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A COMPARATIVE STUDY OF INTERVAL TRAINING EFFECTS ON THE INDICATORS OF THE AEROBIC CAPACITY OF FOOTBALL PLAYERS UNDER 19 YEARS OLD

Boufadene Othmane[a] **Ryad Ali El Raoui**[b]

[a]*Research Laboratory Optimization of Programs in Physical and Sporting Activity*

[b]*Institute of Physical Education and Sport University of Mostaganem Algeria.*

boufadeneattou@gmail.com

Abstract

The study aimed to know the effect of interval training on the indicators of aerobic capacity, and knowing the existence of variances between the change parentages of these capabilities after the training, as that the researcher supposed that there are variances with statistical significance between pre and post measurement in aerobic capabilities after interval training, and according to the nature of the research that depends on experimental method, it has been chosen a sample research non randomly which include twenty four players from the team of Widad Mostaganem under the age of nineteen that they underwent to the training program with interval method for eight weeks which contains three quotas in the week, while the pre and post tests have conducted in order to measure their capabilities aerobic, as the results showed the existence of variances with statistical significance between pre and post measurement for the research sample and in favor of post-test, as that they showed the existence of variances with statistical significance between the change parentages of aerobic capabilities for maximum aerobic speed and anaerobic threshold.So we conclude that the interval training improved aerobic capabilities by increasing the ($VO_{2MAX,}$ VAM,AT and FC_{MAX})and the greatest influence be into the anaerobic threshold(AT) and the maximal aerobic speed(MAS) .

Key Words: interval training, Maximum oxygen uptake, maximal aerobic speed, aerobic threshold.

1. INTRODUCTION

Physical or functional preparation of body systems is very important to reach the best sport achievements. Development of skilled levels and amazing records we find in different sports certainly came as a result of the development of various sport and physical sciences and following right scientific methods by trainers attempting to make maximum use of human energy (Habib, 2006: 98). The interval training method is considered one of the most important methods used by trainers in developing functional abilities of players. Resan Kharbit, 2014 refers that it is one of the methods that develop aerobic capacity that is reflected on the operation of blood circulation (Kharbit, 2014: 174). The evaluating studies of the level of physical and functional efficiency of various body systems and organs are among the most important trends on which researchers in sport training physiology focused in order to determine optimal evaluation of physical and functional efficiency level of players in different aerobic and anaerobic sport events. This, in turn, reflects the level of functional adaptations of the various body systems due to specifications of sport events and preparation level of athletes. The aerobic capacity is considered an indicator of the functional condition of both circulatory and respiratory systems. Eyad Mohamed Abdallah et al, from Moayed Abdelhamid Al Hayali say that: "Oxygen plays a vital role in energy production processes, especially aerobic energy, and in turn, the body's ability to perform the effort and efficiency of both circulatory and respiratory systems (Eyad, 2001: 145). Among the most important indicators that express the athlete's aerobic capacity there are maximum oxygen consumption VO2 MAX and the **FC_{MAX}**. Abul Ela Ahmed Abdelfattah and Ahmed Nasreldin Elsayed, 2003 refer that levels of aerobic energy differ between its maximum and less than this current level. The term maximum oxygen consumption "VO2 MAX" is given as a measurement of the maximum aerobic capacity and this is expressed in the maximum amount of aerobic energy that can be produced by individuals in a single minute, but maximum aerobic capacity is not the main base of the performance of most sport activities. Many of these activities are practiced at levels less than maximum oxygen consumption "VO2 MAX" at limits of not less than 80% of it, so this capacity is called the **FC_{MAX}** (Sayed, 2003: 214). Al Hazaa Mohamed Al Hazaa refers that the **FC_{MAX}** is a decisive factor in the individual's ability of performing an exhausting exercise at a high percentage of maximum oxygen consumption "VO2 MAX" without being included in anaerobic metabolic processes (Hazaa, 1989: 14). Since football is one of the load activities that depend on efficiency of circulatory and respiratory systems including a combination of aerobic and anaerobic endurance and since training methods are set to develop and enhance physical and functional capacities to make players reach the best performance in the pitch, the researcher found that this is achieved through interval training on aerobic capacities of football players and the difference in percentages of these capacities.

Problem of the Study:

There are many studies that discussed the effect of interval training on physiological aerobic capacities of football players (J. Helgerud) (E. Micu, 2007, 2001) as interval training is one of the most effective training methods in making physiological changes such as maximum aerobic speed (A. Gharbi, 2010) and maximum oxygen consumption "VO2 MAX" at practitioners and non-practitioners of sports as well as the **FC_{MAX}** (J. Hekgerud, 2001) and (M. Siahkouhian, 2013). Both the **FC_{MAX}** is and the **FC_{MAX}** are two important indicators to express the aerobic capacity for football players (J. Meddelli, 1989). As various studies tackled physiological effects and aerobic capacities of interval training, they did not tackle the difference between these differences. Our study depends on identification of these differences between the effects of interval training for eight weeks on aerobic capacities of football players under 19 years old, so the following questions were posed:

Are there statistically significant differences between indications of aerobic capacity before and after interval training for football players under 19 years old?

Are there statistically significant differences between percentages of enhancing aerobic capacity indicators after interval training of football players under 19 years old?

Goals of the Study:

This study aims to identify:

- The extent of effect of interval training on football players under 19 years old.
- The differences between enhancing aerobic capacity percentages for football players under 19 years old.

Hypotheses of the Study:

- There are statistically significant differences between pre and post measurements for the sake of the post-measurement of indicators of aerobic capacity of football players under 19 years old.
- There are statistically significant differences between percentages of enhancing indicators of aerobic capacity of football players under 19 years old.

Terminology of the Study:

Interval Training: It is a training system that is characterized with consecutive exchange between fatigue and rest. The term "interval" is related to the break period between the training and the following training (Kamal, 2004).

Aerobic Capacities: It is the determining factor of the level of long time endurance. On the other hand, the level of aerobic capacity is determined by maximum oxygen consumption VO2 MAX (Al Maksoud, 1992: 223). Indicators of maximum aerobic capacity are maximum oxygen consumption VO2 MAX, maximum aerobic speed and maximum aerobic capacity. As for the **FC_{MAX}**, it represents the aerobic capacity less than maximum.

The FC_{MAX}: It is the level of body loads where the rate of moving the lactic acid from muscles to blood in a degree more than the rate of disposing it. This means that it is the point of moving from obtaining energy sources from aerobic metabolic processes to the stage of obtaining energy sources from anaerobic metabolic processes (Said, 1998: 23). It is also the intensity of the used training as to make the rate of spreading the lactic in blood more than the rate of its transportation from the blood (Al Kott, 2002: 52).

Maximum oxygen consumption VO2 MAX: It is the biggest amount of oxygen consumption during muscle operation using more than 50% of body muscles (Eldin, 2003: 215). It is also the amount of oxygen than can be consumed during maximum effort intensity (Vaast, 2008: 21).

Maximum Aerobic Speed (VMA): It is the speed that reached by players at their level of maximum oxygen consumption VO2 MAX (B. Turpin, 2002: 186).

2. METHODOLOGY & FIELD PROCEDURES OF THE STUDY:

Methodology: The researcher adopted the empirical method as it is proper for goals of the study.

Sample of the Study:

- The sample of the study consisted of 24 football players in Wedad Mestghanim club in the regional division.
- Their ages are between 0,5±18,5 years old, weights of 1,5±68 kg and length of 1,13±168,5 cm.
- Grading in training at all age categories.

Temporal Frame: 04 Aug 2013 to 30 Sept 2013 (preparation period).

Spatial Frame: The program was applied in Wedad Mestghanim club's playground. Laboratory tests were conducted in a lab of evaluating the program of physical and sport activities related to the institute of sciences and techniques of physical and sport activities at Mestghanim.

Tools of the Study: This study required the use of a set of tools including:

Automatic Movement Device, a "Poler" clock to follow heart pulses, "Sonore" device for rhythm adjustment, equipment related to training, recording forms and "Lactat Pro" device to measure the lactic percentage in blood.

The Experiment:

Tests were conducted after the first week at the beginning of the second week. Then, interval training program was applied along 7 weeks by 4 training units a week in the preparation stage (3 weeks of general physical preparation, 4 weeks of special physical preparation). Exercises were applied as a part of the main stage of the training unit. The duration of a single unit is between 90 and 120 minutes. Poler clock was used to measure the pulse as a physiological indicator of training intensity during the training session. Incomplete (active) rest to make heart pulses from 120 to 130 pulses/min (Dr. Al Hasnawy, 2014: 91 – 92). Load increase shall be consistent with intensity and frequencies' increase for each exercise. The percentage of interval training percentage was more than 70% of total main stages of the training program. Post-tests were conducted right after finishing application of the training program.

The Used Tests:

Test 1: The lucléger 1982 test for the purpose of measuring maximum oxygen consumption VO2 MAX through equation.

VO2MAX (ml/kg. min) = 31, 025 + (3,238 x running speed km/h) – (3,248 x age in years) + 0,1536 (age x speed) (185 – 184, 2002 b. turpin).

Test 2: The SL_2 test and the Maximum Aerobic Speed (VMA) in laboratory. This is done through determining the starting point of lactic acid accumulation in blood (0BLA). (Sjodin 1981) and consistent speed to make the tested reach exhaustion stage (VMA) through conducting a graded endurance test on the moving walking device till stoppage due to exhaustion. The tested athlete warms-up for 10 minutes with slight intensity with heart pulse not more than 130 beat / minutes. Next, he runs on four stages and each stage is 4 minutes with increasing speed of 2 km/h with 69 seconds break separating between stages. In the break, the amount of lactic acid in blood is read through the (Lactate Pro) device by taking a sample from fingers after sterilization with watching heart pulses (FC) along the test. After that, a chart is drawn for lactic acid and heart pulses with velocity significance determining: SL, V_{SL}, FC_{SL} at immediate escalation point with a great angle at top of the chart (Sjodin 1981), VMA, and FC_{MAX} represented in the chart's stoppage point showing that the player reached exhaustion stage (Reilly 2007, 157).

Statistical Studies:

The researchers used T Students test to determine differences between pre and post tests of the training program. In addition, percentage was used to determine the percentage of change in each indicator of aerobic capacity. The F test and LSD test were also used to determine differences between percentages of aerobic changes after training and then counting via SPSS program.

Index	VMA(km/h)		VO2MAX(ml/min/kg)		SA				FCmax(bpm)	
					FCSA(bpm)		VSA(km/h)			
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Mean	14,20	15,83	57,68	58,18	179,5	176	12,98	14,46	200	194
S.D	0,75	0,63	4,69	4,45	4,93	4,83	0,66	0,66	1,82	7,81
T Counted	3,94		4,61		2,09		1,82		0,091	
T Tabulated	1,71									
Freedom Degree	23									
Significance	Significant		Significant		Significant		Significant		Insignificant	

Showing Results:

Table (1): Difference between pre and post tests of aerobic capacity indicators

Significance level: 0.05

VMA: Maximum aerobic velocity, $VO2_{MAX:}$, SA: the anaerobic threshold , FC_{SA} is the anaerobic threshold rate of pulse, V_{SA} is the velocity of the anaerobic threshold and FC_{MAX} is maximum pulse rate.

From tables (1) and (2) we notice that the T counted value of $VO2_{MAX}$ is 3.94, VMA is 4.61, FC_{SA} is 2.09 and the FC_{MAX} is 1.82 which is bigger than the T tabulated value (1.71) except heart pulses consistent with $VO2_{MAX}$ as the T counted value (0.091) is smaller than the tabulated, we can find that:

- There are statistically significant differences at significance level 0.05 between pre and post tests of maximum aerobic velocity (VMA) for the sake of post-test with an average of 0,75±14,20 km/h before training, 4,49±57,68 mmol/min/kg and 4,45±58,18 mmol/min/kg mmol/min/kg after training with improvement percentage of 0.91%.
- As for the SA, there are statistically significant differences between pre and post tests of for the sake of post-test as the FC_{SA} was 4,93±179,5 pulse/min before training to become 4,83±176 pulse/min after training with a decrease of 2.05%.
- V_{SA} became 0,66±12,98 km/h before training and 0,66±14,46 km/h after training with improvement percentage of 10.13%
- We also noticed that there are no significant differences at 0.05 significant level between pre and post tests of FC_{MAX} as it was 1,82±200 pulse/min before training and 7,81±194 pulse/min after training with a decreasing percentage of 4.96%.

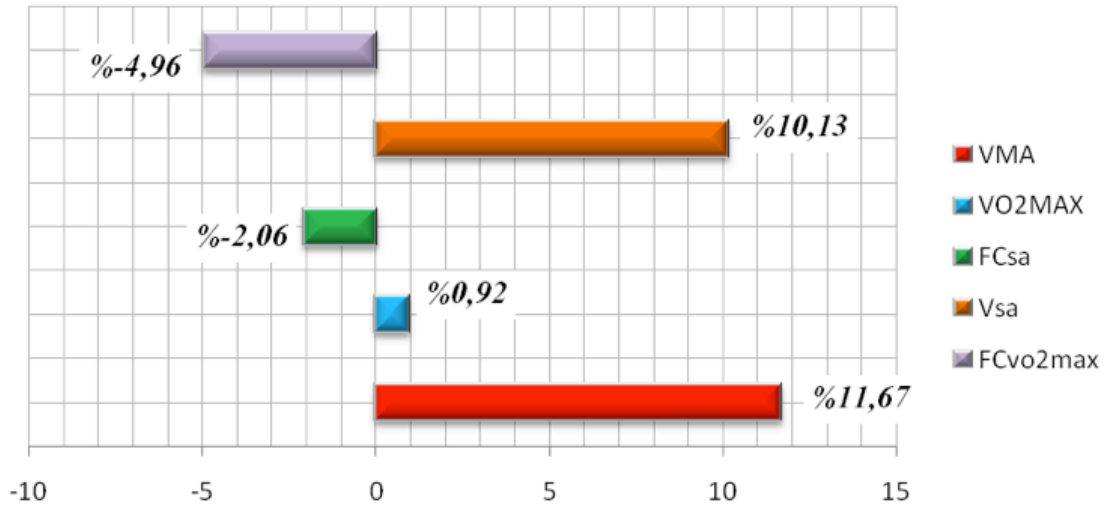

Figure (2): Change percentage in Aerobic Capacity Indicators after Interval Training

VMA: Maximum aerobic velocity, $VO2_{MAX:}$, SA: the anaerobic threshold , FC_{SA} is the anaerobic threshold rate of pulse, V_{SA} is the velocity of the anaerobic threshold and FC_{MAX} is maximum pulse rate.

Table (2): Contrast Analysis between percentages of aerobic capacity indicators for the sample of the study

Contrast Analysis						
Contrast source	Total squares	Freedom degree	Average squares	F Counted	**Significance Level**	F Tabulated
Inter-groups	2 199,95	4,00	1 315,29	5,70	0,05	2,45
Intra-groups	11 090,27	115,00	96,44			

Total	13 290,22	119,00				

Table (3): Difference between percentages of aerobic capacity change after interval training by the LSD test

		VO_{2MAX}	FC_{SA}	V_{SA}	FC_{MAX}	VMA
	Average	0,92	2,06	10,13	4,96	11,67
VO_{2MAX}	0,92	0,00	1,14	9,21***	4,05	10,75*****
FC_{SA}	2,06		0,00	8,08**	2,91	9,61****
V_{SA}	10,13			0,00	-5,17	1,54
FC_{MAX}	4,96				0,00	6,71*
VMA	11,67					0,00

VMA: Maximum aerobic velocity, $VO2_{MAX:}$, SA: the anaerobic threshold , FC_{SA} is the anaerobic threshold rate of pulse, V_{SA} is the velocity of the anaerobic threshold and FC_{MAX} is maximum pulse rate.

Through table (2), we notice that the counted F value is 5.70 which is more than the tabulated F value (2.45). This shows that there are statistically significant differences between percentages of change in aerobic abilities' indicators of football players under 19 years old. From this, the LSD test was conducted among variables through table (3) as it found that the biggest difference among averages in LSD value (5.61) is for the sake of VMA and FC_{MAX} which shows that there are statistically significant differences between for the VMA and the V_{SA}.

3. Discussing Results:

Results of First Hypothesis:

The researcher proposed that there are statistically significant differences between pre and post measurements for the sake of the post-measurement of indicators of aerobic capacity

Table (1) shows that the intervals training program affected all indicators of aerobic capacity except the $FC_{MAX.}$ In terms of statistically significant variables for the sake the post-test, change percentage (table 2) was as follows:

- The VMA is 11.66%, the $VO2_{MAX}$ is 0.91%, the FC_{SA} is -2.05% and the V_{SA} 10.13.
- As for the FC_{MAX}, although there are no statistically significances for its post-test, it decreased by -4.96% which refers that it was affected by the interval training program.
- Improvement of $VO2_{MAX}$ was asserted by multiple studies including the study of "Abdelghany Mathar" (Mathar, 2010), D. Ferrari Bravo et al, 2008 and Jan Helgrido et al, 2007. The researcher found that this improvement is resulted from the interval training on the circulatory and respiratory systems which led to increase the ability of the muscle to absorb the biggest amount of oxygen and the ability of the circulatory system to bear the biggest oxygen amount and transport it to muscles. This is also explained by the increase of heart's ability in terms of the amount of pumped blood and pumping power. All of these are functional changes that help improve the $VO2_{MAX}$. Results of the study were also different from results the study of E. Micu, et al, 2007).
- As for the VMA, the interval training had a significant effect which is shown by multiple studies such as A. Gharbi, 2010, Gegory, 2004 and Abdelrazek Budowany's study (Budowany, 2012). It explains this significant improvement with the improvement in aerobic capacity for the sample of the study. In addition, improvement of $VO2_{MAX}$ led to improve maximum aerobic capacity as this latter is just the least velocity consistent to reach $VO2_{MAX}$ which is explained in figure (3) (Monod, 2009).
- As for the (VA), its results agree with other studies including Mathar, 2010, Ayman Ahmed Elbadrawy, (Elbadrawy) 2008, D. Ferrari, Bravo et al 2008, Jan Helgrid et al, 2007 and the study of M. Siahkouhian, 2013. All of them referred that the improvement of the SA due to legalized training programs in the interval training. The researcher found that this improvement is due to the increase in players' ability to get rid of lactic acid as work in presence of lactic acid in blood with high concentration allows the SA to appear late as the interval training, by nature, is based on physiological basis which is training on conditions of lactic acid accumulation in blood. The nature of breaks of this type of training does not allow to make players completely recover, so functional systems adapt accordingly which is explained by the study of Rahim, Rowih, Habib (Habib 2006) as among its most important results that: the lactic acid exercises led to the ability to endure lactic accumulation in blood for the longest period during performance.

- As for the FC_{MAX}, it was noticed that there is no significant differences of the effect of interval training which agrees with the study of Karoly SPY et al, but there is a decrease percentage of 4.96%. The researcher found that this decrease is due to the growth of heart size and increase in its wall thickness. This leads to slow heart pulses and increase in maximum pulses of the player which is asserted by the study of Hilgrid et al (Jan, 2007).
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Thus, the first goal of the study is achieved and we became able to assert the first hypothesis of the study: there are statistically significant differences between pre and post measurements for the sake of the post-measurement of indicators of aerobic capacity for football players under 19 years old.

4. Discussing Results of the Second Hypothesis

The researcher proposed that there are statistically significant differences between percentages of enhancing indicators of aerobic capacity.

Indicators of aerobic capacity are divided into: maximum aerobic capacity indicators ($VO2_{MAX}$, VMA and the PMA) and: sub-maximum aerobic capacity indicators (SA) and they can be shown through FC_{SA}, V_{SA}, SL_2 or a percentage of $VO2_{MAX}$.

Through comparison between percentages of change toward improvement between the two types of aerobic capacity, we notice that in tables (2) and (3) there are statistically significant differences between change percentages of aerobic capacity indicators. Both VMA and V_{SA} improved by 11.66% and 10.13% consecutively, while the $VO2_{MAX}$ improved by 0.91% and FC_{MAX} by 4.46%. This shows that $VO2_{MAX}$ is not the most accurate indicator in determining aerobic capacity, but both VMA and V_{SA} are the most accurate in determining aerobic capacity of football players and in legalizing training loads. This was asserted by Aboelela Ahmed Abdelfattah as: the V_{SA} is the factor which distinguishes load players if their efficiency was equal in $VO2_{MAX}$. This fact was noticed in a great number of players such as Derrick Clayton, the Marathon player who had less $VO2_{MAX}$ than his opponents, but more in V_{SA} as with a value of 90% of $VO2_{MAX}$. Therefore, he excelled over his competitors as he runs at a high level of $VO2_{MAX}$ without increase in lactic acid accumulation (Sayed, 2003: 229). Figure (4) shows changes of aerobic capacity after training. Thus, we achieved the second goal from the study and managed to assert the second hypothesis: there are statistically significant differences between percentages of enhancing aerobic capacity indicators after interval training of football players under 19 years old.

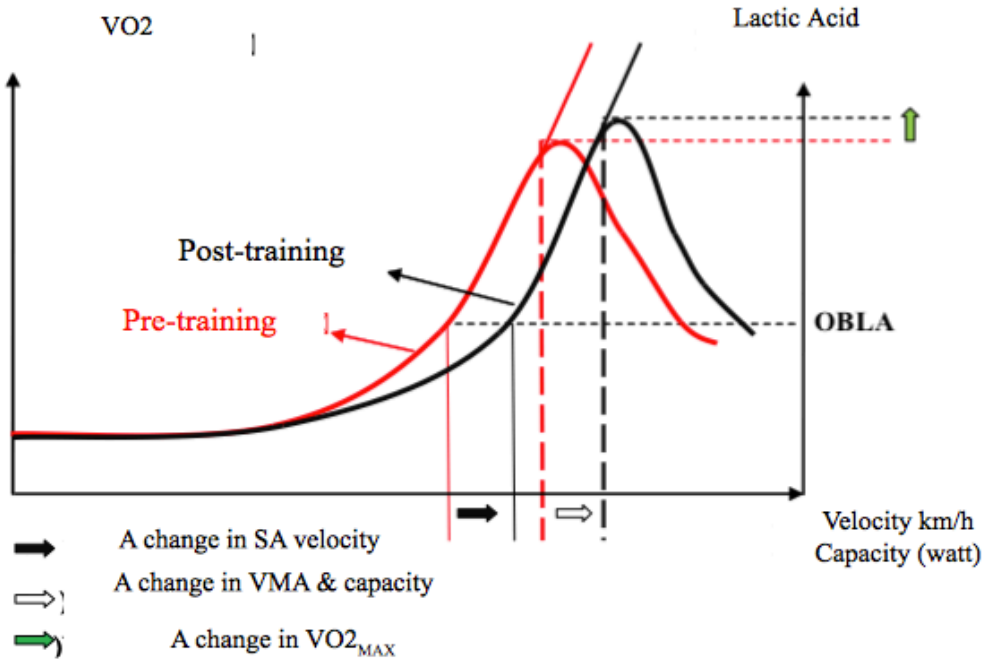


Figure (4): Changes in $VO2_{MAX}$, VMA and SA after interval training

(OBLA): The lactic acid accumulation starting point in blood = SA is the anaerobic threshold

5. Conclusions:

The researcher concluded the following:

- Interval training has a significant effect on improving aerobic capacities of football players under 19 years old.
- The VMA and the V_{SA} are the most affected by interval training than $VO2_{MAX}$ and its consistent heart pulses at training of football players under 19 years old.

Proposals & Recommendations:

- Using interval training in developing aerobic capacities for football players.
- Legalizing training loads by depending on VMA and V_{SA}.
- Conducting more researches to study the effect of interval training on both physical and functional requirements of football players and in all types.
- Conducting more researches to study the effect of other training methods on aerobic capacities for football players in all types.
- Depending on both SA and VMA to determine the level of aerobic capacities for football players.

6. REFERENCES:

1. Abdelfattah, A. A. & Sayed, A. N. (2003): "Fitness Physiology", 2nd Ed., Cairo, Dar Al Fikr Al Arabi.
2. Al Hasnawy, A. Y. M. (2014): "Skills of Sport Training", 1st Ed., Amman, Dar Al Safaa Press.
3. Kamal, A. (2004): "Sport Training in the 21st century", Amman, National Library Press.
4. Abdelemaksoud, E. (1992): "Theories of Sport Training: Endurance Training & Physiology", Cairo, Al Shabab Al Hur Press.
5. Hazzaa, A. M. (1989): "Aerobic Threshold: Meaning & Significance".
6. Abdallah, E. A., Ahmed, N. I. A. & Taha, A. A. (2001): "A Comparative Study of the Physical Efficiency Level and Maximum Oxygen Consumption between Fencing, Football and Short Distances", Sport Education Journal, Issue. 1.
7. Al Badrawy, A. A. (2008): "Effectiveness of Developing Anaerobic Threshold at the Numeral Level for Jogging and Running Competitors", Master's Dissertation, Faculty of Sport Education for Boys.
8. Salama, A. B. A. (2013): "The Effect of Highly-Intense Interval Training and Interval Training on some Physical & Physiological Characteristics of Young Footballers", Master Dissertation, Nablus, Al Nagah National University.
9. Talha, H., Wafaa, S., Mostafa, K & Said, A. (1998): "Scientific Encyclopaedia in Spot Training", 2nd Ed., Cairo, Book Centre Press.
10. Habib, R. R. (2006): "The Effect of Lactic Endurance Training on Developing Special Loads, Endurance of Lactic Acid Accumulation Concentration and 800 Running Achievement", Sport Education Science Journal, No. 98, Issue. 5.
11. Kharbit, R. (2014): "The Selected Collection of Training & Sport Physiology", Cairo, Bok Centre Press.
12. Budowany, A (2012): "The Effect of Continuous & Interval Training on Developing Maximum Aerobic Velocity for Football Players", Mestghanim, Master Dissertation, Institute of Physical and Sport Education.
13. Mathar, A. M. S. (2010): "The Effect of Frequent and Highly Intense Individual Training Patterns on Improving the Anaerobic Threshold and Achievement for Long Distance Runners. A Comparative Study", PhD Dissertation. Faculty of Higher Studies.
14. Al Kott, M. A. A. (2002): "Sport Physiology & Swimming Training", Arab Centre Press.
15. A.Gharbi,k.elabed,i.latiri,z.tabka,a.zbidi. «effets de différentes méthodes d'entraînement sur les paramètres lactiques.» science & sports, n° 25 (2010): 23-31.
16. D. Ferrari bravo, f. M. Impellizzeri, e. Rampinini, c. Castagna, d. Bishop, u. Wisloff. «sprint vs. Interval training in football.» int j sports med, n° 29 (2008): 668-67.
17. E.micu,a.avran,m.badier,j.-m.coudreuse,s.delpierre,a.delarque. «absence d'amélioration des paramètres aérobies après uninterval training de dix mois, chez des footballeurs professionnels.» science & sports, n° 22 (2007): 173–175.
18. Gregory, dupont, koffiakakpo, andsergeberthoin. «the effect of in-season,high-intensity interval training in soccer players.» journal of strength and conditioning research, n° 18(3) (2004): 584–589.

