of the mental preparation (e.g., E. Anderson, 1997; R. Sing, 1986; R. Vernacchia, 1997; Z. Yingbo, 1992).

'Mental toughness' is probably one of the most used but least understood terms used by sporting communities globally and, in particular, by their media. (J. Loehr, 1982, 1986) was perhaps the first to popularise the term and he contended that at least 50% of superior athletic performance could be attributable to mental factors. Currently, within both scientific and coaching communities, mental toughness is now regarded as one of the most important psychological factors associated with achieving performance excellence in any sport.

In order to be mentally tough on the race, you must have talent and be in peak physical condition.

Your technical skills have to be sharp. It is also important to recognize that the physical, emotional and mental sides affect each other. Mental toughness training allows players to tap into emotional and mental resources that keep play at its prime as often and consistently as possible.

J. Loehr (1994) is a noted sport psychologist who has worked with many top athletes over the last twenty years. He suggests the following definition for toughness: "Toughness is the ability to consistently perform toward the upper range of your talent and skill regardless of competitive circumstances".

Toughness is not about having a "killer instinct" or being mean or cold. Loehr describes four emotional markers of mental toughness.

- Emotional Flexibility - The ability to handle different situations in a balanced or nondefensive manner. Emotional flexibility also speaks to the skill of drawing on a wide range of positive emotions - humor, fighting spirit, pleasure.

- Emotional Responsiveness - You are emotionally engaged in the competitive situation, not withdrawn.

- Emotional Strength - The ability to handle great emotional force and sustain your fighting spirit no matter what the circumstances.

- Emotional Resiliency - Being able to handle setbacks and recovering quickly from them.

Like other aspects of mental toughness, these skills can be learned. It is not something genetic. For some players it comes more easily than for others. In general, to play at this level, you probably already have many of these skills. However, for many players, there is often room for improvement.

By being mentally tough, you can bring all your talent and skill to life consistently. Being able to use your emotional life effectively will help you perform at your prime more consistently.

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The use of thinking skills, imagery, confidence building and other skills described later can be powerful techniques in reaching a high level of mental toughness.

Endurance performance is mentally tough; the best athletes can push themselves to sustain physical fatigue and remain psychologically positive over long distances and durations. But according to PP contributor Andy Lane, this doesn't happen by chance; endurance athletes can train the mind to develop emotional control

The general assumption for walking said that process of locomotion in which the moving body is supported by first one leg and then the other. When the moving body passes over the supporting leg, the other leg swings forward in preparation for its next support phase. One foot or the other is always on the ground, and during that period, when the support of the body is transferred from the trailing to the leading leg, there is a brief period when both feet are on the ground (J. Rose, J.G. Gamble, 2006)

Race walking can be described as the technical and athletic expression of fast walking; competition walkers attain speeds about double the maximum walking speed of an average person with a less step increase in energy expenditure, maybe due to two factors: (i) less mechanical work done to move forwards and/or (ii) the efficiency of positive work (GA. & Cavagna, P. Franzetti, 1981; DR. Menier, & L. Pugh, 1968).

Moreover, race walking has some other technical aspects, ruled by International Association of Athletics Federations (IAAF) rule 230, which increase the difficulty of locomotion: (i) loss of contact; and (ii) bent knee. The difference between common walking and race walking and the limits to race walking performance derive directly from these technical and ruling aspects. (L. Antonio, et al. 2008)

Whenever you race there are apt to be conflicting voices in your head. When the going gets tough, the loudest voices say things like: "This is stupid. I feel like garbage and I'm gonna slow down until things start feeling better." But there's always that tiny little voice of pride. The voice that says "I can do this. All I have to do is keep these legs moving." Of course it's not always easy, but if you talk down those negative voices, you can work through the tough patches and keep yourself moving on pace.

Whether it's a 5K or a marathon, there's always a point where your legs aren't going to want to play anymore. That's when you need to buckle down and do whatever it takes to stay focused on that one "simple" task: keeping your feet hitting the pavement one after the other in rapid succession. If you're close to the end of the race, keeping that focus is easy. But most of the time your legs start feeling heavy long before the cold beer at the finish line, in which case it can be extremely difficult to keep them moving. That's when you have to break things into manageable parts. If you start shutting down with four kilometers to go in a 10K, the last thing

you want to do is think about how horrible those 20km are going to be. So don't. Just take it 1 kilometer at a time.

Psychologically, the last kilometer is easy--you're gunning for the finish line. And if all you're thinking about is the one kilometer you're working on, that too will be easy. It's all the kilometers between you and the last one that get those ugly negative thoughts boiling to the top. So forget about them! Just worry about keeping yourself going for those next few minutes, then when you knock that kilometer off, work on the next.

But what if there aren't any kilometer marks? Well, you could think about that next mile, but a mile is a long way when your legs are turning into jelly. It's probably not a good idea to focus on such a long distance, so you're probably better off focusing on the next best thing: your competitors.

To successfully complete an endurance events, athletes must be willing to meet the physical challenges of the sport. This includes many hours of training, even through the cold and wet winter months.

However, one forgotten component of training and racing - mental toughness- separates two athletes with the same skill and physical preparation. This article will describe the importance and the components of mental training for triathlon and other endurance sports.

Until recently, the literature on mental toughness has suffered from a number of inherent weaknesses, and was generally characterized by a lack of conceptual clarity (L. Crust, 2007; G. Jones, et al. 2002).

The aim of this study was to determine the Effect of mental toughness program on 20km race walking.

Methods.

20 young athletics players. Subjects were randomly divided into two groups, experimental group (EG; n = 10) and control group (CG; n = 10). Mean age of all the participants ranged from 18 to 20 year. Subjects in experimental group participated in listening training program for 8 weeks, 3 days per week. To develop their mental toughness, record level of 20km race walking.

All participants were fully informed about the aims of the study, the procedures and the training, and gave their voluntary consent before participation. The experimental procedures were in agreement with the ethical human experimentation.

Instrument :

In 1986 J. Loehr developed the Psychological Performance Inventory Questionnaire with its seven distinct psychological sub concepts

Psychological Performance Inventory (PPI)

The PPI is a 42-item self-report instrument designed to measure factors that reflect mental toughness. All questions in the PPI were answered using a 6-point Likert type scale, ranging from '1' (False) to '6' (True). Six items subsume each of the following seven factors:

- Self-confidence (e.g., “I believe in myself as a player”): Positive cognitions, feelings and images about what one can do and achieve.
 - Negative energy (e.g., “I get angry and frustrated during competition”): The ability to control negative emotions such as fear, anger, frustration and resentment.
 - Attention control (e.g., “I can clear interfering emotions quickly and regain focus”): The ability to sustain a continuous focus on the task at hand. The ability to ‘tune in’ to what’s important, and ‘tune out’ to what is not.
 - Visual and imagery control (e.g., “Before competition, I picture myself performing perfectly”): The ability to think in positive and supportive images and the ability to control the flow of mental images in a positive and constructive direction.
 - Motivation level (e.g., “I am highly motivated to play my best”): The willingness to persevere with training schedules and to endure the pain, discomfort and self-sacrifice associated with forward progress.
 - Positive energy (e.g., “I can keep strong positive emotion flowing during competition”): The ability to become energized through fun, joy, determination, positivity, and team spirit.
 - Attitude control (e.g., “I am a positive thinker during competition”): Control over one’s habits of thought reflecting the extent to which one’s personal attitudes are consistent with those of successful high-level performances.
 - c. Change negatives to positives (pain=working hard)
- 3. Have tricks to keep you focused**
- a. Simplify the race (left, right, left, right...)
 - b. Stay in the present (don’t worry about how much you still have left)
 - c. Music
 - d. Counting
- 4. Remember that confidence is a choice**
- a. Preparation and trust are the keys to confidence
 - b. “Flag the Minefield”
 - c. Acting the way you want to feel creates those feelings
 - d. Focus on what you control
- 5. Use pre-race imagery**
- a. Picture yourself in the event during training runs
 - b. Imagine what you want to look like as you run (posture, body language, smile)
 - c. Imagine your plan for dealing with obstacles (laces, people, start...)
 - d. Picture yourself successfully battling pain/exhaustion
 - e. Imagine yourself crossing the finish line successfully
- 6. Use in-race imagery**
- a. Mentally breaking through the wall
 - b. Sunshine pulling away the pain
 - c. Rocky

Training the mind involves multiple steps. By setting small obtainable goals and then succeeding at them, you can train the mind to be confident you will achieve your main goal.

Start by creating a list of positive mini-goals that seem attainable en route to accomplishing your primary goal. These steps start with your training, lead up to and include your race, and culminate with you reaching your goal.

A typical list may look as follows:

- Walk as far as the race distance.
- Walk further than the race distance.
- Complete an interval workout at—or faster than—race pace.
- Walk half the race distance in another race or workout at—or faster than—race pace, and feel good about it.
- Get to the race with plenty of time to prepare.
- Start the race on pace and feeling comfortable.
- Hit the splits along the way.
- Cross the finish line under goal race pace.

Statistical analysis

All statistical analyses were calculated by the SPSS statistical package. The results are reported as means and standard deviations (SD). Differences between two groups were reported as mean difference $\pm 95\%$ confidence intervals (meandiff $\pm 95\%$ CI). Student’s t-test for independent samples was used to determine the differences in fitness parameters between the two groups. The $p < 0.05$ was considered as statistically significant.

Mental Toughness Program

1. Create a mental map for the course

- a. Use landmarks to trigger a mental reaction
- b. Break the race down and choose your focus/attitude for each piece
- c. Have a focus plan for pain and exhaustion

2. Watch your self-talk

- a. Be your own biggest fan—cheer yourself on.
- b. Don’t say anything to yourself you wouldn’t let anyone else get away with

Results :

Table 1. Mean \pm SD of Psychological Performance Inventory for the control and experimental groups

Variables	Control			Experimental			T Sign.
	pre	post	change%	pre	post	change%	
Self-	19.86 \pm 2.39	20.58 \pm 2.47	3.63	19.23 \pm	23.92 \pm	24.39	Sign

confidence				2.16	2.54		
Negative energy	18.23 ± 2.68	19.11 ± 2.15	4.83	18.65 ± 3.04	22.23 ± 2.62	19.20	Sign
Attention control	20.14 ± 2.55	20.77 ± 2.64	3.13	19.25 ± 2.31	22.16 ± 2.42	15.12	Sign
Visual and imagery control	19.14 ± 2.5	19.15 ± 2.3	0.05	18.41 ± 2.5	23.24 ± 1.96	12.52	Sign
Motivation level	18.01 ± 2.91	20.99 ± 2.38*	16.555	18.14 ± 2.98	24.67 ± 2.34	26.24	Sign
Positive energy	19.12 ± 2.52	20.37 ± 2.61	6.54	19.24 ± 2.70	21.54 ± 2.61	11.95	Sign
Attitude control	17.24 ± 2.77	19.17 ± 2.66	11.19	17.00 ± 1.93	18.48 ± 2.39	8.71	Sign
Total	133.82 ± 2.99	140.00 ± 3.05	4.62	133.44 ± 2.98	157.66 ± 2.44	81.15	Sign

Is clear from Table (1).The t-test showed a significant changes between pre-and post training scores for all variables ($P \leq 0.05$) for experimental group .however no significant differences was shown between pre-and

post training scores for all variables for control group($P \geq 0.05$) .and rates improved measurements posteriori for experimental group highest than the control group in all variables of mental toughness.

Table 2.Mean ±SD of the record level to 20km walking race for the control and experimental groups

Variables	Control			Experimental			T Sign.
	pre	post	change%	pre	post	change%	
Total	77.55 ± 0.23	77.51 ± .11	0.08	77.49 ± 0.28	77.11 ± 0.14	0.8	Sign

Is clear from Table (2).The t-test showed a significant changes between pre-and post training scores for record level ($P \leq 0.05$) for experimental group .however no significant differences was shown between pre-and post training scores for all variables for control group($P \geq 0.05$) .and rates improved measurements posteriori for experimental group highest than the control group in all variables of record level

Discussion:

The main purpose of the present report was to determine the Effect of mental toughness program on 20km race walking . As showed by Psychological skills have been found to differentiate successful and unsuccessful athletes. In general, elite performers have higher self-confidence, heightened concentration, can regulate arousal effectively, use systematically goal setting and imagery, and have high levels of motivation and commitment (D. Gould, & R. Eklund . 1991). It has also been found that elite athletes use more goal setting, imagery and activation compared to non-elite athletes (P. Thomas, et al. 1999) Psychological skills of track and field athletes were also explored in some research studies. In the Olympic US trials of 1988, track & field athletes who managed to qualify for the Olympic team used imagery more, compared to those who failed to qualify (S. Ungerleider, & J. Golding.1991). A research study, using the Psychological Skills Inventory for Sports, revealed that elite Chinese track and field athletes had

higher anxiety control and confidence than collegiate level athletes (R. Cox, et al. 1996).

In race walking, mental toughness can be equated with consistency in performance, and consists of a combination of attributes:
• Discipline, diligence and focus are most evident in a successful athlete's. Discipline also includes being able to sustain good technique and turnover, even when feeling very fatigued.

Moreover, 15 Olympic track and field athletes were interviewed and their psychological characteristics were examined (R. Vernacchia, 1997). The researchers reported that imagery was the most widely utilized mental skill. Also, elite athletes had hard work ethic, patience, persistence, self-confidence, pursued their dreams and enjoyed participating in their sport.

Ideal Performance State control can be acquired in two ways. The first is by getting tougher physically through more outside-in training. The second way can be acquired by getting tougher mentally. The connection between thoughts and emotions is very real.

Being tough mentally means that you have acquired skills in thinking, believing, and visualization.

According to (S. Bull, et al., 2005; G. Jones, et al., 2002) Mental toughness is a psychological characteristic that is suggested to contribute substantially to performance excellence.

Mental toughness can be learned. It is not something genetic. For some players it comes more easily than for others. In general, to play at this level,

you probably already have many of these skills. However, for many players, there is often room for improvement.

Race walkers must have the desire, determination and inner drive to want to be the best. This involves a high degree of self-confidence, concentration, and commitment, being mentally tough and competitive enough to stay focused on their own goals and race plans, and if necessary, to raise their own

level of discomfort high enough to break away from the pack or competitor. As most walkers want to develop more confidence, better consistency, improved concentration, composure and mental toughness throughout a race,

The findings of the present study, hopefully, could help track and field coaches and sport psychologists to design more effective training plans, incorporating psychological skills that need to be enhanced. The training of the specific performance strategies, along with physical and technical components, could help track and field athletes of different level and gender to improve their performance.

Conclusions.

Success in race walking is related more to the efficiency of technique and mental toughness.

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COMPARISON COPING WAYS OF ATHLETES AND SEDANTERS

GORGUT ILYAS¹ GULLU MEHMET², GUZEL CİHAD³**Abstract**

Stress is a term in psychology and biology, first coined in the biological context in the 1930s by H. Selye (1956). It refers to the consequence of the failure of an organism – human or animal – to respond appropriately to emotional or physical threats, whether actual or imagined. It was defined as an action against conditions like a number of conditions that prevents individuals to response in an adequate and instrumental way to environmental stimuli, tiredness, tension, sadness, physical damage nervous breakdown or loss of self-esteem (A. Balci, 2000). Coping refers to an individual's constantly changing cognitive and behavioral efforts to manage external and internal demand or conflicts (R.S. Lazarus S. Folkman 1984) like stress. The aim of this study was to compare the mean between coping ways of the athletes and sedanters to the stress. Study was tried to demonstrate whether there was a significant difference between the research groups by the results of this survey.

The research method was descriptive and survey. The study was conducted by the athletes and sedanters in both Elazığ and Kastamonu Provinces of Türkiye. N.H. Şahin and A. Durak's study (1995) "validity and reliability of Coping Ways Inventory for Turkish was used for collecting datas which was developed by S. Folkman & R.S. Lazarus's (1980). The participants were all Turkish.

As a result of this study, datas were recorded on statistical package programme for the statistical analysis and standart deviation, standart error, mean have been determined. The differences between groups have been examined by t-test in the significance level 0.05. In this study there were 320 volunteer athletes and sedanters. Among the 320 participants there were 52 female athletes, 75 female sedanters and 108 male athletes, 85 male sedanters. Athletes were consist of twelve branches. The ages of the sample ranged from 12 - to 81, with a mean of 13, 86 (SD = 7,270). Education rate and incomes are similar within the athlete group but they are all different in sedanter group.

In conclusion, the findings of the study confirmed a meaningful only two fields (helplessness, Optimism). In the field of helplessness, statistically significant difference was found between the athletes and sedanters ($P < 0,05$) It was seen that Athletes helplessness mean score was higher than sedanters. Optimism mean score also was found significant in our study ($P < 0,05$) because athletes mean score was higher than sedanters The other three fields (Self-Confidence, Submissiveness, Social support) were found meaningless between athletes and sedanters.

Key words: Coping Ways, Athletes, Sedanters.

Introduction

"Stress, like Einstein's theory of relativity, is a scientific concept which has suffered from the mixed blessing of being too well known and too little understood." (H. Selye, 1956)

As a word, stress is the physical and mental tension that reduces the durability or the defense mechanism against it (Turkish language Institute).

