

# THE EFFECT OF MENTAL TRAINING WHICH ACCOMPANIES A PROPOSED TRAINING COURSE ON MENTAL TOUGHNESS OF VOLLEYBALL PLAYERS – SITTING

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## Abstract

Since mental skills and preparation are important in developing sport level, one of the significant problems facing athletes is their need for a mental preparation. Skill or physical abilities only are not enough in order to achieve sport success and achievement. Rather, the need for mental strength, ability to concentrate and how to face psychological pressures during training situation and sport competitions are more important. Achieving ideal skill performance requires that a player possesses comprehensive skill, physical and psychological abilities to achieve the best possible skill performance. Therefore, the researcher found that using mental training course accompanying a proposed training course on mental toughness for sitting volleyball players helps raise their self-confidence and increase their concentration despite psychological pressures they experience. Thus, the study aimed to prepare a mental and physical training course that corresponds with the sample of the study and determine its effect on mental toughness of the sample of the study. Both researchers used some means to achieve goals of the study. They concluded that mental training helps enhance mental toughness for sitting volleyball players. The study also concluded that the best way to represent mental training to sitting volleyball players is at the beginning and at the end of the main section of the training unit with consideration of the percentage of time attributed from the unit time.

**Keywords:** mental training, mental toughness, volleyball – sitting.

## 1. INTRODUCTION

Mental training represents the main part in player's preparation to acquire skills and motor situations in competitions. Mental training includes movement perception, consecutive skills, situations, goals and all aspects of competition including the court, referees, devices and tools. Moreover, the use of mental training is not limited to participation in competitions only. Rather, it is also used in the field of movement in general and at stages of acquiring motor skills in particular besides playing an important role in learning process. Mental training also contributes to the feeling of more confidence, focusing on positive aspects that work on better expectation for good performance and prevent negative perception that harms performance through negative feelings that cause more anxiety and failure expectations which reduce opportunities of right performance.

The concept of mental toughness and the benefit accompanying this toughness which develops it is one of the important characteristics which a player should have. It comes from inside a player's oneself and its motivations and also subjective. Directing this mental toughness is also subjective as a player does not need an external motivation as a motivation is subjective or inside the player. When a player manages to completely control himself, being consistent and factual in achieving his goals makes him calm and relaxed even in difficult situations or pressures. He should also be concentrated, confident careful and responsible in his acts and behaviors besides being able to or willing to move full of energy (Mohanad Taleb Eid Ibrahim El Saadi: 2012, 22)

Sport distinction is determined by the extent to which players can benefit from their psychological abilities in a way that is not less than the benefit from their physical abilities too. Psychological abilities help individuals mobilize their physical energy to achieve the best sport performance. It can also be developed through special training and programs for this purpose. Hence, it is clear that the study is significant in defining the extent of the effect of a mental training course accompanying a proposed training course on mental toughness for sitting volleyball players

### Problem of the Study

Mental training process is one of the factors that help and facilitate physical and skill training. These factors depend on physical and mental correspondence and variability in using its various methods. It is necessary that a player's preparation should be comprehensive in all physical, psychological, health and mental aspects to be prepared for the match and perform well away from mistakes for many reasons such as insufficient psychological readiness. Due to the importance of mental skills and preparation on developing the standard of athletes, one of the significant problems facing players is their need for mental preparation. Skill or physical abilities alone are not enough in order to reach sport distinction and achievement. Rather, it is the need for mental strength, ability to concentrate and face psychological pressures during training situation and sport competitions are more important. Achieving ideal skill performance requires that a player possesses comprehensive skill, physical and psychological abilities to achieve the best possible skill performance. Therefore, the researcher found that using mental training course

accompanying a proposed training course on mental toughness for sitting volleyball players helps raise their self-confidence and increase their concentration despite psychological pressures they experience.

**Objectives of the study:**

- 1- Prepare a mental and physical training course that corresponds with the sample of the study.
- 2- Determine the effect of the mental training course accompanying a proposed training course on mental toughness of the sample of the study.

**2. METHODOLOGY**

Both researchers used the empirical method with the design of (three empirical groups) with pre- and post-tests during steps of their work as it is the most suitable method for this study.

**Population & Sample of the Study**

One of the things that should be taken into consideration by a researcher is having a sample that is actually representing the original population. A sample is defined as: “the part that represents the population and it is the model on which the researcher’s total work depends” (Dhafer Hashem Al Kadhemi: 2012, 84). Population of the study is represented in volleyball players – sitting (144 players) as in table No. (1). As for the sample, it was selected purposively from volleyball players – sitting at Diyala Governorate (17 – 23 years old). About 9 players (6.25%) were selected of the original population of the study representing single disabilities above the knee (4 players), below the knee (2 players) and the distorted (3 players). Players were distributed randomly by poll into three groups as shown in table (1).