19. J.helgerud, lars christian engen,ulrik wisløff, and jan hoff. «aerobic endurance training improves soccer performance.» med sci sports exerc, n° 33 (2001): 1925-31.

20. J.meddelli, h.jullien,m.freville. «apport des testes de laboratoire au controle de l'entrainement de footballeur.» revus staps.science et technique des activités physique et sportives, n° 19 (1989): 27-17.

21. Jan, helgerud and all. «aerobic high-intensity intervals improve v˙o2maxmore than moderate training.» medicine & science in sports & exercise, 2007: 665-671.

22. Karoly spy, audrey marradi-spy. «effet de 6 séances d'interval-training sur l'optimisation de la performance aérobie.»

23. Léger l, lambert j. «amaximal multistage 20m shuttle run test to predict vo2max.» eur.j.appl.physio, n° 49 (1982): 1-12.

24. M.siahkouhian, d.khodadadi,k.shahmoradi. «effects of high-intensity interval training on aerobic and anaerobic indices: comparison of physically active and inactive men.» science & sports, n° 28 (2013): 119-125.

25. Monod, p. Rochcongar h. Médecine du sport pour le praticien. 4e édition . Paris: elsevier masson, 2009.

26. Reilly, thomas. The science of training –soccer:a scientific approach to developing strength, speed and endurance. New york: routledge, 2007.

27. Sjodin, b. And jacobs, i. «onset of blood lactate.» int.j. Sports med, n° 2 (1981): 23-26.

28. Turpin, bernard. Préparation et entrainement du footballeur. 1e édition . Paris: amphora, 2002.

29. Vaast, christian. Les fondamentaux du cyclisme-programmer et gérer son entrainement. 2e édition . Amphora, 2008.

EFFECTIVENESS OF PHYSICAL TRAINING IN IMPROVING OFFENSIVE TACTICS MEANS EXECUTION IN FOOTBALL, UNDER 19 CATEGORY

Dehli Henni

Institute of Physical Education- Abdelhamid Ibn Badis University - Mostaganem- Algeria

henni2009@live.fr

Abstract

The study aimed to find out the Effectiveness of Physical Training in Improving Offensive Tactics Means Execution in Football, under 19 Category. We have tried through this study to access to effective training program that serves the sports schools and raise private training process level of the offensive in the game of football, because offensive plans and means of implementation make the team overcome any defensive plan, and provide the opportunity for any team to win the game and, thus, win the admiration of the audience. To achieve this, the researcher relied on experimental design per sample represented in the junior category of the team Widad Mostaganem, whose number 10 main players, has been traced in the league average of three matches before and after the implementation of the training program, where the goal of the researcher was to know the effectiveness of the built physical training to improve the means of implementing the offensive play plans of the football players, and check it out, the researcher used the analysis of the games program in data collection according. To confirm that, and in order to verify the results, the researcher used the following statistical methods: (v) of the samples associated with the percentage and made findings that the physical training Built-positive effective in improving the means to carry the offensive play plans of the football players and on the basis of which the researcher recommends the use of physical training Built because of its effectiveness in improving the physical and technically gifted side and even tactical.

Key words: efficiency, built-training, playing offensive plans.

1. INTRODUCTION:

The development of achievement global sporting in recent decades did not come at random but was an inevitable result of the use of methods of scientific research and proper planning by employing the foundations and principles of modern science in physical education as a science training and physiology and statistics and meeting and sports medicine and other sciences.

And football was, and the first popular game still in the world, and that modern requirements in this game required a large need to develop players in preparation for an integrated and comprehensive all-round physical and skill and tactical, psychological and mental in order to make a difference and achieve excellence, and is not this only through the preparation of plans and programs integrated training and the search for the means of implementation of these plans offensive and private and

improved according to the physical demands force it, speed and distinctive force as quickly, and this confirmed by (Haland, 2003) (Hoff et al 2006) (Dellal et al 2008) that the organization of training programs according to scientific bases working on the development level of the members of the experimental group also undergo a training program codified for two (08) weeks can lead to positive progress and improvement in the variables included in the training program. Because the distinctive character of the performance of the high difference in terms of level of football now is the speed to move the ball and control the movement and speed to deal with it and move it, so is the setup skills based on improved means of implementing the playing plans because all the plan requires a basic or more skill to implement it, so the master skills necessary for the success of private plans and play offensive.

To reach sporting achievement requires finding ways and means of suitable and discover new and modern methods in sports training, such as using the built physical training which is one of the modern training methods in the field of football, where it is through the development and improvement of physical attributes and basic skills as giving exercises skill physical in the same exercise and this confirmed by (Dellal, 2008) will give rise to the integration of the ball in the physical work that allows the acquisition of skill and physical capabilities of the players, and this is what is supported (Impellizerri, 2006) that the use of exercise training physical Built richer, more complete and more similar to competition from traditional physical training . And it refers to him (Cazorla G et Farhi A1998) as the integration of the physiological side skill and tactical for the football game where the player takes advantage of the transfer process in the development of a private prescription for improving the necessary other qualities in the practice of the game, Due to keep pace with football of technological development and the use of Sciences for their

finding methods and effective methods in the field of training commensurate with the time and place for puberty football player to the highest degree of physical and performance skills, and here lies the importance of research to know the effectiveness of the built physical training to improve the means of implementing playing offensive and its impact on the yield of offensive football players, and how to choose the appropriate exercise and methods and means of training for this purpose in order to keep up with modern training developments.

Research problematic:

To access the performance and result in football, which aims to win requires too many requirements agree, including a high level in an interdependent and overlapping performance of physical and skill capabilities among them, as is the physical and skill capabilities essential foundation upon which the psychological aspect and the physiological and tactical development.

And the fact that the researcher one of the football players and the introduction of the views of the coaches noted that there is a significant weakness in the performance of the means of implementing the offensive game plans which affect the effectiveness of their performance, especially from the offensive, as the majority of the Algerian teams suffer from the apparent decrease in the level of performance, particularly in the last third of the game as lead to early fatigue and slow the case of hospitalization and a few low level of effectiveness of the overall performance focus (physical and technical) that appears through random play and distracting balls and frequent Manipulator broken and slow offensive activities, and not to overcome the defense cases for teams competition.

So felt a researcher studying the problem and developing appropriate solutions through the development of integrated exercises (physical - skill) aimed at improving the means of implementing the offensive play of the players hoping it plans to reach results serve the evolution of this popular sport in the various countries of the world. All of these reasons made him try to solve these problems and that by asking the following questions:

1 - Are Built for physical training effectiveness in improving the means of implementing the offensive game plans?

2 - Is it possible to overcome the situations play defensive teams by improving the means of implementing the offensive game plans?

Research goals:

- Proposal compact physical training improves the means of implementing the offensive play of the football players under 19 years old plans.
- Recognize the impact of the built physical training by improving the means of implementing the plans to play offensively.

Hypotheses:

- Physical Built-positive in improving the effectiveness of the means of implementing the plans of offensive play.
- Can be overcome on defense cases for teams competing in the event to improve the means of implementing the plans of offensive play.

Research Terms:

Effectiveness: brief glossary known as the effect of the amount of thing.

Built-training: a ball in the integration of physical work which allows the acquisition of technical and physical abilities of the players (Dellal, 2008).

Playing offensive plans: plans that are all the players account is in the performance of the offensive nature (Jones et Drust 2007) It is noteworthy (Monkam et al 2007) that it plans to team members participate either as individuals or groups or collectively as a team.

Field research procedures:

2. RESEARCH METHODOLOGY:

Approach: The researcher used in this study and the experimental method that suits its nature.

The research sample: The research sample was chosen intentional manner represented in Widad Mostaganem team playing in the Western region, and the number (10) of the main players within the team.

Domains of research:

The human domain: in the junior category representing Widad Mostaganem.

Spatial field: research completed in:

- Training program has been applied in Benslimane Stadium, and was analyzed at the headquarters of the team.

The time domain: experimental work on the two main stages have extended the period of two:

Phase I: was the completion of the exploratory experiment, which lasted from 15/09/2013 to 30/10/2013, which coincided with the beginning of the period of interviews Western tournament, and this phase included the following steps:

- Prepare interviews and inquiries with officials in the field of specialist training period for players Football
- Research period in the preparation of built-in training program to improve the means of implementing the offensive play plans

- The period of preparation and tactical skill tests for the research sample which will be held by the experience.

Phase II: This phase consisted in the experience of the application of basic research, where extended from 28/09/2014 to31/01/2015. During this time period, was filmed and analysis for 3 consecutive matches in the competition phase from 28/09/2014 to 10/11/2014.

The imaging and analysis for 3 consecutive matches in the competition dimensional stage has been following the implementation of the training program built directly any of 03/01/2015 to 17/01/2015

Table (01) illustrates the calendar imaging and analysis of games and a posteriori

Date of First games analyses	periods / games
27 / 09 /2014	First game WAM OMA
04 / 10/2014	Second game MCBH-WAM
11 / 10 /2014	Third games WAM USM

Date of Later games analyses	periods / games
03 / 01 /2015	First game OMA WAM
10 / 01/2015	WAM-MCBH Second game
17 / 01 /2015	Third game USM WAM

Main study:

Stage imaging matches:

researcher used video devices and of the latest cameras of the type (Numerical) and number 03, the first central camera of the great kind location in the middle of the field , remaining two of the small type (Digital Numerical) easy to navigate and carry them and their location on both sides of the pitch, The functions of these similar to portray the entire game tape.

Also hired a researcher specialized team with experience in the field of photography, and above them, and dealt with the football games, and he has brought the researcher team work composed assistant professors and not less experience for 04 years training for the purpose of objective analysis of offensive aspects of which are the means of implementing the offensive game plans after Prepare technical cards for each player.

Before filming official matches, the researcher with specialists and team work filming a friendly trial which took place in Benslimane Stadium between the team (WAM) and the team (CRBB), to find out the difficulties that may face a researcher at the imaging mode or in how to analyze games and focus on the means of implementing the plans of offensive play, also organized a working meeting with them before shooting was a detailed explanation of each course and methods of analysis, with the display more than once and a private pilot the interview tape. After the completion of the friendly interview depiction and analysis and adjust search variables, the researcher basic study and then filmed three consecutive matches in the competition stage, then the training built the program proposed application of the sample at a rate of 3 servings a week, the time of each share from 90 minutes to 120 minutes and after 3 months was re-shoot 3 consecutive matches in the competition stage dimension.

Analysis stage matches:

After the completion of filming bar every game, the researcher with work analysis team after collecting a set of standardized tests to measure and means of implementing the offensive play plans from group sources and scientific referencials, with the use of the Internet, and in coordination with some of the professors and doctors and trainers specialized in football, have been adjust the tests to assess the means of implementing the plans of offensive play marked by the shooting and passing, dribbling and running the ball, where they are recording the correct number of points or attempts or failed each test, and evaluate the performance of the player in all tests for each of interviews which are analyzed.

Divided objective observation to analyze the game into three types:

1 - Observe and analyze the performance of a given player.

2- Observe and analyze the performance of a group of players.

3- Observe and analysis of the entire team.

Basic points that should be the focus when our analysis of the games before evaluating the tests are as follows:

- Offensive plans and general (basic).
- Focusing on position 1 against 1offensive

- Focus on the correction shooter
- Focus on short and long scrolling
- Running with the ball

Scientific bases for testing:

I chose a researcher at Al-Durra Fish Connect program specialist in interviews analysis and includes this program all methods of evaluation points already touched upon, one of the frontrunners global programs in locomotion analysis and the presentation of the section and return the sum of the Masters of the arbitrators, where the researcher did not find any difference between Arbitrators data that the program is characterized by honestly and objectively and with high accuracy in the presentation and slow the skill and ability remedied plus blogging in paper record.

Statistical methods:

The researcher used: Percentage, arithmetic mean, standard deviation, the significance test (v).

View and analyze search results: Through the research hypotheses and method of statistical significance refers to the results of the experiment researcher within the pro tables:

Table (02) View and analyze test results of kicking:

statstic proof	S classify	Level of proof	Degree of independence	S counted	Estimation derivation		Counting average		
					after	before	after	before	
referencial	**2,22**	**0,05**	09	**4,07**	**2,04**	**1,32**	**6,90**	**3,70**	successful
referencial				**3,97**	**1,22**	**1,43**	**2,54**	8,90	unsuccesful

Table (02) shows the value (v) Student calculated and tabular correction in the test sample to Find The value of (t) calculated amounted to 4.07 of successful attempts and 3.97 for the failed attempts of the two largest (T) Driven estimated 2.22 at the significance level of 0.05 and 9 degrees of freedom, and this indicates the presence of significant difference between the results of pre and post tests It is for post-test, and this is due to give a researcher great importance to this skill in the training built program, and this shown by (Teodoresescu ;L 1977) that the correction in the games is the process of making a decision.

So the coach should be given the freedom to show their abilities to the correction with optimized use of guidance, where it should differentiate the player between the technical performance of the correction and the use of correction as a means of implementing the plans Individual offensive is the actual application of technical performance during the match.

Table (03) View and analyze test results of passing:

statstic proof	S classify	Level of proof	Degree of independence	S counted	Estimation derivation		Counting average		
					after	before	after	before	
referencial	2,22	referencial	09	5,30	8,24	9,46	72,20	53,90	successful
referencial				4,62	6,70	7,21	21,50	49,60	unsuccesful

Table (03) shows the value of (t) calculated in tabular and passing research sample test

The value of (t) calculated amounted to 5.30 of successful attempts and 4.62 of the attempts failed and the two values are greater than (c) Tabulated ,estimated at 2.22 at the significance level of 0.05 and 09 degrees of freedom, and that means the difference between pretest and post test is a difference moral and statistically significant and is in favor of the post test, and this is due to confirm researcher on the scroll in its training program built skill due to its use throughout minutes, and this shown by (Bangsbo2008) that the scroll of the most important arts sport of football at all because he is the most commonly used throughout the playing time and more 80 percent of the cases in which the player gets the ball, be disposed of scroll while the disposition of

the rest of the ratio of 20 percent either by running the ball or dribbling or correction due that the team consists of 11 players,

Table (04) View and analyze test results Shuffle:

statstic proof	S classify	Level of proof	Degree of independence	S counted	Estimation derivation		Counting average		
					after	before	after	before	
referencial	**2,22**	refrence	**9**	**6,45**	**3,55**	**2,98**	**19,60**	**15,70**	successful
referencial				**4,46**	**2,62**	**3,11**	**8,40**	**18,60**	unsuccesful

Table (04) built value (v) value calculated in tabular Shuffle test sample Search: The value (v) was calculated was 6.45 successful attempts and 4.46 of the attempts failed and the two values are greater than (c) Tabulated estimated at 2.22 at the level of 0.05 and the degree of freedom 09 which shows that the pre-test and post-test there are two significant difference results, which for the benefit of post-test, and this is due to the effectiveness of the built-training program, which led to improved dribbling skill through the implementation of training modules based on their content to merge Ball in physical effort skill to control the ball and thus Shuffle use as a means of implementing the offensive game plans, so it has deliberately to strengthen this skill (Assad, 2008) that the Shuffle is one of the techniques influential and exciting football, and on that basis should know the player the basic rules of evasive even work out a Wayne elude, and when elude.

Table (05) View and analyze test results of running with the ball:

statstic proof	S classify	Level of proof	Degree of independence	S counted	Estimation derivation		Counting average		
					after	before	after	before	
referencial	**2,22**	**0,05**	**9**	**5,07**	**3,87**	**2,96**	**18,90**	**13,80**	successful
referencial				**3,11**	**2,47**	**3,44**	**8,54**	**14,70**	unsuccesful

Table (05) shows the value of (t) calculated and tabular in a test run with the ball for the research sample: that the value of (t) calculated amounted to 5.07 of successful attempts and 3.11 of the attempts failed and are the two values greater than (c) Tabulated estimated at 2, 22 at the level of 0.05 and the degree of freedom 9 which shows that the pre-test and post-test results there are two significant differences, which for post-test, and this is due to the focus of the training program is built on the integration of the ball in the physical and skill and tactical work than control skill Ball and running in all directions and that's what he referred to (Louis 1992) that run with the ball of individual skills, as used by the player in order to progress towards the opponent goal,
(Di salvo et al 2007)that the skill of running the ball is the basis of mastering dribbling skill which is considered as a means of implementing the offensive play plans, and must be the coach that consolidates the concepts of tactical and technical use of the skills of playing and excessive use the ball, especially in the attacking third of the breach or Shooting on goal and scrolling to a colleague.

Table (06) Exposé and analysis of the average overall rate of successful attacks and targets registered for two tests:

Number of goals scored by the team			Average of successful offensives	
after	Before		after	Before
8	**3**		58%	28%

Table (06) shows the proportion of successful attacks and the number of goals scored by the team in both tests (pre and post): Through the results Entries in the table above we note that the percentage of the average overall rate of attacks successful in 3 games (pre-test) has reached 28 percent either in the test Dimensional has the percentage of successful attacks 58 percent, an average improvement rate of 30 percent between the two tests, sees researcher that this improvement rate in the increase of successful attacks demonstrate improved level of implementing offensive play plans due researcher that improvements to the effectiveness of the built physical training followed with The research sample according to proper scientific methods by adopting the style of the link between the skills to get a player who is fluent in more than skill and linked with each other and perform skill sentences and major tactical for the benefit of the team, which generate the members of this group a state of adjustment on exercise which integrates the ball and adopted the appropriate intensity and comfort appropriate and in accordance with the frequencies to suit the abilities and capabilities of young players (the research sample).

Discuss the first hypothesis:

that suggest that physical training built a positive impact on improving the means of implementing the plans of offensive play. The findings of the researcher through tables number (2.3, 4, 5), which results suggest the presence of statistically significant differences between pre test and post for post-test after the experience in the following skills (correction, scrolling, dribbling, running the ball) and attributed researcher This positive effect of the effectiveness of the built physical training due to its available duplicates mobility influential in the time periods in a row, as well as through the integration of the physical side, where that improve athletic performance and the ability to implement the various motor skills, is the one expected from the training physical Built for program requirements and this as pointed out by (Lambertin., 2009) and using the built-in exercises using the ball (Built-physical training) richer and more complete than the traditional physical training (Impellizzeri, 2006).
(Lambertin, 2000) that built an important and essential physical training in the physical attributes and the development of the development of even the physiological and skill and tactical qualities during the performance of physical activity. As well as indicated , that the ability to victory and achievement of results depends on getting above attainable standard of physical and tactical and technical skills and intellectual capacity so it must be built on the foundations of a scientific approach and structured training programs.

Attribute Researcher reason to adopt exercise special skills on according to sound scientific methods, through the adoption of binding method between the skills to get a player who is fluent in more than one skill performance and link them with each other and perform skill sentences and major tactical for the benefit of the team, which generate the members of this group a state of adaptation to exercise which was adopted at the appropriate intensity and appropriate comfort and according duplicates, commensurate with the abilities and capabilities of young players (Straighten the research sample), as well as the lack of difficulties when performing these skills, and the possibility of young players due to redundancy in the performance, and this was confirmed by (Tealman,R ,1990) that it was essential that "the player up to skill performance automatically through the permanent repetition of the performance and the use of various exercises and which is characterized by change requirements and external factors during exercise as the existence of a competitor, or more, for example, as well as in experimental games. The development and improvement made in the performance skills (correction and dribbling, and scrolling, and run with the ball) and shown by the results, did not come by chance or at random, but rather was the result of training resulting in the skills referred to in advance to reach this stage of the level of improvement, which confirms the high potential of the exercises in the development of the level of performance and work on improving in side skills to members of the experimental group, as well as what progress can be attributed researcher reasons to organize training method followed with this group, as the organization of the training process gives a fundamental impact on improving the performance level that is consistent with the capabilities of the players, it is through good preparation for the training venue and supplies necessary it will get positive results in the process of understanding and improving the skill level of the players, which is reflected in the results tables number (2.3, 4, 5) and say that the first hypothesis have been achieved with the results of similar and related studies.
Discuss the second hypothesis: that suggests it can be overcome on defense cases to the opposing team in the case of improving the means of implementing the offensive game plans.
Through statistical treatment that produced the presence of statistically significant differences between pre test and post test results of the research sample and in favor of the post test differences, the test of successful attacks and objectives recorded as shown in the table (06), and we explain this to confirm a researcher at the units built physical training to improve and means of implementing the offensive play plans that have become all the way making goals as Statistics confirm that more than 40 percent of goals scored in international and world championships were by fixed positions any scrolling shooting skill then followed by dribbling and running the ball skill This is consistent with Ghazi Saleh Mahmoud study 2000, entitled analytical study compared the level of basic skills in football clubs between Baghdad and the provinces.
As can be seen from the results of Tables number (2.3, 4, 5), improvement in the means of implementing the offensive play plans and to reduce failed attempts between the two tests (pre and post) and this Results Table (06) through the high proportion of offensive attempts successful and that an estimated 58 percent in the post test after it was 28 percent in the pre-test by improved 30 percent, with increasing the number of registered 3 goals targets in the tribal games to 8 goals in a posteriori matches and, this, to the effectiveness of the built physical training manifested in increase

successful offensive attempts resulting in an increase to score goals in the games, a posteriori (Knnekens, 2010) that the performance level is associated with a positive level of tactical skills that have been rehearsed.
Therefore we say that the second premise of the research have been achieved and this associated with the results of the studies.

3. CONCLUSIONS:

Within the limits of the approach used, and the proposed training units, the sample that have been applied by the study was reached following:

1- That use the built physical training has a positive effect in improving the means of implementing the plans to play Offensive.
2 - That the difference between the pre-test and post a statistically significant for post-test in Test correction and scrolling dribbling and running the ball.
3 - it turned out by trainers lack of aspiration and knowledge of the ways in which training It must be applied in the training.
4 - The majority of trainers, on training programs during the training season is not available they have built-in physical training.
5 - Most do not pay attention to the means of implementing the offensive game plans in their programs training.
6 - Our analysis of the a posteriori that matches successful offensive attempts ratio increased with increase Score goals compared with the proportion of successful offensive attempts and goals recorded when Analysis of the tribal games, and that after the implementation of training modules for training physical built.

4. SUGGESTIONS:

1 - Relying on training program for physical training built for different sports disciplines And private collective games.
2 - The universal use of the built physical training on all sports groups and both sexes.
3 - To focus on the use of physical exercise during a special skill categories training modules Age and the forms that fits
4 - Administrative management in clubs give adequate attention to the age groups under 19 years old through tools used for application modules as needed trainer.
5 - To attend Internships analysis on how to take advantage of the games technological means in the training process.

5. REFERENCES IN FOREIGN LANGUAGE:

1- Alexandre dellal .(2008) *.De l'entrainement à la performance en football france . edition de boeck superieur* .france.

2- Assad Mahmoud , (2008) . Learning basic skills in football . Amman : Dar Tigris Oman .

3- Bangsbo J.Futbol ;Entrenamiento de la condicion fisica en el Futbo –Eds Paidotivo 2008 .

4 - Cazorla,G,fahri,A,(1998). Exigences physiques et physiologiques actuelles.revue eps,273,60-66

5 - Disalvo V .Baron R .Tscan H. Calderon Montero F.Bachl N.Pigozzi F . Performonce characteristics according to playing position in elite soccer .Int.J.Sports Med 2007 ;28(3) : 222-227.

6 - Frédéric lambertin .(2009) *.préparation physique intégré* . " Integrated physical preparation"

7 - HOFF J. Training and testing physical capacities for elite soccer players. *J*

Sports Sci. 2005. 23; 573-582

8 - Hoff j Haland .(2003) *.Non domminant legtrainging imrpves the bilateral motor performance. soccer plyers* . stadion medical practicem begroem norwoy.

9 - Impellizzeri FM, Marcora SM, Castagna C, Reilly T, Sassi

A, Iaia FM, Rampinini E. Physiological and performance effects of generic

versus specific aerobic training in soccer players. *Int J Sports Med*. 2006. 27 (6);

483-492.

10- Jones ,S and Drust ,B (2007)phsiological and technical demands of 4V4 and 8V8 games in elite vouth soccer players kinesiology 392, 150-156

11 – Louis, Jean (1991) ; Des hais –foot- passion ; Edition amphora, paris

12- Monkam et al (2007) Quantifications et analyses temporelles des paranétres physiques de l'entrainement d'une equipe professionnelle de football en période pré-competitive. Paru dans 4émes journees internationales des sciences du sport le 28-30 novembre 2006. Actes Edition INSEP,115-116

13 - Rianne Knnekens .(2010) *.the importance of tactical skils intalent development* Groningen: s.n.

14 - Téodorescu,L ,(1977) théorie et méthodologie des jeus sportifs.collection sport et progres de l'homme pris : les editeurs français réunis.

15 - Taelman R., Football techniques nouvelles d'entraînement 170 exercices

pratiques; Paris, Amphora 1990 - 183 p.

IDENTIFICATION OF THE RISKS OF ANABOLIC STEROIDS IN THE ALGERIAN SPORT BODYBUILDING.

Hamadou Ali Djemel AbdNacer [a], Zerf Mohammed[b], Mokkedes moulay idriss[c], Atouti Nouredine[d], Bengoua Ali[e], Mebrouki Fatiha[f]

Physical Education Institute Laboratory OPAPS, University of Mostaganem, Mostaganem 27000, Algeria[a,b]

Physiology Laboratory Physical Education and Sports Institute University of Mostaganem, Mostaganem 27000, Algeria [c,d,e,f]

Email address: Hamadou Ali: killer_forma@hotmail.fr ,Zerf Mohammed: biomeca.zerf@outlook.com,Mokkedes moulay: mi_mokkedes@hotmail.fr , Atouti Nouredine: attouti2476@live.fr ,Bengoua Ali: bengoua67@yahoo.fr ,Mebrouki Fatiha: mabroukifatiha@yahoo.fr

Abstract

In the lack of information and program prevention in the Algerian Leisure and athletics, sports the purposes of this study were to expose the Advantages and Disadvantages of Anabolic steroids administer in the meals by Algerian bodybuilding to gain muscle volume in the shortest time.