Stress is a term in psychology and biology, first coined in the biological context in the 1930s by Selye. He later broadened and popularized the concept to include inappropriate physiological response to any demand. In his usage stress refers to a condition and stressor to the stimulus causing it. It has become commonly used in popular parlance. It refers to the consequence of the failure of an organism – human or animal – to respond appropriately to emotional or physical threats, whether actual or imagined.

It was defined as an action against conditions that prevent individuals to response in an adequate and instrumental way to environmental stimuli, tiredness, tension, sadness, physical damage nervous breakdown or loss of self-esteem (A. Balci, 2000).

With the determination of the American Institute of Stress which found nearly 50 symptoms of

stress both physical and emotional (2010). Signs of stress may be cognitive, emotional, physical or behavioral.

Signs include poor judgments, a general negative outlook excessive worrying, moodiness, irritability, agitation, inability to relax, feeling lonely, isolated or depressed, aches and pains, diarrhea or constipation, nausea, dizziness, chest pain, rapid heartbeat, eating too much or not enough, sleeping too much or not enough, social withdrawal, procrastination or neglect of responsibilities, increased alcohol, nicotine or drug consumption, and nervous habits such as pacing about, nail-biting and neck pains.

In addition to all, E. Hall and R. Abacı (1997) said that stress would hurt interpersonal relationships and impact individual's professional performance in a negative way.

The situations and pressures that cause stress are known as stressors. We usually think of stressors as being negative, such as an exhausting work schedule or a rocky relationship. Brian Luke says; "Situations, circumstances or any stimulus that is perceived to be a threat is referred to as a stressor, or that which causes or promotes stress."

Both negative and positive stressors can lead to stress. The intensity and duration of stress changes

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depend on the circumstances and emotional condition of the person who is suffering from it.

Coping is to afford somethings and able to fight with difficulties (TDK) and an unconscious mechanism of defense.

Coping refers to an individual's constantly changing cognitive and behavioral efforts to manage external and internal demand or conflicts (Lazarus & Folkman 1984). These demands are appraised as taxing or exceeding the individual's resources. Recent conceptualizations of coping have focused on coping as a process rather than as simply a reaction to a stressor (R.S. Lazarus, S. Folkman 1984). That is, coping encompasses the range of purposeful responses to a stressor, from appraisal of the situation (e.g., assessing the situation relative to degree of threat) to stress management via effortful response (e.g., relaxation strategies, social support). Moreover, coping includes all attempts to manage stress (both cognitive and behavioral efforts), regardless of the effectiveness of the attempt (B.E. Compas, 1987).

Stress and Coping occur in accordance with the human personality traits and depending on how the evaluations.

Similar personality factors are called Personality Traits. Research has indicated that certain personality traits can make us more vulnerable to stress. People with such traits are known as Type A personalities. Type A's tend to be more competitive, more impatient, have time urgency when compared to the more relaxed and laid back Type B personalities. It's important to realise that we are all a mixture of type A and B personality traits but if we are excessively type A this can make us more vulnerable to stress.

Regarding functions of coping styles, there seem to be two main sources namely, problem-focused coping and emotion-focused coping (Folkman, 1984). Problem focused coping refers to engaging in activities that directly aims at reducing or diminishing the stressfulness of the situation. On the other hand, in emotion focused coping aim is to alleviate negative emotions by reinterpreting the situation or by distancing oneself from the stress-evoking event, by strategies like avoidance.

Lazarus argued that in order for a psychosocial situation to be stressful, it must be appraised as such. He argued that cognitive processes of appraisal are central in determining whether a situation is potentially threatening, constitutes a harm/loss, a challenge, or is benign. Both personal and environmental factors influence this primary appraisal, which then triggers the selection of coping processes. Problem-focused coping is directed at managing the problem, while emotion-focused coping processes are directed at managing the negative emotions. Secondary appraisal refers to the evaluation of the resources available to cope with the problem, and may alter the primary appraisal.

In other words, primary appraisal also includes the perception of how stressful the problem is; realizing that one has more than or less than adequate resources to deal with the problem affects the appraisal

of stressfulness. Further, coping is flexible in that the individual generally examines the effectiveness of the coping on the situation; if it is not having the desired effect, she/he will generally try different strategies

Windle and Windle (1996) have noted "the positive and negative influences that different coping responses may exert on adaptation". In general, task- or problem-oriented coping styles are positively related to adaptation and good health; emotion-oriented coping styles are negatively related to adaptation and good health (B.E. Compas, et al., 1988).

There are three basic coping strategies for coping with the stress. First of all Peoples choose Coping with the stress when it occurred. Secondly fight against this, or lastly they escape from this situation. When a stress managements plan is creating or when an individual take the stress resources, He must decide about which strategy will be appropriate.

As Endler and Parker (1994) have noted, coping strategies are intricately related to an individual's approach to stressful life events. Specific coping styles can either promote physical and mental health or exacerbate illness.

In this study we are working on the athletes and sedanters groups so we have to give informations about physical activities, sedanters and works which was done before about the activity and mental results.

Physical exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness. It was discovered in 1949 and reported in 1953 by a team led by J.N. Morris.

The benefits of exercise have been known since antiquity. Marcus Cicero, around 65 BC, stated: "It is exercise alone that supports the spirits, and keeps the mind in vigor. It is performed for various reasons. These include strengthening muscles and the cardiovascular system, honing athletic skills, weight loss or maintenance and for enjoyment. Frequent and regular physical exercise boosts the immune system, and helps prevent the "diseases of affluence" such as heart disease, cardiovascular disease, Type 2 diabetes and obesity.

Physical activity is a vital part of a healthy lifestyle and has been linked to a reduced risk of developing a wide variety of diseases, as well as been found to promote psychological wellbeing, reduce stress, anxiety, depression and loneliness, and promote social interaction and integration (US Department of Health and Human Services, 2000; World Health Organization, 2002; 2003).

An important conclusion of the 1997 President's Council on Physical Fitness and Sports Report, Physical Activity and Sport in the Lives of Girls, stated, "Regular participation in exercise and physical activity can allay many of the symptoms of hopelessness and worthlessness, feelings typically associated with anxiety and depression. Involvement in physical activity not only counteracts these negative affective responses, but can instead create expectations of success.

Physical activity appears to have therapeutic benefits and may be able to reduce the risk of

depression. The literature reviewed in the latest report of the Surgeon General on physical activity and health (1996) supports the concept that physical activity has a beneficial effect in relieving symptoms of depression and anxiety and improving moods.

When O. Neumann comprised young athletes and sedanters in a study which deal with the relationships between individuality and sporting actions, he determined that young athletes are more hardworking, alive, almost ready for making relationships with peoples and good at adapting to environment than sedanters.

In a study on 57 national team tennis players in England It was understood that they were extroverted than sedanters but introverted tennis players were more successful than the extroverted tennis players.

The aim of this study was to compare the coping ways of athletes and sedanters.

Methods

Procedures and Participants

Folkman and Lazarus Coping Way Inventory survey was multiplied and done both in Elazığ & Kastamonu, province of Turkey. Then survey results transferred into Statistical Programme for analysis.

Participations; athletes and sedanters were choosed by random methods. 160 athletes and 160 sedanters were joined study voluntarily.

Measure

At this study, volunteers were performed 2 questionnaires voluntarily. These questionnaires were demographic properties, Coping Ways Inventory. Demographic properties were included age, status of sport, income, educational levels both participations and their parents and sport branches.

Stress inventory was used from Şahin and Durak's study "validity and reliability of Coping Ways Inventory for Turkish" included 30 questions. These questions were about self-confidence, optimism,

submissiveness, helplessness, and seeking social support

Survey Form- Survey form used for collecting demographic informations about the participations.

The Ways of Coping Inventory (WCI)-The Ways of Coping Inventory (WCI) was developed by S. Folkman and R.S. Lazarus (1980), and later revised by S. Folkman and R.S. Lazarus (1985). The scale is scored on a 4-point Likert scale from "not used" (0) to "used a great deal" (3), and aims to measure different types of coping. The original scale is composed of eight subscales. The subscales of problem-focused coping are suggested to be confrontive coping, and planful problem-solving. The subscales of the emotion-focused coping are suggested to be distancing, self-controlling, seeking social support, accepting responsibility, escape/avoidance, and positive reappraisal.

The adaptation of the scale into Turkish was made by Siva (1991). The Turkish form of the scale includes 74 items, and new items stating the fatalism, and superstition were added. Şahin and Durak used Turkish Ways of Coping Inventory (WCI) in a study conducted with university students and reduced the number of items to 30. The factor analysis conducted yielded 5 similar factors, namely, self-confidence, optimism, submissiveness, helplessness, and seeking social support. They also proposed that these factors fit into two dimensional coping styles - problem-focused coping and emotion-focused coping

Data Analysis:

Mean, standart deviations, standart error of demographic informations have been determined. The differences between groups have been examined by t-test in the significance level 0.05.

Results

Table 1: Descriptive statistics table over athletes participated in the research

	Number Of Participations		
	Frequency	Percent	Valid percent
Athlete	160	50,0	50,0
Sedanter	160	50,0	50,0
Total	320	100,0	100,0

According to the data in Table 1, it is realised that in total 320 participations 50 % of the study group are athletes (160) and 50 % of the study group are sedanters (160).

Table 2: The distribution of Participant's Gender

Gender (Athletes & Sedanters)			
	Athlete	Sedanter	Total
Female	52	75	127
Male	108	85	193
Total	160	160	320

Table 2 shows that among 320 participations, there are 52 female athletes, 108 male athletes and 75 female sedanters, 85 male sedanters participated in this study.

Table 3: The distribution of Athletes Age in the research

Age Of Athletes				
	Frequency	Percent	Valid Percent	Cumulative Percent
18 and under age	153	95,6	95,6	95,6
19-23 age	4	2,5	2,5	98,1
24-28 age	3	1,9	1,9	100,0
Total	160	100,0	100,0	

Participants age distributions was determined as 18 and under age participant 153 athletes (95,6), 19-23 age 4 athletes (2,5), 24-28 age 3 athletes (1,9). The ages of the sample ranged from 12 - to 81, with a mean of 13, 86

Table 4: The Distribution Of Sedanters Age In The Research

Age of Sedanters				
	Frequency	Percent	Valid Percent	Cumulative Percent
18 and under age	129	80,6	81,1	81,1
19-23 age	12	7,5	7,5	88,7
24-28 age	8	5,0	5,0	93,1
29 and over age	11	6,9	6,9	100,0
Total	160	100,0	100,0	
System	160	100,0		
Total	160	100,0		

18 and under age 129 sedanters (80,6), 19-23 age 12 sedanters (7,5), 24-28 age 8 sedanters (5,0) 29 and over age 11 sedanters (6,9) was observed in this study.

Table 5: The Distribution Of Athletes Branch

Branch (Athletes)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Handball	39	12,2	24,4	24,4
Football	58	18,1	36,2	60,6
Basketball	8	2,5	5,0	65,6
Volleyball	26	8,1	16,2	81,9
Taekwondo	1	,3	,6	82,5
Wrestling	1	,3	,6	83,1
Orienteering	1	,3	,6	83,8
Athletics	8	2,5	5,0	88,8
Badminton	4	1,2	2,5	91,2
Ski	2	,6	1,2	92,5
Folk dance	7	2,2	4,4	96,9
Gymnastics	4	1,2	2,5	99,4
Boxing	1	,3	,6	100,0
Total	160	50,0	100,0	

With results of branch determinations; It was found that Handball 39, Football 58, Basketball 8, Volleyball 26, Taekwondo, Boxing, Orienteering, Wrestling 1, Athletics 8, Badminton 4, Ski 2, Folk dance 7, Gymnastics 4 athletes

Table 6: The Distribution Of Athletes Sport Age

Sport Age of Athletes				
	Frequency	Percent	Valid Percent	Cumulative Percent
1-5 sportage	23	7,2	14,4	14,4

6-10 sportage	93	29,1	58,1	72,5
11-15 sportage	37	11,6	23,1	95,6
16 and over	7	2,2	4,4	100,0
Total	160	50,0	100,0	
Missing System	160	50,0		
Total	320	100,0		

Table 6 shows that 6-10 years involved in sport is higher than the other years with a number of 93 athletes (29,1), then 1-5 years and finally 16 and over years take place in this study.

Table 7: The Distribution Of Participant's Education

Education (Athletes & Sedanters)			
	Athlete	Sedanter	Total
Only reads-writes	0	4	4
Primary school	0	8	8
Secondary school	3	5	8
High school	22	26	48
University	135	117	252
Total	160	160	320

Table 7 shows the distribution of participant's education number both in athletes and sedanters. Rate of University is high in both two groups

Table 8: The Distribution Of Participant's Income

Income (Athletes & Sedanters)			
	Sport		Total
	Athlete	Sedanter	
500-750 TL	53	41	94
750-1500 TL	59	72	131
Over 1500 TL	48	47	95
Total	160	160	320

Table 8 is about the distribution of participant's Income. Athletes' income is similar but sedanters' income different from each other.

Table 9: The Distribution Of Participant's Group Statistics (Mean Std., Deviation, T- test, P)

Group Statistics						
	Sport	N	Mean	Std. Deviation	T- testi	P
Self-confidence	Athlete	160	14,3750	3,87339	1,322	0,187
	Sedanter	160	13,8125	3,73693		
Helplessness	Athlete	160	10,3000	3,40699	2,271	¶ 0,024
	Sedanter	160	9,3875	3,77177		
Submissiveness	Athlete	160	5,7000	3,52493	,991	,323
	Sedanter	160	5,3062	3,58368		
Optimism	Athlete	160	9,2625	2,95136	2,587	¶ ,010
	Sedanter	160	8,4812	2,42620		
Social support	Athlete	160	6,6562	2,07121	,737	,462
	Sedanter	160	6,4875	2,02496		

In this Table; Only two fields were found significant (Helplessness 0,024, Optimism, 0,10) according to the ($P < 0,05$) Social support 0,462, Self-confidence 0,187, Submissiveness 0,323, was found meaningless in significance level.

Discussions and Conclusion:

In our study; in the field of helplessness, statistically significant difference was found between

the athletes and sedanters ($P < 0,05$) It was seen that Athletes helplessness mean score was higher than sedanters. "In coping way of adolescence athletes and

sedanters" study, helplessness was found meaningless in term of athletes and athletes' helplessness mean score was lower than sedanters. This result doesn't support our study.

Optimism mean score was found significant in our study ($P < 0,05$) because athletes mean score was higher than sedanters. But both in Sendur's (2006) and Duman's (2009) study there was no significant difference found in optimism ($P > 0,05$)

Self-Confidence wasn't found statistically significant between athletes and sedanters in our study ($P > 0,05$). In Sendur (2006) Self-Confidence wasn't found significant ($P < 0,05$) so this result supports our study result in self confidence field.

Submissiveness wasn't found significant in our study but Sendur (2006) found significant different in submissiveness. Athletes mean score was higher than sedanters. This result doesn't support our study.

Social support wasn't found significant between study groups both in our and Sendur's (2006) study.

The main purpose of this study is to compare the coping ways of Athletes and sedanters. The findings of the study confirmed as meaningful only two fields (helplessness, Optimism). The other three fields were found meaningless (Self-Confidence, Submissiveness, Social support).

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STUDY ON THE FUTURE INSTRUCTORS' MOTIVATIONS TO PARTICIPATE IN SPORT FOR ALL PROGRAMS OF PROFESSIONAL TRAINING AND IMPROVEMENT

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Abstract

Sport for All represents a social activity field of national interest that supports the practice of physical activities by all the population categories. Physical activities are considered elements essential to health improvement, social integration, development of human personality, integration of moral values, but also to the promotion of self-discipline, respect and tolerance. These factors are fundamental to the life of any democratic society.

Purpose. This study aims at investigating the reasons for which people of different age groups and professions, both males and females, choose to become Sport for All instructors.

Methods. This questionnaire-based study analyzed the categories of age, gender and professional training in persons attending the Sport for All training and improvement stages organized by the Romanian Sport for All Federation (FRSPT). The research was focused on the following variables: age, gender, profession, previous sports experience, preferences related to physical activities specific to the field.

Results. By analyzing the respondents' answers to the questionnaire, we detached some reference data concerning subjects' motivations to approach this specialization. Thus, we find on the first places the following motivations: desire to improve and update one's knowledge in the field; desire to work as Sport for All instructors within different clubs for sport activities; pleasure and passion for movement; improvement of one's own physical condition.

Conclusions. The efforts made by the Sport for All Federation to develop programs assigned to specialists' training and improvement have constantly determined more and more persons either to choose from the very beginning the career of Sport for All instructors or to become interested in a professional reconversion. Besides the professional concern, there are also motivations related to the perspective of starting some business, such as opening fitness rooms or clubs, promoting and trading sport equipment etc.

Keywords: Sport for All, professional training, motivation.

Introduction

Sport for All represents a social activity field of national interest that supports the practice of physical activities by all the population categories, as a factor for the health improvement, the development of human personality, the integration of moral values, the promotion of self-discipline, self-respect and mutual respect, as a means of social integration and tolerance learning - all these elements being essential to the life of a democratic society (A., Suci, Gh., Dumitru, 1997; Gh. Dumitru, 1997).