**Table (1) Sample of the Study**

Groups	Number	Percentage
1 <sup>st</sup> Empirical Group	3	6.25 %
2 <sup>nd</sup> Empirical Group	3	
3 <sup>rd</sup> Empirical Group	3	

**Sample Homogeneity**

Sample homogeneity was counted for the sample using skewness coefficient for the following variables (age, weight, trunks length and arm length) as shown in table (2).

**Table (2): sample homogeneity at some anthropometric variables:**

Variables	Measure Unit	Number	Mean	Median	S.D	Skewness Coefficient
Age	Year	9	20,56	20	2,242	0,804
Weight (mass)	Kg	9	59,11	58	6,936	0,121
Trunks length	Cm	9	50,33	51	3,742	1,164-
Hitting hand length	Cm	9	73,89	74	4,226	0,361-

**Table (2) shows that all skewness coefficient values in the table were between  $\pm 3$  which refers to homogeneity of variables within it and these values lie within normal distribution.**

**Groups Equalization**

For the purpose of identifying equalization among the three groups due to empirical design requirements of this study, the researcher adopted the (F) Test in contrast analysis for pre-test results as it is shown in table (3):

**Table (3): results of contrast analysis for pre-tests among the three study groups due to variables of the study:**

Scale & Tests	Number	Contrast Source	Total Squares	Freedom Degrees	Average Squares	Counted (T) Values	(Sig) Degree	Significance
Mental	9	Intergroup	20.222	2	10.111	0.271	0.772	Insignificant

Toughness		Intra-group	224	6	37.333			
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**Table (3) shows that the counted (F) values for the three groups of the study at the results of pre-test of tests in the table were all insignificant compared with the (Sig) value (0.05) as they were more at significance level (0.05) and freedom degrees (6 – 2) which shows that they are equal to all pre-tests and the same at the line.**

### Selection of Tests used in the Study

A researcher often needs to select or set multiple tests to measure some variables that are related the studied phenomena (Nouri Al Shouk & Rafea Saleh Fathy: 2004, 89).

### Mental Toughness Test

The researcher used mental toughness test after extracting reliability, validity and objectivity to be suitable factors for the sample of the study represented in sitting volleyball players. This scale was designed previously by (Mohanad Taleb Ibrahim Al Saady). Players were healthy. The researcher distributed the form on a number of professors to determine how they correspond with the sample. This test is a set of paragraphs that need to be answered.

### Main Trial Procedures:

Pre-tests: pre-tests were conducted on members of the sample (9 players) on Thursday and Saturday 26 and 28 March, 2015 at 2:30 pm at the closed sport arena at the building of Al Katoun Youth Club at Diyala Governorate as follows:

- At first day: physical tests were conducted and mental toughness forms were distributed.
- At second day: skill tests were conducted.

In addition, the researcher decided to perform homogeneity on the variable of mental toughness and as shown in table (5):

**Table (5): Homogeneity of the study sample in results of testing variables of the study**

Variables	Measure Unit	Number	Mean	Median	S.D	Skewness Coefficient
Mental Toughness	Degree	9	73.56	72	5.525	0.056

### Training Course

The researcher used a course including mental training accompanying physical training for the three empirical groups based on references and scientific literature due to available tolls and devices. Course elements were applied on the sample. Mental training of the first empirical group was used twice in the single training unit at the beginning of the program (before introduction and after finishing the main part). Mental training of the second empirical group was used once in the single training unit at the beginning of the program (before introduction). Mental training of the third empirical group was used once in the single training unit after finishing the main part. The work method is to put the three empirical groups at the same time inside the sport hall. First and second groups were taken together towards the inside of a calm and isolated room besides the sports hall to perform mental training and within the time set for it. After finishing, the two empirical groups join the third one continuing items of the training unit. After ending the main part, the first empirical group was taken once again but with the third empirical group only to the room at first to apply items of mental training at first. This can be in the form of watching a movie or a model according to what was determined for the training unit seen also by first and second empirical groups. After the third group ends watching, the first group enters to complete items of mental training including relaxing, imagination, etc. The way of applying the method was high and low intensity interval training. In extracting intensities, the researcher used beat measuring method through the following equation: (beat rate needed at certain intensity =  $\frac{\text{max beat rate} * \text{the needed intensity}}{100}$ )

The researcher used the following equation to get maximum beats:

$$\text{Max beat} = 220 - \text{age}$$

**The researcher also used the following table to keep intensity degrees (Mohamed Reda Ibrahim Ismail El Madamegheh: 2008, 94):**

Intensity No.	Percentage of max achievement	Intensity degree
1	%50 – 30	Low
2	%70 – 50	Moderate
3	%80 – 70	Average