From that, our subjects were 12 Algerian athletes confirmed who practice bodybuilder for more than 7 years ago and who volunteered accepted to participate in our experience 06 from them involve Anabolic steroids in their meals and 06 rely on natural nutrition. Our study based on the following Analysis of blood, urine, and anthropometric measurements where our work was divided into two team –research: Field team[1] and a Lab team[2].

To verify the hypothesis that support:

Which Advantages and Disadvantages can be observed when athlete addition the Anabolic steroids in Bodybuilding from that, our aims for this study interest:

(1) Which differences anthropometric we can observed between our samples?
(2) Which UR Regulations can be observed in their vital functions?

For that, we have chosen the analysis of independent T-TEST to compare the implementation differences anthropometric and modification in the regulation of the vital functions in the two cases for the current study. Based in the results accuses

We confirm: (1) Anabolic steroids develop the anthropometric better than fed natural; (2) Anabolic steroids destabilizes Cycles vivo and disorderly the vital functions.

Key words: Risks of Anabolic steroids, Algerian Sport Bodybuilding.

1. INTRODUCTION

In the lack of the Anti-doping policy, the information and program prevention in the Algerian Leisure sports. Our aims were to expose the doping as a global problem that follows leisure sports, national and international sporting events worldwide (David A Baron, David M Martin, and Samir Abol Magd. 2007). Historically, anti-doping have focused on the detection and deterrence of doping in our elite sport latest case the Hichem Chaabane cycling 2015 (algeriepatriotique.com, 2015). The research team fears, however, a growing concern that doping is occurring outside the elite sporting system; giving rise to the belief that the misuse of doping agents in recreational sport has become a social problem and a public health concern. The reasons for our choice of this subject is due to the measures taken latest March 19, 2015 (ALGÉRIE PRESSE SERVICE, 2015)by Sports Minister Mohamed Tahmi that we are Considering late, In comparison with the death of the Algerian hero and the World Championship Mohammed Benaziza fought the Giants in October 4, 1992 at the age of 33 years in the category under-75 kg category. (Wikipedia, 2015) As a result, cardiovascular back, it was said in the rapport that the cause come back to the doping for the Quick Preparation to the Bodybuilders Championship Which is the first case detected in the Algerian Sports.
Our attention for this study is due to the use of Anabolic steroids on the Algerian Leisure sports, were we can provide it from the

gyms.
Our set came from the reality of the gyms visits in our country that:
On one hand

1. The hypothesis of doping is easily advanced to the athletes who use it for quick visual successful results (Steven B. Karch, MD, FFFLM, 2006).
2. The training weights accompanied by greater growth, due to the increase in bio-metabolism that proteins positively condense in the practice of body building (Mohamed Mahmoud Mandalawi, 2000, p. 95).

On the another,

1. Delaying instructions of the preventive measures relevant ministries in our elite sport.
2. The absence of such a statement in the amateur sport
3. Monitor and control the distribution of these drugs sources

2. Material and Methods

The research teams' role in this study is limited to monitoring the experience and take the measures planned with the agreement of the participants:

A. Medical tests(Lab team[2] collection and interpretation)

- **Were These tests added in the laboratory Sports Physiology of EPS Mostaganem**

1. Measuring the ratio of urea in the blood
2. Measurement of Creatinine in the blood
3. Measure the ratio of testosterone in the blood
4. Blood glucose measurement

B. Anthropometric tests (Field team[1] collection and interpretation, over the direction and coordination of teams)

1. Measure Weight
2. Measure the circumference of the shoulders
3. Measure the chest circumference
4. Measure the upper arm circumference
5. Measuring thigh circumference

❖ **From that, this study was limited to follow-up**

1. Measurement variables Within the limits and the possibilities for researchers
2. Where the condition of taking the medical standards
   - 48 hours after the last use Anabolic steroids
3. The medical measures taken in fasting conditions
4. Adjust random variables (Age - Age Training - Height Weight -Social conditions Number of training hours and retrieval means)by an investigation that was conducted one week ago before beginning the initial experience

Data Collection

Subjects:

Our experience is composed of 12 volunteers Algerian athletes confirmed who practiced the bodybuilding for more than 7 years ago and who volunteered accepted to participate in our experience 6 from them involve Anabolic steroids in their practices and 6 rely on natural nutrition. The research teams role is limited to monitoring the expierence and take measures planned with the agreement of the participants

Table 1 shows the Equal and the homogeneity of the Sample in Some growth indicators.

Independent Samples Test							
variables		N	Mean	Std. Deviation	df	T	Sing(2-T)
Weight	Anabolic steroids	6	79.67	4.76	10	-0.23	0.82
	natural		80.33	5.01			
Height	Anabolic steroids		184.00	6.54		0.51	0.62
	natural		182.33	4.63			
age	Anabolic		26.33	2.07		0.15	0.87

	steroids						
	natural		26.17	1.83			
Age practice	Anabolic steroids		7.83	1.17			
	natural		7.33	0.82		0.86	41.00

Through the results table 1 the Independent Samples Test of the growth indicators variables, at the 0.05 level (2-tailed) and Degrees of freedom (2n-2) that the T calculated is not significant Within All comparisons.

From that, we confirm the homogeneity of the Sample in Weight-Height-age and Age practice

Table2 (a-b-c-d) shows the Total Measuring values of the Variables in order to study

Table2a Shows Sample NATURAL Anthropometric tests(cm)					Table2b Shows Sample NATURAL Medical tests			
sample NATURAL	shoulders	chest	upper arm	thigh	glucose	urea	creatinine	testosterone
1	97	85	39	53	0.92	0.39	0.8	2.9
2	96	94	42	55	1	0.27	0.9	3.8
3	99	92	36	59	1	0.45	1.01	5.87
4	101	94	37	60	1.11	0.38	1.02	4.95
5	102	96	39	61	1.04	0.55	1.1	3.97
6	104	94	35	64	1.02	0.52	1	4.67
Mean	99.83	92.50	38.00	58.67	1.02	0.43	0.97	4.36
SD	3.06	3.89	2.53	4.03	0.06	0.10	0.11	0.94
Table2c Shows Sample Anabolic steroids Anthropometric tests(cm)					Table2d Shows Sample Anabolic steroids Medical tests			
Sample Anabolic steroids	shoulders	chest	upper arm	thigh	glucose	urea	Creatinine	testosterone
1	109	89	44	57	1.77	0.55	1.63	2.04
2	112	101	39	68	1.86	0.63	1.75	2.47
3	104	99	45	64	2	0.64	1.56	2.59
4	122	99.9	43	64	1.99	0.52	1.42	2.68
5	143	104	46	69	1.87	0.63	1.61	3.06
6	107	106	42	68	1.82	0.62	1.67	3.13
Mean	116.17	99.82	43.17	65.00	1.89	0.60	1.61	2.66
SD	14.52	5.91	2.48	4.47	0.09	0.05	0.11	0.40

Data Analysis

Based on the Medical tests with their natural ratios and rates our Lab team[2] confirm that sample NATURAL are normalized but the sample which add Anabolic steroids in their practice are Greater than the normal limit except in the testosterone which is Less than the natural ratios see the normal limit and fig1.

The normal limit :

Glucose: 0.70-1.10mg/L

Urea: 0.20-0.40mg/L

Creatinine: 0.8 to 1.3 mg mg/L

Testosterone: 2.80-8ng/mL

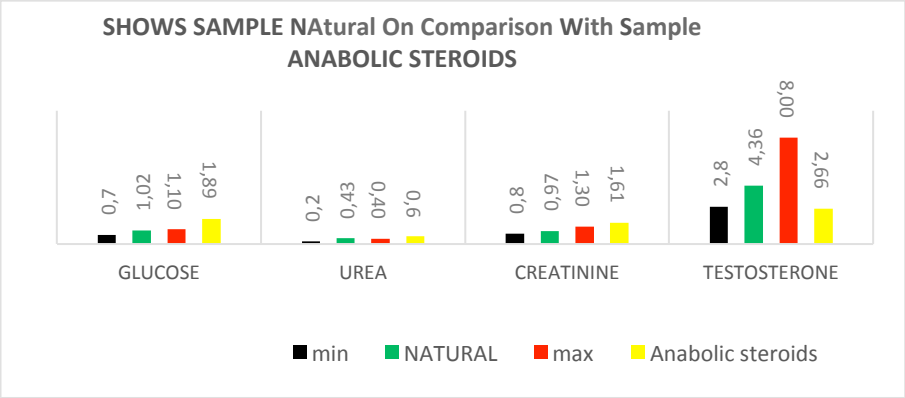


Fig 1 shows the results of medical test.

3. Results and Discussion

Table 3 shows Independent Samples Test calculated from Anthropometric tests(cm)

variables		N	Mean	Std. Deviation	df	T	Sing(2-T)
shoulders	natural	6	99.83	3.06	10	2.69	.022
	Anabolic steroids		116.17	14.52			
chest	natural		92.50	3.89		2.53	.030
	Anabolic steroids		99.82	5.91			
upper arm	natural		38.00	2.53		3.57	.005
	Anabolic steroids		43.17	2.48			
thigh	natural		58.67	4.03		2.58	.028
	Anabolic steroids		65.00	4.47			

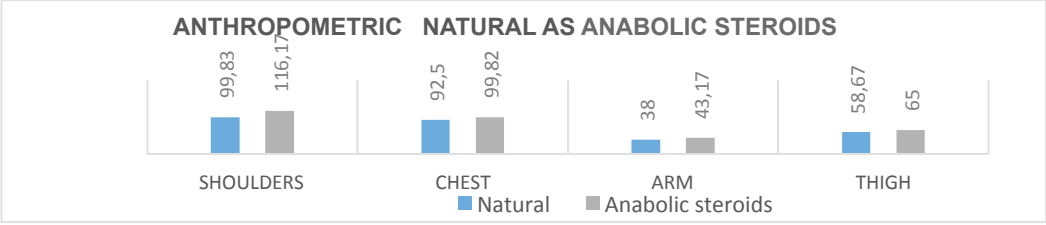


Fig 2 shows the results of Anthropometric natural as Anabolic steroids.

From the fig2 through the results table 3, the Independent Samples Test calculated from Anthropometric tests (cm) is significant Within All comparisons for Anabolic steroids sample.

Table 4 shows Independent Samples Test calculated from medical tests(cm)							
variables		N	Mean	Std. Deviation	df	T	Sing(2-T)
glucose	natural	6	1.02	.062	10	19.18	.000
	Anabolic steroids		1.88	.092			
urea	natural		.43	.102		3.68	.004
	Anabolic steroids		.59	.050			
creatinine	natural		.97	.106		10.13	.000
	Anabolic steroids		1.61	.11			
testosterone	natural		4.36	1.03		3.758	.004
	Anabolic steroids		2.66	.40			

From the table 4 through the results of the Independent Samples Test calculated from Anthropometric tests (cm) is significant Within All comparisons for Anabolic steroids sample. Except in the testosterone, which is less than the sample witch don't practice the Anabolic steroids

Discussion and Conclusion of our experience

Our discussion is based on what Indicates (C Saudan, N Baume, N Robinson, L Avois, P Mangin, M Saugy, 2006) that the Anabolic steroids are synthetic derivatives of testosterone, modified to enhance its anabolic actions (promotion of protein synthesis and muscle growth). The impact of this research rolling around the drugs and dietary supplements that have become promoted in sports halls:

Within the limits and possibilities, we confirm:

[1] Through the fig2 and Table 3 the account of the Independent Samples Test, shows that the Anabolic steroids develops the anthropometric better than fed natural where (Lauralee Sherwood, 2011) confirms our findings: that Studies have confirmed that steroids can increase muscle mass when used in large amounts and coupled with heavy exercise.

[2] Through Table 4 of the account of the Independent Samples Test, shows that the Anabolic steroids destabilizes Cycles vivo and disorderly the vital functions where our finding are identical to the confirming of (Lauralee Sherwood 2011): these agents adversely affect the reproductive and cardiovascular systems and the liver Kidney. Where we agree with (John Josias Conybeare (Sir.), William Neville Mann, 1975)that the simplest test of renal function is the measurement of the blood urea level. The normal range is from 20 to 40 mg. per 100 ml. The actual level depends upon the equilibrium between urea productions from protein. For the creatinine, we agree with (CATHEY PINCKEY AND EDWARD R. PINCKNEY, M.D., 1982): that the Normal values: Blood serum creatinine values range for 0.8 to 1.3 mg per 100-ml.From the measured of testosterone we agreed with (David Wild, 2013) for that the Normal values Testosterone are 0.22–2.9nmol/L 9.9–27.8nmol/L for Women 0.06–0.82 ng/mL and Men 2.8–8.0 ng/mL (Bayer ACS:Centaur).For the measured of Glucose, we agreed with (G. P. TALWAR,L .M. SRIVASTAVA, 2006) blood sugar concentration are from 70 mg/100 ml to 120 mg of glucose in blood.

For those reasons, we recommend our athletes to avoid these practices because the health requires a good reflection of the actors and decision makers (Yves Géry. 2012). Where our find Background theoretical based on the site by (Steven B. Karch, MD, FFFLM, 2006)that the hypothesis of doping and the use of Anabolic steroids is easily advanced to the athletes who use it for quick visual successful results in our case this result is significant in the anthropometric variables. Based on data medical standards our sportive must avoid this ideal because their health will be Susceptible to diseases, mostly lead the user to death as the example of our champion Benaziza, in case of the body building and the result of the Similar studies that the Nutritional supplements can be a source of positive doping cases as some supplements contain prohibited substances without showing this on their label (Olivier de Hon, Bart Coumans, 2007) from that we recommend our leaders in sports to create Anti-doping policy in the Algerian Leisure sports. Our aims focuses on preventing, and formed Anti-doping policy for the education of our athlete (Ivan Waddington,Andy Smit, 2009)

4. Our results and recommendation:

1- Anabolic steroids develops the anthropometric better than fed natural.

2- Anabolic steroids destabilizes Cycles vivo and disorderly the vital functions.

3- Formed Anti-doping policy for the education of our athlete as Program of prevention in the Algerian Leisure and athletics sports.

Our aim:

For our sample and responsible in sports and health in our country:

- Health foremost.
- Integrated the Anti-doping policy for the education of our athlete.
- Study the problem posed in other similar studies.
- Take advantage of this study in the assessment Program of the Algerians prevention.

5. References

1. Yves Géry. (2012). La Santé de l'homme : 1942-2012 - 70 ans d'éducation pour la santé. *420*.
2. Wikipedia. (2015, 08 01). *Mohamed Benaziza*. Récupéré sur Portail de la musculation: fr.wikipedia.org/wiki/Mohamed_Benaziza
3. ALGÉRIE PRESSE SERVICE. (2015, 3 19). *Dopage : le laboratoire effectuera ses premiers contrôles dans "les mois à venir*. (ALGÉRIE PRESSE SERVICE) Consulté le 8 15, 2015, sur SPORT: aps.dz/sport
4. algeriepatriotique.com. (2015, 7 7). *cyclisme-lalgerien-hichem-chaabane-suspendu-18-mois-pour-dopage*. (algeriepatriotique.com) Consulté le 8 15, 2015, sur algeriepatriotique.com: algeriepatriotique.com
5. C Saudan, N Baume, N Robinson, L Avois, P Mangin, M Saugy. (2006). Testosterone and doping control. *Br J Sports Med , 40* (i21).
6. CATHEY PINCKEY AND EDWARD R. PINCKNEY, M.D. (1982). *MEDICAL TESTS.*
7. European Union. (2014). *Study on Doping Prevention.* Luxembourg: Publications Office of the European Union.
8. David Wild. (2013). *The Immunoassay Handbook Theory and applications of ligand binding, ELISA and related techniques.* (4. Edition, Éd.) Access Online via Elsevier.
9. DAVID A BARON, DAVID M MARTIN, and SAMIR ABOL MAGD. (2007). Doping in sports and its spread to at-risk populations: an international review. *World Psychiatry , 6(2)*, 118–123.
10. G. P. TALWAR,L .M. SRIVASTAVA. (2006). *TEXTBOOK OF BIOCHEMISTRY AND HUMAN BIOLOGY.* new Dalhi: PHI Learning Pvt. Ltd.
11. Ivan Waddington,Andy Smit. (2009). *An Introduction to Drugs in Sport: Addicted to Winning?* USA: Routledge.
12. John Josias Conybeare (Sir.), William Neville Mann. (1975). *Conybeare's Textbook of Medicine.* C. Livingstone: Amazon France.
13. Lauralee Sherwood. (2011). *Fundamentals of Human Physiology.* USA: CengageBrain.com.
14. Olivier de Hon, Bart Coumans. (2007). The continuing story of nutritional supplements and doping infractions. *41* (11).
15. Steven B. Karch, MD, FFFLM. (2006). *Drug Abuse Handbook.* USA: CRC Press.

LEVEL OF DECISION MAKING IN SOME VOLLEYBALL SKILLS (SERVE, RECEPTION, PREPARATION) FOR SECONDARY STAGE STUDENTS

A Descriptive Study on the Secondary 2nd Grade Students of Mestghanim City (16 – 17)

Merzougue Djamel [a] , Sebbane Mohamed [b]

[a,b] *Institute of Physical & Sport Education, Mestghanim University - Algeria*

E- Mail: merzouguedjamel@gmail.com

Abstract

The importence of reserch to identify the skilllevel to takedécision in some volleyball skills and hadassumed the existence of researcherstatisticallysignificantdifferencesbetween the decision-makingskill and volley-ball oneswith the lowlevel of eachskill. 148 pupel of the second level of secondary on the city of mostaganem, havebeenchoasenad the resercher has in concludedthatthere are significantdifferencesbetween the decision-makingskills.

The resercherrecommended the need to use new methods focus on montalskills in teaching volley-ball skills, and this in order to raise the level of learningaccording to the phases of the age, sex, and potential, italsorecommendedthat the harmfulconductperiodictests and ongoinng mental abilities in order to recagnizetheir reality and thenwork on developingthem.

Key words: decision-making , volley-ball, heighschool.

1. INTRODUCTION :

Factors of success in sports require adopting the correct scientific method that achieves what is needed by specialists including trainers or teachers. This is in order to reach the best results. Volleyball is considered one of the games that need research, study, analysis and evaluation as this game is characterized by high level of technical performance of skills. Lately, there was a notable development in this game which asserts the concern of trainers and researchers in the use and development of means of measurement and evaluation for the purpose of identifying status and condition of players or learners. This is in order to prepare training or educational programs on the light of results of measurement and evaluation to raise performance level from skill and mental aspects. Volleyball is considered one of the forms of ball games which are characterized by dynamism and thrill which gave it a special nature that differs from other team games. This is evident in the way of using the ball through a set of various and different skills. In addition, volleyball has its basic various principles that depend in mastering and raising their levels on optimal achievement level. This is done by adopting the right style of methods of teaching, learning and training with the choice of the latest among them. A lot of specialists in volleyball workers (trainers or teachers of this game and academics) in their studies and researches agreed that the success of any team in volleyball is determined to a great extent by the extent of mastering the game's basic principles of skills (Al Bek, 1984: p. 122).

However, this success cannot be reached except for mastering total complex mental skills that are considered as essence of tactical strategies in volleyball. Among these mental skills, there is decision making skill which is considered the core of achieving results in performance. So this mental skill should have important and great concern of teachers, trainers and players themselves. This is done only through intensifying exercises which include multiple various mental skills and develop them in order to reach a high degree of distinction, accuracy and consistency. In addition, volleyball is one of the team sports that are characterized by continuous observation of situations, continuous concentration and preparation for decision making suitable in acting at anytime. The nature of this game also makes it as a scenario which is full of continuous events and changes. This encourages us to use total mental and physical abilities to cope with these changes through good and right employment of these abilities in order to reach a good level of playing and competition (Ali, 2004: p. 12).

Problem of the Study:

There is no doubt that the importance and effectiveness of basic skills in volleyball represent the main base for effective performance and achieving good results. Evaluation of these skills is a helping aspect, so decision making is very important in individual's educational process if connected with volleyball as it is one of the games which require great mental and movement concentration. Significance of the study comes in determining the performance of some important and effective skills in skilled and technical performance of this game. The tactic which builds aesthetics of this game is built if the game is connected with decision making and showing the level of this skill for learners. It is the decision making which makes teachers able to know determine optimal way and pattern of raising the game's level and considering points of strength and weakness in preparing

teaching programs. Individuals are characterized by individual differences and attributes. Therefore, physical education teachers are suffering from some problems when they evaluate their demand or players. Among them, there are those who believe that they know their students well and able to evaluate them based on many impressions formed by improvised scenes, but this knowledge and experience is not different from other scientific methods of evaluation.

Since the researcher works in the sport field and a good watcher of volleyball, he noticed that most teachers focus on skilled performance, ignore mental aspect or they lack experience in this field especially when it comes to mental skills including decision making skill which is considered one of the updated and modern terms which tackles optimal mental ability of learners in an accurate way for good preparation, exert efforts and excel in competition. Therefore, the researcher studied the level of decision making in serving, reception and preparation skills by posing the following essential question: What is the level of decision making in some volleyball skills for secondary stage students?

Goals of the Study:

Identifying the level of decision making in serving, reception and preparation skills

Hypothesis of the Study:

- There are statistically significant differences between decision making and some volleyball skills (serving, reception and preparation).
- There is a low decision making level for secondary stage students in serving, reception and preparation skills.

Terminology & Concepts:

Decision-Making:

In language: It is means what we need to be empowered to control.

Terminology: Decision is selection among different alternatives. Not making a decision towards a certain condition is considered a decision in its own sake.

Volleyball: It is considered one of the most widespread team sports around the world and practiced by various ages and ethnics. It is played between two teams, each team consists of 6 players on a playground with a length of 18 m and width of 9 m. The single volleyball match consists of 4 halves; each round consists of 25 points and it is run by referees. This game depends on fast movement and fast reactions using motor skills such as serving, passing and reception, etc.

2. Related Studies:

Al Hawary, 2011 conducted a study aimed to determine emotional intelligence level for students at Moata University, the relation between emotional intelligence of students and decision making and determining significance of differences in both emotional intelligence and decision making due to variables of social gender, specialization and educational level. The sample of the study consisted of 897 male and female students from the first academic stage from various specialties and grades. They were chosen in strata randomly. The researcher applied on them both emotional intelligence scale and decision making scale. The study reached the following results: students of Moata University have an average degree of emotional intelligence, there is an effect of total aspects of emotional intelligence on the ability of decision making for university students and there are no differences between emotional intelligence and decision making for university students due to social type and specialization, but there were differences for the sake of the fourth grade in decision making.

In addition, Al Karaan, 2003 conducted a study aiming to determine the effect of the educational program that is based on "Sternberg's Ternary Method" in order to enhance decision making level and gender and specialization at the level of decision making for first secondary stage students (literature / scientific). The sample of the study consisted of 222 male and female students from governmental schools at Jarash governorate. They were divided into two groups: empirical group (120 male and female students) and a control group (102 male and female students). Decision making scale was applied on the sample of the study and results found that: there is a statistically significant effect on the education program for the sake of the empirical group, there is a statistically significant effect for the sake of scientific section's students and there is no statistically significant effect in the gender variable. The researcher recommended conducting studies to determine the level of decision making for university students.

Holt & Sparkes, 2011 conducted a study aiming to determine the ability of female players in decision making skills and implementation during the game after participation in training overlaps lasted for five weeks. The sample of the study consisted of 14 female students of the university team in the Faculty of Sport Education at Charles University, New Zealand. The researcher conducted pre and post tests as follows: cognitive test (30 paragraphs about football and a standard test about technical football skills evaluation). After the end of application period in terms of tactical aspects, results of the study showed that: students of the empirical and control groups had a notable improvement in decision making, both groups were equal in improving ball passing rate, successful execution rate, shooting rate and positive changes in knowing tactics for the empirical group.

How Far the Benefit of Studies:

The researcher's review of these prior studies led to benefit from them in both theoretical and practical aspects as this benefit is represented in:

- Determining the steps to be followed in research procedures from technical or administrative aspects.
- Determining the suitable methodology for the study as the researcher used the descriptive approach to achieve the goal of the study.
- Determining suitable tests to measure variables of the study and suitable method to estimate decision making level.
- Knowing how to use statistical processing, confirm or reject any results of the study through results of related studies.

Field Procedures of the Study:

3. METHODOLOGY:

The researcher used the descriptive approach with a survey as it is suitable to the nature of the study.

Sample of the Study: The sample of the study consisted of 148 students (7% of original population which is 2279 students).

Fields of the Study:

- **Human Field:** This study included students of the 2nd secondary grade for some secondary schools of Mestghanim city.
- **Temporal Field:** The study started from 20/01/2014 till 20/02/2014.
- **Spatial Field:** This study was applied in the volleyball playground at all secondary schools.

The Tools of the Study:

- Arabic & foreign references and sources.
- A computer device including the electronic program.
- Scientific observation.
- Skill tests.

The Used Devices:

Volleyball hall, volleyballs, volleyball net, measuring bands, measuring watches and assistant crew

The Used Tests:

The researcher designed a form concerned with basic skills and determined the most important tests that measure the accuracy of these skills. After presenting the form to a group of experts, the most important of these tests were determined as shown in table (1). All tests were taken from the book of scientific basics of volleyball, measuring and testing methods. (Al Moneim, 1997: p. 209, 211, 236, 239, 241 and 243)

Table (1): Basic Skills of Volleyball and the most important tests chosen by experts

Serial	Skill	Proposed test	Purpose of the study
1	Serving	Test. 1: long serve accuracy	Measuring long serve accuracy
		Test 2: hard points serve accuracy	Measuring specific hard points serve accuracy
2	Serving	Test. 1: serve reception test (1)	Measuring player's skill in serve reception
		Test 2: serve reception test (2)	Measuring player's skill in serve reception
3	Serving	Test. 1: test of preparation close to net	Measuring preparation close to net accuracy
		Test 2: test of preparation from above with fingers	Measuring readiness of the tested in close preparation skill

The Electronic Program:

The used program was test of decision making skill using simulation of playing postures in volleyball using computer program called "Super Lab (Version 4.04)". It presents images as visual attention for choice. This programming presents pictures and records answers of the search and time of answer during different experiments used on the computer. A group of images used representing different playing positions in volleyball chosen by a group of referees and then they were presented to the samples of the study (96 3D pictures) ordered according to name and number using a lottery. The tested respondents answered correct and quick balls during presenting pictures on the computer screen to answer them through choosing the correct decision.