The promoter of these activities in our country is the Romanian Sport for All Federation (FRSPT) that, through its "Sport for All National Program, Romania 3rd millenary - another way of life", has for strategy to promote and cultivate sport for health, education and recreation, as an integrant part of the lifestyle (Buiac, D., Suci, A., 2007).

According to the FRSPT documents, the federation objectives are focused on (www.sportulpentrutoti.ro):

- guaranteeing any person's right and access to the free practice of recreational sport/ physical activities;
- building up favorable mentalities, as well as positive and active attitudes on all levels;
- providing the necessary conditions - human

resources, material facilities, management, quality services for the organized or independent practice of recreational sport/ physical activities in a clean and safe environment;

- passing from a centralized planning and offer to local programs based on traditions, on the population's needs and preferences.

These desiderata can be fulfilled only under the supervision of some well-trained specialist teams able to meet each practitioner's individual needs, but also the social needs.

The task of training skilled specialists in the field comes to the subprogram called "Human Resources - specialists in Sport for All", within which there are organized training and improvement courses for the future Sport for All instructors, courses accredited by the CNFPA and that have also become traditional through their location during the last 10 years.

In relation with the previously commented aspects, the authors of this study were interested in investigating the reasons for which persons of different age groups and professions, both males and females, choose to become Sport for All instructors.

The desire to know their motivations was also inspired to us by the necessity of identifying the modalities through which the program assigned to specialists' training and improvement can be developed

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and rendered efficient, so that it offers the population who loves movement an expert professional assistance.

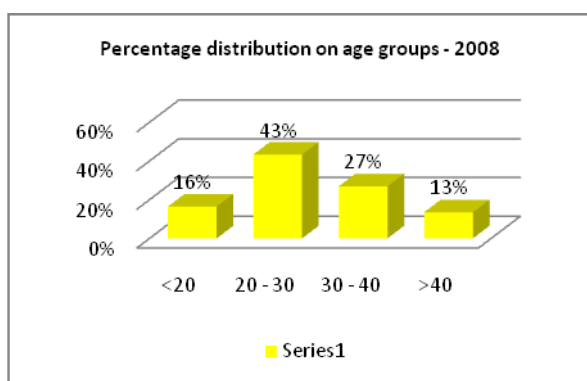
Research methods

We applied this questionnaire-based study to persons attending the training and improvement stages destined to Sport for All instructors organized by the FRSPT.

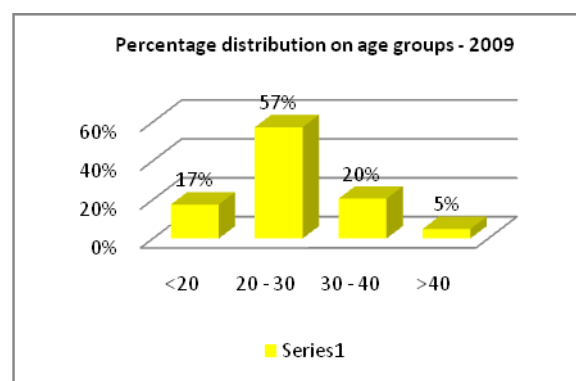
Results and discussions

Results were systematized on calendar years and we made a comparative analysis of the evolution of the above-mentioned variables. For each variable, the answers were calculated in percents and were graphically expressed.

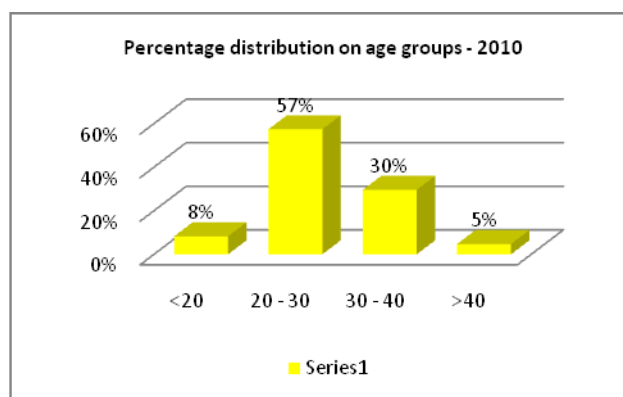
Graph no. 1



Graph no. 2



Graph no. 3



We can see that, during these 3 years, most of the students are comprised in the age group between 20 and 30 years old.

But we can also notice the interest of the group aged 30 to 40 years old in the Sport for All professional training and improvement, by taking into

We analyzed the answers given by the 400 participants in these courses in 2008, 2009 and 2010.

The applied questionnaire required information related to subjects' age, gender, studies, professional status, previous sport experience, motivations to choose this activity.

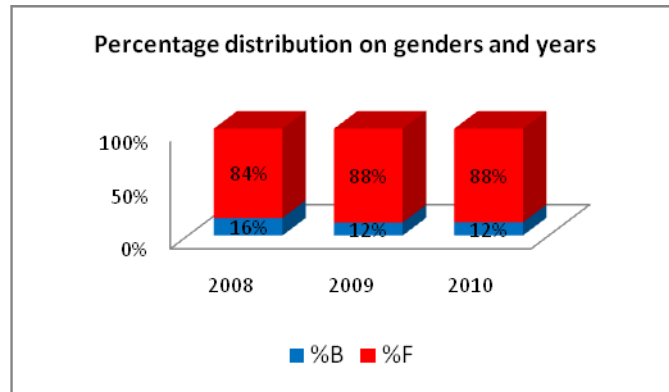
1. For the **age**-related variable, we established the following categories: under 20, between 20 and 30, between 30 and 40, above 40 years old.

Graphs 1, 2 and 3 present the percentage distributions on these age groups.

account that they are already employed in other activity fields.

2. The **gender**-related variable highlights women's major participation in this activity, their representation being constant throughout the investigated period (graph no. 4).

Graph no. 4

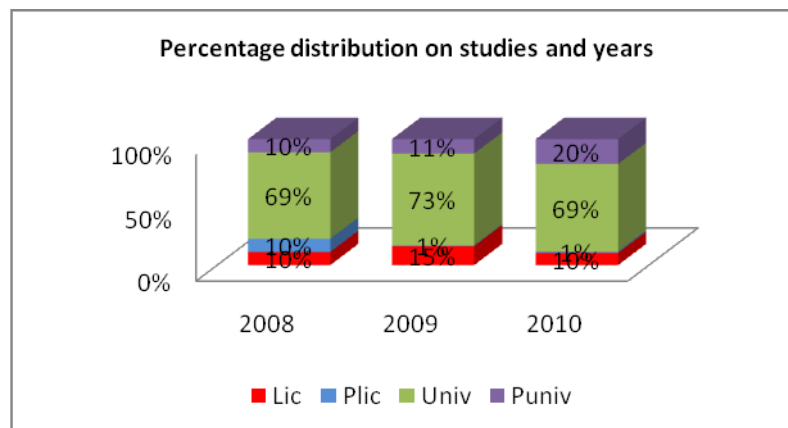


3. For the **study**-related variable, we had in view the high school (Lic), post-high school (Plic), university (Univ) and post-university (Puniv) studies.

Graph no. 5 shows the increased interest in these courses of persons with university and post-university studies (master's and doctor's degrees). The

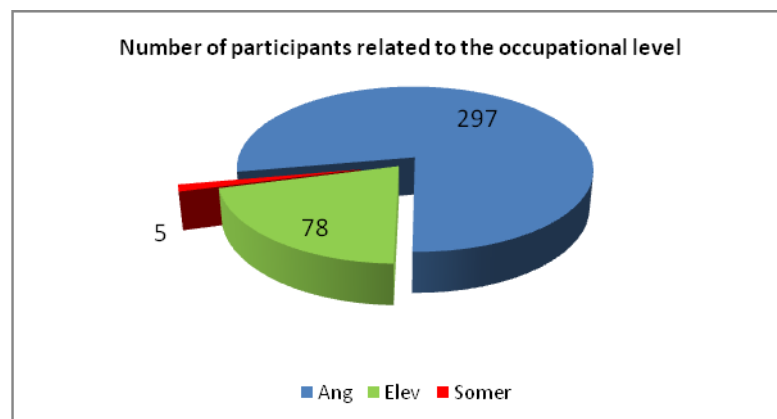
consistency of these categories of students is visible during the 3 years submitted to our analysis, which allows us to consider it as being remarkable and clarifying for the professional quality of the Sport for All future instructors.

Graph no. 5



4. The **professional status** analysis emphasizes that most of the students are persons with stable and well-defined occupations (graph no. 6).

Graph no. 6



The interest of our study being also directed to the occupational sphere or professions, after having analyzed the respondents' answers we identified the following professional categories: journalism and communication sciences (jur), psychology-sociology (psi), humanistic sciences (chemistry, biology), economic sciences (ASE), physical education and sport and physical therapy (sport), engineering (ing), medicine and dentistry (med), law, other professions (etc.), military staff and employees from the Ministry of Home Affairs (vam).

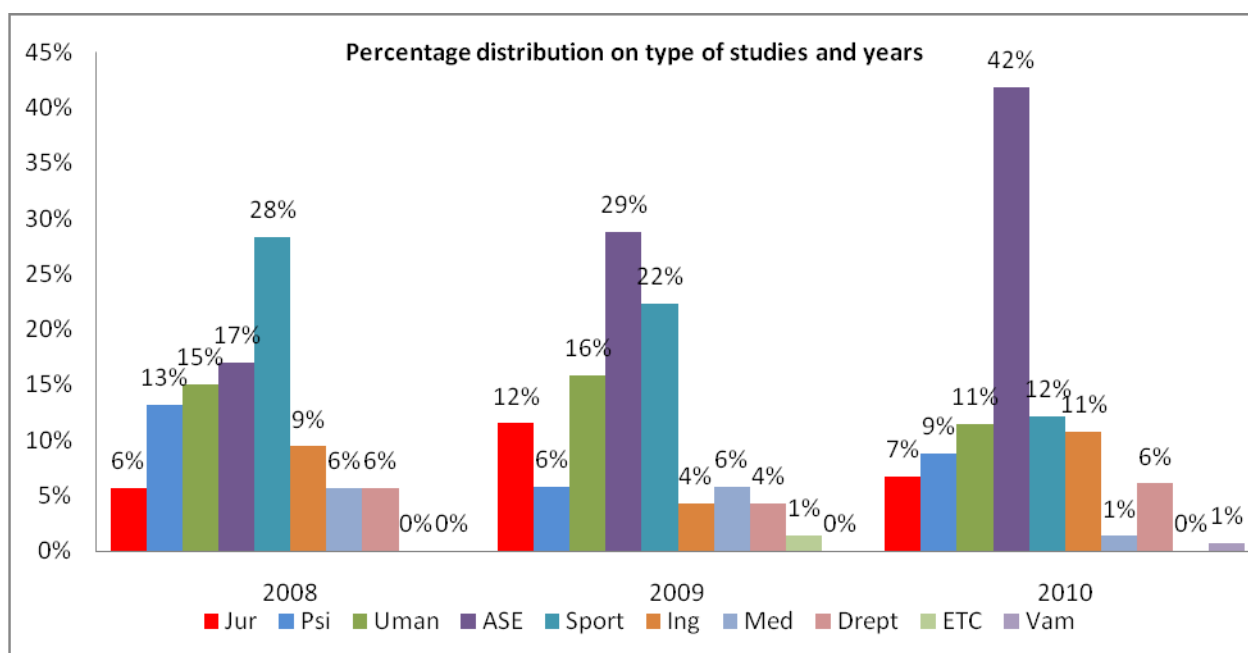
Generally, we can notice that the activity of Sport for All instructor is approached by persons from a wide

range of professions, but who are attracted by the magic of movement, according to the FRSPS slogan: "movement is life, life is movement" (A. Suciu).

Graph no. 7 shows that more and more specialists in the economic fields are interested in attending the Sport for All professional training courses, which can be explained by their perspective to start a business, such as opening a fitness room or club, promoting and trading sport equipment etc.

In contrast with this spectacular evolution, we can notice a diminution of the number of students coming from the physical education and sport field.

Graph no. 7



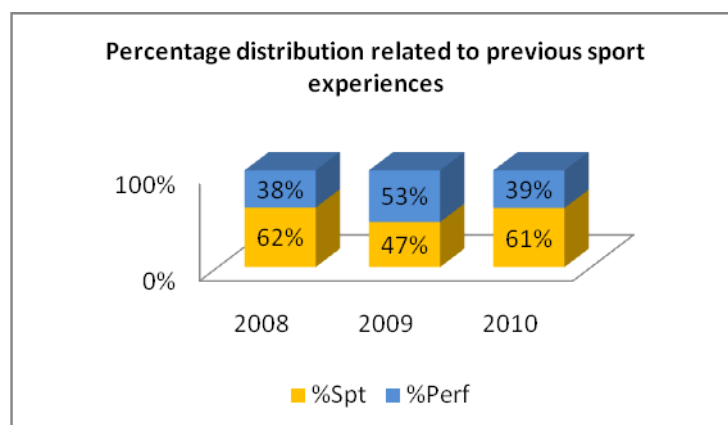
5. The variable related to **previous sport experiences** shows a balance between those practicing performance sports and those involved in Sport for All (graph no. 8).

We can see that all the investigated students love movement and have a certain sportive

background, either on the performance level or in different body conditioning activities.

Among the Sport for All preferred forms of activity, we mention: aerobic gymnastics, kangoo jumps, tae bo, step aerobics, Pilates, zumba.

Graph no. 8



6. **Motivations** for the professional training and improvement in the Sport for All area are represented in graph no. 9.

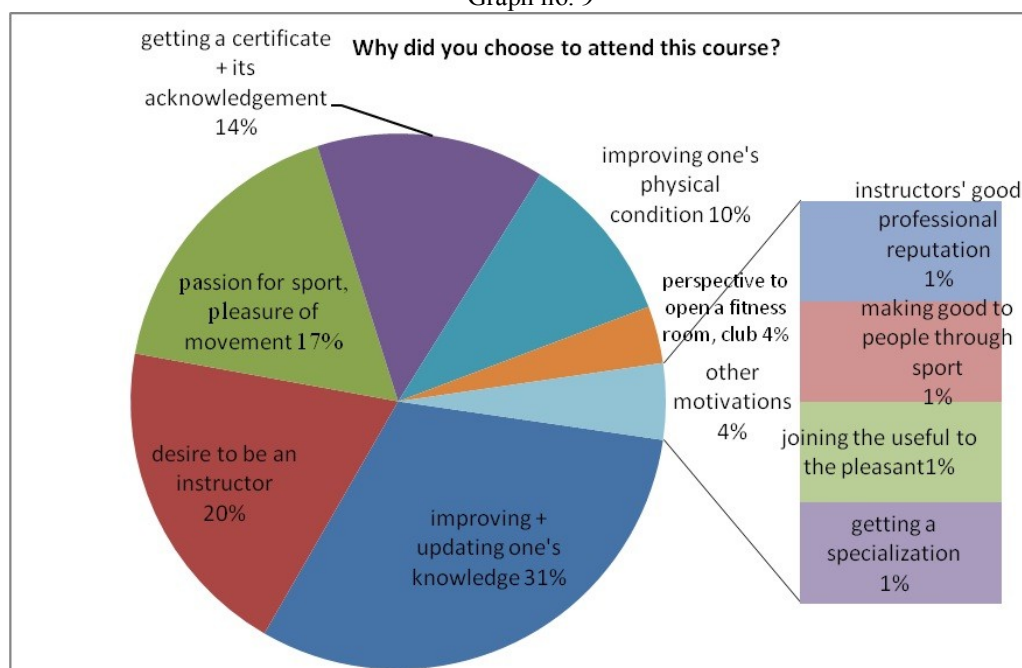
The answers to the questionnaire item “Why did you choose to attend this course?” were grouped on 10 categories of motivations:

- Improving and updating one's knowledge in the field;
- Desire to work as a Sport for All instructor;
- Passion for sport and pleasure of movement;
- Improving one's own physical condition;
- Getting an acknowledged certificate;

- Perspective to start a business;
- Good professional reputation of the instructors trained by the FRSPT;
- Contribution to the improvement of population's quality of life through the movement practicing;
- Joining the useful and the pleasant;
- Getting a specialization in the field.

We can find on the first positions: desire to improve and update one's knowledge in the field; desire to work as a Sport for All instructor within different clubs for sport activities; pleasure and passion for movement; improvement of one's own physical condition.

Graph no. 9



Conclusions

- The approaches initiated by the Romanian Sport for All Federation in order to develop the programs assigned to specialists' training and improvement have determined the attraction of a constantly increased number of persons who either choose from the very beginning the career of Sport for All instructors or become interested in a professional reconversion.
- The offer in Sport for All activities is very generous and provides those wishing to practice an organized movement form the opportunity to choose according to their personal preferences, to their individual physical capacities, but also to the specialized medical prescriptions. To wish and to do something you like, this is enough (Macovei, S., 2007).
- Most of the students are persons with a stable occupation based on university studies, but that has nothing to do with the sport field, and they approach the different forms of physical activities with passion, devotion and constancy.
- The main motivations determining the participants in the courses to become Sport for All instructors promote the desire for intellectual improvement, the

development of physical condition, the love for movement and the understanding of its value in improving the quality of life.

- Besides the professional interest, there are also motivations related to the perspective of starting a business, for instance opening a fitness room or club, promoting and trading sport equipment etc.