4	%90 – 80	Under maximum
5	%100 – 90	Maximum
6	%105 – 100	Over maximum

In distributing training size, the researcher used intensity used in training in terms of repetition number and group numbers as follows:

**Table (6): intensity levels and repetitions**

Intensity percentage	Repetitions	Number of Groups
%100 – 90	1 – 5 times	2 – 1
%90 – 80	6 – 10 times	3 – 2
%80 – 70	10 – 15 times	4 – 3
%70 – 50	10 – 20 times	6 – 3
%50 – 30	20 – 30 times	8 – 4

**Rest periods can be determined through intensity type as shown in table (7)**

Intensity percentage	Rest between repetitions	Rest between groups
%100 – 90	1 : 6 or 1 : 10	4 – 5 minutes
%90 – 80	1 : 3 or 1 : 5	2 – 4 minutes
%80 – 70	1 : 1 or 1 : 3	1 – 3 minutes
%70 – 50	1 : 1 or 1 : 0.5	45 sec – 1 minutes
%50 – 30	1 : 0.5 or none	30 – 45 sec or none

Tasks started to be applied on Tuesday 31/03/2015 till 09/06/2015 as follows:

- 1- Course period (10 weeks)
- 2- Number of total training units (30 training units)
- 3- Number of training units a week (3 training units)
- 4- Weekly training days (Saturday, Tuesday and Thursday)
- 5- Time period of training unit (90 minutes)
- 6- Timing of training unit at 2.30 pm.

**Post-tests**

After ending application of the course, the researcher conducted post-tests to the sample of the study on Thursday and Saturday 11 & 13 /06/2015 at 3.30 pm.

**3. DISCUSSING AND ANALYZING RESULTS**

**Analysis of pre-test results of mental toughness scale for the three empirical groups:**

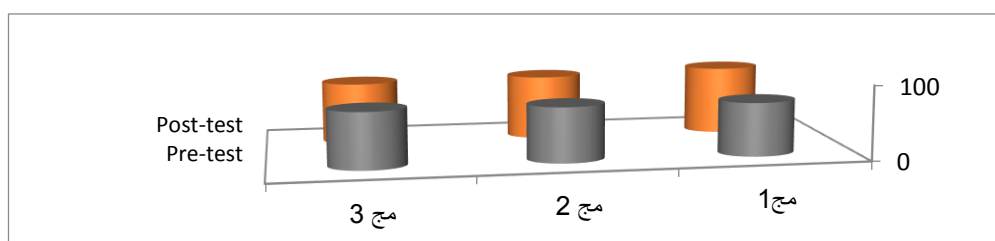
The researcher presents results of using mental toughness scale for the three empirical groups as in figure (2) and table (8)

**Table (8): arithmetic means, standard deviations S.D, differences average, differences deviation, counted (T) value and significance of the results of using mental toughness scale for the three empirical groups:**

Measure Unit / Scale	Group	Pre-test		Post-test		Differences average	Differences deviation	Counted (T)	(Sig) Degree	Significance
		Mea	S.D±	Mean	S.D±					

		n						Value		
Mental Toughness Scale	Group 1	71,67	7,638	91	1	19,333	7,024	4,768	0,041	Significant
	Group 2	73,67	6,429	85,33	2,517	11,667	4,041	5	0,038	Significant
	Group 3	75,55	3,512	82,33	2,517	7	1	12,124	0,007	Significant

N = 3 in each group, freedom degree N – 1, Significance level (0.05), total scale degree (145) and hypothesized mean is (77)



Figur (1): arithmetic means for the results of using mental toughness scale for the three empirical groups

Analysis of post-test results of mental toughness scale for the three empirical groups:

Table (9) results of contrast analysis of post-tests using mental toughness scale for the three empirical groups:

Scale	Total N	N for each group	Contrast source	Total squares	Freedom degrees	Average squares	Counted (F) Value	(Sig) Degree	Significance
Mental toughness scale	9	3	Inter-group	116.222	2	58.111	12.756	0.007	Significant
			Intra-group	27.333	6	4.556			

Significance level (0.05)

Table (10) results of (LSD) test among post-test results of mental toughness scale for the three groups of the study

Scale & Group	Means difference results	(Sig) Degree	Significance	
Mental Toughness Scale	(G.1) – (G. 2)	5,667*	0,017	Significant for the sake of 1 <sup>st</sup> Empirical Group
	(G.1) – (G. 3)	8,667*	0,003	Significant for the sake of 1 <sup>st</sup> Empirical Group
	(G.2) – (G. 3)	3	0,136	insignificant

- Difference is significant at level (0.05), measuring unit is (degree), N = (3) for each group.