Test Design:

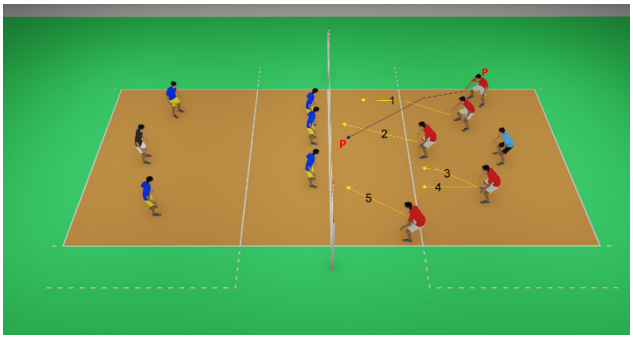
The sample of the study was put before the computer screen, pictures of different positions were presented in the said playing cases and then they choose decisions in each case in good and quick answers by choosing the correct playing position (each playing position has five choices to choose from "from 1 to 5"). Each attempt was made as follows: preparation signal (!): 1500 ml / second showing the picture of a certain playing position and followed by the correct chosen picture after pressing any of the five buttons (1, 2, 3, 4, 5) by your index finger.

Pictures presentation before the tested respondents:

1500 on the screen

!

Still on the screen till the answer



1500 on the screen

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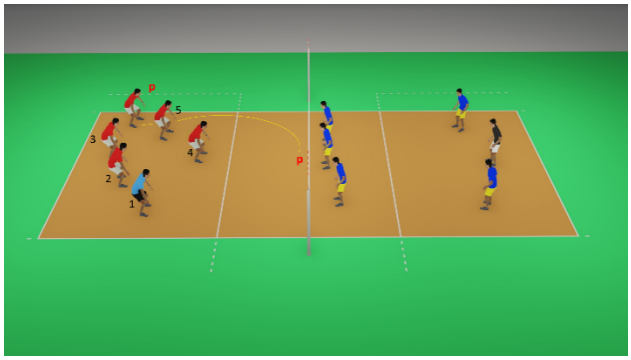
Still on the screen till the answer



Exploratory Trial:

After the researcher determined the most important basic attacking skills and t heir related proposed tests, he performed the exploratory trial on 01/01/2014 on a sample of second secondary stage students among those who are not included by the main exploratory trial (10 students). The aim of this trial was to identify the difficulties which may face the researcher during performance of tests, the efficiency of the assistant working team and the lasted time to execute these tests.

Scientific Bases of the Tests

- **Test-Retest (Reliability):** Test reliability is known as giving the same results if repeated on the same persons and under the same conditions. The researcher conducted tests and re-performed them on an exploratory sample of 8 players out of the sample of the study.
- **Test Validity:** It means correct testing of what was measured (Mokaddem, 1993: p. 146). In order to ensure test validity, the researcher used self-validity which is measured by counting the square root of test reliability coefficient: self validity

$= \sqrt{\text{reliability coefficient}}$

Table (2): Reliability and Validity Coefficients of the Test:

Serial	Test items	Reliability	Significance	Validity
1	Serving	0.87	0.05	0.93
2	Reception	0.91		0.95
3	Preparation	0.95		0.97
4	Decision-making	0.85		0.92

Table (2) shows that all items of the test gave results with high reliability and validity as we recorded statistically significant correlations in al tests at significance level 0.05 which asserts success in measuring the study variables.

Objectivity: Tests of the study are the most objective as they are proper for the sample of the study and volleyball and they are derived from prior studies, Arabic and foreign references asserting their importance and objectivity. They were chosen based on their effectiveness, easy application and result validity.

Statistical Study:

The researcher used arithmetic mean. Standard deviation, contrast analysis, good compatibility testing and percentage as shown in table (3).

Discussion of Results: First Hypothesis:

- There are statistically significant differences between decision making and some volleyball skills (serving, reception and preparation).

Second Hypothesis:

- There is a low decision making level for secondary stage students in serving, reception and preparation skills.

Table (3): A. Means, Standard deviations, F test of decision making tests in some volleyball skills (serving, reception and preparation)

Tests		Category no.	Mean	S.D	F Counted	F Tabulate	Significance level	significance
Serving	Test 1		27.1	11.82	3.80			Significant
	Test 2		18.8	3.6				
	Decision making		12.35	3.84				
Reception	Test 1		27.25	7.5	5.94			Significant
	Test 2		26.15	6.45				
	Decision making	148	7.85	2.79		3.06	3.05	
Preparation	Test 1		27	7.40	4.46			Significant

	Test 2		26.4	6.70				
	Decision making		7.85	2.79				
Total decision making	Good	18	12.16%					
	Average	40	27.02%					
	Weak	90	60.81%					

In table (3) which shows results of decision making tests in some volleyball skills, we notice that means of serving, reception and preparation are as follows:

Serving: (12.35 / 18.8 / 27.1), reception: (7.85 / 26.15 / 27.25) and preparation: (7.8 / 26.4 / 4.27) and with standard deviations as follows: serving: (3.84 / 3.6 / 11.82), reception: (2.79 / 6.45 / 7.5) and preparation: (2.79 / 6.7 / 7.4).

Accordingly, there were statistically significant differences between decision making level and some volleyball skills as the F counted values for (serving, reception and preparation) were (4.46 / 5.94 / 3.80) which are better than the tabulated one (3.06) under significance level (0.05).

Decision Making: through the table which shows results of decision making tests in some volleyball skills, we notice that there were statistically significant differences between decision making levels (good, average and week) with percentages at all decision making levels ((good, average and week) as: (12.16 / 27.02 / 60.81), so they achieved the hypothesis which says that decision amking level is low at each skill (serving, reception and preparation). Results reflected a clear weakness in respondents in decision making as well as their poor performance in volleyball skills performance which asserts that they need follow-up and development in mental skills. Students who use their mental skills well will reflect positively on using their basic volleyball skills which means that skilled performance is connected to abilities. Rayan, 1971 found that the physical and skill conditions do not only express general level of players, but what we need to know is the degree of mental recognition accuracy in their abilities and potentials. Sakhi, 2006 found that continuous use of mental skills training is as important as training on using physical and skill abilities, which means that performing skills with high level leads to increase muscular and nervous compatibility, movement control and good skill performance.

The researcher found that lower levels of decision making skill for the sample of the study is due to the educational content which is almost empty of training related to develop mental abilities of students. It can be said that the best results that can be reached through good execution of basic skills should be related to the student's ability to use his/her mental potentials, especially decision-making which is based on good expectation and timing and ability to follow the ball.

4. Conclusions:

Through results of the study, the researcher reached some results as follows:

- There are statistically significant differences between decision making and some volleyball skills.
- There are statistically significant differences between total decision making levels.
- Sample of the study has a low decision making level.
- Most individuals of the sample are at weak level.

5. Discussing Results:

Through statistical treatment of the study results and results at above tables, it can be said that:

Discussing Results of the First Hypothesis:

The researcher proposed that there are statistically significant differences between decision making and some volleyball skills. This was found in table (3) as it showed statistically significant differences between decision making and some volleyball skills (serving, reception and preparation). The researcher found that these differences are due to lack of experience and practice in students in performing skills as well as lack of mental and cognitive maturity. Each skill needs repeated physical training in addition to mental skills. Skills in general need from learners high and successful consistency and perception and they need high degree of accuracy, attention, intelligence and recognition.

Discussing Results of the Second Hypothesis:

Results in table (3) showed low decision making level for students in (serving, reception and preparation) skills. The researcher found that most respondents of the sample were at weak and average levels due to the difficulty of this mental skill which needs high consistency between concentration, speed and accuracy in performance. Decision making is one of the most important abilities of players in higher sport levels. Its success depended on basic factors such as information speed, accuracy, and level of

activity, knowledge, skills and prior experiences which are not found in the sample of the study. Fathy, 2008 referred that skill o creative abilities through the ability to take suitable decisions with experience represented in repetition.

6. RECOMMENDATIONS:

- Asserting the use of various teaching methods based on a modern technique that make the teacher's role effective in educational process.
- Performing periodic and continuous tests of mental abilities of students with the aim of identifying their reality and them work on developing them.
- Performing similar researches on students for the other volleyball skills and other sport games' skills to know the importance of decision making on different sport events.
- The necessity of making teachers aware how to develop variables of decision making skill for sport movements through practical experiences using different senses.
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7. REFERENCES:

1- Khater, A. & El Bek, A. F. (1984): "Measurement in Sport", Cairo, Dar Al Fikr.
2- Fathy, J. (2008): "Talent, Distinction and Creativity", Amman, Jordan, Dar Al Fikr.
3- Sakhy, H. S. (20006): "the Effect of a Training Method to Develop the Time of Accuracy, Expectation and Motor Response in Accuracy of some basic Skills of Young Volleyball Players", Baghdad.
4- Hassan, Z. M. M. 7 Ali, E. A. M. (2004): "Center of Controlling Team Sports, the Egyptian Library.
5- Al Garaan, A. A. (2003): "The Effect of an Educational Center based on Sternberg Theory to Enhance Decision Making Level for the First Secondary Grade Students", Jordan, Amman.
6- Mokadem, A. (1993): "Statistics, Psychological and Educational Measurement", Algeria: University Publishing Authority.
7- Hassanein, M. S. & Abdelmoneim, H. (1997): "Scientific Principles of Volleyball and Measuring and Evaluating Methods", Cairo, The Book Center Press.
8- Al Hawary, M. (2011): "The Relation between Emotional Intelligence and Decision Making for Moata University Students", Jordan, Moata.
9- Holt, N.& Sparkes, A. (2001). An ethnographic study of cohesiveness in a coolege soccer team over a season. The sport psychologist, (15) p237-259.
10- Ryan, A, J : The limites of hyman performance in new york ,san francisco, london, A wadernic press, 1991,p58.

PREDICTING MUSCULAR CAPACITY OF ARMS FROM DISTANCE OF HORIZONTAL THROWING OF MEDICAL BALL

Nihad Ayub Qadir Tarjile

Koya University, Faculty of Physical Education & Sport Sciences

E- Mail: nihad.ayub@koyauiversity.org

Abstract

The medical ball horizontal throwing test is one of the optimal tests to measure explosive strength and capacity. However, results of the test are not accurate because they use the meter as a measuring unit while strength measuring unit is the Newton and capacity with the Watt. Our knowledge of these variables makes us near to feel strength that was produced to make the ball reach this distance. These real units help us estimate components of loads including intensity, size and relief. Therefore, this study came to show the meaning if each term and how terms are connected mechanically in order to enhance scientific information of the researchers and follow modern measuring and testing methods.

The study aims to:

1- Determine some biomechanical variables that affect medical ball horizontal throwing.
2- Determine the percentage of participation of explosive strength that affect medical ball horizontal throwing.
3- Finding the equation of predicting throwing level with significance of the explosive capacity of the medical ball horizontal throwing test.

Population of the study was determined among some players of Koya University teams in the following games: (basketball, volleyball and handball). Number of players was 13 players selected purposively. The researcher used one (1) video camera (model: Casio-High Speed-Exilim) made in Japan, with a speed of 210 photos/sec. The researcher also used the medical ball throwing test (2 kg) using hands from sitting on a chair position. Among the most important conclusions found by the researcher, there were:

1- The watt unit can be predicted based on distance (in meters) in the medical ball throwing test.
2- Capacity is not the only biomechanical variable that affects throwing distance at medical ball horizontal throwing, but there are other variables which also affect and can be predicted.

Keywords: prediction, muscular capacity, throwing distance, medical ball

1. INTRODUCTION

In most, or we can say all, of sport events strength is needed as a basis for movement as well as capacity whether explosive or speed one according to skill. In addition, the physiological difference between strength and capacity is a hard thing, but there are differences between them which are the essence of training on which trainers rely in order to develop these two attributes. Explosive strength means the use of a strength resulting from a maximum central muscular contraction at a specific moment by extending the joint on which it operates. This also happens in body joints, at moments of taking off for jumping in skills, shooting, etc. This strength can take longer time to become (speed strength) or with the least possible time to become a capacity. This is done based on the mass, duration and movement, but the explosive strength or capacity is "the formula or the explosive nature of evaluating strength" (Osama Ahmed 2009: 1). Both variables of explosive strength and capacity differ from one player to another as these two elements need to be integrated and produced within movements in an effective way as their mere presence does not mean necessary a high result in muscular capacity. This is determined by the individual's ability to integrate these two components with a consistent ability between nervous and muscular systems on one side, and between the nervous central system and internal systems on the other. These systems perform a distinctive task in making successful achievement. In linear movements, the second movement rule is linked with total strength affecting body and changing its speed which is known as acceleration that is proportionate with the amount of exerted strength and at its same direction. Body mass is the constant of this proportion. This means that strength = mass x acceleration. Based on this rule, strength equals the change in body acceleration with its mass constancy. Thus, we are able to derive the moment pushing rule which means that it is a moment explosive strength exerted to perform a skill according to the rule (strength = mass x acceleration) (Linthorne, N. P. 2001, 69). Since strength here is explosive, it means that initial speed equals zero, so the above rule is: (explosive capacity = mass x acceleration ÷ time). By this rule, we can measure the exerted strength at any moment of explosive push performed by a player to perform a skill characterized

by explosive strength. Through the first rule of Newton, movement production is a result of strength as "strength is a mechanical act that changes, attempts or maintains the shape of motor body condition" (Kasem & Eman 1998: 237). Capacity forms when the time of muscle contraction is short. This means using the biggest motor unit in order to reduce time. Therefore, capacity is defined by (Hara) as "the ability of one or group of muscles to reach frequency in the least possible time and it is called speed strength" (Mohamed Sobhy & Ahmed Kesra 1998, 103) and this means that capacity includes important factors which are strength and motor speed.

The capacity rule is (capacity = strength x speed). As previously mentioned, this means that capacity is affected by strength and speed as it increases by the increase of any one of them. Thus, relation between strength and speed in this rule is an inverse relation. This classic relation between strength and speed was firstly determined by Hill, 1938.

Muscle contraction speed has a notable and clear effect on muscles' capacity to generate strength. In addition, the type of muscle contraction plays a great role in this respect. During concentric contraction, in which muscles are shortened, maximum strength is reduced gradually with increased speed, while the opposite is correct during eccentric contraction as strength increases with speed increase when operating muscles are extended. Therefore, in most studies and researches in the field of sport education, the used tests for measuring strength depend on jumping distance or medical ball throwing without depending on mechanical bases which may affect performance outcome. Hence, the importance of the study comes in predicting the explosive capacity of arms with significance of distance through horizontal medical ball throwing.

Problem of the Study

Through surveying, there is many scientific problems in sports which need to be studied and examined to set scientific solutions for them and employ results of these studies to serve the sport achievement. One of the problems that are seen by the researcher is the problem of studying explosive strength and capacity in the test used a decade ago which is the arms explosive strength and capacity test due to distance and measuring, in the same test, the mass and movement duration. This is done without considering the nature of morphological differences between the examined and the possibility of their effect results of tests.

Through reviewing references and researches, the researcher did not find a study tackling photography based on mechanical rules which made him perform an analytical study using photography, biomechanical analysis and attempting to adjust outsider factors. Therefore, the problem of the study can be summed in the inaccurate results of the test because it uses the meter as a measuring unit, while strength is measured by Newton, capacity by Watt and our knowledge of these variables makes us close to feel real strength that is used for ball pushing.

Goals of the Study:

1- Determine some biomechanical variables that affect medical ball horizontal throwing.
2- Determine the percentage of participation of explosive strength that affect medical ball horizontal throwing.
3- Finding the equation of predicting throwing level with significance of the explosive capacity of the medical ball horizontal throwing.

Hypotheses of the Study:

1- The explosive capacity of arms can be predicted based on distance through horizontal medical ball throwing.

2. METHODOLOGY:

The researcher used the descriptive method as it is proper to the nature of the problem.

Population & Sample of the Study:

Population of the study was determined from some players of Koya University teams in the following games: (basketball, volleyball and handball). Number of players was 13 players selected purposively. Numbers of observations were determined (39 observations) at individuals' number and sample for the purpose of statistical analysis of biomechanical variables.

Tests & Measurements of the Study:

Arm's Explosive Capacity Test (Ali Salloum 2004, 94)

Biomechanical Variables:

Through (Kinovea) analysis program, variables under study were counted from chest to after releasing the ball and counting both speed and acceleration, and then from the below rules strength and capacity were obtained. Ball mass (2 kg) and arms mass is (9.8 kg) so mass will be (11.8 kg).
In addition:

F =ma
P = fd/t = fv

As:
(F) Strength
(M) Ball mass + arm mass
(P) Capacity
(t) Time
(V) Velocity

Figure (1): Measuring

Photography:
The researcher used video photography (figure 2) as it is one of the means of observing errors and how training reaches the most accurate moves and their goals.

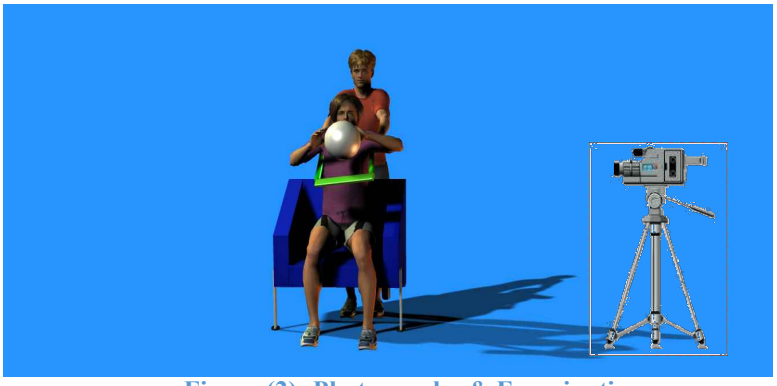

Figure (2): Photography & Examination

The researcher used one (1) video camera (model: Casio-High Speed-Exilim) made in Japan, with a speed of (210-420-1000 photos/sec). Its speed can be controlled due to the studied movement speed. The researcher depended on the (210 photos/sec) speed. This camera can directly store the movement in the (Memori) and installed on a (Tripod) vertically in a distance of (2.45 m) away from the point at the centre of the player's movement in the left side. Height of its lens is 110 cm from the ground. The scale was photographed after putting at the centre of the place of performance horizontally with a length of 1 m with black and white colours. Photography was performed in the internal hall related to the Sport Education School / Koya University on 02/02/2014 corresponding Sunday at 1 pm with the help of the work team.

Calculator's Accounting and Analysis
In order to get accurate analysis results, the researcher had to use a developed calculator with a high degree of speed and accuracy as biomechanical analysis depends on goals related to the skill which needs to be studied (one of the first steps of biomechanical analysis is to determine the main goal of the motor skill or what is called mechanical goal of the skill. "Without clarity and goal detection we cannot evaluate the effectiveness of skill performance" (Talha Hossameldin 1994, 25). After many previous surveys, all attempts were selected. One of the most important basic requirements to extract results is conducting analysis and evaluation of the research's sample. In order to treat these mistakes, they must be diagnosed which is the core of the problem.

3. Discussing Results:

Statistical Description of Variables of the Study:

Table (1): Arithmetic mean and standard deviations for the variables of the study

Serial	Variables	Measuring Unit	Mean	S.D
1	Strength	Net	292.3495	116.34586
2	Capacity	Watt	1273.6051	536.04582
3	Distance	Meter	5.3992	0.56182
4	Speed	m/sec	4.5915	1.50257

Contributions Percentage, Prediction Equations and Discussing Results:

Table (2) Simple skewness analysis of scoring from movement ability index and contribution percentages in medical ball throwing distance

Model	Correlation	Correlation	Contribution %	F Value	Freedom Degree		Error %
Capacity	0.884	0.781	0.775	131.748	1	37	0.000

It is clear from table (2) that capacity variable contributed with a percentage of (77.5%), so the prediction skewness equation by variable significance will be:

y = b0 + x b1
y = (-3277.828) + (5.63*842.994)

As: b = constant amount
b1= skewness coefficient
x = value of measuring contributing biomechanical index (distance)

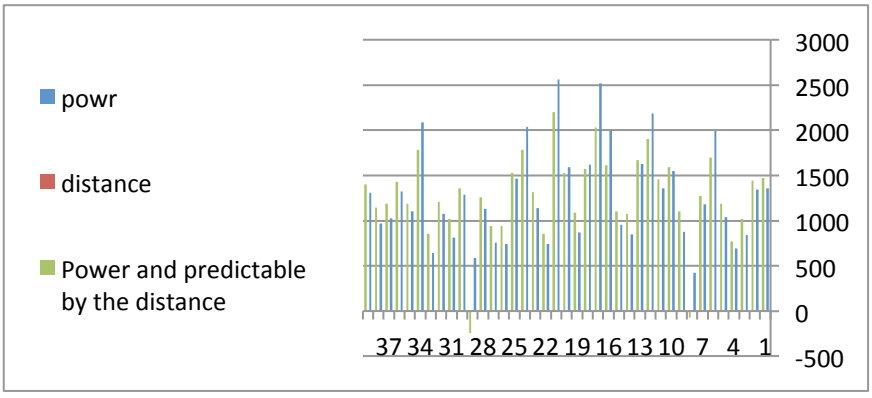

Figure (3) diagram of capacity prediction by distance

Result shows that arms capacity contributes greatly. The researcher found that this is a proof that the equation is valid in predicting arms' capacity through distance. However, absence of contributing percentage is an important proof that there are other biomechanical variables that influence and contribute during measuring explosive capacity of arms in medical ball horizontal throwing (medical ball pushing). These variables include pushing angle, duration and gravity. In addition, anthropometric variables have their percentages in terms of arms length and periphery. Thus, the researcher explains this result due to contribution of these variables too but with small percentages. Through this presentation, the researcher found that arms' ability affects the distance of throwing for medical ball horizontal throwing. Further, the nature of the correlation was detected between this index and its percentage of contribution in medical ball horizontal throwing distance in addition to detection of prediction skewness line equation with significance of values of the biomechanical variable (strength and capacity) that affect the distance in this test.

4. CONCLUSIONS:

1- The watt unit can be predicted based on distance (in meters) in the medical ball throwing test.
2- Capacity is not the only biomechanical variable that affects throwing distance at medical ball horizontal throwing, but there are other variables which also affect and can be predicted.

5. REFERENCES

- Talha Hossameldin (1994): "Motor and Functional Bases of Sport Training", Cairo, Dar Al Fikr Al Arabi.
- Ali Salloum Jawad Al Hakim (2004): "Tests, Measurement and Statistics in Sports", Al Qadesia University, Faculty of Sport Education.
- Kassem Hassan Hussein & Eman Shaker Mahmoud (1998): "Principles of Mechanical Bases for Sport Movements", 1st Edition, Amman, Dar Al Fikr Press.
- Mohamed Sobhy Hassanein & Ahmed Kesra (1998): "Encyclopaedia of Sport Training & Application", 1st Edition, Cairo, Book Centre Press.
- Linthorne, N. P. (2001). Analysis of standing vertical jumps using a force platform, American Journal of Physics, 69, 1198–1204.
- -McGraw-Hill Scott K. Powers, Edward T. Hawley: Exercise Physiology, 4th edition, Companies, Inc-New York, USA, 2001.

Online references:

- Osama Ahmed Hussein El Taey: "Strength and Capacity" (Published article at the Iraqi Sport Academy, 2009).

REHABILITATION PROGRAM FOR TREATMENT OF SIMPLE WRIST LIGAMENTS TEAR FOR SOME STUDENTS IN ARTISTIC GYMNASTICS LESSON

Zainab Abid Ali Albaezangi

zainab.abidali@koyauniversity.org

Abstract

This study aims to prepare a rehabilitation program for the treatment of simple wrist ligament torn for some students of artistic gymnastics and determine the effect of this rehabilitation program on treatment. The hypothesis of the study says that there are statistically significant differences as a result o the prepared rehabilitation program for treatment of simple wrist ligament tear for some artistic gymnastics students. As for the used methodology, the researcher used the empirical method. The population of the study is represented in students of Physical Education School in Koya University in the third stage. The sample of the study was some students who are injured with wrist ligament tear in artistic gymnastics (7 students). The rehabilitation program was prepared after being presented to experts for treatment of the said injury using a set of treatment exercises for the wrist joint. The rehabilitation program was followed with consideration of gradual intensity, time, frequencies and break periods. The selected pre and post-tests of the study were chosen reaching results after analyzing data and the use of suitable statistical methods. The study then reached the most important recommendations and conclusions that can be summed up in the following: (there are significant differences in all tests of the study between pre and post tests for the sake of post-tests). As for recommendations, they include: (the necessity of practicing strength training in general during practicing all games and for all students, the necessity for gymnastic players to possess suitable physical characteristics that are consistent with all given skills).

Key Words: Injury, tear, ligaments of simple wrist joint, artistic gymnastics for men

1. INTRODUCTION

There are a lot of people who get injured whether in sport or in other events. Many of them get this kind of injuries which make them use various methods that have a positive effect on improving their healthy conditions. In addition, these injuries may lead the athletes to leave the sport field or reach a state of psychological dissatisfaction as a result of physical harm on their sport levels.

Among these injuries, there are wrist joint tears. They are among common injuries in a lot of sport games including gymnastics. Their symptoms include great pain, swelling and small ligament tears between joint bones with restrictions of joint movements. In case of wrong treatment, it affects the function of wrist especially in moves that control radius and ulna in lower forearm and severe injury may be greater if ignored and may require surgery interference (5:189).

A tear, in itself, is a pull apart of muscle tissues or ligaments as a result of violent muscular effort more than a muscle can bear. Causes of injury are inconsistency of contraction between two groups of muscles or being contradicted in operation, great loss of water and salts, accumulation of secondary remains in the muscle resulting from muscle contraction, severe and sudden muscle contraction, great effort which is more than a muscle's power, differences in the power of muscle groups during training and poor warming-up of muscle groups (: 6). In addition, the simple wrist joint tear injury represent great importance and danger on athlete's life, especially gymnastics players due to their continuous need to practice different motor and sport skills. Gymnastics are characterized with difficult motor skills and their performance requires high accuracy and physical abilities with absolute power. Moreover, gymnastics is a sport of complete fitness as is contains in essence consistency between body and muscles by giving players resiliency, agility, speed and power. It is preferred to practice gymnastics at ages from 4 to 5 years besides it is considered among the most important Olympic games that are watched by a lot of people around the world. (7: 205).