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THE EFFECTS OF TESTOSTERONE, A PROHIBITED SUBSTANCE, ON THE BODY AND ORGAN WEIGHTS OF PUBESCENT RATS

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Abstract

The aim of the present study was to investigate the effects of testosterone on certain organs and the macro-anatomical changes induced by this hormone in pubescent male and female rats.

The trial was conducted in 32 Sprague-Dawley rats, 16 of which were male and 16 female, at the premises of the Experimental Animals Unit of Selçuk University, Faculty of Veterinary Medicine. The study protocol was approved by the Ethics Board of the same faculty.

The male and female rats were allocated to two groups, one which constituted the control group and the other the experimental group. The average body weight of each animal was calculated. The experimental group was injected subcutaneously with 5 mg/kg of testosterone 5 days a week for a period of 10 weeks. At the end of the 10th week, the animals were euthanized; and their average body weight and the weight of the testes, liver, spleen, heart and kidneys were measured. The values of the group, which was administered with testosterone, were compared with those of the control group.

The weight of the heart, right kidney, left kidney and spleen of male experimental and control rats did not differ from each other significantly ($P > 0.05$). However, it was determined that testosterone administration led to a statistically significant reduction in the weight of the right and left testes and the liver ($p < 0.05$) in male rats.

In result, in the present study, it was demonstrated that testosterone caused certain morphometric changes in the organs of pubescent experimental rats. The results of the present study could be indicative of the effects of testosterone in young athletes, who use anabolic androgenic steroids. The results of the present study may contribute to raising awareness among athletes on the adverse effects of anabolic androgenic steroids.

Key words: Organ, morphometry, rat, testosterone

Introduction

Although the use of doping agents is associated with certain adverse physical effects and the risk of the development of addiction, owing to the improvement observed within a short time period in the performance and physical appearance of athletes, today, unfortunately, these agents are still frequently used (W.E. Buckley et al, 1988, M.S. Bahrke et al, 1998).

The prohibition of the use of performance-enhancing doping agents is aimed at protecting the health of athletes (A. Dirix et al, 1988). In professional sports, the career and future of athletes depend on their performance in races. The profession of athletes is sports and the pressure of achieving success in the particular sports branch dealt with may impel athletes to consult all kinds of methods to reach this target. Nonetheless, the prohibition of the use of doping agents is also closely related to the maintenance of the self-respect of athletes (C.E. Yesalis, 2000).

Today, anabolic androgenic steroids (AAS), apart from their medical use, are preferred rather for enhancing athletic performance (as doping agents) and to improve physical appearance. Regular reports on the use of these agents were started to be compiled only after the year 1971 (E. Vardar et al, 2002).

Starting from the 1950s and up to the early 1970s, AAS were commonly used by athletes. In Switzerland, 30% of the athletes involved in indoor sports and other sports branches admitted to having used anabolic androgenic steroids (A. Ljungqvist, 1995). In the 1980s, these steroids began to be used commonly in

outdoor sports as well (C.E. Yesalis et al, 1989).

Steroid hormones are used particularly by athletes, such as weight lifters, who perform heavy endurance workouts. Furthermore, it has been demonstrated that heavy endurance workouts bring about an increase in the number of steroid receptors in these athletes, thereby, further aggravating the effects of steroids (T.D. Fahey, 1998).

Studies conducted on anabolic steroids have pointed out to the continued and even increased use of these agents by both adult athletes and other persons (J.C. Wagner, 1989, R. Windsor., D. Dumitru, 1989).

Attention has been drawn to the health risks associated with the frequent use of anabolic steroids not only by scientists but also in reports published by many healthcare and sports organisations (C. Maravelias., A. Dona, 2005). In general, it has been clearly indicated in these reports that the use of anabolic steroids, which damage health, is prohibited (E. Marshall, 1988, L.Goldberg et al, 1990). Despite all these efforts, for many years, anabolic steroids have been available on the black market and have been readily accessed in many sports clubs and gymnasiums (D. Duchaine, 1989).

It is observed that, despite their adverse physical effects and the risk of misuse and addiction, androgens are frequently used by adolescent athletes with an aim to enhance performance (M.S.Bahrke et al, 1998, E. Vardar et al, 2004).

The general side effects of anabolic androgenic steroids include, increased water retention, liver

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dysfunction, oedema, jaundice, increased cardiac workload, increased risk of malign and benign liver tumours, increased blood pressure, kidney dysfunction, increased cholesterol levels, induced tumour growth, risk of cardiovascular diseases, increased blood glucose levels, pustulation, epistaxis, muscle cramps and spasms, thyroid dysfunction, tendon damage or rupture, psychological disorders and aggressiveness. The side effects of anabolic androgenic steroids in females include hirsutism, nymphomania, hair loss, menstrual irregularity or menopause, reduced breast size, deepening of voice and clitoral enlargement. The side effects of AAS in preadolescent males include the early ossification of cartilages and short stature. Furthermore, it has been reported that AAS cause hair loss, infertility, decreased production of male sex hormones, gynecomastia, sexual anorexia, reduced testicular size, impotence, decreased production of male sex hormones, enlargement of the prostate gland, prostate gland cancer, reduced sperm production, Wilms' tumour and abnormal sperms in males (K. Livanelioglu, 2010).

The differences between males and females for muscular growth resulting from workouts, and muscular hypertrophy being more evident in males, as well as the differences of secondary sex traits of males and females have all been attributed to testosterone being produced at higher levels in males. As a matter of fact, testosterone, together with the hormones of the hypophysis and adrenal glands, render the morphological structure of males and females different (N. Akgün, 1993). Testosterone, which is an androgenic hormone, belongs to the group of steroids responsible for the primary and secondary male sex traits (B. Starcevic et al, 2003).

Due to its androgenic and anabolic effects, testosterone has influence on several organs. Its anabolic (myotropic) effects are observed as the development of a larger mass of muscles, increased maturity of skeletal bones and increased mineralization (C.D. Kochakian., J.R. Murlin, 1935).

Anabolic steroids, which are the illegal synthetic derivatives of testosterone (J.A. Potteiger., V.G. Stilger, 1994, M.E. Powers, 2002, N.A. Evans, 2004), have strengthened anabolic efficacy and reduced androgenic effect. Drugs such as oxymesterone or oxandrolone are frequently used by athletes to increase strength and endurance (F. Muscatelli et al, 1994, C.J. Bagatell., W.J. Bremner, 2003). It has been stated that, today, the use of anabolic steroids with an aim to decrease body fat, increase strength and enhance athletic performance, has increased even among high school students (G.L. Gaa et al, 1994, J.A. Potteiger., V.G. Stilger, 1994, M.E. Powers, 2002).

In his recent studies, N.A. Evans (2004) suggested that the short-term use of the physiological doses of anabolic steroids did not induce significant side effects, whilst long-term use was associated with grave harm. This researcher has underlined that still some athletes insist on the illegal use of steroids for the sake of either maintaining or enhancing their performance.

The present study was aimed at the investigation of the possible adverse structural effects of testosterone, an AAS frequently used by athletes, on the internal organs of pubescent rats.

Materials And Methods

Thirty-two 50-day-old laboratory rats of the Sprague Dawley breed constituted the material of the study. The rats were obtained from the Experimental Medicine Research and Practice Centre of Selçuk University (SÜDAM), a legal experimental animal breeder, accompanied by the approval (No. 2007/022) issued by the Ethics Board of Selçuk University, Faculty of Veterinary Medicine. The animals were provided with *ad libitum* feed and were kept in standard cages. Each cage housed four rats. The room temperature was adjusted to an average of 25 °C throughout the trial. The relative humidity of the laboratory was adjusted to an average rate of 52.00 %. The 32 rats (16 males and 16 females) were allocated to two equal groups (n:16). The first group was maintained as the control group, whilst the second group was administered with testosterone.

All of the animals, including the control rats, were weighed on an assay balance (Ohaus CS 200 Compact Scale, Mexico) prior to the start of the trial and on Monday every week throughout the trial. The experimental animals were administered with 5 mg/kg/day (C.R. Blystone et al, 2007) of testosterone (Sustanon 250 ampoule) by subcutaneous route 5 days a week for a period of 10 weeks. The experimental animals were left to rest on Saturdays and Sundays. At the end of the 10th week, the animals were euthanized with an intraperitoneal injection of 200 mg/kg of pentobarbital (Pentotal sodium, Abbott).

Prior to euthanasia, the average body weight of each animal and after euthanasia, the weight of the dissected testes, liver, spleen, heart and kidneys were measured on an assay balance (Kern q Jehy. GmbH, Germany US 9v). The measurements of the group, which was injected with testosterone, were compared with those of the control group. The data obtained from the experimental and control groups were statistically analysed. The comparison of the two groups was performed using the independent t-test. Anatomic terminology conforms to that prescribed by Nomina Anatomica Veterinaria (N.A.V. 2005).

Result**Table 1. The t-test results for some organ weights (g) in male rats included in the control and testosterone-administered groups**

		Groups	N	Mean	Std. Deviation	t	P
Male Rats	Heart	Testosterone	8	0.2962	0.01847	-0.653	0.525
		Control	8	0.3025	0.01982		
	Liver	Testosterone	8	3.6388	0.14327	-3.714	0.002*
		Control	8	3.8700	0.10240		
	Right kidney	Testosterone	8	0.3638	0.01302	0.432	0.672
		Control	8	0.3612	0.00991		
	Left kidney	Testosterone	8	0.3688	0.01458	0.522	0.610
		Control	8	0.3650	0.01414		
	Spleen	Testosterone	8	0.1475	0.01488	-2.084	0.056
		Control	8	0.1625	0.01389		
	Right testis	Testosterone	8	0.3325	0.02053	-15.950	0.000*
		Control	8	0.5050	0.02268		
	Left testis	Testosterone	8	0.3350	0.02330	-11.705	0.000*
		Control	8	0.5062	0.03420		

In male rats, the weight of the heart, right kidney, left kidney and spleen did not differ statistically between the testosterone-administered and control groups ($P > 0.05$). However, it was determined that testosterone administration led to a statistically significant decrease in the weight of the right and left testes and the liver ($p < 0.05$).

Table 2. The t-test results for some organ weights (g) in female rats included in the control and testosterone-administered groups

		Groups	N	Mean	Std. Deviation	t	P
Female Rats	Heart	Testosterone	8	0.3112	0.01885	-1.986	0.067
		Control	8	0.3363	0.03021		
	Liver	Testosterone	8	3.7050	0.13082	-1.706	0.110
		Control	8	3.8612	0.22351		
	Right kidney	Testosterone	8	0.3750	0.03162	2.792	0.014*
		Control	8	0.3362	0.02326		
	Left kidney	Testosterone	8	0.3750	0.02330	1.938	0.073
		Control	8	0.3425	0.04132		
	Spleen	Testosterone	8	0.1688	0.03227	-1.946	0.072
		Control	8	0.2025	0.03694		

It was detected that, in female rats, testosterone administration significantly increased the weight of the right kidney ($p < 0.05$), whilst it decreased the weight of the left kidney, heart, liver and spleen ($P > 0.05$).

Table 3. The t-test results for the body weights (g) of male rats included in the testosterone-administered and control groups throughout the 10-week-trial period.

	Groups	N	Mean	Std. Deviation	t	P
Week 1	Testosterone	8	152.0000	24.28403	-0.682	0.633
	Control	8	159.2500	17.70190		
Week 2	Testosterone	8	181.3750	22.63965	-1.030	0.669
	Control	8	190.8750	12.95528		
Week 3	Testosterone	8	194.2500	23.27322	-0.318	0.854
	Control	8	197.3750	15.15574		
Week 4	Testosterone	8	205.1250	22.05472	-0.851	0.407
	Control	8	212.6250	11.58740		
Week 5	Testosterone	8	217.8750	23.94898	-0.678	0.416

	Control	8	224.3750	12.71599		
Week 6	Testosterone	8	232.5000	24.61707	-0.338	0.401
	Control	8	236.0000	15.87451		
Week 7	Testosterone	8	241.7500	26.27737	0.031	0.735
	Control	8	241.3750	21.95409		
Week 8	Testosterone	8	249.5000	27.66122	-0.125	0.972
	Control	8	251.1250	24.34536		
Week 9	Testosterone	8	256.0000	29.18414	-0.494	0.333
	Control	8	262.1250	19.46746		
Week 10	Testosterone	8	265.2500	28.17167	-0.697	0.404
	Control	8	273.7500	19.89077		
Week 11	Testosterone	8	271.0000	28.20841	-0.503	0.465
	Control	8	277.0000	18.50097		

Based on the data presented in Table 3, it was determined that testosterone administration did not have a significant effect on the body weight of male rats ($P > 0.05$).

Table 4. The t-test results for the body weights (g) of female rats included in the testosterone-administered and control groups throughout the 10-week-trial period.

	Groups	N	Mean	Std. Deviation	t	P
Week 1	Testosterone	8	155.0000	18.49324	5.336	0.096
	Control	8	115.7500	9.52815		
Week 2	Testosterone	8	192.1250	15.04695	10.750	0.234
	Control	8	126.0000	8.73417		
Week 3	Testosterone	8	199.3750	18.37652	7.793	0.023*
	Control	8	144.6250	7.55811		
Week 4	Testosterone	8	215.8750	16.08404	10.480	0.050*
	Control	8	151.5000	6.56832		
Week 5	Testosterone	8	227.2500	16.67119	11.035	0.055
	Control	8	157.3750	6.54517		
Week 6	Testosterone	8	239.7500	19.96962	9.965	0.067
	Control	8	166.0000	6.27922		
Week 7	Testosterone	8	245.2500	26.04803	7.778	0.011*
	Control	8	171.2500	6.75595		
Week 8	Testosterone	8	254.0000	27.74373	7.860	0.001*
	Control	8	174.7500	6.60627		
Week 9	Testosterone	8	266.5000	23.04034	10.638	0.005*
	Control	8	177.5000	5.39841		
Week 10	Testosterone	8	277.0000	23.10844	11.437	0.021*
	Control	8	180.2500	6.20484		
Week 11	Testosterone	8	280.5000	22.45631	10.558	0.067
	Control	8	189.7500	9.31589		

Based on the results presented in Table 4, it was ascertained that, testosterone administration significantly increased the body weight of female rats during weeks 3, 7, 8, 9 and 10 ($P < 0.05$).

Discussion and conclusion

In the present study, it was determined that, in male rats, testosterone administration did not have an effect on the weight of the heart, right kidney and left

kidney, but led to an insignificant decrease in the weight of the spleen when compared to the control group. Furthermore, it was observed that the weight of the liver and right and left testes had decreased

significantly in male rats administered with the hormone ($p < 0.05$) (Table 1). C.R. Blystone et al (2007) reported that the administration of testosterone to pubescent male rats significantly reduced the weight of certain organs. The results of the present study are in compliance with the report of J.A. Carson et al. (2002) indicating that nandrolone administration significantly reduced testis weight in male rats. M. Balkaya et al. (2002) reported to have observed significant decrease in the weight of certain organs in male rats administered with testosterone. In the present study, it was determined that, compared to the control group, the weight of the heart, liver and spleen had reduced only quantitatively, whilst the weight of the right kidney had increased statistically in the female rats included in the experimental group (Table 2).

Data obtained in the present study demonstrated that the body weight of male control and experimental animals did not differ from each other significantly between weeks 0 and 10 of the trial. However, it was observed that the body weights of the female experimental animals had significantly increased in comparison to the female control rats. In a study on the investigation of the effect of testosterone in adult male rats, J. Iwamoto et al. (2002) reported that no significant difference was determined between the initial and final body weights of the animals. In another study conducted by A. Bisschop et al. (1997), it was determined that in healthy female rats administered with nandrolone decanoate, body weight and muscle weight had increased after treatment compared to pre-treatment values, whilst in male rats no alteration was observed. The results of the present study are in agreement with the data reported by (A. Bisschop et al, 1997).

Side effects observed with the use of AAS in research conducted in experimental animals may provide valuable insight into the use of doping agents by athletes. The data obtained from experimental animals in the present study may contribute to raising awareness among young athletes on the adverse effects of AAS, as well as to protecting their health. It is also considered that the present study may contribute to similar studies to be conducted in the future.

In conclusion, it was determined that testosterone led to certain morphometric changes in the organs of pubescent experimental rats. REFERENCES

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METHODOLOGY OF LEARNING SWIMMING IN THE FIRST PART OF LIFE THROUGH A POSITIVE APPROACH

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Abstract

Stan E.A. Methodology of learning swimming in the first part of life through a positive approach

Aim: aquatic activity started early educate children in developing a spirit of good fitness throughout life, in addition to developing muscle strength, coordination and balance.

Scope: learning swimming and water activities from an early age.

Material. Using an appropriate approach to the introduction into the aquatic environment, it can give your child a fun and healthy start in life.

Methods:

- parent playing in water with the new born, with preschool children,
- the method of learning that focuses on addressing child – affection versus fear.

Results. Learning swimming with family and child builds and strengthens relationships, offers multiple benefits.

Conclusion. The good safety habits that will last a lifetime by acquiring aquatic habits early, along with parents.

Key words: children, water activities, positive approach.