#### 4. DISCUSSING RESULTS

##### Discussing results of using mental toughness scale for the three groups of the study

From reviewing table (8), it is clear that there are significant differences in results of pre- and post- mental toughness scale for the three groups of the study. Table (9) shows significant differences in post-results among the three groups of the study. In table (10), we found that significant differences for the sake of the 1<sup>st</sup> Empirical group whose players performed mental training at the beginning and the end of the main section of the training unit, while there were no differences between 2<sup>nd</sup> and 3<sup>rd</sup> empirical

groups despite the clear difference significance in post-tests. The researcher attributes this to the time factor. Mental training twice in a single training unit was for the best players. In addition, effectiveness of the mental training program is a basic and important part in the sport training program for volleyball players – sitting as it contains mental training with continuous assertion of using it during training helps players control their thoughts. This is done through dealing with cases of fear, anxiety, high excitability, limiting the effect of negative emotions during training, learning how to concentrate on motor duties, performance and avoiding attention distraction. This leads to promote mental toughness that plays an important role in realizing pressuring events and facing them as they affect player's realization and evaluation of the pressing event. They also influence the player's effective psychological sources in facing pressures he faces during competitions by controlling his psychological condition such as attention focus, emotions control, less tension, self-confidence and mental perception. Optimal performance of a player can be achieved through developing his various mental skills in order to face problems he faces during sport competition and then reaching practical goals represented in better performance and achieving the hoped results (Mohanad Taleb Eid Ibrahim El Saadi: 2012, 21).

Furthermore, the importance of mental training lies in that after reaching a degree of mastering, it helps increase the ability to predict and gives opportunity to perform in future events. This means that not only mental perception, but also any situation that can be expected in the coming competitions. This contributes to readiness to respond situations in future. The importance of mental training using mental skills also helps players reach the mental condition that enables them to prevent negative thoughts and attention distraction which overlaps with physical performance. Care with beginners is among the special importance of mental training as regular training should not wait till a player reaches international level and then mental training starts. But interest increases by focusing on juniors in this field of training in order to avoid this idea which was expressed by some players which is training through attempts and errors (Mohamed El Arabi Shamoun: 1998, 35).

Therefore, mental abilities play an effective role in the process of thoughts interaction for players in terms of preparation, physical and mental preparedness before performing a certain event or skill because the most connected matters to mental abilities are factors that lead to success of the designed plan for players in matches or competitions. The better the perception ability of a player is, the better performance level will be. Concentration on ball path, aspects related to ball hitting or focusing on total movements of players during preparation will help invest their mental abilities and employing them in the right direction.

## 5. CONCLUSIONS

- 1- Mental training helps enhance mental toughness for sitting volleyball players at the beginning and the end of the main section of the training unit with consideration of the percentage of the time dedicated for the unit.
- 2- The best way to represent mental training to sitting volleyball players is at the beginning and at the end of the main section of the training unit with consideration of the percentage of time attributed from the unit time.

## 6. RECOMMENDATIONS

- 1- Approving mental training at the beginning and at the end of the training unit during training some special physical and skill abilities of volleyball players – sitting at the special preparation stage.
- 2- During training using mental training, players have to take an idea of it to adapt with it.
- 3- It is necessary to consider scientific principles and methods in training plan during using mental training besides introducing its nature to trainers and assistants.
- 4- Asserting the legalization of using mental training especially in training camps.

## 7. REFERENCES

- Dhafer Hashem Al Kadhemi (2012): "Practical Applications of Writing Theses, Educational & Psychological Dissertations", Baghdad.
- Laila Elsayed Farahat (2007): "Measures & Tests in Sport Education", 4<sup>th</sup> Ed., Egypt, Cairo, Book Center Press.
- Marawan Abdelmegid (1999): "Measures, Tests and Evaluation in Sport Education", 1<sup>st</sup> Ed., Cairo, Dar Al Fikr Al Arabi.
- Mohamed El Arabi Shamoun & Magda Mohamed Ismail (2001): "Players & Mental Training", 1<sup>st</sup> Ed., Cairo, Book Center Press.
- Mohamed El Arabi Shamoun (1998): "Mental Training & Sport Performance", Cairo, p. 35
- Mohamed Reda Ibrahim Ismail El Madamegheh (2008): "Field Application of Sport Training Theories & Methods", 2<sup>nd</sup> Ed., Baghdad, Al Fadly Office.
- Mohanad Taleb Eid Ibrahim El Saadi (2012): "Building Mental Toughness Scale for Team Players", Master Thesis, Baghdad, Faculty of Sport Education, Baghdad University.
- Nouri Al Shouk & Rafea Saleh Fathy (2004): "Researcher's Guide in Research Writing in Sport Education", Baghdad University, Faculty of Sport Education., P. 89.