Because of continuous and intense training and the lack of necessary strength for optimal performance of athletes, they face this type of injuries due to difficulty of most motor skills in men's gymnastics and those who practice it in early ages. In addition, students of Physical Education School do not perform correct and equal prior training which led to these injuries, especially in case of repeated motor skills that certainly affect their performance level. Injuries may be more complicated in case of not having enough medical care, so there are treatment methods with correct methods and without complications. These methods ensure safety of students and gradual recovery. Their effect is clear as there are symptoms that affect the athlete's potential and may lead him to stop practicing suitable sports. Thus, it was required to set a rehabilitation program using a set of treatment exercises. These exercises are defined as: "movements based on psychology diagnosis in order to restore the body's normal state and to be near normal operation of the body" (4: 198). This program aims to restore the athlete's normal state and to be able to perform this

sport with all its motor skills easily. Hence, the researcher thinks that the significance of the study lies in preparing a rehabilitation program for the treatment of simple wrist ligament torn for some students of artistic gymnastics in the Physical Education School at Koya University as these students suffer from severe pains and lack of suitable physical attributes to respond the requirements of gymnastics. This program may contribute positively to set proper solutions for them in order to prevent complications of this injury in the future and to develop their performance level significantly. The hypothesis of the study was including that there are statistically significant differences as a result o the prepared rehabilitation program for treatment of simple wrist ligament tear for some artistic gymnastics athletes.

Procedures of the Study

The researcher used the empirical method as it is proper to the nature of the problem of the study.

Population & Sample of the Study

The population of the study consists of Physical Education School in Koya University in the third stage for the academic year 2013 / 2014 (39 students). The sample of the study was some students who are injured with wrist ligament tear in artistic gymnastics lesson for men (7 students) chosen purposively by the researcher.

Field Procedures of the Study:

Determining Degree &Type of Injury

The researcher presented all members of the sample to the specialized doctor for correct diagnosis and to determine degree and type of injury. The injury was diagnosed as first degree (simple) injury, then they took a break for two (2) weeks and then they applied the rehabilitation program.

Determining the Used Tests in the Study

The researcher chose a set of tests and presented them to a group of experts to choose the most suitable of them as follows:

1. Test of skewed prostration from standing (7:91)
2. Test of bending arms from standing on hands and leaning on the wall (6:158)
3. Test of pushing upwards on the parallel bars (9:65)
4. Test of pulling upward (9:69)
5.

Preparing the Rehabilitation Program:

The researcher prepared and designed the rehabilitation program after reviewing a set of modern references and the program was as follows:

A) The program included a set of rehabilitation exercises related to wrist joint.
B) The duration of the program was 6 weeks (3 rehabilitation units per week) outside the times of gymnastics lesson.
C) The researcher considered (repetitions, breaks within repetitions, time and the used intensity) during program application.
D) Gradual intensity was considered from 55% to 80%.
E) Gradual increase in the used time for performance was considered.
F) Items of the rehabilitation program were presented to a group of specialists in the field of sport training, sport medicine and psychology in order to determine their validity with consideration of proposed amendments by experts.

Pre-tests:

The researcher conducted pre-tests on the sample of the study on 13/04/2014 in Martyr Khaled Hospital at Koya City and the internal hall of the Physical Education School in Koya University. All tests set by the researcher were conducted with the help of the assistant working team.

Application of the Rehabilitation Program

After completing the technical test, the researcher applied terms the rehabilitation program on the individuals of the sample for the single empirical group (due to small number of sample members.

Post-Tests

Post-tests were conducted on Sunday 25/04/2014 after completing and implementing the rehabilitation program with consideration of conducting the tests by the same way by which the pre-tests were conducted.

2. Statistical Methods:

1- Arithmetic Mean.
2- Standard Deviation.
3- The T- Test for symmetric samples.

3. Discussion of Results:

Table (1) shows that all variables of the study include statistically significant differences at significant level (5%) and freedom degree (6) for the sake of post-tests and measurements.

Table (1): Statistical Features of the Empirical Group in Pre and Post Tests at Tests of the Study

Tests		Mean	S.D	Means Variance	S.D	T Counted Value	Error level	Significance
Test of skewed prostration from standing	Pre	15.12	6.93	21.25	8.66	6.93*	0.000	Significant
	Post	36.37	15.1					
Test of bending arms from standing on hands and leaning on the wall	Pre	6.25	4.02	11.6	3.2	*10.26	0.000	Significant
	Post	17.87	6.35					
Test of pushing upwards on the parallel bars	Pre	7.62	4.27	19	12.2	*4.405	0.003	Significant
	Post	26.62	15.42					
Test of pulling upward	Pre	7.37	4.8	32	18.53	*4.88	0.002	Significant
	Post	39.37	23.08					
* Significant at level ≤ (0.05)								

The researcher found that the reason for the significant differences in all tests is that preparation of the rehabilitation program contributed and affected positively the improvement of conditions of the athletes injured with the simple wrist tear, especially when they are practitioners of sport activity as they are students of physical education. Significant differences are also due to the fact that all tests set for the sample are related to strength especially that the injury happened during the gymnastics lesson with absolute strength. There is an important relation between muscular strength and movement performance as it is the factor from which movement results and it is the main factor for this movement that enables man to move, move a device, tool or any external resistance (5:256). Meanwhile, muscle contraction happens so quickly in the injury. The muscle or muscle group contracts by their maximum speed as a result of a very great number of muscle fibers, but the number decreases in maximum muscular strength (10: 127). All of the used tests measure the speed strength for muscles of arms and chest through the test of pressure from a standing position on the mat or hanging on the parallel bars with the use of (55 – 80%) of maximum intensity. The individual is also asked to repeat lifting as fast as possible within 10 seconds (1:86) and the adopted rehabilitation program contributed to strengthen operating muscles on the injured area because muscle stress and imbalance between the facing muscle group is one of the most important reasons leading to injury (6:90). In addition, the use of extension and contraction continuously during rehabilitation contributed effectively in recovery from injury that happened as a result of clear weakness in the joint (11:345).

4. References:

- Abdallah, E. M. (2004): "The Effect of using Centrum Drug on some Aspects of Muscular Strength for Arm Muscles of Throwing Athletes", Published Study in Al Rafedayn Journal for Sport Sciences, Vol. 10, Issue. 37, p. 87.
- Riad, O. & Al Nejmy, E. H. M. (1999): "Sport Medicine and Physical Treatment", Book Center Press, Cairo, Masr Elgdida, p. 86.
- Al Hassow, T. S.: "Treatment Exercises", Baghdad University, Baghdad University Press.
- Mohamed, S. K. (2005): "Sport Injuries", Faculty of Sport Education for Girls", Baghdad University.
- Abdelrahman, A. (1998): "Sport Medicine", Al Mawsel University, Dar Al Kotob Press, p. 218.
- Bayoumi, A. H. (1998): "Technical Groups in Ground Moves", Cairo, Dar Al Fikr Al Araby Press.
- Zaher, A. A. (2004): "Encyclopedia of Sport Injuries and their First Aids", the Book Center Press, Cairo.
- Shehata, M. I. (2003): "Contemporary Gymnastics Training", 1st Ed., Dar Al Fikr Al Araby, Cairo.
- Allawy, M. H. & Radwan, N. (1982): "Tests of Motor Performance", 1st Ed., Dar Al Fikr Al Araby, Cairo, p. 127.
- Hamada, M. I. (1998): "Modern Sport Training", 1st Ed., Dar Al Fikr Al Araby, Cairo.
- Jean Genety / elisabet brunet .glued .traumathologie du sport en pratique medical courant .edition vigot.1991.

Annexes:

Annex (1)

A Survey of Experts' Opinions in the Rehabilitation Program

Weeks	Training Units	Serial	Exercises	Repetitions	Breaks between Repetitions	Time (Min)	Intensity	General Notes
First Week	First Unit	**1**	Opening and closing fingers consecutively	**5**	1 – 2 min	10-20 sec	55%	
		2	Sticking palms together – wrist bending of sides	**5**	1 – 2 min			
		3	Sticking palms together – wrists rotation rightwards – leftwards	**5**	=			
		4	Fingers together - wrists rotation outward	**5**	=			
		5	Fingers together - wrists rotation inward	**5**	=			
		6	Palms together – bending fingers inward	**6**	=			
		7	Palms together – bending fingers outward	**6**	=			
	Second Unit	**1**	Exercise (1) Unit (1)	**6**	=		55%	
		2	Sticking palms – wrist bending sideward together	**6**	=			
		3	Exercise (3) Unit (1)	**7**	**3 2**			
		4	Exercise (4) Unit (1)	**7**	**3 2**			
		5	Exercise (5) Unit (1)	**7**	=			
		6	Exercise (6) Unit (1)	**7**	=			
		7	Exercise (7) Unit (1)	**7**	=			
	Third Unit	**1**	Exercise (1) Unit (1)	**7**	=		60%	
		2	Exercise (2) Unit (2)	**7**	=			
		3	Exercise (3) Unit (1)	**7**	=			
		4	Exercise (4) Unit (1)	**8**	=			
		5	Exercise (5) Unit (1)	**8**	=			
		6	Exercise (6) Unit (1)	**8**	=			
		7	Exercise (7) Unit (1)	**8**	=			
Second Week	First Unit	**1**	Palms together – opening and closing fingers	**8**	3 – 4 min	20-30 sec	63%	
		2	Forearm on a table, wrist hangs outside the edge downwards, relaxing fingers, palm downward & hand bends downward as possible then upwards	**8**	3 – 4 min			
		3	Forearm on a table, wrist hangs outside the edge, palm toward board & straight fingers (hand rotation upward then downward)	**10**	=			
		4	Sitting with wrist on table (wrist rotation making hand back toward the table)	**10**	3 – 4 min			
		5	Wrist one-way rotation and then the other way	**10**	3 – 4 min			

	Second Unit	**1**	Exercise (2) Unit (1)	**10**	=		65%	
		2	Exercise (4) Unit (1)	**10**	=			
		3	Exercise (5) Unit (1)	**10**	4 – 5 min			
		4	Forearm on table, wrist hangs outside the edge, palm downward, fingers pulled with consistency	**12**	=			
		5	Forearm on table, wrist hangs outside the edge, palm downward, fingers relaxed with bending hands as possible and consistency	**12**	=			
	Third Unit	**1**	Exercise (1) Unit (2)	**12**	=		65%	
		2	Exercise (2) Unit (2)	**12**	=			
		3	Exercise (3) Unit (2)	**12**	=			
		4	Exercise (4) Unit (2)	**12**	=			
		5	Exercise (5) Unit (2)	**12**	=			
Third Week	First Unit	**1**	Wrist rotation one direction then the other direction	**14**	3 – 4 min	35-45 sec	68%	
		2	Press on a small plastic ball	**14**	=			
		3	Touching thumb with the rest of fingers as possible touching palm top by tips of a single hand then making an angle by fingers	**14**	=			
		4	Forearm on table, wrist nagging outside the edge, palm down, fingers relaxed, hand bending downward as possible then upward with holding a weight (2/1 pounds)	**14**	=			
		5	Forearm on a table, wrist hangs outside the edge, palm toward board & straight fingers (hand rotation upward then downward) with holding a weight (2/1 pounds)	**14**	=			
	Second Unit	**1**	Exercise (2) Unit (1)	**14**	=		70%	
		2	Exercise (3) Unit (1)	**16**	=			
		3	Exercise (4) Unit (1)	**16**	2 – 3 min			
		4	Exercise (5) Unit (1)	**16**	=			
		5	Holding a weight (2/1 pounds & consistency	**16**	=			
	Third Unit	**1**	Exercise (4) Unit (1)	**16**	=		70%	
		2	Exercise (5) Unit (1)	**18**	=			
		3	Exercise (5) Unit (2)	**18**	1 – 2 min			
		4	Left wrist rotation with weight (2/1 pounds) and vice versa with right wrist	**18**	=			
		5	Wrists rotation rightward & leftward with weight (2/1 pounds)	**18**	=			
Fourth Week	First Unit	**1**	Holding a towel horizontally between hands making hands on each other, towel vertical then rotation backward & forward	**18**	=	25-35 sec	73%	

		2	Tying light weight (pound) on a rope tip then tying the other tip to a long stick, hold the post, palm down then raising the weight by bending wrists upward, then lowering weight by bending wrists down, repetition with palms up	**18**	60 – 90 sec			
		3	Hand contraction, extension then opening outward with the use of rubber band around fingers	**18**	=			
		4	Forward leaning – both palms forward – forearms bending & extending	**20**	=			
		5	Forward leaning on palms and fingers – forearms bending & extending	**20**	30 – 60 sec			
	Second Unit	**1**	Exercise (1) Unit (1)	**20**	=		75%	
		2	Exercise (2) Unit (1)	**20**	=			
		3	Press on a tool to strengthen hand	**20**	=			
		4	Exercise (4) Unit (1)	**20**	=			
		5	Exercise (5) Unit (1)	**20**	=			
	Third Unit	**1**	Exercise (6) Unit (1)	**15**	=		79%	
		2	Exercise (7) Unit (1)	**15**	20 – 50 sec			
		3	Holding weight (2/1 pounds) & consistency	**15**	20 – 50 sec			
		4	Left wrist rotation with holding weight (2/1 pounds) and vice versa with right wrist	**14**	20 – 50 sec			
		5	Wrists rotation together rightward – leftward with holding weight (2/1 pounds)	**14**	=			
Fifth Week	First Unit	**1**	Exercise (1) Unit (1)	**14**	=	45-55 sec	80%	
		2	Exercise (2) Unit (3)	**12**	=			
		3	=	**12**	=			
		4	Forward leaning on forearms – bending & extending upper trunks	**12**	=			
		5	Forward leaning on forearms – pressing arms from forearm to wrist	**12**	20 – 40 sec			
		6	Pushing a wall with both arms then forward leaning (Chtaw)	**10**	=			
		7	Forward leaning – palms facing each other – forearm bending & extending	**10**	=			
		8	Forward leaning on palms – (Chtaw) with rising by palms tap on ground	**10**	=			

	Second Unit	**1**	Forward leaning- palms forward – forearms bending & extending	**11**	=		80%	
		2	Forward leaning on palms forward with fingers together – forearms bending & extending	**11**	=			
		3	Forward leaning on fingertips – forearm bending & extending	**11**	=			
		4	Exercise (3) Unit (1)	**8**	15 – 30 sec			
		5	Exercise (5) Unit (1)	**8**	=			
		6	Exercise (6) Unit (1)	**8**	=			
		7	Forward leaning on palms facing each other – forearms bending & extending	**8**	=			
		8	Chtaw with rising by taping palms on ground	**7**	=			
	Third Unit	**1**	Standing facing the wall, arm distance & pushing wall only with right arm	**7**	=		75%	
		2	Previous exercise with left arm	**7**	=			
		3	Previous exercise with both arms	**6**	20 – 50 sec			
		4	Leaning on a wooden bar	**6**	=			
		5	Hanging, leaning (arms bending & extending)	**6**	=			
		6	Exercise (5) Unit (1)	**5**	=			
		7	Exercise (6) Unit (1)	**5**	=			
		8	Exercise (7) Unit (2)	**5**	=			
Sixth Week	First Unit	**1**	Hanging on horizontal bar	**6**	30 – 60 sec		65%	
		2	Standing – swinging of arms consecutively holding a weight	**6**	=			
		3	Previous exercise	**7**	=			
		4	Lying down, wrist rotation with dimple	**7**	=			
		5	Lying down, pushing ground by palms and immediate rising	**4**	40 – 70 sec			
		6	Hanging (arms bending &extending)	**4**	=			
		7	Forward leaning on forearms – pressing arms from forearm to wrist	**4**	=			
		8	Pushing a wall by both arms then down and forward leaning	**6**	=			
	Second Unit	**1**	Hanging on horizontal bar – forward leaning (arms bending & extending)	**6**	30 – 60 sec		65%	
		2	Forward leaning on forearms – pressing on forearms to the wrist	**6**	=			
		3	Standing facing the wall – pushing the wall by arms then	**8**	=			

			down to forward leaning					
		4	Exercise (4) Unit (1)	**8**	=			
		5	Exercise (5) Unit (1)	**8**	20 – 50 sec			
		6	Exercise (6) Unit (1)	**10**	=			
		7	Left wrist rotation with holding a weight (2/1 pound) and vice versa with right wrist	**10**	=			
		8	Wrists rotation rightward – leftward with holding a weight (2/1 pound)	**10**	=			
	Third Unit	**1**	Standing facing the wall on an arm distance – pushing arm by right arm	**10**	=		60%	
		2	Previous exercise – left arm	**12**	15 – 40 sec			
		3	Previous exercise – both arms	**12**	=			
		4	Skewed leaning on a wooden bar	**12**	=			
		5	Hanging on horizontal bar(arm bending & extending)	**8**	=			
		6	Exercise (2) Unit (2)	**8**	=			
		7	Exercise (3) Unit (2)	**8**	=			
		8	Forward leaning of palms facing each other & wrists bending & extending	**8**	=			

THE EFFECT OF A TRAINING METHOD WITH DISTANCES SHORTER & LONGER THAN RACE DISTANCE TO DEVELOP SPEED ENDURANCE, ANAEROBIC CAPACITY & ITS EFFECT ON 400 M DASH ACHIEVEMENT FOR YOUNG FEMALES

Sirwan hamid rafiq [a] ,Rawand mohammed ali [b], Bebak mohamme ali khan [c]

[a] *Halabcha University / Faculty of Education & Human Science, Department of Sport Education*

[b,c] *Al Solimanya University / Faculty of Sport & Basic Education, Department of Basic Sport Education*

E- Mail: sirwan33@yahoo.com , rawand77777@yahoo.com , bebak.alikhan@univsul.edu.iq

Abstract

The study aimed on preparing two training courses by using for the distance less or more than the race distance for developing long aerobic capacity and bearing speed for ran 400 m for young women and to identify his impact of these two approaches for developing long aerobic capacity and bearing speed for run completion 400m m for and to identify the best distance which was used in the research for distance for developing long aerobic capacity and bearing speed for ran 400 m for young women , The researchers used experimental method for two months and by three days a week and a research sample composed of young women players ran 400 meters in Sulaymani city ,toll of their number was 8 player , divided into two experimental groups , One of them Applied training course spaces less than a race distance of 400 m and Second applied or distances of more than race distance The researchers used a smart table for Energy Systems for Fox and Matthews to extract distances in training courses and the way of training And the percentage of extraction intensity And the percentage of rest to work between the duplicates and between groups Depending on certain ratios of the second and third distances of the two regions For suitability with the energy system to run 400 meters The researchers found the results that distances less is more worked on the development of variables research And developed its achievement also ran the 400 meters, but the distances over the race distance has worked to develop endurance speed and achievement was better than less of the race distance they are close together a little bit, the researchers recommend using use-distance approach or similar to the actual performance of the event itself is very comparable to the privacy of the effectiveness of 400m doing and conduct similar research on other distances in other game in track and field , especially barriers and middle distance Researchers to unload the statistical data and the results on the electronic system to extract spss research and the conclusions adopted The researchers adopted to unload the statistical data and the results on the electronic system spss for finding and concluding research

Key Words: Training method, shorter and longer distances than race distance, speed endurance, long anaerobic capacity, 400 m dash sprinting for young females.

1. INTRODUCTION

Sport education various sciences contributed effectively to raise sport performance in many different games. Sport training plays an important role in developing sport achievement and pushing it towards the highest sport levels. Bastawesi Ahmed says that: "sport training is a purposeful educational process with scientific planning for preparing players with their different levels physically, skillfully and psychologically to reach the highest possible level" (24: 3). The game of the 400 m dash race is one of the tough and quick events in athletics in which speed endurance plays an important and decisive role in achievement and achieving records. This game needs levels of speed, endurance and the rest of physical abilities to reach the hoped goal. Speed endurance is one of the most important aspects in achievement in the 400 m dash sprinting. It should be considered through setting training methods. Speed endurance is one of the complex physical capacities that consist of speed and endurance. It also means an athlete's ability to maintain his speed and the length of his/her performance duration period of the effort exerted. Athletes will resist the fatigue that emerges as a result of lack of consumed oxygen, accumulation of lactic acid in muscles and the distances used in developing these various capacities between shorter or longer than the distance of the race itself (148: 24). On the other hand, the long anaerobic capacity, with its consistency duration falls within this game and performance consistency period between (30 – 60 seconds) using nutritional fuel is called the Glycogen. Aboelela Abdelfattah, 1997 referred that this substance is originally resulted from the carbohydrate substances consumed by humans and transform in digestion into glucose sugar, but n the form of a longer complex substance, the glycogen. It splits into energy, transforms into glucose sugar, and then into lactic acid helping in rebuilding ATP to produce necessary energy (1: 32). There are a lot of trainers who prefer using shorter distances and

others prefer using longer distances based on personal experience. Hence, the importance of this study emerges in determining the priority in using shorter or longer distances than the race distance to develop speed endurance, long anaerobic capacity and achievement of the 400 m dash sprinting for young females.

Problem of the Study

All training methods aim to develop physical, functional aspects and achievement. Literature of training and athletics, especially in sprinting games, refer that the distances used in training methods arte whether shorter or longer than distances of races themselves. After scholars' review in addition to exploration of opinions of many trainers and specialists about priority of using distances in training, it was found that there is a difference in views in 400 meter dash sprinting. Some support adoption of shorter distances and other support adoption of longer distances. This issue makes a problem facing trainers in choosing the best method to be used, so researchers conducted this study to determine the effect of using shorter or longer distances than the race's distance to develop speed endurance, long anaerobic capacity and the achievement in the 400 m dash sprinting race for young females.

Goals of the Study

1. Preparing the two training methods using shorter and longer distances than the race's distance to develop speed endurance, long anaerobic capacity and the achievement in the 400 m dash sprinting race for young females.
2. Determine the effect of both methods using shorter and longer distances than the race's distance to develop speed endurance, long anaerobic capacity and the achievement in the 400 m dash sprinting race for young females.
3. Determine the best distances used under study to develop speed endurance, long anaerobic capacity and the achievement in the 400 m dash sprinting race for young females.

Hypotheses of the Study

1. There are statistically significant differences between pre and post tests as a result of using shorter distance training in 400 m distance to develop speed endurance, long anaerobic capacity and the achievement in the 400 m dash sprinting race for young females.
2. There are statistically significant differences between pre and post tests as a result of using longer distance training in 400 m distance to develop speed endurance, long anaerobic capacity and the achievement in the 400 m dash sprinting race for young females.
3. There are statistically significant differences in post tests between both groups that used shorter and longer distances than 400 m distance to develop speed endurance, long anaerobic capacity, and the achievement in the 400 m dash sprinting race for young females.

2. Methodology of the Study:

The researchers used the empirical method as it is proper to procedures of the study.

Sample of the Study:

The sample of the study was chosen from outcomes of young females in Al Sulaimanya Governorate's clubs in the 400 m dash sprinting in athletics (8 female runners in the original population chosen all by the researchers). Therefore, the percentage of the sample was 100% of original population of the study. The sample was divided randomly into two equal empirical groups (4 female runners each). Both groups conducted the two training methods prepared by the researchers unified in terms of intensity, size, repetition and breaks depending on high intense interval training.

Homogeneity:

In order to ensure homogeneity of the sample, the researchers adopted skewness coefficient to explore homogeneity in length, weight, time age and training age for the sample of the study. Results of the test are shown in table (1):

Table (1) Homogeneity of the sample in length, weight, time age and training age

Serial	Statistics / variables	Measure Unit	Arithmetic Mean	S.D	Median	Skewness
1	Mass	Kg	57.50	1.69	58.00	0.82
2	Length	M	1.63	0.02	1.63	0.21
3	Age	Year	18.62	0.51	19.00	0.64
4	Training age	Year	3.43	0.41	3.50	0.27

Table (1) shows skewness value less than ±1 for all variables in homogeneity of the sample (length, mass, age, training age).

Field Procedures

Tests: the researchers adopted the following tests:

- **Speed endurance test 300 m** (316:13)
- **400 m Dash Achievement test**
- **Sprint test for the non-oxygenic capacity** (157:17) (measure unit = watt)

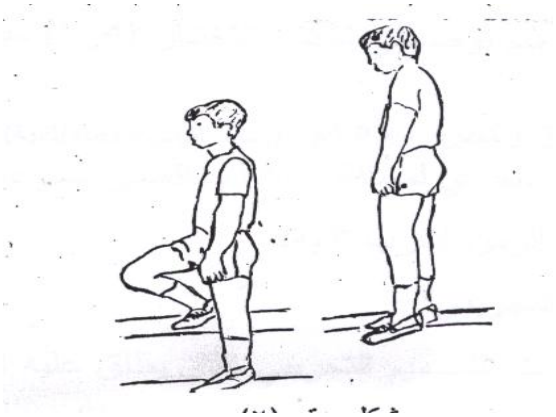

Figure (1) positions of the body and legs when performing the anaerobic capacity sprint

Pre-Tests

The researchers conducted pre-tests for groups of the study at the same day, times and conditions to give equal opportunity to both groups to record results. Pre-tests were applied on variables of the study as follows:

First: Friday 10/07/2015

- Speed endurance test (300 m dash)
- Long anaerobic capacity test

Second: on Saturday 11/07/2015, the 400 m dash sprinting achievement test was conducted after a one-day break to reach the needed achievement. Rest between both tests of speed endurance for the 300 m dash was 45 m as a measuring rate for speed endurance in terms of intensity and break after complete recovery. The test was conducted at five in the pitch of Al Solimanya sporting club.

3. Training Method

The researchers prepared two training methods for the 400 m dash for both empirical groups; one of them used distances less than the distance in 400 m dash and the other used the high intense interval training method (see annexes 1, 2). This was done depending on their field training experience and trials, opinions of some specialists in sport training and building method of interval training based on distances set by Fox & Mathews (266: 25) at table (2). This method was applied on both empirical groups on Sunday 12/07/2015 in 8 weeks (3 days a week average: Sunday, Tuesday and Thursday) considering a set of notes in methods. Note also that the female players went through their training program on other days of the week.

Notes on the Training Method

1- It depends on the second and third energy system areas from two tables of (Fox & Mathews) based on distances (see table 8) to set the training program with taking a percentage from a certain sample (quarter) from the whole area alone with integration in a training unit to be proportionate with the 400 m dash event and considering the sample's category and homogeneity. This is because the energy system for any physical activity is determined in the light of effort time and energy consumption rate in this activity. One of the basic principles to build any training method is the necessity to determine the used energy system through which body loads are distributed (244: 9).

1. Intensity was determined through maximum achievement for each distance and player of the sample.
2. Breaks between repetitions were determined according to the ratio of working to breaks in the table.
3. Break within groups were set based on the table of forming training load's components to develop the lactic anaerobic abilities (197: 1).
4. The high intense interval training was used (80% to 95%).
5. The training term is the period of special preparation and the training load was done with two medium rounds.