Introduction

Parents know their child best: limits, needs - the most able, together with the teacher, to engage him in aquatic activities. The most important way to help children to make fun activity is to ensure water safety. In addition, playing in the water together, parent - child can be a unique opportunity to strengthen the link between parent and child. „Babies and young children are very receptive to the emotions of people around

them” (J., Katz, 1995) and therefore will project a positive attitude to the child at entering in the water. The feeling of comfort and safety in the water of the adult child is sent, which receives fear of water by observing uncertainty in parents. The effect is the interpretation of aquatic experience unpleasant or frightening. „Children „learn” to be afraid of water; is not an innate response” (J., Katz, 1995). Retention of the parent to wash the child on the head for fear of

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entering water in the ears or on face, because there is a feeling of choking to breath holding, are complex and parent unwittingly transmit them. Have instilled a sense of safety and fun in the water.

Scope. Learning swimming and aquatic activities from an early age with parents.

„Swimming is the ideal family activity – fun and safe for all. One of the best gifts you can give a little one is to teach him or her how to safely enjoy the pleasures of swimming and water play. It’s a gift your child will keep for life and that you will enjoy giving.” (J., Katz, 1995) Regardless of age, all people can feel comfortable in water, from 5-6 months (after the first vaccine, vaccination according to the system) at the elderly. Family ties and water fitness aquatic centers or swimming pools, lakes, seas and oceans, practice in family can be a great strategy to spend more time together.

Many young children can swim before they even walk, because „a water environment is familiar to your infant, as he just spent 9 months in amniotic fluid” (J., Katz, 1995).

At the age of about six months it develops breathing reflex. At this age a child can participate in healthy aquatic activities, without forcing him into the water or sinking, especially in cases of side effects or complained. „An infant in water instinctively paddles and holds her breath if she submerges (although she will lack the strength to get her face above the water to breathe) (J., Katz, 1995). The most relevant way of familiarity with water is by stimulating confidence by presenting safety and swimming skills acquisition through the level of comfort.

A means of presenting the aquatic safety is through simulation of „swimming” by keeping the child on your back with one arm under his shoulders and the other arm under hips. Hips are kept below the shoulders, because the baby’s head is very large compared to the body.

„You can introduce your child to the joys of water almost immediately after birth.” (J., Katz, 1995) Swimming is health, is considered one of the prophylactic sports because offers special conditions: horizontal position of the body, by supporting state and high pressure are demanding over the respiratory movements. During swimming water pressure on the body causes the lungs and heart to make more effort to operate within normal parameters and improve the cardiovascular system. The swimming has a favorable effect on the body in physical development, ideal for children of all ages, from the general process of growth, hardening and strengthening the body resistance and increase the overall capacity of effort.

For newborn the aquatic environment offers the continuity of the intrauterine development, thus accelerating the dynamic of evolution biopsychosomatic.

Babies can enter this unique natural element with water gravity as a stress-free manner, harmonious. They can learn to swim for months before learning to walk and it will be easier for them to propel in water to the attendant, but to learn to draw up, to overcome

gravity and go to adult. Nobody remembers when he learned to walk, and for the most part, a baby learns to swim at an early age as part of a phased approach, will lead not remember a time when not able to swim.

Water play with new - born. Swimming can be an ideal family activity, the fun, the effect of massage on the skin, the feeling of safety, especially the environment they provide. One of the best moments offered to the baby is the joy of swimming and the pleasure of playing in the water. It is a skill that children will have all life and they will gladly share.

You can enter the baby the joy of water almost immediately after birth. Water is a familiar environment for baby, because he spent nine months in amniotic fluid. A baby in the instinctively pedal and hold their breath when submerged (although it will lack power and head out to the water surface to breathe).

There are even some indications that children placed in aquatic playground and swimming at an early age are healthier, smarter, more sociable than those who did not contact with water. And, of course, learning them to float we provide an important safety skill. In addition, a very special relationship between parent and child increases forever.

Parents can be the best teachers because, who may be better to teach your child to swim than the person you trust? Parents can establish an optimal environment for learning for children aged 6 months to 4 years. I can successfully create a full support aquatic activity, color, music, stimulation, laughter and motivation.

Together with teacher or independent, parent can learn to develop to child swimming skills through games, songs, humor, praise and appropriate skills in development motor. Believe, based on the experience of 20 years in initiation, improvement and performance in swimming sports that, by focusing on the child’s pace, step by step learning sequence specifically designed for each young swimmer, he will receive a more efficient way of acquiring skills and safety procedures for swimming.

And the babies swim approach should be gentle, based on the child’s pace, when it is open, receptive, relaxed and ready. Learning swimming requires patience, practice and time and patience you give your baby, put a mutual respect and trust, on which is building other aspects of family life. Child learning to swim in an encouraging and caring, it teaches not only skills but also confidence in water safety. Develop a learning style in relation to the child how to assimilate, encouraging and supporting him, and not demanding, but replacing the pressure of learning with a desire to learn.

By celebrating each step throughout the process of learning is given satisfaction. No need to rush or force the child to perform as they will have periods of assimilation of skills and moments of stagnation in learning. By reading body language training is evaluated to determine the direction of each lesson. We want to make this experience fun from the first trip to the pool, hoping that it will continue to love to swim

for all life. Play with baby in water, not only teaches moves through the water, but encourages exploration, curiosity, confidence, joy, risk taking, attraction and determination.

The benefits of baby swimming

Children who learn to swim at an early age show advanced development in:

- Motor skills,
- Reaction time,
- Power of concentration,
- Intelligence,
- Social behavior,
- Social interaction,
- Self-confidence,
- Independence,
- Disentanglement in new and unknown situations.

Children are better adapted than those who do not participate in swimming programs early and increased self-confidence and independence are due to swim programs.

Emotional benefits

Swimming allows babies to move independently much earlier than they are able to do on land. Movement through the water to bring the child a confidence boost when exploring the aquatic environment. Whenever jumps and is caught or after swimming he learns confidence. Whenever a child is assessed for each small achievement on the way to acquire a skill, builds good opinion on him. Baby's face glows after each task is performed - they seek approval and confirmation; recognition of its efforts by the parent it strengthen self-acceptance and pride. Swimming can be very comforting for babies because it provides a new sense of freedom.

Union between parent and child grows deeper in the process of learning to swim. Child learning to swim increases contact with him during the game together, movements performed in unison, while practicing patiently through encouraging and gently. As a parent, learn about growing personality, his humor and possibilities to deal with new situations. As you will learn, as a parent you become aware of learning style and needs changing and about his skills. This knowledge will not only help the child successfully to swim, but will also help the parent to determine the child's positive growth methods that can be used outside the pool.

Social benefits

A group of like-minded parents and teach their children together, will reap social benefits - they learn from their peers by observation and imitation, and also will enjoy their company. Children begin to want to interact with each other, learning to turn, to share and learn new skills.

Physical benefits

All the benefits that swimming provides for adults - increased strength, muscle tone, resistance and lung capacity - are the same that benefit the children. For small babies, movements through the water will liberates them from a relatively static life and allows them to work muscles that otherwise would not be

used. For older babies, swimming is the natural complement to the growing repertoire of skills on land. Since both parts of the body are involved and therefore both lobes of the brain, swimming increases coordination, motor development and balance. Parents have noticed better sleep patterns after swimming.

Personal safety

Over time, through practice and skill development, children can make their own swimming safety skills needed to help them in the event of an emergency water. A quiet child who feels at ease in water and had regularly practiced the basic skills of swimming will not panic, will implement proactive techniques that you learned.

Positive learning methods

A proactive parent with positive thinking facilitates a child's education well adapted and happy. When children learn at an early age, you can build trust, share joy, to communicate through touch and words and create a link with your child while he lives new and varied stimulus.

Addressing child

We live in a time where we can benefit from research on infants capabilities. They not appear as some small lumps, babies often capture through their innate capacities the researchers. Now we know even when a baby can discern faces, language and emotions and how their activities and experiences affect mental development. Although many babies develop skills at a very early age, parents should not try to create a „super kid”. Children should not be forced or pushed to perform, only guided to develop skills at a pace with which her will feel comfortable because „mental activity of children can not be sustained and lasting”. „At this age playing acts upon them a great attraction and is a very important means of training.” (E.A. Stan, 2005)

Pace of progress in child

As children learn to walk, talk and read at different ages, so he will learn to swim in different rhythms. As a parent, it is essential to not impose an acceleration in preparing children to learn a skill. All children learn to kick with their feet when swimming - but some do it from day one, and others long after, through motivation and practice. Execution of feet beating on the first day does not mean that a child is better, smarter or stronger than other which learn later - it just means they are different and unique people.

It is not important how quickly a child learn a new technique – only the orientation on the aid to be granted by a skill acquisition one after another in time. Have taken full advantage of this process and the time spent together doing an activity you enjoy to both child and parent, a fun and entertaining lesson.

Comfort in the pool

Both children and parents bring with them a lot of previous water experiences - some negative, others positive. Some babies have a bath with water running down their face even from a few days, others saw their sister or big brother swimming under water and others are scared of water because of a failure at bathing or because of pool aggressive program. Some children are

shy and want to evaluate a new situation from a distance, others show an inherent aversion to water on the face, while others will enter a new environment without any care.

If the parent is outgoing but has a child reserved and cautious, he must respect that each individual has differences so that he must learn from child what it gives the child safety, comfort and state of well in the pool.

The importance of body language

Even before a child can talk, he is a great interpreter of body language, and will catch the most subtle nuances. Facial expression, muscle tension, tone of voice and reactions, all clues will be converted into the surrounding environment and how they should behave. Therefore, it is what makes the parent to be relaxed and confident with him in the water because it will make cues, whether positive or negative.

§ A relaxed approach, light and optimistic tone, playful or calm state give the child a sense of ease.

§ Positive signals are used as smiles, hugs, applause, laughter and a kiss to ensure the child and reinforce a positive atmosphere.

§ Do not emit mixed signals - for example, not force the child to perform movements and then hug or kiss. Use encouragement rather than coercion.

You have to look at interpret the child's body language carefully - especially if it is too small to speak. This will help to assess the level of comfort and if is happy to practice skills or games.

§ A child relaxed, happy and cheerful will enjoy the experience. His muscles will be soft, not stiffed.

§ If your child clings to adult means that it is not ready or needs more time to adjust to the new situation. Do not be rushed or distanced - give them security that seek.

§ Crying child is the way to say that something is wrong and points to the need to stop. Divert attention with a toy or playing certain games and evaluate why he cries.

Methods.

Fear against affection

Some parents see swimming programs as a threat, which they fear. Indeed, there are some programs that are based on aggressive methods (such as forcing the float on back, ordered the child to place face in water when is not prepared physiologically for it). Parent is not usually in water during lessons where children rely on parents to help. This is the reason why some parents are displayed reticence of this activity.

These aggressive methods are in contradiction with child-based approach, based on the child love and love of the water and learn. This positive guidance and fun leads to more success in learning than can produce an environment set up in fear. Water is seen as a great environment for growth and development. And if parents are in water, in close contact with the child, facilitate learning and assist in a gradual acquisition of skills. This means that the parent knows exactly what can and can not baby in the water, how long they can hold their breath and how relevant it is. The parent also recognizes its responsibilities in relation to child safety

and know how to implement a comprehensive water safety.

Ways to create an optimal learning environment

To ensure the best environment for learning swimming will follow some general guidance:

§ If the parent is in the water provides security and promotes familiarity and trust and establish close links;

§ If lessons are frequent, the repetition is smooth and practice encourages learning, forming natural patterns that resemble with baby's learning;

§ Warm, clear water is essential for swimming babies - they not fully developed heating system so that water should be warm;

§ It must develop a positive learning environment with a positive learning atmosphere, appealing to the senses by using water play activities, games, songs and colorful toys.

How we face volatile nature of children

Everyone is given a difficult day occasionally, but sometimes children can have bad five minutes or an entire week. Often these states may not be related to swimming - out teeth is a common problem, and lack or interruption of sleep, hunger or change the program (for example if one parent is gone). It is important to pay attention to physical energy levels and mood of the child, without force.

Fortunately, even the presence of water will help your child feel better. Swimming with other children means time for observation, that will provide an opportunity to try learning later in bath or pool next visit, imitating what he saw before. It will use these days for orientation skills who likes, relaxing pace of the lesson.

The role of parent in the pool

It is essential to create a direct sense of security. A parent provides familiarity and can go through the lesson in the child's rhythm. Child is relaxed and ready to try something new, or is tense, stressed or afraid and needs more time to adapt? The role of the parent is the observer aware and the instructor. The presentation of new material will be as important as learning itself. As this is an approach that focuses on the child pace is important to remember that tone of voice, mood and muscle tension send strong messages.

Focus on movement

Because swimming lesson may be the first educational experience in a child's life, it must be a positive experience leading to many educational successes as they grow. The child will be more focused on moving - on simple indulgences and unique experiences - and should not be rushed. The first pool experience can be exciting for adults as for children who may be feeling pleased that provides water to skin, shiny toys, from the water around him, and the other people in the pool.

Swimming lessons fun

Crying is not a prerequisite for learning swimming. To acquire skills at a time when the child is ready, not pushed beyond its capabilities. Required skills in children is contrary to any logical theories of learning. Swimming program should be similar to the

best land-based programs for the relevant age group and contain the most appropriate for early childhood education - play, toys, fun and laughter.

As a teacher, parent must be patient, relaxed and have fun during swimming lessons, issues which naturally must accompany learning. Being patient with your child if he does not like to jump on the water or put face in water - surprisingly, at some point will make their own initiative. Tone of voice should not betray the child and show disappointment or frustration. Instead, you must try another tactic or another skill. Often, only time is needed before presentation as a new skill to seem less intimidating and start to be fun and worth seem to be tested.

Using humor

Mood is the universal language that all children understand. Regardless of the game they know that we do something fun and want to participate too. Adult must play and use toys to their advantage - they are amazing learning aids and gives a good fun after a child doing something that is not safe, for example, a first dive. The more involved the child in play, the more likely to realize that trying something new can be daunting.

Encouraging children over 1 year

When the child turns to the age of 1 year signs of independence in developing require more patience in activities. During this stage of development operative word is „no”, that can even mean „no” or can mean „yes” or „maybe”. It is important at this stage not to transform pool into a battlefield. Instead, it increases the time to play the program, using games, fun lessons to keep this group motivated and interested. Except for a selected few who jump into the water and swim like fish, most young children will see swimming as a series of experiments.

Communication with child

Expression of what will be must always be positive. For example, you say to the child to *jump, splash and wet everywhere you want* than addressing with *jump on me, the water will not harm you*. Always call the child's sense of fun and humor. The praise always materialize every achievement, no matter how slight.

If you want to stop child to do something, not just say „no”, use another tactic. For example, if he salt before you finish counting, ask him to count out loud, then jump.

Imaginary games. Encourage older children to try new skills through an imaginary game. For example, after sinking the pirates hidden treasure is more exciting than just dive after rings.

Babies from 6 to 12 months

Most babies of this age group love the water - bath and enjoy gladly the transition from tub to the pool. I am satisfied with small quantities of water flowing over his head and face, which facilitates the adaptation phase with water and make the transition easier and faster than older children.

A way to improve trust is to sit the child on the deck, his feet dangling in the water, and then slide him fall into your arms. With each catch, you must try to

get him more and more involved with the water. Facial expressions and cheering words really pump up his enthusiasm. You will soon discover he will excitedly jump rather than fall to you.

What to expect in the pool

Babies up to nine months they like to sprinkle water to creep into the wave with whole body movement dolphin - or reflex beating frog legs. Between 6 and 12 months the foot reflex movement disappears and is replaced with slip for a period until the leg movement is learned later.

Babies can stare for a long time, but as they grow they become more alert and focused. Learning breathing exercises also shows parents keeping the difference between a reflex reaction and a skill that the child has learned.

Younger children tend to be more sensitive to water temperature. They get cold very quickly get tired more easily and sleep more after swimming.

The common misconception is that only children over the age of four can really begin to master the art of swimming and, thereby, receive any benefits from actual lessons. Children ages six months to three years have the ability to develop their swim skills with the proper teaching. For teaching your children you have to know just some basics about water safety and swimming techniques will let you better optimize your young child's time in the water.

Preschool children

Fun is the main objective in the child learn to feel comfortable in the water and around water. Remain comfortable in the water is the first step to learning swimming. Finally, with increasing obesity in children, it is important to start thinking about child fitness. Although fitness may not be an immediate goal to help pre-school child to like water, a successful introduction in aquatic activities can have a positive impact on the psyche and emotional health.

An important aspect that is overlooked is to help preschool children feel comfortable in the water and entry to take place in a friendly, safe way. If the pool is a clean environment, appropriate depth of standing, water temperature comfortable, there are relatives or some friends present and the teacher that the child is familiar, it is more likely to like water and learn to swim.

Patience and encouragement will accelerate comfort preschoolers and enthusiasm in water, swimming and learning. Appreciate their achievements and discuss the progress. All children learn to swim in different rhythms. There is no age at which the child is ready to learn to swim or put his head under water. Some children naturally feel more comfortable in water than others. The best way to support child learning to swim is to let the pace of progress.

Putting their face in the water is a significant barrier for children who are learning to swim. You have to encourage your child to dip his face. Sometimes getting him to bob up and down is a great motivator. Another technique is to use imitation to inspire one to dip the face. The animated smile of the parent will convey the fun of the task.

After the child is used to dipping his face under water, the parent must try then to gently guide the sides of his head into the water, almost as if he was side-breathing. This will enable him to experience different sensations in the water and be more apt to completing submerging his head.

Children from 1 to 3 years

Stiff legs, an evolution in the movement of the legs, increasing coordination and a sense of humor that symbolizes this age group are specific issues for young swimmers. This area of age includes babies that are just beginning to go to the children who run, children who still do not talk to children who speak competently and independent children of 3 years.

Because of interest in handling toys and objects, as well as games that can understand and can see the actions and consequences, children this age are fundamental participants in learning through games and interactive activities.

What we expect in the pool

Because this age range is so wide, so is temperament. Starting swimming at 13 to 18 months is the first period of receptivity to water, making it easier to learn swimming - will be less afraid, more cooperation and affinity for water. From 19 months to 3 years, increasing independence, stubbornness and fear may require more intelligent games, humor, time for children to learn new skills.

Like most children at this age, they become mobile and move the legs that was before reflex movement is replaced by the learned legs voluntarily.

„In infant-toddler terms, swimming to us it is the ability to move through the water, harmoniously on their own accord. Initially, for very short distances. In the younger stages, the primary mode of propulsion is kicking. For those families who continue to practice, their child will eventually be able jump in, turn around and swim back to the side.”(www.babyswimming.com)

Children from 3 to 4 years

These children have the original characters and with their personality make the swimming lessons extremely lively with verbal comments and lively imagination. It's fun to interact with them and their likes and dislikes as well as various water experiences.

What we expect in the pool

Physical robustness and coordination with increasing age at this stage are able to swim well. They can make voluntary beats strong with legs, they can sit, climb or sit with little or no help. However, if they are only beginning to learn to swim at this age, a significant percentage of children will be afraid of swimming. Some fears can be reinforced and almost paralyzed, others can be easily and quickly calm down.

A child who can already swim it can instill confidence, and children like to show other children and relatives what they can do. It is extremely exciting to watch children at this age to copy and encourage each other. If a child hits the water well with splashes demonstrate their strong legs, while another may be great to breath air and another can happily put the face to the water.

Children begin to focus more, to follow simple instructions and link some skills one to another. Imaginative play, also distinguishes this group of age and help a child scared, hesitant, like one loud. The indication is to use a theme in lessons - whatever motivates and encourages the child.

Children in this age group also enjoy to work for rewards. A verbal appraisal is sufficient. Or collecting toys as a reward earned one by one. Small steps, always repeated, begin to introduce a model of desired behavior.

Signs you need to stop

As a parent you respond to the needs, health, safety and welfare of the child from the day was born. The pool must be subtle cultivated skills which help from parental instinct in assessing flow training and, most importantly, reduce the rate or stops.

An area without tears

Do from lessons of swimming „an area without tears” (F.B. Freedman, 2004)

Often people who witnessed the aggressive swimming lessons are astonished by laughter, tears and lack of confidence in the water for some swimming teachers.

There are several ways to maintain the mood and learning without stress, by stopping, or rather submission slower pace appropriate to the child. You can not do everything at once and to try this will lead to stress and overwhelmed child. Always keep calm because a powerful jerk, a push or a gruff tone, anxious tears will lead to tears.

- * Do not introduce new skills until the child is not ready.

- * At any sign of resistance or discomfort because it exceeded the capacity of children, stop the activity. Return to previous learning or part of the skill without progress until your child is ready.

- * Do not run all at once. Each lesson runs a little and gradually skills will develop.

- * In this process stress and frustration can not find the place.

- * If the child is cold, shaking, has purple lips, or is tired or upset, stop and exit the pool.

- * Lesson has to be happy, relaxed time together. There is no quick rhythm, the rhythm goes by the baby. If things go easily, it gives the lesson tasks, returning to play, enjoying the water with the rest of the lesson, and start again next session.

Signs when you must not enter in water

There are some days when it is important to stop just before you start. If the child is sick, for example, if cold, congestion, has strong a stomach virus with vomiting or diarrhea, fever or ear infection, conjunctivitis, or any contagious or infectious reaction is not working. In addition to exposing children to disease, in some cases the child's muscle strength, lung capacity and disposition will be compromised by exercises such as swimming. In other cases, your doctor may temporarily stop the lessons to a visit further to clarifies the resumption of activities. Return the child to swim is done when its activity level is normal and healthy.

When you must not immerse the child

When you learn to dive at first indications some babies may sputter, cough or be a bit surprised. Usually, their attention can be redirected with a toy or another activity. However, if after a few times a child is uncomfortable or begin to be resistant to signs and diving by arching the back, stop and resume once the child feels comfortable. Once the new elements have been successfully reintroduced gradually, you can try near the face of water. After several weeks, when the comfort is back, movement retry before holding breath.

How often the child sinks

Swallowing excessive water is not part of this program so that it limits the number of times when the child is immersed in every lesson. The sinking is introduced gradually because the maintenance of respiration is learned after a few lessons. If swallowed too much water, it stops. The pace slows and returns to the water pouring over the face than before, gradually to retry sinking.

Results.***The benefits of swimming to babies***

For almost all children in this age group will be the first experience teaching swimming outside the environment in which they live, and it is important to be a positive experience. In general, parents of very young babies tend to be nervous when their children go swimming, but the child is very strong and very capable.

In this segment of age is a vast opportunity to feel at home above, in and under water. Small baby is still very close to the aquatic environment that left him in the womb - has no fear and still does not support independence. Once the babies are comfortable swimming at this early age, they will not know an age that has not been able to swim. They will not be afraid of water safety and they will learn skills earlier than children who start at a higher age.

Swimming benefits in young children: between 1 and 3 years.

Children at this age become more aware and will imitate other children so that, for beginners this is a good time to start swimming with other children. Through games and use toys together in the pool, children develop social skills and sense of sharing and communication.

The benefits of swimming for children between 3 and 4 years

Part of respecting the child's confidence involves the person to understand that he does not want to put face in water. The parent can help him overcome this fear by using games and fun to meet sinking in small steps, non-threatening. Adults can meet with techniques to delay, but must be patient. Once passed over the biggest obstacles, this age group shows considerable skill.

Comparing methods of learning

Aggressive swimming programs use pressure and coercion to achieve specific goals. The approach focuses on the child is very different and evolving in child's pace. See the table at the end of the work.

Discussion.

„Too much.” Often when parents have problems to teach children to swim can be found in the past in adults that „too” means: expect too much, too fast, too far and too often.

Too much

Babies can easily become overwhelmed, for example by the flow of too much water on the head repeatedly when spraying or when too much new material is presented to a child he reluctantly.

Too fast

The parent must always be vigilant and aware of the signs of readiness in children before trying new skills. His comfort, ability and relaxed confidence will indicate whether it is ready to try the next step. Entering the wrong skills for babies will stress and will result in a lack of confidence, a lack of desire to try the previous learning, frustration and tears. It moves in a row, builds skills as the child grows and develops physically and mentally.

Too far

When children swim under water, maintain a short distance for swim not to be too much. Hold the child's confidence by lifting out of water as he has air in the lungs and keeps breathing comfortably. Lung capacity is gained slowly, not jumping, and swallowing too much water will harm.

Too often

Repetition is the key to acquire a skill to strengthen, but know when to stop. Putting a beginner underwater too often it is the beginning of learning, „learning to keep breathing” (D. Douglas, 2006) may mean that it is tired and begins to swallow water. Putting a child of three years receptive to stick the face too much in the water begins to wear confidence. They practice skills, but it goes to a new task before exaggerate any skill.

Conclusion.

Learning step by step water confidence and safety skills for babies and young children with their parents, may be the most rewarding experience of childhood.

Familiar with all safety standards and safety rules of the pool learning is essential for both parents and child. Good safety habits acquired early will last a lifetime. Prevention is always the best remedy.

The most important aspects in water together with the parent activity is helping them to hold and expel their breath, teach them to float and improve their balance.

The most importantly, make sure your child has fun in the water. Swimming not only develops physical coordination, but it can greatly enhance a young child's self-esteem and social skills. If the child does not seem to like a particular task, quickly switch to another one. Mix up the routine, introduce water games, and make everything dynamic, constantly encouraging him to try new „adventures” in the water.

„Teaching young children to swim can be frustrating if you expect immediate results.” (F.B., Freedman, 2001) But they have a long time to improve their abilities. Rather than preparing them to join a swim team, focus instead on getting them water safe

and enhancing their confidence and independence in the water. This process may take weeks, even months, but the rewards of swimming will last them a lifetime.

In children gymnastics water efficiency is the maximum absolute growth all suffering orthopedic (kyphosis, scoliosis, kypho scoliosis). This is the reason why children are encouraged to perform specific movements of swimming, for example, swimming back.

One of the main goals is to help the child continually build a sense of independence in the water. Get him to become more active by kicking his legs, for

example. The faster they kick the more bubbles they make.

„Any method is successful if it results in a child who loves to swim and is safe in the water. As a child gains ability, he becomes safer in the water, but a truly safe child is always under the watchful eyes of competent adult.” (D. Douglas, 2006)

Even if the child does not really swimming in the proper maner „in my opinion, anyone who can propel himself through the water, in any manner, is swimming” (V.H., Newman, 2002).

PROGRAMMES DOMINATED BY PURPOSE	APROACH ON THE CHILD
Learning is dominant	The child is dominant
Time is fixed and there is pressure to perform	Working time is flexible and depends on the availability of child
Force and coercion are used to learn skills	Gentle guidance and encouragement helps children to achieve goals
Professor is the leader	The pace of advances in child rithm
Lesson imposed	Playful learning, fun

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HEALTH PROMOTING BEHAVIOURS OF TURKISH AND FOREIGNER UNIVERSITY STUDENTS

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Abstract

Purpose: At this study, it was aimed to compare health promoting behaviors of Turkish (TS) and Foreigner (FS) students of university.

Methods: At this study, 64 FS and 70 TS were participated voluntarily, mean age of FS and TS were 23,11 and 20,87 respectively. Volunteers were performed demographic questionnaire and Healthy Lifestyle Behaviors Scale II (HLBS). 34 Foreigner participants were performed HLBS II inventory by post and 30 participants were performed by e-mail. Independent-t test was performed for comparing groups. The level of significance was set at 0.05.

Results: Meaningful difference was found at the age parameter ($p < 0.05$). Meaningful difference was not found at the body height, weight parameters ($p > 0.05$).

When HLBS and its aspects were compared according to TS and FS; statistically meaningful difference was found at the healthy responsibility, spiritual growth, interpersonal relations, stress management and HLPL total parameters ($p < 0.05$).

When HLBS and its aspects were compared according to male TS and FS, statistically meaningful difference was found at healthy responsibility, interpersonal relations, stress management and HLPL total parameters ($p < 0.05$) but meaningful difference was not found at the physical activity, nutrition and spiritual growth parameters ($p > 0.05$).

When HLBS and its aspects were compared according to female TS and FS, statistically meaningful difference was found at healthy responsibility, spiritual growth, interpersonal relations, stress management and HLPL total parameters

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($p < 0.05$) but Meaningful difference was not found at the physical activity and nutrition ($p > 0.05$).

Conclusion: It was so clear that University students needed to be informed about Healthy Lifestyle Behaviors. We thought that health, guidance and counseling units of both campus and other environments had to work more actively with students in co-operation.

Key words: Health Promoting Behaviors, University Student, Turkish, Foreigner

Introduction

According to definition of WHO, health is not only lack of illness and injury, health is completely well-being on account of physical, mental and social (N. Yardim, et al, 2009). Nowadays perception of health is not only devoted to prevent of illness, health propose maintenance approach based on health that protect, continue and improve health condition of individual, family and society. This perception was based on acquiring behaviors that protect, continue and improve well-being condition of individuals and based on judgement about their health (G.O. Çelik, et al, 2009). As for health behavior is defined that individuals believe and do any activity to be healthy and prevent the disease when person are healthy.

Health behavior is not only sightful behaving. It includes mental events and sense conditions that are evaluated indirectly (A. Karakoç, 2006). The efforts of people to improve health status are important to be healthy to control and improve their health. Thus people improve healthier life conscious, remedy life style, perceive their own duties to keep healthy, behave guiding and improving the health by perceiving their own duties to keep healthy and abstaining the behaviors at risk.

The health levels of societies are evaluated by majority of healthy people (G. Karadeniz, 2008).

The behavior disorder that occurs in earlier age related health is risky in increased ages. So the researching health behavior of the youth in earlier age is important. The students of university represent a large part of adult population.

The relation between health and motivation should be focused so as to improve health activities for this group. Because the students occur relatively healthy, homogenous and extendable population (M.I.K. Von Bothmer, B. Fridlund, 2005).

That the university education of students conduces to alterations on their personality development, personal life and health behavior in addition to acquire the formation is apparent in the present day. This alteration is important especially for the attitude and behaviors in the field of health.

Because their attitude and behaviors related of health effect of their own individualistically in private and effect of current and prospective family in connection with society (H. Batı, et al, 2008).

To compare the healthy life style behaviors of Turkish and foreign university students was aimed in this study.

Method

Participants

In this study, 18-30 aged 64 foreigner university from 4 countries and 70 university students from Physical Education and Sport Department of Erciyes University, totally 134 students were participated voluntarily. While 34 foreigner volunteers were participated to study by post, other foreigner volunteers were participated by e-mail.

Data collection method

Socio-demographic and HLBS II inventory were performed by volunteers. HLBS II inventory was developed by S.N. Walker et al. (1987), re-organized in 1996. This is a self-administered questionnaire with 52 questions covering different aspects of 6 factors. The HPLP-II is a 52-item scale consisting of four-point responses; scores range from 52 to 208. The construct validity was confirmed through factor analysis. A reliability and validity study in Turkey was made by N. Esin (1997) (S. Özkan, E. Yılmaz, 2008, S.N. Walker, D.M. Hill Polerecky, 1996, T. Yu-Ying, C. Shu Pi, 2002).

These factors are health responsibility (3, 9, 15, 21, 27, 33, 39, 45, 51), nutrition (2, 8, 14, 20, 26, 32, 38, 44, 50), stress (5, 11, 17, 23, 29, 35, 41, 47), spirituality (6, 12, 18, 24, 30, 36, 42, 48, 52), interpersonal relations and physical activity (4, 10, 16, 22, 28, 34, 40, 46).

The HPLP II asks respondents to select one of four answer choices. The answer choices are rated from 1 to 4 (1 = never, 2 = sometimes, 3 = often, 4 = routinely).

The scores are then totaled in each of the six subscales and results are tabulated. The subscales with the lowest scores indicate areas of weakness (S.N. Walker, D.M. Hill Polerecky, 1996, D. Mcelligot, et al, 2009, A. Zaybak, Ç. Fadiloğlu, 2004, E.J. Dubois, 2006, M. Cürçani, et al, 2010). The lowest and highest score of the scale for whole were as 52 and 208 points respectively (S.N. Walker, D.M. Hill Polerecky, 1996, M. Cürçani, et al, 2010, Z. Bahar, et al, 2008).

Statistical Analysis

Statistical evaluations of data from the study were done by SPSS 13.0 package program. As statistical representation of arithmetic mean \pm standard error values shown. Normality of distribution was tested with Shapiro-Wilk and Kolmogorov-Smirnov tests and distribution was observed normally distributed. To compare the independent groups was used compared with independent t test. The level of significance was set at 0.05.

Results

Table 1. The Comparison of socio-demographic characteristics of TS and FS

Variable	Groups	n	X±Sx	T	p
Age	F.S	64	23.11±0.50	4.06	0.000*
	T.S	70	20.87±0.22		
Height	F.S	64	170.91±1.06	-0.68	0.497 ^{NS}
	T.S	70	171.93±1.06		
Weight	F.S	64	65.67±1.48	0.48	0.631 ^{NS}
	T.S	70	64.66±1.49		

NS: Non Significance, *p<0.05, **p<0.01, ***p<0.001 F.S: Foreign Students, T.S: Turkish students.

According to table 1, meaningful difference was found at the age, parameter (p<0.05). Statistically meaningful difference was not found at the body height, body weight, numbers of brothers, income parameters (p>0.05).

Table 2. The Comparison of HLBS values of TS and FS.

Variable	Group	n	X±Sx	T	p
Health Responsibility	F.S	64	18.67±0.50	-3.50	0.001**
	T.S	70	21.50±0.63		
Physical Activity	F.S	64	17.48±0.60	-0.94	0.346 ^{NS}
	T.S	70	18.20±0.47		
Nutrition	F.S	64	18.50±0.45	-1.15	0.250 ^{NS}
	T.S	70	19.24±0.46		
Spiritual Growth	F.S	64	28.20±0.55	-2.28	0.024*
	T.S	70	29.90±0.50		
Interpersonal Relations	F.S	64	26.94±0.48	-17.20	0.000***
	T.S	70	47.07±1.07		
Stress Management	F.S	64	20.08±0.47	-7.30	0.000***
	T.S	70	24.76±0.43		
HLBS Total	F.S	64	129.88±2.21	-9.07	0.000***
	T.S	70	160.67±2.54		

NS: Non Significance, *p<0.05, **p<0.01, ***p<0.001 F.S: Foreign Students, T.S: Turkish students.