Type of Interval Training Used in the Study:

The researchers adopted high intense interval training as well as the training which is based on the smart table based on time or distance (25: 266). It is divided into four areas: ATP-CP, ATP-CP-LA, ATP-O2-LA and O2. In this table, the researchers set intensity, size, breaks and method of breaks noting that this table was used in all fields of sport education for all individual, team games and teaching methods' exercises. It is possible to use the full area, parts of it or 3/2 of the training method for male young men and applicants as in table (2):

Table (2) Smart Table to build the program in interval training based on distances

Area	Energy system	Sprint distance	Repetitions in training units	No. of groups in one unit	No. of repetitions in one group	Ratio of work to rest	Type of rest
1	ATP – PC	50 100	50 24	5 3	10 8	3:1	Passive rest
2	ATP – PC LA	200 400	16 8	4 2	4 4	3:1 2:1	Positive rest
3	LA – O_2	600 800	5 4	1 2	5 2	2:1 1:1	Passive rest
4	O_2	1000 1200	3 3	1 1	3 3	2/1:1 2/1:1	Passive rest

Post-Tests

The working team under the researchers' supervision conducted post-tests for groups of the study at the same day, times and conditions to give equal opportunity to both groups to record results. Post-tests were applied on variables of the study in two days as follows:

First: Friday 04/09/2015

- Speed endurance test (300 m dash)

Second: Saturday 05/09/2015

- The 400 m dash sprinting achievement test

Post-tests were conducted at the same day, times and conditions and procedures used in pre-tests.

Discussing and Analyzing Results of Pre & Post Tests of the 1st Empirical Group, Distances Shorter than 400 m

Table (3) Statistical features of Pre & Post Tests of the 1st Empirical Group, Distances Shorter than 400 m:

Serial	Test / measure unit	Pre-test		Post-test		T Counted	Significance Level	Differences
		Mean -	S.D ±	Mean -	S.D ±			
1	Speed endurance / sec	49.39	0.65	47.21	1.02	8.94	0.003	Significant
2	Long anaerobic capacity / watt	222.25	15.174	240.75	13.12	12.33	0.001	Significant
3	400 m / sec achievement	65.91	0.64	64.00	0.28	7.73	0.004	Significant

Table (3) shows that the counted T value for pre and post tests of speed endurance was (8.94) which refers that there is a significant difference, and it was (12.33) in long anaerobic capacity. This means that there is a significant difference. As for the 400 m sprinting achievement, its value was (7.73) with a significant difference.

Results show that all variables of the study developed notably as researchers found that this is due to effectiveness of the used exercises in terms of intensity, size and breaks appropriate to speed endurance requirements. This was evidence that the positive effect of the training method applied on members of the sample. This is done through preparing training in terms of setting the training place and distance. This shows that achieving and approving skills will be as a result of organizing the available tools and

materials, investing and utilizing them properly, so it was necessary to organize training due to correct rules which include optimal development (15: 76). Therefore, components of the training load of the method were used properly as a result of the training method used during the training method shown in the interval training. Since legal training loads have a great effect, they achieve a good level as asserted by (Allawy Aboelela). He found that training loads are the main method to achieve physiological effects to the body to enhance the response of body systems and raise level. It is one of the most important and successful factors and of the training programs and then improving levels (20: 22). In addition, the duration of implementing the training methods are sufficient to change for the better as any change or adaptation needs a duration to make the training effective in functions of the body that affect performance level which was asserted by (Wilmor and Castle) from (Aboelela) regarding that most changes resulting from training happened through the first period of the program within 6: 8 weeks (2: 32). Upon reviewing the training's duration, we find that it is suitable and close to program period with developing the program to be proper with the duration. Further, the training method performed by the group resulted in the hoped results as being concerned with physiological aspect and energy systems that are related to the 400 m dash represented in the long anaerobic capacity. Goals of the training unit cannot be achieved if they are far from applications of energy production system (1: 30) and the physiological aspect has a direct and effective relation with the recording level of runners in athletics and achieving physiological adaptation between muscular effort and functions of body systems. Physiological changes through organized training in body systems' functions result in adaptation of these systems through muscular effort and persistence of performing this effort (22 : 72). Results of 400 m dash achievement refer that there is also a development in results of the post-test which are better than the pre-test. Researchers found that this was due to development of speed endurance which is a physical capacity composed of endurance and speed. It means one's ability to perform physical endurance with high speed and in a specific duration. Trainers think that this is one of the most important physical capacities in training 400 m dash sprinting. The level improvement in 400 m dash sprinting is related to this capacity as asserted by (Kais Nagy) as speed endurance training is one of the most important basic elements needed in the400 m dash training (13: 167).

Discussing and Analyzing Results of Pre & Post Tests of the 2nd Empirical Group, Distances Longer than 400 m

Table (4) Statistical features of Pre & Post Tests of the 2nd Empirical Group, Distances Longer than 400 m:

Serial	Test / measure unit	Pre-test		Post-test		T Counted	Significance Level	Differences
		Mean -	S.D ±	Mean -	S.D ±			
1	Speed endurance / sec	46.91	1.43	43.86	1.03	7.82	0.004	Significant
2	Long anaerobic capacity / watt	246.75	23.94	265.25	19.75	5.32	0.013	Significant
3	400 m / sec achievement	65.69	1.38	62.64	1.46	8.70	0.003	Significant

Table (4) shows that the counted T value for pre and post tests of speed endurance was (7.82) which refers that there is a significant difference, and it was (5.32) in long anaerobic capacity. This means that there is a significant difference. As for the 400 m sprinting achievement, its value was (8.70) with a significant difference.

Results of tests for the group which used training with longer distances than 400 m showed that there is a development as post-tests' results referred that there is a significant difference than in results of pre-tests which refers to a change in the players' likelihood towards change to better. Researchers found that this was due to effectiveness of the training method which is the used means in organizing exercises used in a scientific way to have effect as well as testing suitable close distances to develop speed endurance and suitable intensity to develop achievement speed endurance in 400 m dash. It also showed that loads are an important factor in the success and failure to achieve its goal. Organization of components in terms of intensity, size and rest in the training method to be proportionate with the level and goal of training is a very important factor in successful training. This was referred to by (Hamdy & Mohamed) as importance of intensity and load is given to be proportionate with the level of the trainee. In case of training aiming to develop and enhance speed endurance, it is good to use incomplete rest (67: 5). This was applied when designing and applying the training method to make such an improvement. The used high intensity ranges between (80 – 90%) with suitable training size distributed along 2 months. This was a sufficient period to make such effects and suitable training amount. These generate fatigue which is one of the signs of good training load to a percentage till the athlete reaches fatigue and not adapting. This was asserted by (Holman) from (Hamdy) ad "the use of training load leads to fatigue appropriate to the level of this load (5: 66). In addition, stresses and difficulties that affect functional systems related to physiological development are also effective. Legalizing these components has an effect on improving player's level, so researchers found that the training load, which is one of the most important means to affect quick response to training's requirements, enhances levels of players and makes them endure burdens of their trainings in order to make enhancement towards development of their levels and reach achievements as well as the physiological aspect represented in the long none-oxygenic capacity. This was asserted by (Allawy & Aboelela) as they found that training loads are the main method to make body physiological effects, enhance responses and adaptation of the body systems and raising levels. Yet, using proper physical loads is the important thing as physical load should not be less than the player's level, not leading to advancing the athlete's level nor more than his capacity which lead to disorder in the health

condition, fatigue and injuries. Therefore, regulation of training loads is one of the most important factors of successful training program and then performance improvement (22: 20). Finally, results of post tests of both groups of the study using shorter and longer distances than the race's distance showed that there are significant differences in tests. Results also refer that the prepared training method by the researchers with the choice of close or similar distances to actual performance of the same event, so selected distances in speed endurance training are close to distances in 400 m dash. From a training perspective, it becomes 300 meters. Distances less than actual distance use very high intensity in performance or maximum intensity due to distance length. This stimulates functional systems, muscular and nervous systems operate with maximum abilities despite severe lack in consumed oxygen which does not respond the body's need as a result of high intensity which is not appropriate with the percentage of available oxygen. This causes high accumulation of lactic acid in muscles resulting in fatigue. Training on such type of distances is very close to specifications of performing the 400 m dash as asserted by (Ralph Setpis) as he found that "it is one of the most difficult types of non-oxygenic capacities and it is repeated with less repeated times and achieved using shorter distance than the race's distance and quicker (14: 26). Moreover, (Shaker Mahmoud) asserted that training in these distances is done with high intensity and is important for the 400 m dash and at special preparation stage (8: 33). As for distances used in longer than 400 m, the used intensity will be less than in longer distances. In addition, the consumed oxygen percentage will be less, so players adapted in performance but players of short distances will not continue in shorter distances with high intensity for longer distances than training. Therefore, the group using longer distances was better and this agrees with what was found by (Bomba): "by choosing shorter distances than the race's distance, it gives higher speed than the race's in addition to application of the technique with slower distance than the race's (23: 148), so while training it is preferable to use both distances to develop speed endurance and non-oxygenic capacities included in this capacity of speed endurance which was asserted by (Crowman) from (Mohamed Reda) as it is better to develop speed endurance with high intense training with shorter time period to develop speed followed by training with average intensity training loads to develop endurance (21: 6). Finally, researchers found that both distances will lead to develop speed endurance, long the anaerobic capacity and achievement in 400 m dash sprinting for young females in a close way.

4. Conclusions:

Using longer and shorter distance training than race's distance develops speed in the 400 m dash sprinting event for young females in a close way and the most used is longer distance training.

1. Using shorter and longer distance training than the race's distance developed the long anaerobic capacity in an equal way in both methods.
2. Using longer and shorter distance training than race's distance develops achievement in the 400 m dash sprinting and longer distance training developed it better than shorter one.

5. Recommendations:

1. Asserting that using longer and shorter distance training than race's distance develops speed endurance and long anaerobic capacity in the 400 m dash sprinting.
2. Using other training method is recommended such as repeated training with high intensity.
3. Using close or similar distances to performance of actual event is very close to achievement and specifications of the 400 m dash sprinting event.
4. Conducting similar researches on other distances of athletics' races especially hurdles and average distance races.

6. References:

1. Aboelela Mohamed Abdelfattah (1997): "Physiology of Sport Training – Scientific Principles" , 1st Ed., Dar Al Fikr Al Arabi, Cairo.
2. Aboelela Mohamed (1996): "Training Load and Health of Athletes", Dar Al Fikr Al Arabi, Cairo.
3. Bastawisy Ahmed (1999): "Basics and Theories of Sport Training", Dar Al Fikr Al Arabi, Cairo.
4. Hussein Baher (1999): "Training & Measurement in Sport Education", 1st Ed., Dar Al Fikr Al Arabi, Cairo.
5. Hamdy Abdelmoneim & Mohamed Abdelghani (1999): "Notes of Sport Training for the Second Grade Students", Cairo, Faculty of Sport Education.
6. Zaki Darwish (1984): "The Art of Sprinting and Competitions in Athletics", Egypt, Dar Al Maaref.
7. Saad Moneim Al Shiekhli (2004): "Published Researches Collection", 1st Ed., Kawthar Office Press.
8. Shaker Al Shiekhli (2001): "The Effect of using Legalized Training Methods from Fartelk to Develop Speed Endurance: Concentration of Lactic Acid in Blood and Achievement in 400 m and 1500 m dash races", PhD Thesis, Baghdad University, Faculty of Sport Training.
9. Talha Hossameldin (1994): "Motor & Functional Basics for Sport Training", Dar Al Fikr Al Arabi, Cairo.
10. Essam Abdelkhalek (1999): "Sport Training", Dar Al Maaref, Cairo.
11. Amer Fakher Shaghany et al (2009): "Encyclopedia of Track & Field Games for Females", Baghdad, Al Karrar Office.

12. Amer Fakher et al (2006): "Applications if Technical Principles & Basics of Track & Field Games", Iraq, Al Karrar Office, Bab Al Moadham.
13. Kais Nagy Abduljabbar & Bastawisy Ahmed (1984): "Tests, Measurements and Principles of Statistics in Sport", Baghdad, Baghdad University Press.
14. Kassem Hassan Hussein (1988): "Tests, Measurement and Evaluation in Sport Education", Al Mawsel, higher Education Press.
15. Kassem Hassan Hussein (1976): "Basic Rules of Track & Field Education", Baghdad, Dar Al Hurryea Press.
16. Mohamed Sobhy Hassanein & Ahmed Kesra Maani (1998): "Encyclopedia of Applied Sport Training", 1st Ed., Cairo, the Book Center.
17. Mohamed Nasreldin Radwan (1999): "Measuring Methods of Physical Effort in Sport", 1st Ed., Cairo, the Book Center.
18. Mohamed Mohamed Al Khater & Ali Al Bik (1978): "Measurement in Sports", 1st Ed., Cairo, Dar Al Maaref.
19. Mohamed Osman (1990): "Athletics Encyclopedia", 1st Ed., Dar Al Fikr Al Arabi, Cairo.
20. Mohamed Hassan Allawy & Aboelela Mohamed (1984): "Physiology of Sport Training", Dar Al Fikr Al Arabi, Cairo.
21. Mohamed Reda Al Romy (1986): "The Effect of Developing Special Endurance on Effectiveness of Performing some Moves of the Back Throw Set for Wrestlers", PhD Thesis, Faculty of Physical Education for Boys, Alexandria.
22. Heba Val Khorshed Rafek (2004): "The effect of Skill Physical Training Based on Basics of Interval Training on a Number of Physical, Skill and Functional Variables of Young Football Players", PhD Thesis, Al Mawsel University.
23. Bompa . T . O : Theory and Methodology of training . second print , Kendall .publishing company , Lowa , 1985 .
24-Bompa . T . O : Theory and Methodology of training . second print , Kendall . Hunt publishing company , Lowa , 1985 .24
25. Fox and Mathews; Interval Training, Conditioning For Sport and General Fitness, W.B Sounders Company Philadelphia, 1981
26. Ralff. Stabam and sam bell : Track and field . houghtom Mifflin compan Boston . 1974.

Annex (1): A model for a training method for 1st, 2nd, 3rd and 4th weeks for shorter distances than in the 400 m race:

Week	No. of training Unit	Intensity %	Date	Method items	Repetition time (sec)	Break within repetitions (mins)	Break within groups (mins)	Weekly training size
1	1	80	Saturday	200 m x 3 250 m x 3	31 39	3 – 4 mins	6 – 8 mins	4300 m
	2		Monday	300 m x 3 350 m x 2	51 63	3 – 4 mins	6 – 8 mins	
	3		Wednesday	250 m x 3 300 m x 2	39 51	3 – 4 mins	6 – 8 mins	
2	4	80	Saturday	$(200 \text{ m x } 3x)^2$	30	3 – 4 mins	6 – 8 mins	41500 m
	5		Monday	250 m x 3 350 m x 2	38 62	3 – 4 mins	6 – 8 mins	
	6		Wednesday	250 m x 3) x2	38	3 – 4 mins	6 – 8 mins	
3	7	85	Saturday	300 x 3 250 x 2	49 37	4 – 5 mins	6 – 8 mins	4000 m
	8		Monday	350 x 2 200 x 2	60 28	4 – 5 mins	6 – 8 mins	
	9		Wednesday	(250 m x 3) x2	37	4 – 5 mins	6 – 8 mins	
4	10	80	Saturday	200 m x 2 250 m x 3	31 39	3 – 4 mins	6 – 8 mins	4400 m
	11		Monday	300 m x 3	51	3 – 4 mins	6 – 8 mins	

				350 m x 2	63			
	12		Wednesday	250 m x 3 350 m x 2	39 62	3 – 4 mins	6 – 8 mins	

Note:

The training method lasts in the second month with the same pattern but with higher intensity in the 5th and 6th weeks to 85%, in the 7th to 90% and then reduces to 85% in the final week.

Annex (2): A model for a training method for 1st, 2nd, 3rd and 4th weeks for longer distances than in the 400 m race:

Week	No. of training Unit	Intensity %	Date	Method items	Repetition time (sec)	Break within repetitions (mins)	Break within groups (mins)	Weekly training size
1	1	80	Saturday	500 m x 2 600 m x 2	1.35 1.50	4 – 5 mins	6 – 8 mins	6550 m
	2		Monday	550 m x 2 600 m x 2	1.45 1.50	4 – 5 mins	6 – 8 mins	
	3		Wednesday	450 m x 3 700 m x 1	1.15 2.15	4 – 5 mins	6 – 8 mins	
2	4	80	Saturday	$(500 \text{ m x } 2x)^2$	1.35	4 – 5 mins	6 – 8 mins	7100 m
	5		Monday	650 m x 2 700 m x 1	1.55 2.15	4 – 5 mins	6 – 8 mins	
	6		Wednesday	600 m x 2) x2	1.50	4 – 5 mins	6 – 8 mins	
3	7	85	Saturday	450 x 2 500 x 2	1.12 1.30	5 – 6 mins	6 – 10 mins	5600 m
	8		Monday	600 x 2 700 m x 1	1.46 2.10	5 – 6 mins	6 – 10 mins	
	9		Wednesday	(450 m x 2) x2	1.12	5 – 6 mins	6 – 10 mins	
4	10	80	Saturday	500 m x 2 700 m x 2	1.50 2.15	4 – 5 mins	6 – 8 mins	6600 m
	11		Monday	500 m x 2 600 m x 2	1.35 1.50	4 – 5 mins	6 – 8 mins	
	12		Wednesday	550 m x 2 450 m x 2	1.45 1.15	4 – 5 mins	6 – 8 mins	

Note:

The training method lasts in the second month with the same pattern but with higher intensity in the 5th and 6th weeks to 85%, in the 7th to 90% and then reduces to 85% in the final week.

THE EFFECT OF GROUP TRAINING IN DEVELOPING COMPATIBILITY & RESPONSE SPEED FOR HANDBALL PLAYERS (AGES 12 – 14 YEARS OLD)

Huda Najy Zidan

Abstract

Handball players need high motor attributes that are consistent with requirements of the game. Since handball is one of the team sports that depends on compatibilities and harmony in movements on time among players in close playing positions such as angles, assistants, middle and center players. This recalls for the concern of developing individual compatibility and of players through group training, so the researcher tried to apply these exercises on a group of players in the National Center for Sport Talent Care in Handball, Diala Center (20 players between 12 – 14 years old).

Keywords: Training, compatibility, speed, response, handball

1. INTRODUCTION:

The continuous development in handball in its physical, skilled and planning variables made trainers concerned with the start training young ages to build right bases for players and their motor abilities as they are important for the nature of their performance. It is necessary that the beginning of training handball players should concentrate on developing compatibility and quick response as they are necessary for other basic characteristics. Compatibility and quick response are important and necessary physical attributes in handball especially for young players or at the beginning of practicing the game (Kamal Darwish, 1998: 28). As for the significance of the study, it comes through group exercises which include movements of close positions in the game and the age nature (12 – 14 years old) as this is the beginning of practicing the game in Egypt through specialist centers of the game represented in "the Talented Player" project which is one of the most important projects by the Ministry of the Youth.

Problem of the Study:

Throughout the experience of the researcher in handball as she is a handball player and a trainer for long periods and various age stages including the current research category, she noticed weakness in compatibility abilities and quick motor response for players which resulted in weakness of their motor performance and not developing their levels in the reasonable limit. Therefore, the researcher found that through her study she will attempt to develop compatibility and quick response for handball players (12 – 14 years old).

Goals of the Study:

1. Preparing group exercises to develop compatibility and quick response for handball players (12 – 14 years old).
2. Determining the effect of group exercises on developing compatibility and quick response for handball players (12 – 14 years old).

Hypothesis of the Study:

- There are significant differences between pre and post tests in compatibility and quick response for the sake of the post-test.

2. METHODOLOGY & FIELD PROCEDURES OF THE STUDY:

The nature of the proposed problem determines the nature of the used methodology, so the researcher used the empirical method which is "a deliberate and accurate change in the conditions which determine a certain event and then observation of the changes resulting from it" (Amer Ibrahim, 2012: 48). This methodology corresponds with the nature of the study problem as practice is one of the most efficient means to get reliable knowledge. Since this method is described with accurate results compared with other results, the researcher applied the design of single group training with pre and post tests. This means measuring a single group before and after the trial. The difference between both results to measure the variable is considered an evidence of the influence if the empirical factor (Abo Taleb Mohamed, 19990: 21).

The Empirical Design:

Groups	Treatment		
	Pre-trial	Independent	Post-trial
Empirical Group	The studied tests	Group exercises	The studied tests

Population & Sample of the Study:
The way of choosing the population of the study is one of the requirements of scientific research as it is the part which represents the original or model population about which the researcher centers his work (Wgih Mahgoub, 2002: 164). The researcher set population of the study to be from handball players (12 – 14 years old) from the National Center for Sport Talent Care in Handball, Diala Center (20 players) for 2014. The choice of these players as a purposive sample was due to the following reasons:

- To ensure presence of the sample to perform the tests used in the study.
- To ensure application of items of the proposed training exercises by sample members.
- To ensure continuous supervision on implementing tests and trial.

Compatibility Test: (Ali Salloum, 2004: 58)
- Test name: tests of numbered circles.
- Test goal: measuring legs and eyes compatibility
- The used tools: (watch, drawing 8 circles on the ground with diameters of 60 cm for each circle and a whistle).

Performing the Test:
The tested player stands on circle (1) and then jumps to circle (2) with both feet at signal and then till the circle (8) with full speed.

Recording:
The tested player records the duration in movement through the eight circles.

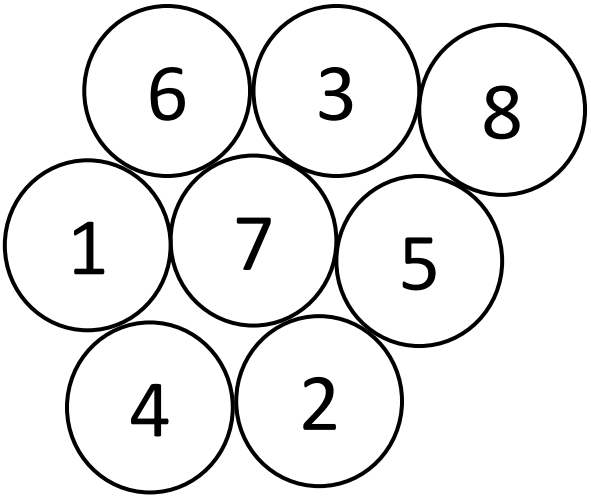

Table (1): Test of Numbered Circles

Nelson Test for Selective Motor Response: (Mohamed Hassan Allawi & Mohamed Nasreldin Radwan 1988: 254)
- Purpose of the test: measuring the ability to respond, move with speed and accuracy according to choosing stimulus.
- Tools: a flat area without barriers with a length of 20m and width of 2m, stop watch and a measuring band.
- Procedures: planning the testing area with three lines with a distance between each line and the other 6.40 m with a line length of 1 m.

3. Performance:

- The tested player stands at the end of the middle line facing the referee who stands at the tip of the other end of the line (see figure 14).
- The tested player takes the readiness position to make the middle line between both feet and bending body forward.
- The referee holds the stop watch with one of his hands and raises it upwards and then immediately moves his arm whether to the right or the left with operating the watch at the same time.
- The tested player responds to the starting signal and tries to move with the most possible speed in the set direction to reach the sideline that is away from the middle line in 6.40 m.
- When the tested player takes the correct side, the referee stops the watch.
- If the tested player started to run in the wrong way, the referee should keep operating the watch till the tested player changes his direction and reach the correct sideline.
- The tested player makes ten consecutive attempts with 20 seconds between each stage (five attempts from each side).

- Choosing attempts in each side with a consecutive random way. To achieve this, the tested prepares ten pieces of paperboard with similar size and color, writes word (left) on five of them and the word (right) on the other five and then makes it upside down to be put inside a bag or a box and be pulled without looking at it.

Test Instructions:

- Each tested player takes a number of trials away from the measurement with the same terms with the purpose of identifying test procedures.
- The referee should train on the starting signal in order to give this signal with arms and operate the watch at the same time.
- Before testing the player, the referee pulls the previous ten cards randomly, records them according to their order in pulling in a special card and puts it in one of his hands to guide him to the sequence of signals' directions to record times. Recording times should be separated to prevent the tested player from expecting direction to the second attempt.
- The tested player should not know that he is asked to perform ten attempts distributed on both directions and their order is random. This is different from a tested player to another.
- The test should start by giving the following signal by the referee: "ready – go" and in all attempts this duration between "ready – go" should be in a range between 0.5 and 2 seconds.
- The tested player should perform some light exercises for warming-up. It is preferable to wear light shows and the test area free from any barriers.

Recording:

- The duration of each attempt is counted to the most approximate second.
- Average of the ten attempts is the degree of the tested player.

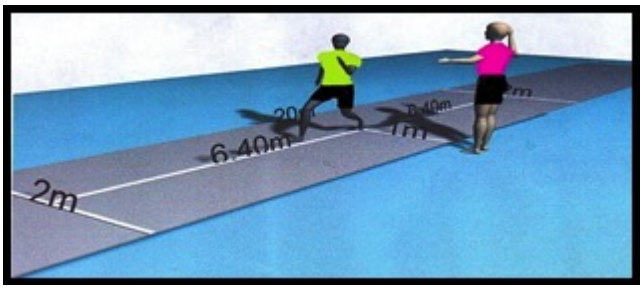

Figure (1)

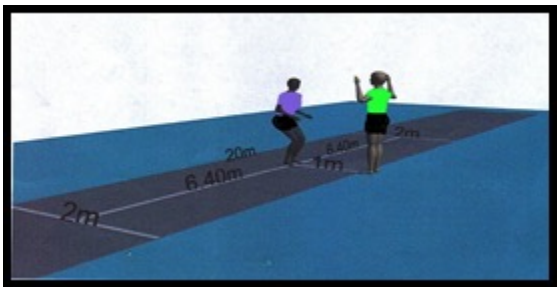

Figure (1 – 1)

Pre-Tests:

The pre-test was performed on Saturday 03/01/2015 after preparing performance equipments, presence of the assisting team, the formation of test recording forms with presentation of the needed performance method and counting marks in both tests.

Application of Compatibility Exercises:

The researcher prepared a set of group exercises in playing positions with and without tools within general preparation benefiting from the abilities in the specialist center, time, place and standard of the sample of the study chosen for this project according to the Ministry of Youth. For this purpose, the researcher took the following procedures:

Group exercises were applied in playing positions by trainers of the center and the researcher's supervision for 12 weeks during the stage of general preparation before special preparation by 3 units on (Sunday, Tuesday and Thursday) to make a total of 36 training units. Training units were divided according to three chapters (preparation, main and final parts). Exercises were applied in the main part of the training unit.