According to Table 2, Meaningful differences were found at the health responsibility (p<0.01), Spiritual Growth (p<0.05), Interpersonal Relations, Stress Management and HLBS Total parameters (p<0.001). Meaningful difference was not found at the Physical Activity and Nutrition parameters (p>0.05)

Table 3. The Comparison of HLBS values of male TS and FS.

Variable	Group	n	X±Sx	T	P
Health Responsibility	F.S	34	18.74±0.75	-2.015	0.048*
	T.S	40	21.08±0.86		
Physical Activity	F.S	34	18.38±0.87	0.284	0.777 ^{NS}
	T.S	40	18.08±0.67		
Nutrition	F.S	34	18.50±0.57	-0.621	0.536 ^{NS}
	T.S	40	19.05±0.66		
Spiritual Growth	F.S	34	28.74±0.78	-0.874	0.385 ^{NS}
	T.S	40	29.63±0.67		
Interpersonal Relations	F.S	34	26.85±0.67	-12.880	0.000***

	T.S	40	47.15±1.42		
Stress Management	F.S	34	20.82±0.68	-3.860	0.000***
	T.S	40	24.38±0.62		
HLBS Total	F.S	34	132.03±3.32	-5.538	0.000***
	T.S	40	159.35±3.56		

NS: Non Significance, * $p<0.05$, ** $p<0.01$, *** $p<0.001$ F.S: Foreign Students, T.S: Turkish students.

According to Table 3, Meaningful differences were found at the Health Responsibility ($p<0.05$), Interpersonal Relations, Stress Management and HLBS Total ($p<0.001$). Meaningful difference was not found at the Physical Activity, Nutrition and Spiritual Growth ($p>0.05$).

Table 4. The Comparison of HLBS values of male TS and FS.

Variable	Group	n	$\bar{X}\pm S_x$	T	p
Health Responsibility	F.S	30	18.60±0.67	-3.019	0.004**
	T.S	30	22.07±0.93		
Physical Activity	F.S	30	16.47±0.81	-1.845	0.070 ^{NS}
	T.S	30	18.37±0.63		
Nutrition	F.S	30	18.50±0.71	-1.051	0.297 ^{NS}
	T.S	30	19.50±0.63		
Spiritual Growth	F.S	30	27.60±0.79	-2.424	0.018*
	T.S	30	30.27±0.77		
Interpersonal Relations	F.S	30	27.03±0.69	-11.196	0.000***
	T.S	30	46.97±1.64		
Stress Management	F.S	30	19.23±0.63	-7.039	0.000***
	T.S	30	25.27±0.58		
HLBS Total	F.S	30	127.43±2.81	-7.661	0.000***
	T.S	30	162.43±3.60		

NS: Non Significance, * $p<0.05$, ** $p<0.01$, *** $p<0.001$ F.S: Foreign Students, T.S: Turkish students.

According to Table 4, meaningful differences were found at the Health Responsibility ($p<0.01$), Spiritual Growth ($p<0.05$), Interpersonal Relations, Stress Management and HLBS Total parameters ($p<0.001$). However Meaningful difference was not found at the Physical Activity and Nutrition parameters ($p>0.05$).

Discussion

In this study, 134 university students which were 64 from 4 different country and 70 from Physical Education and Sport Department of Erciyes University, aged between 18-39 were participated voluntarily. Mean age of FS and TS were found as 23.11±0.50 and 20.87±0.22 respectively.

Meaningful difference was found at this parameter ($p<0.01$). At literature, there are studies which haven't found meaningful difference at the age parameter (Mcelligot, et al, 2009, H.Ö. Can, et al, 2008).

Mean height of FS and TS were found as 170.91±1.06 and 171.93±1.06 respectively. Mean weight were found FS and TS as 65.67±1.48 and 64.66±1.49 respectively. Meaningful difference was not found at these parameters.

When the sub-dimensions of the HLBS analyzed, the highest average of the behaviors which

contributed to improve health, was observed among the Turkish students in interpersonal relations.

When the Turkish and foreign students were compared from the perspective of health responsibilities, significant difference was found. Health responsibility point average was found as high in a study made on university students (N. Tuğut, M. Bekar, 2008).

In another study, It was found that getting older was increased the health responsibilities of the people (G. Karadeniz 2008)

A significant difference was not found when the physical activity levels of the TS and FS. Likewise, a significant difference in the physical activity levels of the university students was not found in another study (A. Zaybak, Ç. Fadiloğlu, 2004). This result is similar to our findings.

Significant difference was found in the average points of Spiritual Growth of TS and FS. In terms of average points, our study is similar to former

studies (N. Esin, 1997). But at literature we could see some studies which were found higher (S.R. Hawks, et al., 2002) and lower (W.H. Hui, 2002, M. Chen, et al., 2001) values.

In the comparison of TS and FS according to interpersonal relations parameter, statistically significant difference was found.

When the students were compared about being Turkish or foreign, it was seen that the interpersonal relations of TS were more than FS. In another study which was carried out similarly, it was found that the subgroup has been statistically significant (F. Özbaşaran, 2004).

When the stress management parameter of the TS and FS was compared, significant difference was found.

The average of stress point of TS was significantly higher than FS value. Similarly, in a different study made on the university students, the stress management average point of subgroup was found as significantly different (F. Özbaşaran, 2004).

A significant difference was found in the average total points of HLBS of TS and FS the HLBS Total value of the TS are significantly higher than FS.

It was seen that the HLBS Total values are mid-range but the average of the TS was higher than the average of FS. Similarly, HLBS Total rate was detected as low in the abroad studies (J. Tashiro, 2002, MM. Bagwell, H.A. Bush, 2000).

Consequently, in this study which has been carried out to compare the healthy life style behaviors of Turkish and foreign students, it has been found that the Turkish and foreign students are mid-ranged according to healthy life style behavior scale.

That the point of the HLBL scale becomes high shows that the person has more positive health behavior. In this regard, it has been detected that the Turkish students have more health behaviors than the foreign students do.

It is necessary that the personal and environmental negativeness should be swept away and the self-confidence should be provided.

It is necessary to increase the number of observations and countries and carry out the experiment again.

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STUDY ON GAME CONTENT AND EFFECTIVENESS OF UNIVERSAL ACTION AT SENIOR LEVEL - DIVISION A

COJOCARU ADIN MARIAN¹, COJOCARU MARILENA¹

Abstract

Purpose. The study with the title *Study about the contain of games and the efficiency shares of the universal players to the senior level*, consisted in the analyzes of the model of the game through modification appeared in the contain of the game competition current: the speed accelerated of game, the development of power of attack, execute of serve and the block, but and the specific peculiarities of reception and the attack, due modifications in main the new changes supervened in regulations.

Making an accurate analysis of the content in accordance with reality racing game can give us a large amount of accurate information on the game of volleyball player called in slang "falsely elevated" senior division at A1, available that can provide benchmarks and absolutely essential necessary to prepare players for this post and also the development of a model-based game in November. Determination of the game must bring their contribution to the knowledge of volleyball practice at this stage, reference is internal competition in the reality game.

Assuming that the game of volleyball takes place after certain fundamental characteristics and effectiveness of the fund request of the players that make team play features printed pattern preparation, determine the game stations, and the default position of the player in two zone, it becomes necessary to increase the objective parameters that can play the whole team

Methods. To check this hypothesis we tried to get (from recordings made at the Senior National Championship games - information on successful and unsuccessful actions of the player during a competitive game of the two. This was directed to determine their effectiveness and to track and find real solutions to eliminate errors or to improve the game.

In this study we used the following formula for calculating the effectiveness

$$\text{Efficiency} = \frac{A + 1/2B}{A + 3 + C}, \quad \text{where } A = "+", \\ B = "0", \\ C = "-"$$

- "+" – immediate success: his opponent can not play ball;

- "0" – opponent can not win control of the ball, preparing the attack is not possible, the ball remains in play;

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- "++" – immediately lost the point: the player hits the ball in the net or out, the player who commits a technical foul penalized by regulation (Lăzărescu, D, 1991).

Conclusions were systematized research problems, which are derived from the general hypothesis of the study.

Key words: *game, efficiency, skills*

Introduction

Making an accurate analysis of the content in accordance with reality racing game can give us a large amount of accurate information on the game of volleyball player called in slang "falsely elevated" senior division at A1, available that can provide benchmarks and absolutely essential necessary to prepare players for this post and also the development of a new model based (T. Bompa, 2003). Determination of the game must bring their contribution to the knowledge of volleyball practice at this stage, reference is internal competition in the reality game (M. Ioniță, 2007).

Starting from this state that a player set a maximum of 48 teams participate in the fundamental

situation of the game if the set is over 25 to 23, of which 52% are playing fundamental situation in the execution of service and 48% are playing fundamental situation the takeover of the service (M. Șerban, 1999). These percentages change if the sets are won more clearly, the fundamental situation in winning percentage increasing and decreasing percentage of the service other (V. Ghenadi, 1995).

Research Hypotheses

Assuming that the game of volleyball takes place after certain fundamental characteristics and effectiveness of the fund request of the players that make team play features printed pattern preparation, determine the game stations, and the default position of the player 2, it becomes necessary to increase the objective parameters that can play the whole team.

To check this hypothesis we tried to get (from recordings made at the Senior National Championship games - information on successful and unsuccessful actions of the player during a competitive game of the two. This was directed to determine their effectiveness and to track and find real solutions to eliminate errors or to improve the game.

Research tasks

You can draw the following tasks for our research:

- literature information on the state of knowledge on the chosen theme;
- the collection information and data on game content in area 2, in terms of weight and effectiveness of the game in general and for the two structures;

- processing information and identifying those most characteristic aspects of the game content in zone two;
- analysis of results, their interpretation and separation of the most important conclusions, theoretical and practical value, which may be helpful in charge of training specialists;
- writing research work and conclusions.

4. Data processing method

In this study we used the following formula for calculating the effectiveness:

$$\text{The efficiency} = \frac{A + 1/2B}{A + B + C}, \text{ where } A = "+"$$

$$B = "0"$$

$$C = "-"$$

- "++" – immediate success: his opponent can not play ball, a player takes so vague that his teammates can not keep the ball in play, in terms of setting, seeking guidance passes, their distribution and completion.

- "0" – the opponent can't win control of the ball, preparing the attack is not possible, the ball is still in the game: the opponent can take to prepare for the attack, the opponent hits the ball directly served the team, the opponent wins partial control of the ball, the attack is possible but not all choices: opponent can't take the best area to lift linkage having difficulties in sending the ball in the right place; the opponent may not quite correctly take a combined attack or a second stroke, the opponent hits the ball inefficient (below, on the net etc..) limited possibilities attack, the opponent gains full control of the ball and can prepare an appeal to all choices: the opponent takes the ball right to the best area of lifting, as all possible combinations in attack for lifting or difficulty without limitation, the opponent takes the ball well enough for an attack on the second touch of the ball;

- "--" – kick attack, immediately lost the point: the player hits the ball in the net or out, the player who commits a technical foul penalized by regulation.

The interpretation of results and conclusions

After processing the data and information obtained through the records of championship games we have developed the following model, whose average values are represented in the table.

1.

The average values of 19.3 shares when we play by a player of zone two during a set, it:

- playing an average of 5.3 actions that win points, representing 28%
- playing an average of 5.3 shares for their own team, representing 29%
- playing an average of 5 action to the detriment their team, representing 24%
- Playing an average of 3.5 actions that loses points, representing 19% of the game (Chart 2)

After processing the data we obtained the following attack model content (Chart 3):

- attack all actions set: - 6,8 representing 100%
- attack actions zone 4 - 1.1 representing 16%
- attack actions zone 3 - 1.5 representing 22%
- attack actions zone 2 - 3.2 representing 47%
- attack actions from second line -1 representing 15%

In order to obtain a complete image of the game in attack provided by zone player 2, we developed a model of efficiency of the attack, which is so:

From 6.8 the shares of attack made by a player of zone two during a set, it:

- playing an average of four actions that win points representing 59%
- playing an average of 1,2 actions that win points representing 17%

- playing an average of 0,8 actions that win points representing 12%

- playing an average of 0,8 actions that lose points representing 12% from attack.

In zone functional model of player 2, the service takes a in the lead ranking action game, this player averaged 3.3 services running on the set, the second action as a share of total shares of the game.

The efficiency of blocking is a fairly high level for this player so 3.1 out of action set:

Efficiency takeover of attack, as can be seen from the data model shown below is suitable job and qualifies for the senior competition for upper division

Thus, the 2.6 shares of takeover attack, the player executed an average of zone two:

- situations in 0.4, it runs good takeover phase is still playing for their team, representing 15% of all takeovers of attack set;

- in 1.3 cases, the weak running attack takeover, phase is still playing to the detriment their team, representing 50% of all takeovers in the attack on the set;

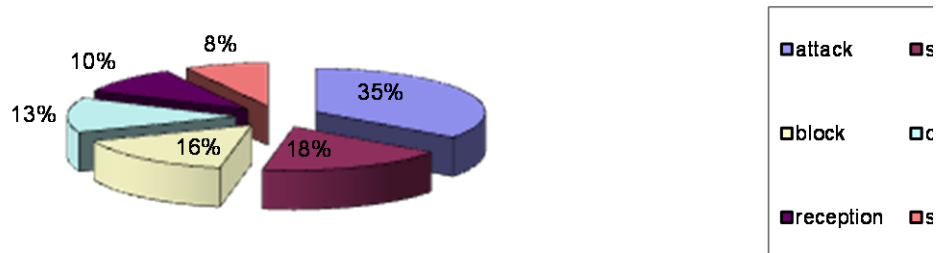
- in 0.9 cases, takeovers are executed wrong, losing the point, representing 35% of takeovers in the attack.

Table 1

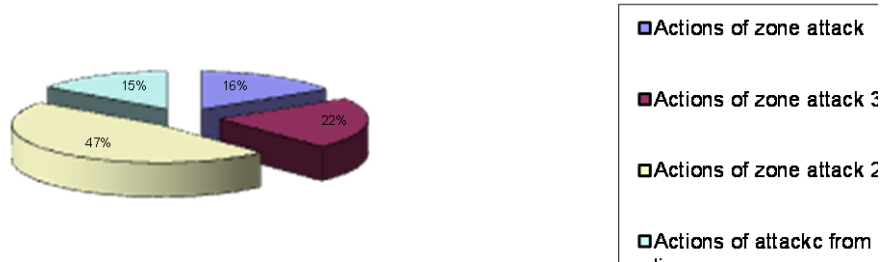
Nr.crt.	MODEL COMPONENTENTS	NR. MEDIUM ACT. / SET	PERCENTAGE
1	NR. MEDIUM ACTIONS./ SET	19,3	100%
2	ATtack	6,8	35%
3	Service	3,3	18%
4	Block	3,1	16%
5	Digger	2,6	13%
6	Reception	2	10%
7	Set	1,5	8%

Graphically model developed is as follows (Chart no. 1)

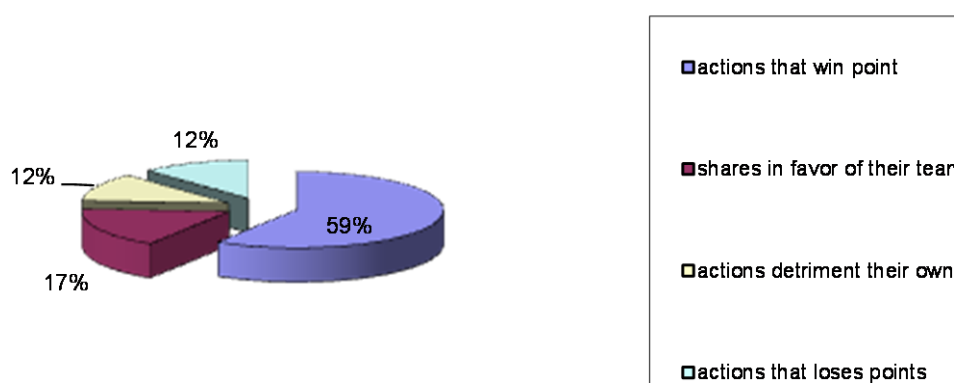
Graphic nr. 1 - game content on the player set for zone 2



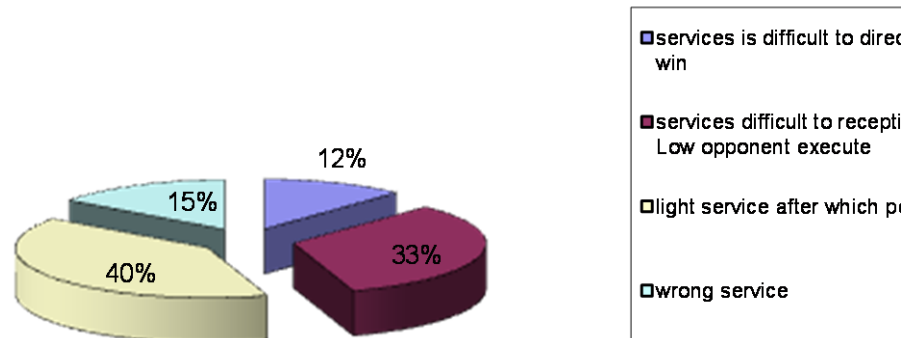
Graphic nr. 3 The attack player content in zone two