The duration of the single training unit is 90 minutes distributed on the preparation part and 70 minutes for the main part if the group training session's duration is 30 minutes with final part (5 minutes). Total time in minutes for group exercises in training units was 1080 minutes. The researcher depended on the interval training (with low and high intensity) by repetition training and then adopting gradation in training loads (1 : 2).

The researcher used the following points in applying the exercises:

- Gradation from the easy to the difficult and from the simple to the complex
- Using group training in playing position
- Training intensity and repetition for their effect on the nervous system

Post-Tests

The post-test was performed on Friday 27/01/2015 after preparing performance, presence of the assisting team, formation of test recording forms with the same conditions of the pre-test and then the researcher made data analysis using proper statistical rules.

4. Discussing Results:

Table (1) shows percentage of development in compatibility between pre and post tests. Table (2) shows significant differences between pre and post tests in compatibility as follows:

Table (1): Means and Standard deviations for pre and post tests, means difference and development percentage in compatibility test

Tests	Measuring unit	Pre-test		Post-test		Means difference	Development %
		Mean	S.D	Mean	S.D		
Compatibility	Second	12.23	6.1	11.15	7.3	1.08	8.83

Table (2): Means values of differences, total S.D differences' squares, the T counted and tabulated values and differences' significance between pre and post tests for compatibility

Test	Measuring unit	Mean	Total squares	T counted value	T tabulated value	Significance of differences
Compatibility	Second	0.4	2.5	5	2.09	Significant

The (T) tabulated value (2.09) at significance level (0.05) and freedom degree (19)

It was clear that the group exercises had an effect on developing compatibility through significant differences that appeared in post-tests. It is among the important motor attributes for handball players and all athletes. This was referred to by Kassem Hassan Hussein, 1990: 14 that "any sport activity related to functional systems especially muscular compatibility requires many adaptations including nervous muscular adaptation. This compatibility occurs by motivation, training and adaptation in each type of training as increasing body readiness or systems on training type, preparation and adaptation to increase compatibility likelihood for each move and skill". The researcher found that group exercises contributed to increase the ability of players in the right motor performance as a result of developing motor compatibility which agrees with what was referred to by (Ali Salloum, 2004: 146) that "the most recurring mistake by beginners is the inability of compatibility when performing moves by involving unnecessary muscles in performance to make disturbance in movement".

The importance of motor compatibility emerges when motor performance is related to the operation of muscular and nervous systems and their continuous interaction with a degree of agility, flexibility, balance, response speed, and high accuracy related to good motor potentials. Aboelela Ahmed, 1993, 313 found that "muscular and nervous compatibility is one of the important motor attributes necessary for mastering different motor skills. Compatibility forms out of multiple physiological and physical attributes such as balance, response speed, rhythm, motor feeling and the ability of body direction".

Table (3): Mean, S.D, and development percentage for the pre and post tests in motor quick response

Serial	Statistical treatment	Measuring unit	Pre-test		Post-test		Development %
3	Motor response speed	Second	1.773	0.141	1.655	0.187	6.655%

Table (4): Means values of differences, S.D, standard errors of differences, T counted and tabulated values for the quick response test

Statistical treatment	Measuring unit	Mean	S.D	Standard error	T counted	T tabulated	Significance
Response speed	Second	0.188	0.166	0.047	2.954	2.57	Significant

The researcher attempted to develop motor response speed through training that develops simple and complex quick response as well as short distance speed exercises as shown by Adel Abdelbasir, 1999: 109. In addition, Amerallah Ahmed Al Bosaty, 1998: 30 found that: "using highly intense interval training has an effective influence in developing nervous system and adaptation to take decisions, enhancing nervous receptors, increasing nervous compatibility inside the muscle and increasing repetition of nerve impulses to stimulate muscles with high speed".

5. REFERENCES:

- Abutaleb Mohamed Said (1990): "Research Mthodologies", Baghdad
- Abuelela Ahmed Abdelfattah & Ahmed Nasreldin Saad (1993): "Fitness Physiology", 1st Ed., Cairo, Dar Al Fikr Al Arabi
- Amerallah Al Bosaty (1998): "Applications of Sport Training", Alexandria, Monshaet Al Maaref
- Amer Ibrahim Kandilgi (2012): "Research Methodologies", 1st Ed., Amman, Dar Al Yazodi Press
- Adel Abdelbaseer (1999): "Comprehensive Sport Training between Theory & Practise", Cairo, Dar Al Fikr Al Arabi
- Ali Salloum Jawad (2004): "Tests, measurement and statistics in Sport Field", Al Qadesya University
- Kassem Hassan Husein (1990): "Applications & Principles of Physiology in Sports", 1990
- Kamal Darwish et al (1998): "Goalkeepers in Handball", Amman, Book Center Press
- Mohamed Hassan Allawi & Mohamed Nasreldin Radwan (1988): "Measuring in Sport Education & Sport Psychology", 2nd Ed., Cairo, Dar Al Fikr Al Arabi
- Wagih Mahgoub (2002): "Methodologies of Research", Baghdad, Dar Al Kotob Press.

THE EFFECT OF USING TEACHING WITH MOTOR TASKS AT TOTAL & PARTIAL TRAINING IN DEVELOPING ATTENTION FOCUS AND LEARNING SOME TYPES OF SCORING IN BASKETBALL

Emad Toma Radi[a] ,Muntathar Hussen[b] , Suha Abas[c]

[a,b] Al Mostanserya University / Faculty of Basic Education / Sport Education Department

[c] Diala University / Faculty of Physical Education & Sport Sciences

Iraqemad7@gmail.com

Abstract

Variability and overlap in teaching and learning methods achieve high percentages of development in characteristics, skills and other aspects of teaching strategies and methods. Teaching is one of these methods using motor tasks which currently play an effective role in modern teaching through which a part of the teacher's authorities is transferred to students.

The problem of the study lies in that teachers did not use modern teaching methods, training schedule and organization and they kept the concept of generality in teaching and learning these skills. They also did not consider effective factors and conditions, so the researcher conducted this study to solve this problem.

The researchers used the empirical method. The sample was represented in students of the first grade at the Sport Education Department in the Faculty of Basic Education, Al Mostanserya University (40 students). The sample was divided into a first empirical group (20 students) using the method of teaching with motor tasks due to total training and second empirical group (20 students) using the method of teaching with motor tasks due to partial training. The researchers conducted sample homogeneity, applied tests of attention focus and skill tests. Pre-tests were applied on the sample of the study with the use of teaching method of motor tasks in the educational units. Researchers concluded that:

- There are differences between pre and post tests for both empirical groups which refer that teaching using motor tasks due to pre and post training is correct.
- Results showed that the second empirical group excelled in attention focus using teaching with motor tasks due to partial training.
- Results showed that the second empirical group excelled in learning some types of scoring from the free throw line and peaceful scoring using teaching with motor tasks

Keywords: Effect. Teaching. Motor. Learning.Basketball

1. INTRODUCTION

Sport education is considered one of the important fields of education as it prepares athletes physically, skillfully and emotionally according to their attitudes and emotions. Therefore, a lot of countries around the world resorted to develop their educational systems in the light of caring with modern educational methods in the field of sport education. This was a turning point in the teaching process that contributed to develop teaching differently in its goals and contents especially in the field of individual differences and participation in the light of their education levels and among their choices. Variability and overlapping between teaching and learning methods by this way leads to achieve high percentages of developing characteristics, skills and others that need to be achieved by strategies and methods of teaching. Among these methods, there is teaching using motor tasks which currently plays an effective role in modern teaching through which a part of teacher's authorities is transferred to students and help give students roles in the learning process, increase motivation and care with lessons.

Scheduling training is one of the important aspects in learning as it contributes to facilitate learning different sport skills through gradation and according to the difficulty of the skill that needs to be learnt. In addition, using various and different methods helps generate new ideas for learners and then achieve the best level of learning. Therefore, scheduling training is one of the methods

which were considered by educational process officials as it positively contributes to achieve variability in the used training and tits implementation methods as well as facilitation of skill and physical learning in sports including total and partial methods.

Basketball is considered one of the games which are characterized by multiple and various basic skills as well as its relation to physical, planning and psychological aspects. Because of this great importance of physical skills and abilities of basketball players, there is an increased concern with developing these skills and abilities for the purpose of acquisition and mastery with high efficiency. They require high degree of attention and concentration by learning their skills, especially scoring. This motivated a lot of specialists to conduct researches and studies searching for the best and the most optimal methods of raising this game reaching the vest levels. To achieve this, we should depend on experts and specialists in setting educational and training curricula depending on scientific methods in planning and application in order to raise the level of concentration, attention and ensure achieving goals of the educational process through overlapping teaching and learning methods due to training scheduling. Thus, the significance of the study lies in determining the importance of overlapping the use of comprehensive teaching of motor tasks and integrating total and partial training in order to develop attention focus and learn some types of scoring n basketball.

Problem of the Study

One of the goals of sport education lessons in universities and schools is to make teachers aware of playing skills and rules that regulate performance for all games and especially basketball. Since the researchers are teachers, they found a vacillation in learning some skills of scoring among students. This is may be due to not considering individual differences between learners because of difference in perception level and abilities of students through learning and adopting specific methods on one hand, approving these educational methods on the other without consideration of the use of modern teaching. This means teaching and overlapping between teaching and motor education through the use of training scheduling. The concept of comprehensive teaching and motor tasks was not recognized by school teachers. This concept considers individual differences. In addition, teachers did not use modern teaching methods and training organization and scheduling inside educational units. Moreover, the adopted teaching methods do not consider these individual differences. They also kept the concept of generalization in teaching and learning these skills nor the factors or conditions affecting them. Therefore, researchers decided to study this issue through the use of multi-level teaching due to total and partial training as they are among methods which the researchers think that they affect the perception, attention, focus and learning of students in scoring types of basketball reaching a high degree of learning and mastery.

Goals of the Study

1- Using teaching with motor tasks method (comprehensive teaching) due to full and partial training in learning some types of scoring skills in basketball.
2- Knowing the effect of using teaching with motor tasks (comprehensive teaching) due to full and partial training in attention focus and learning some types of scoring skills in basketball.
3- Determining which is better than full and partial training using motor tasks (comprehensive teaching) in attention focus and learning some types of scoring skills in basketball.

Hypotheses of the Study

- There are statistically significant differences between results of pre and post tests for the first and second empirical groups in developing attention focus and learning some types of scoring skills in basketball.
- There are statistically significant differences between results of post tests for the first and second empirical groups in learning some types of scoring skills in basketball for the sake of the first empirical group.

2. METHODOLOGY

The researchers used the empirical method.

Sample of the Study

The sample of the study is represented in students of the first grade at the Sport Education Department in the Faculty of Sport Education, Al Mostanserya University for the academic year 2014 / 2015 chosen purposively (55 male and female students). Students who are not regular and those who participated in the exploratory trial (15 students) were eliminated. Therefore, the sample became (40 students) representing 72.72% distributed on two halls No. 1 and 2. Hall No. 1 was chosen for the 1st empirical group using comprehensive method in teaching including motor skills due to total training (20 students) and hall No. 2 for the 2nd empirical group using teaching with motor tasks due to partial training (20 students) selected by the toss.

Sample Homogeneity:

Since the sample was subject to testing during approval, to be sure, the researchers conducted homogeneity in some anthropometric measurements (length, weight and age) on a single line with all sample members as shown in table (1)

Table (1) Sample Homogeneity

Statistics / Variables	Measuring Unit	Arithmetic Mean	S.D	Skewness Coefficient
Length (cm)	Cm	172.80	6,29	%3,39
Weight (kg)	Kg	63,63	7,97	%11,55
Age	Month	218,73	6,88	%3,15

The table showed that difference coefficient in measurements was (2.39%, 11.55% and 3.15%) consecutively, so the sample is homogeneous as it is less than 30%.

Tests of the Study

- Peaceful scoring test from movement. Scoring level evaluation (Faez Bashir & Moaid Abdallah1987: 234 – 235).
- Peaceful scoring test from the free throw line. Measuring scoring accuracy of free throw (Ali Salloum 2004: 179).
- Attention focus test by Animov to measure attention focus (Iqbal Rasmy et al 2004: 8).

Pre-Tests

The researchers conducted pre tests on 15/03/2015 on the sample of the study in the internal sport hall at Sport Education Department in the Faculty of Sport Education, Al Mostanserya University for skill tests. It was applied by specialist professors in basketball and under the supervision of both researchers. The attention focus test was applied on the next day after skill tests.

Using teaching with motor tasks (comprehensive teaching) due to full and partial training

The researchers integrated this method at the main section of the educational specialist units selected at Sport Education Department in Al Mostanserya University for 4 weeks. The first empirical group was taught the method of motor tasks in comprehensive teaching due to full training, but the second empirical group used the method of motor tasks in comprehensive teaching due to partial training.

Post-Tests

Post- tests were conducted on the first and second empirical groups. The researchers applied post tests at the same sports hall with the same professors at the first group. Tests were conducted on 20/04/2015. Attention focus test was conducted on the next day on both empirical groups.

Discussion and Analysis of Results

Discussion & analysis of results of pre and post tests for the 1st & 2nd empirical groups for attention focus, scoring from free throw line and peaceful throwing

Table (2) arithmetic means, Standard Deviations (S.D), T counted and tabulated values in pre and post tests for attention focus, scoring from free throw line and peaceful throwing in basketball for both groups

Abilities & Skills	Group	Pre-Test		Post-Test		T counted value	Error level	Significance
		Mean +	S.D -	Mean +	S.D -			
Attention Focus	1st Empirical Group	1,95	1,28	3,30	0,88	2,950	0,036	Significant
	2nd Empirical Group	1,68	0,96	4,61	1,00	7,20	0,000	Significant
Scoring from free throw line	1st Empirical Group	5,00	0,88	6,50	0,55	6,71	0,001	Significant
	2nd Empirical Group	4,83	0,72	7,65	0,80	9,20	0,000	Significant
Peaceful scoring from movement	1st Empirical Group	3,99	0,65	5,67	0,55	5,00	0,004	Significant

	2nd Empirical Group	4,11	0,58	6,83	0,76	11,17	0,000	Significant

Table (3) shows that the 1st and 2nd empirical groups advanced in attention focus and skill abilities (scoring from free throw line and peaceful scoring from movement) for the sake of post test. The researchers found this due to the use of teaching due to motor tasks and integrating this method in the educational curriculum. This gave students the chance to set their abilities according to their capacities and levels in addition to continuous evaluation, feedbacks from teachers during learning stage and finding errors to correct. This, in turn, leads to development and improvement in skills. Learner using motor tasks by learning self-image which gives the ability to continue attention and obtain information as (modern teaching depends on investing all senses of learners using different means addressing more than one sense in activating learning process) (Mohamed Labib et al 1997, 128).

Work documents related to each student allows a chance for them to return to the skill and remember correct performance due to sequence in skill performance and clear written steps which helps learner's self-guidance and positivity. It also generates the sense of responsibility positively with integration with what is drawn and what is drawn which help remember the written and recall skill sequence.

The researchers found that the excellence achieved by both groups in post-test is due to the use of comprehensive method due to full and partial training. The researcher agreed with what was mentioned by (Essam Najdat Kasem 2004) as "the main goal from this method is to give a chance to learners for social participation with others and be more able to select the desired level. It is also an enjoyable and encouraging process for learners (Essam Najdat 2004, 32). This leads to self-confidence as confidence increases at an optimal point where performance enhances (Osama Kamel Rateb 1997, 72).

Table (3) arithmetic means, Standard Deviations (S.D), in pre and post tests for the first and second empirical groups in attention focus, scoring from free throw line and peaceful throwing in basketball

Abilities & Skills	1st Empirical Group		2nd Empirical Group		T counted value	Error level	Significance
	Mean +	S.D -	Mean +	S.D -			
Attention Focus	3,30	0,88	4,61	1,00	2,48	0,024	Significant
Scoring from free throw line	6,50	0,55	7,65	0,80	2,90	0,016	Significant
Peaceful scoring from movement	5,67	0,55	6,83	0,76	3,14	0,011	Significant

Table (4) shows that the 2nd empirical group using teaching with motor tasks due to partial training was more effective in developing attention focus and learning some attacking skills in basketball. The researchers found that this was due to the development in attention focus due to training during the educational units. They are in parts as to give a new chance for learners to control thoughts which increased their ability to focus away from distracters and attempting to focus on aspects related to performance which played an important role in developing their focus ability (an athlete who owns deep concentration is the one able to balance between his physical and mental situations for his own entity) (John Suer 2000, 33).

A learner needs to control tension for the purpose of controlling his skill performance. High self-confidence of learners helps overcome difficult situations during performance (increasing self—confidence for players during performance helps increase attention focus) (Osama Kamel Rateb 1997, 361). Development of attention focus in this teaching method according to one criterion influences learners, saves time and effort in explanation of the skill needed to be learned and increases the ability of attention focus for learners.

In addition, the motor tasks method in general affects the increase in learning both skills of scoring from free throw line and peaceful scoring learners in the comprehensive method evaluate their performance of the skill and compare the execution of skill and model. This is the self-evaluation reference and it determines correct and wrong performances.

In comprehensive method, there is an interesting phenomenon that does not appear in other methods which is that there is a number of good students who may face difficulty in performance, so we should create conditions that help and facilitate reaching these requirements. Anxiety resulting from the height of devices requires the use of this type of responsive information which cal for continuous reference as "the best", so we find that the level of each student is good and acceptable according to their abilities. Learning how to be self-dependent in decision making in this method requires breaking barriers of self-dependence on teachers (Gamal Saleh et al 1991, 202). The researchers found that the excellence of the 2nd empirical group (motor tasks due to partial training) over the first empirical group was due to effectiveness of the motor tasks method accompanied with partial training as it

affected learning of this group agreeing with (Magill 1998) in that: "the overlapping in learning aims to regulate training (lesson), its variability and better effect on learning) (Mabill,A.Richard:1998. 230).

Dependence on partial training in performance practice with both skills added to learners an experience in the ability to perform, learn and control parts of the skill. Training on these parts reduces the degree of complexity and difficulty of skill performance. It also helps master this part correctly before uniting its parts together as in full performance. This was asserted by scientific evidences that partial and full training affect learning and depend greatly on the nature of tasks as well as variability in training methods with frequent repetitions. Sufficient educational units in training stages also increased learning. Knowing errors increased development by learners. This was asserted by (schmidt 2000) as "feedbacks increase energ yand motivation towards promoting correct perforamnce, avoidance of wrong performance by learners and giving them corrective suggestions for their hperformance) (Schmidt and Wrisberg :2000 .282). in addition, adopting the method of teaching through partial learning training was effective in developing acccuracy and technical performance of the studied skills. Methods, training and increasing educational units are more appropriate for beginners, but when used it is better to unite and integrated skill moves to help learners and draw aplan for the motor program to be implemented as a comprehensive skill.

In sum, supporting the use of partial method with variability aims to facilitate learning as most complex and difficult motor skills use the partitioning method in learning although it is very complicated so it is better to learn it as a whole to facilitate learning transfer from part to another without interruption. (Magill, A.R.:1998.230).

3. CONCLUSIONS:

1- Differences between pre and posttests for both empirical groups show that there is good teaching using motor tasks due to full and partial training.
2- The second empirical group excelled in attention focus through teaching using motor tasks due to partial training.
3- Results showed the second empirical group which used teaching using motor tasks in learning some types of scoring skills from free throw line and peaceful scoring.

4. RECOMMENDATIONS

1- Benefit from results of current study to develop attention focus and learn some types of basketball skills.
2- Work to overlap the teaching method of motor tasks and scheduling of full and partial training in learning basketball skills.
3- Work to overlap other teaching methods and scheduling training to learn skills with other games, conduct similar studies on other samples and adding some physical and motor variables in basketball.

5. REFERENCES:

- Osama Kamel Rateb (1997): "Sport Psychology", 2nd Ed., Cairo, Dar Al Fikr Al Arabi.
- Osama Kamel Rateb (1997): "Psychological Preparation for Training the Junior Players", 1st Ed., Cairo, Dar Al Fikr Al Arabi
- Iqbal Rasmy Mohamed et al (2004): "Attention Focus and its Relation to Performance Level of the Free throw in Basketball", Libya, the 7th of April, the 2nd Scientific Conference for Sport Science.
- Gamal Saleh et al (1991): "Teaching Sport Education", Al Mawsel, Dar al Kotob Press.
- Dhaher Hashem Al Kadhemy (2002): "The Effect of Overlapping Training Method on Learning and Development through Spatial Organizational Experiences in Tennis Learning Environment", PhD Thesis, Faculty of Sport Education, Baghdad University.
- Faez Bshir Hamoudat & Moaed Abdallah (1987): "Basketball".
- Qais Nagy & Bastaweesy Ahmed (1987): "Tests & Statistical Principles in Sport", 1st Ed., Baghdad, Press of Ministry of Higher Education & Scientific Research.
- Essam Najdat Kasem Maksoud (2004): "The Effect of Teaching using the Integration Mthod overlapping with Random and Sequential Training on Learning Students some Basketball Skills and Keeping them", Master Thesis, Faculty of Sport Education, Baghdad University.
- Ali Salloum (2004): "Tests, Measurements and Statistics in Sport", 1st Ed., Al Qadessia University, Ministry of Higher Education & Scientific Research.
- Mohamed Labib & Mohamed Mounir (1997): "Method of Educational Means", Cairo, the Anglo-Egyptian Library.
- John suser:Sporting body sporting mind,united king on campridg,ovniu press,2000.
- - Mabill, A. Richard : Motor Learning , concepts, and application , Boston , Mcgraw – Hill , fifth edition , 1998.
- - Magill, A.R. 1998. Op.Cit, ..
- -Schmidt and Wrisberg : Motor learning and performance ,Third Edition , IL , Human kentics ,2000...
- Statistical package for social sciences .

THE EFFECT OF USING THE RANDOM VARIABLE METHOD IN DEVELOPING SOME MOTOR & SKILL ABILITIES FOR JUNIOR FOOTBALL PLAYERS

Ismael Abd Zid Ashour [a], Soha Abas Abod [b]

[a] *Al Mostanseryah University, Faculty of Basic Education*

[b] *Diala University, Faculty of Physical Education & Sport Sciences*

iaa_75@yahoo.com

Abstract

The significance of this study comes as it attempts, through the interference of variable random method, adopting correct scientific method, gradation and move in learning from the easier to the harder, involving suspense and interest in exercises similar to playing, to increase student's acquisition of motor abilities and basic skills in a way better than traditional methods.

The researchers prepared a set of exercises due to this interference in both methods to treat the weakness in motor and skill abilities for the junior players, trainers who do not consider training presentation in football to be consistent with motor and skill abilities of players and being restricted to use traditional methods in educational and training units for junior football players. The study aims to identify the effect of developing some motor abilities and basic skills of junior football players. The researchers used the empirical method as it is proper to the nature of the study and sample (junior football players in Al Shoala club). The researchers concluded that the overlap between both methods has a positive effect on acquisition of some motor abilities and basic skills of junior football players. In addition, the used educational means in training have a positive effect as well.

Keywords: random variable method, motor abilities, skill abilities, junior football players.

1. INTRODUCTION

Modern football is a good playing method that contains elements of suspense and interest by audience. This game has great sponsorship and interest and it is practiced by the young and the old as it contains motor skills, events and situations that cause interest and suspense of everybody towards practicing and watching football. This led to practice this game by a great number of players. Therefore, a football player needs a high and good motor performance that greatly requires the use of body parts with changing place and maintaining performance itself with high accuracy and good performance.

Basic skills are one of the components of football as well as fitness, motor attributes, psychological, educational and mental aspects which enhance performance levels. Thus, skill preparation should be considered through testing various educational and training methods which aim to acquire and develop motor characteristics and basic skills to enhance the level of the skill performance to the better.

The significance of this study comes as it attempts, through the interference of variable random method, adopting correct scientific method, gradation and move in learning from the easier to the harder, involving suspense and interest in exercises similar to playing, to increase student's acquisition of motor abilities and basic skills in a way better than traditional methods.

Problem of the Study

The researchers used the method of learning skills by using the random variable method which gives enjoyment in learning and understanding how to play the game better. At the same time, it develops basic skills and motor abilities, so the researchers prepared a set of exercises due to this interference in both methods to treat the weakness in motor and skill abilities for the junior players, trainers who do not consider training presentation in football to be consistent with motor and skill abilities of players and being restricted to use traditional methods in educational and training units for junior football players. The study aims to identify the effect of developing some motor abilities and basic skills of junior football players.

2. METHODOLOGY

The researchers used the empirical method as it is proper to the nature of the study

The Sample of the Study

The sample was chosen purposively. It is a group of junior football players in Al Shoala club (20 players among 51players using pair numbers). 11 players were eliminated as the researchers performed the exploratory trial on them. The percentage of the sample was (39.22%) of the population of origin.

Determining Motor and Skill Football Abilities

The most important motor characteristics in football were determined through a questionnaire. After analyzing it and getting the percentage, motor abilities were proposed according to relative importance as in table (1)

Table (1) Motor Abilities rank due to experts

Motor Skills	Relative Importance	Final Rank
1- Agility	93.3%	1

Determining Motor Ability Tests

After determining the most important motor abilities used in the study, the most important tests of these abilities were determined and legalized as in table (2)

Table (2) tests of motor abilities used in the study

Serial	Motor Skill	Tests	Percentage
01	Agility	Zigzag Running between barriers	93.3%

Determining Basic Football Skills

Basic skills were determined through random variable method and these exercises were more effective than others as in table (3)

Table (3) basic skills used in the study

Serial	Motor Skill	Relative Importance	Final Rank
1	Ball dribbling	93.3%	1

Determining Bask Skill Tests in Football

After determining basic skills in football, tests for these skills were proposed by the researcher (3 tests) and chose the most suitable of them as in table (4)

Table (4) the used skill tests in the study

Serial	Motor Skill	Tests	Percentage
01	Ball dribbling	Dribbling between 5 posts come & go	93.3%

The Used Tests in the Study

Test of football motor abilities.

Agility: zigzag between posts (Qais Nagy, Bastawisy Ahmed, 1984: 323)

Tests of basic football skills

Dribbling by changing direction (Qais Nagy, Bastawisy Ahmed, 1984: 321)

First exploratory trial

The two researchers conducted this trial for tests set for motor characteristics and basic skills on a sample of 11 players from population of the study on 08/11/2014

Scientific Principles of the Tests Used in the Study

The two researchers sought to the scientific principles in tests for the purpose of determining validity of these chosen tests or how valid, reliably and objective they are.

Test Validity

Test validity means "to measure what is set to be measured by the test in a way that valid test measures its target function and nothing instead or in addition" (Nori El Shok, Rafea Al Kebissy 1999: 89 – 99). The researchers obtained test validity coefficient through the use of self validity coefficient.