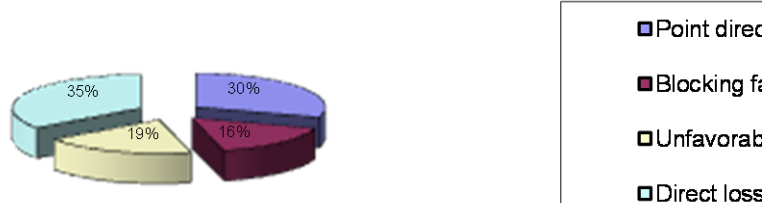
Graphic nr. 4 The model of attack efficiency



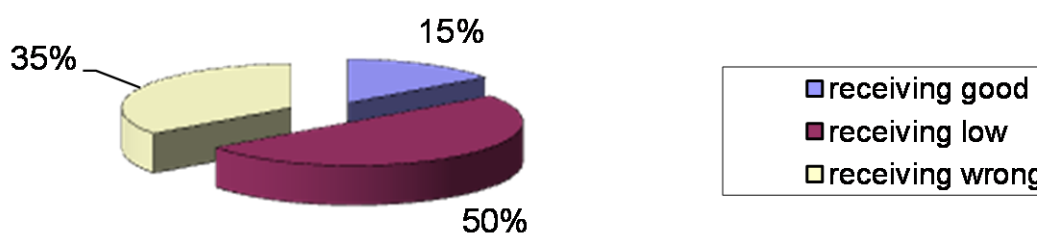
Graphic nr. 5 The coefficient of efficiency of service to the zone player 2



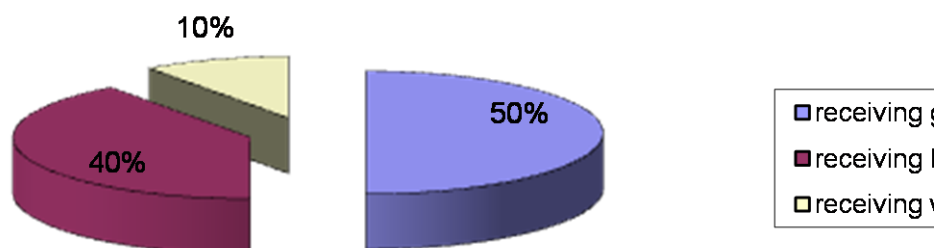
Graphic nr.6 The efficiency of block



Graphic nr. 7 Efficiency of digger



Graphic nr. 8 Efficiency of receiving from serve



Conclusions

Conclusions were systematized research problems, which are derived from the general hypothesis of the study:

- ⇒ content model of the data presented in the game notes that one of the essential and crucial changes of this post, is the balancing of general application as regards action to attack and defense;
- ⇒ zone 2 player, is a complete player, who must be near a good player and a good player attack defense, and blocking the line II;
- ⇒ attack action game is the most important of zone two player game, its value and requirements of the position within the team are essential elements in defining and often winning the game;
- ⇒ the block, is zone 2 for player action and requires that the necessity and importance, both because of job characteristics, and especially that they must have an enormous contribution in getting points. The effectiveness of this action game set is calculated on the performance requirements of the job and volleyball;
- ⇒ taking the attack, consideration of this action demonstrates that, although the game is an action of great importance to zone game player 2 is not sufficiently well prepared and does not constitute a priority in their preparation or at this level, as shown by the number executions and effective than the low return in attack actions performed during a set;
- ⇒ finalized (in especially the attack and block);
- ⇒ there is an increased safety in the executions and takeover of service attack;
- ⇒ is an increase in the concentration game, to eliminate the distraction and relaxation moments, the service occupies a prominent place in ranking actions of play as the average number of shares as set and less efficiency. It is noteworthy that the decrease in service efficiency is due to new regulations;
- ⇒ action pass is a lower weighting in the game for that player but the efficiency is higher, this is due both to fewer exceptions and conditions that run in relatively lighter than when playing by the old scoring system
- ⇒ Given a set they play an average of 410-415 action game in which 40-45% are playing ball action, and 55-60% stocks to play without the ball. On average a player plays the actions set about 40-70 games, which shares 16-40 ball, the number is higher or lower depending on the value of each player in the band and channel on which it plays.
- ⇒ Consequently, in a volleyball game, a player participates in almost every action game with ball and without the ball, which depending on the number of sets played (3, 4 or 5) can be between 120-350 game actions, of which 50-200 action

game in which touches the ball in one way or another.

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Requirements for the elaboration of the scientific papers (2009-2012)

Structure of the experiment type paper:

- the title of the paper will be written with Majuscules, Times New Roman, Size 12, Bold, Align Left;
- the names of the author or authors of the research will be written with Times New Roman, Size 10, Bold, Majuscules, Align Left, one line under the title of the paper;
- under the author's name, the department /departments and institution / institutions it is e-mail address for the corresponding author;
- the source of the material support in the form of the GRANTS not more than 40 characters including spaces if need be, with Times New Roman, Size 10, Align Left;
- the Department name, institution name, contact address email *can be* as footnote;
- Abstract, Key words, Introduction, Methods, Results, Discussion, Conclusions, References.

Abstract

The structured abstract and 3-5 key words will be written with Times New Roman, Size 10, Justified.

The abstract must not contain more than 150 words for unstructured abstracts essay type and 200-400 words for structured abstracts experiment type. The abstract must be elaborated in English language. In the abstract there will be no abbreviations used.

The structured abstract for **the experiment type paper** must contain:

- the aim / purpose / object of the research;
- the procedures and methods of research subjects, applied tests;
- the results / main results;
- discussions and conclusions;
- key words between 3 and 5 key words, which punctuates the interest areas of the article;

The aim, purpose, object, methods, results, discussions, conclusions and key words have to be written bold and minuscule.

Introduction

Procedures and methods of research (subjects, applied tests)

Results

Discussion

Conclusions

All of its will be written Times New Roman, Size 10, Justified, two columns;

Bibliography

It will be written with Times New Roman, Size 10, two columns, First Line Indent 0 cm, Hanging Indent 1cm, Left Indent 1cm. The names of the articles / book will be written in italics.

Author's name has to be written with bold and majuscule (eg. **SMITHOSCKY, M.,2011**)

Structure of the essay type paper:

- the title of the paper will be written with Majuscules, Times New Roman, Size 12, Bold, Align Left;
- the names of the author or authors of the research will be written with Times New Roman, Size 10, Bold, Majuscules, Align Left, one line under the title of the paper.
- under the author's name, the department /departments) and institution / institutions) it is e-mail address for the corresponding author.
- the source of the material support in the form of the GRANTS not more than 40 characters including spaces if need be, with Times New Roman, Size 10, Align Left.
- the Department name, institution name, contact address email *can be* as footnote.
- **the unstructured abstract and 3-5 key words** will be written with Times New Roman, Size 10, Justified;
- **the introduction and the object of the research, the content, the conclusions** will be written with Times New Roman, Size 10, Justified, two columns;
- the **bibliography** will be written with Times New Roman, Size 10, two columns, First Line Indent 0cm, Hanging Indent 1cm, Left Indent 1cm. **The names of the papers/ articles will be written in italics.**

For the abstract - essay type paper

- the aim/object of the research;
- the content of the research (short summary);
- conclusions (main conclusion);
- key words between 3 and 5 key words, which punctuates the interest areas of the article);

Details:**Introduction**

The introduction will only contain strict and pertinent references pro and cons) on the studies that have as a common subject the object of the research.

Research methods and procedures**Subjects**

The subjects involved in the experiment are described, their distribution in groups, identifying the age, the sex and other important characteristics. The experiments on human subjects are produced in accordance with the national legislation for the human protection and the Helsinki Declaration of 1975, revised in 2004. The names and the surnames of the subjects are not used, especially in the illustrative materials.

The work methods are identified, the apparatus on which the experiment takes place presenting the name of the producer and the address between parentheses) and the statistic methods in detail. The new or considerably modified methods are described, motivating their choice and evaluating their limits. The hypotheses of the paper must be clear and concise.

Statistical analysis

The statistical methods are described with sufficient details, in order to understand and to check the results obtained. The names of the computer programs used for the statistical processing of the data are specified.

Results

The results are presented in a logical sequence, through tables and diagrams. The results expressed through text should not be found in the tables and/or diagrams and the other way around.

Tables

The tables cannot be introduced in the text as photographs. The tables must be numbered in the upper part, in succession in the order of the first text quoting, followed by a conclusive and succinct title.

Table 1. Physical characteristics of the subjects

Variables	Feminine subjects n=21	
	M±DS	CV %
Body height cm)	166,143±5,597	3,369
Body weight kg)	61,524±8,364	13,595
IMC kg/m ²)	22,338±3,282	14,692
Body fat percentage %)	25,329±3,074	12,136
Fat mass kg)	15,182±4,066	25,715
*significant correlated with IMC, r=0,875.		
Established significance level at p<0,05.		
IMC, body mass index; M, average; DS, standard deviation; CV, variability coefficient; n, number of subjects.		

In the lower part of the table the following symbols will be used, in order to emphasize the differences or the significant correlations statistically, in the following order: *, †, ‡, §, □, ¶, **, ††, ‡‡, etc. Also in the lower part of the tables the significance level established by the researcher will be presented and the unusual abbreviations used in the table will be explained.

Each table must be quoted in the text. The tables from other publications must be used with the permission of the author authors), indicating the bibliographical source from where it was assumed.

Diagrams illustrations)

The diagrams must be numbered in the lower part, in succession in the order of the first text quoting, followed by a conclusive and succinct title, preceded by the unusual abbreviations used in the diagram or other observations.

Measurement units

Measuring the length, height, weight and volume must be expressed in metric units meter-m, kilogram- kg, liter- l, second- s, or decimal multiples). The temperature must be measured in Celsius grades °C), and the arterial pressure in mmHg. Other measurement units must be expressed in the International Units System SI).

Discussions

In the chapter Discussions the new and important aspects are emphasized, which result from the data processing. The data of other similar studies presented in the introduction chapter cannot repeat in detail. Also, the implications of the results found must be discussed, their limitations and the implications of these results, for the future studies. The observations found must be reported to other similar studies.

Conclusions

The conclusions must be reported directly to the hypotheses of the paper and derive directly from the chapter Discussions. The conclusions that are not fully backed-up by the data found or that are based on unjustified affirmations must be avoided. New hypotheses can be concluded or attach some recommendations, if the case be.

Thanks

In the section Thanks when the case appears) there can appear:

- the contribution of the people that are not co-authors;
- the name and surname of the people that have contributed intellectually to the accomplishment of the paper (with their agreement), but that are not co-authors- scientific counselor, data collector etc.;
- the financial help and the material support, specifying the nature of the support;
- the technical help in a separate paragraph called "Other contributions");

Bibliography/References

Bibliography and text quoting

The bibliography must be arranged in alphabetical order, the unpublished papers being quoted, but that are registered for publishing. In the bibliography all the authors quoted in the text are written. In the text all the authors are written if there are 6 or less. If there are 7 or more authors, the first three authors are written, followed by "et al." it comes from the latin "et alia" which means "and others"). If in the bibliography there are at least 2 papers that have an identical author (authors) and the publishing year, in the text, but in the bibliography as well, immediately after the publishing year, a letter will be written (in alphabetical order), in order to distinguish the papers in the bibliography (1998a), (1998b)). The name of the author / authors) must be followed by the initials of the surname.

In the text, the quotations will have the following structure:

- a) for one and/or two authors
 - at the end of the phrase T.S. Keller, and A.L. Roy, 2002);
 - in the phrase T.S. Keller and A.L. Roy 2002), T.T. Gomez, 2003 found significant differences of isometric force...
- b) up to including) 6 authors
 - at the end of the phrase T.S. Keller, A.L. Roy, Carpenter G, 2002)
 - in the phrase "Also, .S. Keller, A.L. Roy, G. Carpenter, 2002) found significant differences of isometric force..."
- c) more than 6 authors
 - at the end of the phrase T.S. Keller, A.L. Roy, G. Carpenter et al 2002);
 - in the phrase "Also, T.S. Keller, A.L. Roy, G. Carpenter et al 2002) found significant differences of isometric force..."

Generally, for magazines, the bibliography will have the following structure:

NAME OF THE AUTHOR- AUTHORS year of publication), Title of the article, Magazine, number of the volume
yearly number the number of the supplement part): number of pages.

- a) standard magazine article
- b) organization as an author
- c) no author
- d) volume with a supplement
- e) number with supplement
- f) volume with part
- g) number with part
- h) number without volume
- i) no volume and number
- j) pages in roman numbers
- k) indicating the type of article if it is necessary

DEURENBERG, P., WESTSTRATE, J.A., SEIDELL, J.C., 1991, *Body mass index as a measure of body fatness: age- and sex-specific prediction formulas*. British Journal of Nutrition. 65(2):105-114.

For **books** the bibliography will have the following structure:

- a) personal author s)
- b) editor s) as author s)
- c) organization as author or the one that publishes
- d) chapter in a book
- e) license degree paper, dissertation or PhD. Thesis.

RISTARU, M., 2005, *The influence of pliometry on the muscular development at the lower limbs level* [dissertation]. Constanta, The Faculty of Physical Education and Sport.

For **unpublished materials but in the course of publication**), the bibliography will have the following structure:

For the **electronic materials**, the bibliography will have the following structure:

- a) article in electronic format
- b) computer program

Sending the manuscripts in electronic format

For the review of a research paper or a better organization of the research papers volume by the scientific board, the author authors) will have to send a copy in electronic format (ASCII) in the format Word Microsoft Office. The papers in Romanian will be written with diacritical signs in the format Romanian Legacy) of the computer keyboard. Also, the operating system used (Microsoft Windows XP, Microsoft Vista) and the processing program of the text (Microsoft Office XP, Microsoft Office 2003, Microsoft Office 2007) will be mentioned.

The evaluating/self-evaluating grid for the quality of the research paper by the reviewer/author s)

The evaluating/self-evaluating grid for the quality of the research paper by the reviewer/author s)		
1	The originality of the research theme	15 points
2	The quality of the research paper structure	5 points
3	The clarity and quality of the research hypotheses elaboration	10 points
4	The quality of the registration of the results and their presentation	10 points
5	The clarity and quality of the discussions directly linked to the results with reference to similar studies	10 points
6	The clarity and quality of the elaboration of the conclusions in accordance with the hypotheses of the paper	10 points
7	The applicability of the results found in the practical and scientific practice	10 points
8	The accuracy of the in text and bibliography quoting	10 points
9	The clarity and quality of the expression in the text	10 points
10	Strictly respecting the elaboration technical requirements	5 points
Total		100 points

Based on these reasons, the article will receive from the reviewers' board a number of points. A number lower than 60 will lead to the rejection of the article, between 60 and 90 points the article will suffer certain changes from the point of view of the structure, expression in the text, etc. in order to receive the accept for publication, and over 90 points the article will receive the accept for publication, after small changes in the elaboration (if the case may be).

The review of the article will be objective, clear and strictly formulated, in accordance with the **technical and scientific request for the elaboration of the scientific papers**, without discrediting the author s) of the article manuscript).

The review process

Step 1

The article must be send in electronic format or on any media format (CD_ROM, etc), in English (Abstract in English), through electronic mail at the address contact@analefefts.ro, alternative adress: gevatceccilia@yahoo.com, or at the mailing address: Cpt. Av. Al. Serbanescu, no.1, Constanta, Romania, RO-900470 Tel./ Fax. +40 241 640 443 or 004 077 136 1179

Step 2

The article deposited for publishing must be accompanied by a short personal presentation and a professional CV, no more than 120 words, that must contain the detailed contact address, including phone number, fax number if it exists) and the e-mail.

Step 3

At least two members of the Editorial Collective and of the Scientific Board will initially analyze the article and will nominate at least two reviewers to analyze the article in detail.

Step 4

The article will be officially analyzed by at least two reviewers with expertise in the thematics of the article deposited for publication. The article will receive a number of points from the reviewers' board.

Step 5

The articles that follow over 90 points) the scientific and technical standards for elaboration will be included into the waiting list for publication. The articles that need certain modifications between 60 and 90 points) will be returned with the reviewers' observations, for their modification by the author s). The articles that do not accomplish the minimum scientific and technical requests for elaboration 60 points) will be rejected by the reviewers' board.

Step 6

The articles will be included on the waiting approval) list for publication.

Step 7

After the approval, the article will be published in the magazine, and the author s) will receive a free copy of the magazine.

Deadlines for handing in the articles

Two numbers of the journal will be published per year and a supplement for number 2 of the journal in that year.

The deadline for handing in the articles for the first number of the magazine is 6th January, for the second number of the magazine is 15th of June and for the supplement of the magazine is 30 September. Based on the number of articles handed in, the Editorial Collective and the Scientific Board will be able to postpone the publishing of an article in a future number of the journal.

Publishing / subscription taxes

The publishing fee is 10 euros just for online journal)

For purchase a number of the journal the fee is 15 euros for 2009, 2010, 2011 year)

For purchase a number of the journal the tax is 5 euros 2001-2010)

For subscription 3 annual numbers of journal 2011) the fee is 25 euros