Test Reliability

Test reliability means that "if a test is conducted on a sample and then repeated on the same sample and under the same conditions, results appeared at the first time are the same results in the second time" (Mostafa Husein Bahy 1999: 5). The researcher used selection and repetition to get reliability coefficient as this is one of the most suitable ways adopted in tests.

Test (5) reliability coefficient, self validity coefficient and freedom degree for tests used in the study

Serial	Tests	Validity Coefficient	Self-Validity Coefficient
1	Zigzag Running test to measure agility	87%	93%
4	Dribbling by changing direction test	84%	91%

Test Objectivity

Since the tests used by the researcher are far from self-design and prejudice, they became clear and easily understood by members of the sample depending on clear measuring tools. This is because results of tests are recorder using seconds, degree/specific time, degree / counting ball position) as time units which made the researchers prepare the study tests with high objectivity.

Pre-Tests

Pre-tests of the sample were conducted on Monday 09/11/2014 on a football pitch. Both researchers used the same conditions as possible at post-tests.

The Main Trial

The method included 8 educational units for 8 weeks (one unit a week) with a time of 90 minutes for the single educational unit. The empirical group works with teachers of football in the faculty as in table (6)

Table (6) Divisions of the single educational unit, times and percentages through educational course for the empirical group

Serial	Divisions of the educational unit	Time in the educational unit (min)	Time in the educational course (min)	Percentage
1	Preparation division	15	120	%16,66
	- Attendance	3	24	%3,33
	- Warm-up	12	96	%32,13
	1- Public 2- Private	4 8	32 64	%4,44 %8,88
2	Main division	70	560	%77,77
	- Educational side	20	160	%22,22
	- Applied side	40	320	%44,44
	- Educational playing	10	80	%11,11

3	Final division	5	40	%5,55
	- Small game	4	32	%4,44
	- Dismissal	1	8	%1,11
Total		90	720	100%

Post-Tests

Post tests on the sample were conducted on Monday 07/01/2015. The researchers adopted the same conditions and procedures of the pre-tests.

Analysis of Motor Abilities Tests in Pre and Post Tests for the Sample of the Study

Table (7) values of arithmetic means, standard deviations for pre and post tests, variances of means and development percentage for motor characteristics' tests

Tests	Measuring unit	Pre-test		Post-test		Means variance	Development %
		Mean -	S.D	Mean -	S.D		
Agility	Time (sec)	7.66	3.8	6.60	4.2	1.06	13.83%

Table (7) shows values of arithmetic means, standard deviations, means variance and development percentage in pre and post tests for the motor characteristics under study. The arithmetic mean in the pre-test for agility (7.66), standard deviation (3.8), while the arithmetic mean in post-test for agility (6.60) and standard deviation (4.2). The difference in arithmetic means for the pre and post tests for agility is (1.06) and development percentage was (13.83%).

To determine the significance of differences between pre and post tests for the studied motor abilities, the researchers used suitable statistical rules for data processing as in table (8)

Table (8) values of arithmetic means, total squares of differences' deviations from their average, the T counted and tabulated values and significance of differences between pre and post tests for motor abilities' tests

Tests	Measuring unit	Mean – S.D	Total D^2	T counted	T Tabulated	Significance of differences
Agility	Time (sec)	0.6	3.1	6.6	2.09	Significant

The (T) tabulated value is 2.09 at significance level 0.05 and freedom degree 19.

Table (8) shows values of arithmetic means, total squares of differences' deviations from their average, the T counted and tabulated values and significance of differences between pre and post tests for motor abilities' tests for the sake of post test in agility.

3. Discussion of Results of Motor Abilities

Analysis of results in previous tables showed that there are statistically significant differences between pre and post test of the sample in tests of motor characteristics for the sake of post-test. This shows the effect of tests that used educational method of junior players in developing some important motor abilities needed by football players including agility as it includes all or most other characteristics. This was asserted by (Kasem Lazam & Furat Jaber) as "most actions performed by the football players require enough strength accompanied with suitable speed and good flexibility. Thus, performance will be good and consistent. Consistency is the most accurate concept to the player's agility".

In order for a football player in integrating multiple basic skills in one frame and change in his speed and direction (Hanafy Mahmoud 1994: 60), the player needs to use his body completely to master the move with ability to change direction and speed with an easy and flexible way. A football player needs agility to succeed in integrating a number of basic skills in one way, changing from a skill to another or changing speed and direction.

The researchers found that interference contributed to increase players' ability on the correct skill performance as a result of motor consistency development. This agrees with what was referred to by Ali Salloum 2004: 146 as "the most recurrent error for beginners is the inability to be consistent at performing moves by involving unneeded muscles when performing moves which caused disorders in movement to be produced in a confused form".

Analysis of results of basic skills' tests in pre and post tests for the sample of the study

For the purpose of determining differences between means in pre and post tests from the basic skills and development percentage in these skills, the researchers used the statistical rules for data processing as shown in table (9)

Table (9) values of means, standard deviations for pre and post tests and means differences

Tests	Measuring unit	Pre-test		Post-test		Means variance	Development %
		Mean -	S.D	Mean -	S.D		
Dribbling	Time (sec)	17.77	1.35	16.40	1.73	1.37	13.83%

Table (9) shows values of means, standard deviations, means differences and development percentage in pre and post tests for the main skills under study as the mean in pre-test for dribbling skill is 16.70 and standard deviation is 1.35, while mean's value for dribbling in post tests was 15.30 and the S.D was 1.70.

As for differences of means between pre and post tests, it was for the sake of dribbling (1.37). For the purpose of determining significance of differences between pre and post tests in basic skills under study, the researchers used suitable rule for data processing as shown in table (10).

Table (10) values of arithmetic means of differences, total squares of differences' deviations away from average, the T counted and tabulated values, significance of differences between pre and post tests in tests of basic skills

Tests	Measuring unit	Mean – S.D	Total D^2	T counted	T Tabulated	Significance of differences
Dribbling	Time (sec)	2.9	6.50	8.05	2.09	Significant

The (T) tabulated value is 2.09 at significance level 0.05 and freedom degree 19.

Table (10) shows that values of arithmetic means of differences, total squares of differences, T counted and tabulated values and significance of differences between pre and post tests in tests of basic skills. The value of mean of differences in dribbling is 2.9, while the T counted value was 8.05 which is more than the T tabulated value (2.09) at significance level (0.05) and freedom degree (19) which shows that there are significant differences between pre and post tests in dribbling.

4. Discussing Results of Basic Skill Tests:

Discussion and analysis of results in the previous tables showed that there are statistically significant differences between pre and post tests for the sample in all chosen basic skills for the sake of post-test. This shown the extent of the effect of using interference exercises integrate in the educational course of junior players in developing some important basic skills in football including dribbling skill as exercises contain correct organization by grading from the easier to the harder and scientific planning. Taha Ismail et al 1989: 17 say that "football training is characterized by planning, organization and continuity based on scientific basics to ensure positive effect on the level of the player and continuity in the front of different aspects of football as gradation in load levels and correct repetition timing". The researchers found that reasons for developing dribbling skill are due to using various means during performing exercises including the use of posts. Hergold & Wibler 1998: 24 refer that training using posts gives players sense of facing the opponent, so we can estimate distance available from the sides of the player quickly.

5. Conclusions:

In the light of results, the researchers concluded the following:

1- Interference between both methods has a positive effect on acquiring some motor abilities and basic skills for junior football players.
2- Educational means used in training have positive effect.
3- Repetition of some exercises led to develop some motor abilities and basic skills to be consistent and developed.

6. Recommendations

In the light of conclusions, the researchers recommend the following:

1- Application of interference of both methods used in this study within preparation periods for junior players.
2- Applications of methods with significance of training in other games and age categories in football.

7. References

- Ahmed Mohamed Khater et al (1978): "Studies in Motor Learning in Sport Education", Cairo, Dar Al Maaref.
- Osama Kamel Rateb (1997): "Psychological Preparation for Training Juniors", 1st Ed., Cairo, Dar Al Fikr Al Arabi.
- Hanfy Mahmoud Mukhtar (1994): "Scientific Basics in Football Training", Cairo, Dar Al Fikr Al Arabi.
- Zohir Kassem Al Khashab et al (1999): "Training in Football", 2nd Ed., Al Mawsel, Al Mawsel University.
- Sabah Reda Gabr et al (1991): "Football for the 3rd Divisions", Baghdad, Dar Al Hekma Press.
- Diaa Mounir Fadel (2006): "The Effect of Educational Planning Exercises in playing method in learning, Maintaining and Evaluating Performance for some Football Skills", Unpublished PhD Thesis, Faculty of Sport Education, Baghdad University.
- Taha Ismail et al (1989): "Football between Theory, Practice and Physical Preparation", Cairo, Dar Al Fekr Al Arabi.
- Abbas Ahmed Saleh & Abdelkerim Mahmoud (1991): "Teaching Efficiencies in Sport Education Teaching Methods", Basra University.
- Faten Ismail Al Ezzawy (2000): "The Effect of Interference of Training in Learning and Transferring its Effect to some Basic Volleyball Skills, Master Thesis, Faculty of Sport Education, Baghdad University.
- Kais Nagy & Bastawisy Ahmed (1984): "Tests and Statistics in Sports", Baghdad University Press.
- Kassem Lezam Sabr (2005): "Applications of Learning, Education Principles in Football", Baghdad, Dar Al Horreya Press.
- Language House (1984): "Psychology & Education", Part One, Cairo, public Organization for Government Printing Offices.
- Mohamed Hassan Allawi (1994): "Motor Intelligence Tests", 1st Ed., Cairo, Dar Al Fikr Al Arabi.
- Mohamed Sobhy Hassanin (1985): "Model of Physical Efficiency", 1st Ed., Cairo, Dar Al Fikr Al Arabi.
- Moustafa HusseiN Bahi (1999): "Scientific Dealings between Theory & Practice (Validity, Reliability, Objectivity and Standards), Cairo, Book Center Press.
- Hergold Wibler (1988): "Football", Translated by Yurgen Chlaiff: (Germany, Leipzig, Higher Institute of Sport Education.

THE EFFECT OF BRAINSTORMING ON PSYCHOLOGICAL SKILLS OF FACULTY OF SPORT EDUCATION'S FEMALE STUDENTS

Baydaa Ghaylan Mahmood

Baghdad University, Faculty of Physical Education & Sport Sciences

Baidaagylan@yahoo.com

Abstract

The study aimed to set brainstorming sessions and find out the extent of their impact on the psychological skills of a sample of students in the Faculty of Physical Education (18) student were selected in a deliberate manner. The experimental method has been used as a way to solve the problem.

The researcher has used the means and the tools and procedures among which were : sessions of brainstorming in the form of ten-week duration of the program for a period of two hours a week to understand where the student know how to solve problems in conditions such as imposing upon the state of anxiety or lack of confidence or cases of failure to focus attention down the lack of performance. After the doing of the pre and post tests, the researcher has reached several conclusions, the most important of which were the following :

- The brainstorming sessions have a significant impact on all of the skill of visualization and face anxiety and relaxation and self-confidence and realistic achievement and the focus of attention.
- The most important recommendations were:

Conducting a study similar to facilitator or disabling worry and their relationship to brainstorm

Keywords: brainstorming, psychological, skills, Sport Education, Female.

1. INTRODUCTION:

Researchers all over the world are concerned with students as they are the future of scientific and practical application of educational curricula prepared by them. This is because the period of a tudent's university age is sufficient to establish self-confidence in sport education and training in schools. Transferring theoretical, practical and applied information contributes greatly to learning and educating students in the right direction. However, this application is still related to the physical aspect only without consideration of student's personality from a psychological point of view. Most scientists asserted that psychological skills should be consistent with developing physical elements and abilities in the form of training programs or sessions. This is the case in training of the basic skills of sport activities. Mental development, relaxation, facing anxiety, self-confidence and attention focus are necessary to make a student persistent in solving and facing any problem on one hand. On the other hand, solving psychological problems and facing fatigue require brainstorming. Brainstorming is this method which contributes to problem solving through cooperation of a group in the form of a team. Each one in the team contributes by giving an opinion. After that, opinions are gathered to reach the best solutions. Therefore, in order to raise the level of the group of the students through brain storming, the significance of this study emerged. The significance of the study lies in the mental development of students in solving psychological problems by using brainstorming with a number of sessions and the time of a lesson's unit based on the effort to obtain information by students or prepared by them as a task in solving these problems.

Problem of the Study

The problem of the study lies in the use and innovation of scientific and practical methods to treat the idea of dependence on physical solutions in sports as an alternative to psychological aspect. Most school teachers do not rely on the psychological aspect as a way to solve problems related to physical and psychological aspects. Therefore, brainstorming was used as one of the methods which contribute to develop psychological aspects though mental perception, relaxation, facing anxiety, self-confidence, attention focus and achievement motivation for physical and technical skills of students of Faculty of Sport Education.

Objectives of the Study

The study aims to

- Set sessions of brainstorming for students of Faculty of Sport Education.

- Determining the effect of brainstorming sessions on psychological skills: (mental perception, relaxation, facing anxiety, self-confidence, attention focus and achievement motivation) for the sample of the study.
- Determining significant differences of the variable of brainstorming and psychological skills in pre-tests not in post-tests for the sample of the study.

Hypotheses of the Study

- There are statistically significant differences of brainstorming in pre-tests not in post-tests for the sample of the study.
- There are statistically significant differences of psychological skills in pre-tests not in post-tests for the sample of the study.

2. METHODOLOGY

The researcher used the empirical method for a single group (pre and post tests) as the only clear and efficient means to solve the problem of the study.

Sample of the Study

The researcher selected a purposive sample from the Faculty of Education, fourth stage (18 students). Two of the students were subject to exploratory trial and the other 16 were subject to the main trial during the course with age average of (21.6 years) due to arithmetic mean.

Tests of the Study

Brainstorming Test

After preparing brainstorming form (see annex 1), due to steps of preparing the form to be able to collect paragraphs, formulation and using partitioning method of paragraphs depending on their validity and reliability, eliminating insignificant paragraphs, showing all paragraphs under the curve are in normal distribution and all of them are homogeneous, the researcher distributed the brainstorming measuring form on the female students. This was by making the student sit on a chair at break time filling the form by pen, the assistant working team declares the sign of beginning answering and then students are allowed to answer paragraphs of the measurement without leaving any one. The answer ranged between (4 marks) to a very great extent, (3) to a great extent (2) moderately agree (1) to a small extent. After that, answers are collected and statistically treated as shown in part four.

Psychological Skills Test

This test was designed by Stephen Bill, John Allenson and Christopher Chambrock (1996) Arabized and prepared by (Mohamed Hassan Allawy). It was applied on a number of swport activities. Here, this test was used after being used by researcher Faten Abdelsherif Dahesh El Askary on the third stage, Faculty of Sport Education for Girls after performing all requirements of preparing and application.

Exploratory Trial

The exploratory trial was performed on three students on Sunday 02/11/2014. The goal of this trial was to avoid all errors that may occur in the main trial such as the expected time for work, response of the assistant working team and students at application in addition to the method used in test application.

Pre-Test

After reviewing obstacles resulting from the exploratory trial, the researcher began tests regarding distribution of questionnaires as follows:

1- On 03/11/2014, brainstorming questionnaire was distributed after explaining all related requirements.
2- On 04/11/2014, psychological skills questionnaire was distributed after explaining all related requirements.

After responding all requirements of answering the questions in questionnaires, they were collected to be statistically treated in part four from the requirements of the post-test.

3. BRAINSTORMING PROGRAM

The brainstorming program was applied in the period from 05/11/2014 to 19/01/2015 as it was applied based on the following main principles: (Hassan Ibrahim Abdelaal 2005, 87):

1- Delaying evaluation (this means that evaluation of any ideas generated in the first stages of the session is not allowed).
2- Freedom of thinking (liberating from any blocks against creative thinking, increasing creative abilities of imagination and ideas generation in an atmosphere that is open for criticism and evaluation).
3- Quantity before quality (concentration in the brainstorming session on generating the biggest possible amount of ideas whatever their qualities are).

4- Building on others' ideas (it is allowed to develop ideas of the others and generate new ideas proposed as a legitimate right for any participant to change them and generate other ideas with us).

Accordingly, based on above principles, steps of brainstorming were set (Turner, Thomos N.: 1994.87). Discussion of the session:

1- Reframing the problem.
2- Preparing an atmosphere of creativity.
3- Generating ideas.

In addition, the training program of brainstorming sessions (10 weeks) was applied and each session includes problem solving method theoretically and practically.

Post-Tests

Post-tests were performed due to what was included in pre-tests and with the same steps. The first brainstorming test was conducted on 21/01/2015 and the psychological skills test was conducted on 22/01/2015. After finishing tests, all data were collected to be statistically treated in schedules as it is shown in part four.

Analysis & Discussion of Results:

Analysis & Discussion of Brainstorming

Table (1): statistical Features of brainstorming:

Statistical Values / Study variables	Pre-test		Post-test		F	F Tabulated value	T Value *	Significance
	Mean 1	S.D 2	Mean 2	S.D 2				
Brainstorming	29.83	0.579	46.45	1.34	16.62	3.69	4.50	Significant

(*) tabulated T value (2.18) at freedom degree (9) and significance level (0.05)

Table (1) shows that the arithmetic mean in the pre-test was (29.83), the standard deviation (0.579), but in post-test they were (46.45) and (1.34) consecutively. The difference of means (F) was (16.62) and its standard deviation was (3.69). At the statistical treatment of the (T) counted value, it was found that its value after treatments was (4.50), while the tabulated one was (2.18) at freedom degree (9) and significance level (0.05). The researcher found that these differences were due to what is included in brainstorming sessions as they were theoretical and practical sessions subject to practical scientific thinking based on cooperation and approaching levels of students to solve problems in their minds in addition to reinforcement of self-confidence (as a learner finds himself in an atmosphere in which his ideas are welcomed with productive thinking) (Gouda Saada 2003, 8). Working using brainstorming makes the brain think based on trial because traditional education does not encourage much on discussion, dialogue and presenting ideas in free collective discussions so the strategy of brainstorming was designed (Hussein Mohamed Hassanein 2002, 76).

Analysis & Discussion of Sample Results:

Table (2) statistical features of psychological skills' variables for the sample of the study

Statistical Values / Study variables	Pre-test		Post-test		F	F Tabulated value	T Value *	Significance
	Mean 1	S.D 2	Mean 2	S.D 2				
Mental perception	12.38	0.28	18.80	0.13	6.24	1.6	3.90	Significant
Relaxation	11.23	0.20	17.82	0.16	6.59	1.70	3.87	Significant
Attention focus	13.80	0.11	18.99	0.45	6.79	1.73	3.92	Significant
Facing anxiety	12.18	0.14	19.87	0.20	7.69	1.83	4.2	Significant
Self-confidence	12.83	0.12	20.43	0.41	7.6	1.92	3.95	Significant
Achievement reality	12.51	0.26	19.14	0.40	7.13	1.78	4	Significant

(*) tabulated T value (2.18) at freedom degree (9) and significance level (0.05)

Table (2) shows that arithmetic mean for mental perception as one of the main psychological skills is (12.38) and standard deviation is (0.28), but in post-test they were (8.80) and (0.13) consecutively. The difference of means (F) was (6.24) and its standard deviation was (1.6). At the statistical treatment of the (T) counted value, it was found that its value was (3.90), while the tabulated one was (2.18) at freedom degree (9) and significance level (0.05). Since the T counted value is bigger than tabulated one, this means that the difference is significant. The researcher found that these differences were due to the level of students' acceptance and interaction with them although they know that mental perception is not a magical power, but it is like vitamin that helps physical, motor training and planning. It gives the student extraordinary powers and makes them not exceed their physiological abilities, but it is like a helping factor to generate maximum inner energy of the student (Mohamed Hassan Allawy 202, 248) in addition to retrieval of stored information in the brain about the needed performance through education, training and model presentation (Faten Abdelsherif Dahesh 2009, 81).

When it comes to relaxation, the arithmetic mean for the pre-test is (11.33) and standard deviation is (0.20), but in post-test they were (17.82) and (0.16) consecutively. The difference of means (F) was (0.59) and its standard deviation was (1.70). At the statistical treatment of the (T) counted value, it was found that its value was (3.87), while the tabulated one was (2.18) at freedom degree (9) and significance level (0.05). Since the T counted value is bigger than tabulated one, this means that the difference is significant. The researcher found that these differences were due to sessions of brainstorming that contributed to relaxation which, in turn helped relieve stress and restore the body's normal physical or functional conditions to the steady state. This was asserted by (Hanzmill) from (Lamiaa Al Diwan) as relaxation plays an important role in preparing the body to resist the threats that come from internal resources which cause the persistent feeling of anxiety and stress from something that will happen in the future (Lamiaa Hassan Mohamed Al Diwan, Education Forums at Grabil)

As for attention focus, the arithmetic mean for the pre-test is (12.80) and standard deviation is (0.11), but in post-test they were (18.99) and (0.45) consecutively. The difference of means (F) was (6.79) and its standard deviation was (1.73). At the statistical treatment of the (T) counted value, it was found that its value was (3.92), while the tabulated one was (2.18). Since the T counted value is bigger than tabulated one. This means that the difference is significant. The researcher found that these differences were due to concentration in problem solving in more than one situation contributed to these results in addition to the period in which the researcher worked through discussion and dialogues with students also contributed to mental communication (persistent attention on selected stimulus for a period of time) which achieved significant results shown in table (2).

As for facing anxiety, the arithmetic mean for the pre-test is (12.18) and standard deviation is (0.14), but in post-test they were (18.87) and (0.20) consecutively. The difference of means (F) was (7.69) and its standard deviation was (1.83). At the statistical treatment of the (T) counted value, it was found that its value was (4.2), while the tabulated one was (2.18) at freedom degree (9) and significance level (0.05). Since the T counted value is bigger than tabulated one. This means that the difference is significant. The researcher found that these differences were due to practical brainstorming sessions which contributed to increase relaxation and attention focus. This was reflected on anxiety by increasing the sample's ability to face anxiety resulting from performance or technical or emotional work of students. Accordingly, this mitigated fear, especially when we know that anxiety is (reaction of fear graded from connection and disorder till reaching extreme fear (Mohamed Hassan Allawy 2002, 286). In addition, treatment of performance barriers and thinking in information solving also contributed to face anxiety by the sample of the study.

As for self-confidence, the arithmetic mean for the pre-test is (20.43) and standard deviation is (0.41), but in post-test they were (7.6) and (1.92) consecutively. The difference of means (F) was (7.6) and its standard deviation was (1.92). At the statistical treatment of the (T) counted value, it was found that its value was (3.95), while the tabulated one was (2.18) at freedom degree (9) and significance level (0.05). Since the T counted value is bigger than tabulated one. This means that the difference is significant. The researcher found that these differences were due to information in practical brainstorming sessions which contributed to solve problems related to performance; lesson management and reduced doubt in solving any problem related to the technical side of the lesson which made the student avoid concentration on weakness points and strength sides (Osama Rateb 2004, 316).

As for achievement motivation, the arithmetic mean for the pre-test is (12.59) and standard deviation is (0.12), but in post-test they were (19.64) and (0.40) consecutively. The difference of means (F) was (7.13) and its standard deviation was (1.78). At the statistical treatment of the (T) counted value, it was found that its value was (4), while the tabulated one was (2.18) at freedom degree (9) and significance level (0.05). Since the T counted value is bigger than tabulated one. This means that the difference is significant. The researcher found that these differences were due to the very good level of significant values in psychological skills which contributed greatly to these results. This was asserted by (Mohamed El Arabi) who said that the development o psychological skills should be consistent with developing fitness elements through educational and training programs as they should be considered like basic skills in sport activities (Mohamed El Arabi Shamon 1995: 219).

4. CONCLUSIONS:

1- Brainstorming sessions have an effect on mental and practical reality of the students.
2- Brainstorming sessions have a great effect on (mental perception, attention focus, facing anxiety, relaxation and achievement reality).

3- The time of methodology was suitable for problem solving through the use of brainstorming.
4- The period of (10) weeks is enough to affect psychological skills of the sample of the study.

5. RECOMMENDATIONS

1- Conduct similar studies on the light of concepts of the study.
2- Conduct a study for simple and hard anxiety and its relation with brainstorming.
3- Conduct another study to determine the relation between self-burning and brainstorming.

6. REFERENCES:

- Osama Rateb (2004): "Training of Psychological Skills & Applications in Sport, 2nd Ed., Dar Al Fikr Al Arabi, Cairo
- Gouda Saada (2003): "Training Thinking Skills", Amman, Dar Al Shorouk
- Hassan Ibrahim Abdelaal (2005): "Creative Education", Amman, Jordan, Dar Al Fikr.
- Hassan Ibrahim (2003): "Creative Education is Necessary for Existence", Amman, Jordan, Dar Al Fikr.
- Hussein Mohamed Hassanien (2002): "Methods of Brainstorming", Dar Majd, Amman, Jordan
- Khalida Ibrahim Mohamed (2010): "New Concepts in Sport Psychology", 1st Ed., Baghdad, Al Mansour Office
- Faten Abdellatif Dahesh (2009): "Predicting the Motor Level of Performance on Balance Post with Reference to some Psychological Skills", Master Thesis, Baghdad University, Faculty of Sport Education for Girls.
- Kadhem Karim Reda & Maher Mohamed Awwad (2012): "Thinking: A Psychological Explanatory Study", 1st Ed., Baghdad, Al Naeemy Library Press.
- Lamiaa Hassan Al Diwan (2009): "Effective Methods in Teaching Sport Education", Iraq, Al Nakhil Press, Basra, Al Kuwait St.
- Lamiaa Hassan Mohamed Al Diwan: "Psychological Stress. A Problem Facing Athletes, Education Forums at Gharabil. Available online at the following link: http://www.glllg.com/vb/tl08341tt.html.
- Mohamed El Arabi Shamoun (1995): "Mental Training", 2nd Issue, Arab Association for Sport Medicine, Sport Medicine Science Magazine, Bahrain.
- Mohamed Hassan Allawy (2002): "Training Psychology & Sport Competition", Dar Al Fikr Al Arabi, Cairo.
- Mohamed Hassan Allawy (2002): "Training Psychology & Sport Competition", Dar Al Fikr Al Arabi, Cairo.
- Nazim Shaker Al Watar. Available at: http://batree.net/doc/index.php@action=show8+4pp=story&id=lv
- Martens R., (1987): coach quide to sport Psychobogy, Champing, 1L, Ituman kinetics.
- Turner, Thomos N., 1994; Essen rids of classroom treading elementary social stuties, philade, allen and baeon,