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## CONTENTS

S.No.	Name of the articles	P.No
1	A Study on the effect of Weight Training for development of Upper Body Strength and Speed among Sprinters of Hyderabad in India- Dr.Rajesh Kumar,J.Babu Lal	1
2	Impact exercises agility to develop some of the basic movements and their relationship with the Speed transitional players fencing -Assistant professor: Dr. Ishraq Ghalib,Dr. Teacher: Saja shukr	4
3	Predictive values of skill (throwing and receiving) in terms of some (physical and sensory abilities and anthropometric measurements) of the arms in the rhythmic gymnastics - Dr. Teacher: Ennis Salman Ali	7
4	Impact of using rehabilitative exercises accompaniment with ultrasound According to the indicator change momentum and strength of the legs muscles in rehabilitation of ankle joint -Prof. Suad Abdu Hussien Prof. Huda shihab,Assistant Prof. Zinah Abdulsalam	11
5	Determining factors that pull crowds to Stadiums during football matches in Ghana -Shani Bashiru	15
6	Impact of use a special exercise to develop some of the Optical capabilities & explosive strength on the performance of (jump shot) skill in basketball for the junior category -Associate Prof. Iekaa Abdulla Ali	25
7	Longitudinal relations between peer victimization in High Schools and Mental Health in College -Pro/ Serbout Abdel Malik	29
8	Coaches and Players Injuries in Cricket and Boxing during Training and Competition A Comparative Study – Shakeel Ahmad Shahid	32
9	Some Aspects of the Muscular Strength for the Volley Ball Players and Javelin Players in Athletics -Prof. Dr. Suad Abdel Hussein,Dr. Assistant Professor: Suhad Qasim Saeed,Asst. Professor : Huda Badawi Shabib	38
10	Studying Relationship between service quality and spectators' behavioral intentions of Pro League clubs of Golestan Province- FatemehNajafi, Reza Rezaeshirazi, Nasser Bai	41
11	Modelling Touch Football (Touch Rugby): Can Successful Execution Of Line Attack And Defence Be Probabilistically Modelled As Independent Events-Joe Walsh, Ian Timothy Heazlewood, Mike Climstein	45
12	Relationship Between Motor Abilities And Smash Skill Of Badminton Players -Meenu	52
13	Effect Of Six Weeks Yogic Exercises Training On Muscular Strength Development Of Athletes -Dr. Chidanand Pruhuling	56
14	Exercise During Pregnancy -Ashwini K N	59
15	Relationship between Common Sports Injuries and Football Players Lines in First Division Clubs in Republic of Yemen - Dr. Mohammed Abdulhalim Haidar Ali, Dr. Abbas Djamal, Dr. Makarand Joshi, Maeen Abdulwali Mohammed,	62
16	A Comparative Study of Mental Health and Enthusiasm among Inter university Kabaddi Players - Quadri Syed Wajeed	68

17	Comparative Study of Speed and Agility among Base Ball Players and Cricketers of Osmania University -Prof.Janagama Prabhakar Rao, Prof.L.B.Laxmikanth Rathod, Dr.B.Sunil Kumar	71
18	A Comparative Study of Anxiety among Sprinters and Cross Country Runners of Hyderabad - Dr.K.Deepa	73
19	Father methods of treatment as perceived by the Sons and their relation to television watching for students of fifth primary stage -Ph.D. student \ Assistant teacher: Zina Khalid Jasim	75
20	Intolerance and its relationship with self-esteem among students preparing teachers Institute -Ph.D. student \ teacher: Khansaa Sabri Mohammed Ali	79
21	A comparative study of physiological responses between 200 m and 400 m swimming competitions-Dr. Marwa Ali Mohamed Habaka	82
22	Comparative study to learn some of the free swimming skills, according to the simple sensory learning patterns -Assistant Prof: Mawaheb Hameed	86
23	Directiveness And Self-Esteem, And System Of Values In The Students Of Physical Education -Tadeusz L. Jasiński, Dominika Wilczyńska	90
24	Anthropometric Variables In Malaysian Swimmers of Various Age Groups -Oleksandr Krasilshchikov, Mohamed Saat Ismail & Mohd Nawawi Yasin	96
25	A qualitative study of organizational factors affecting participation in leisure time sport activities in Iran -Mehdi Khatibzadeh' Hashem Koozechian'Mohammad Ehsani, Afshar Honarvar	100
26	A Comparative Study of Agility among Cricketers and Foot Ball Players of Andhra University -Dr.N.Vijay Mohan	103
27	Effect Of Recreational Physical Activity On Mental Health Among adolescence School Students -Mr. Sarbjit Singh, Dr. (Mrs.) AnjuLata	106
28	Determining Intrapersonal Factors Affecting Participation In Leisure Time Sport Activities In Iran -Mehdi Khatibzadeh, HashemKoozechian'Mohammad Ehsani, Afshar Honarvar	109
29	Contribution Of The Mr. Universe Sri Manohar Aich In The Domain Of Physical Culture -Miss. Punam Shaw,Dr. Sanjib Mridha	112
30	Effect Of General Conditioning Program On Agility, Explosive Leg Strength And Speed Performance Of College Girls- AnkanSinha,Meenakshi Saini	115
31	Sports Psychology And Its Methods -Kulwinder Singh	120
32	Study on Effect of Weight Training on the Performance of Long Jumpers of Khammam District -I. Pavan Kumar	123
33	Comparison Of Selected Physical Fitness Variables among Rem And Nrem Sleeping Pattern Men inter-Collegiate Players -Dr. A.Pallavi, Dr. N.Vijay Mohan	125

## **A Study on the effect of Weight Training for development of Upper Body Strength and Speed among Sprinters of Hyderabad in India**

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**Osmania University, Hyderabad, T.S.India**  
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### **Introduction:**

Weight training is a common type of strength training for developing the strength and size of skeletal muscles. Weight training uses a variety of specialized equipment to target specific muscle groups and types of movement. Sports where strength training is central are bodybuilding, weightlifting, power lifting, and strongman, Highland games, shot-put, discus throw, and javelin throw. Many other sports use strength training as part of their training regimen, notably; mixed martial arts, American football, wrestling, rugby football, track and field, rowing, lacrosse, basketball, baseball and hockey. Strength training for other sports and physical activities is becoming increasingly popular.

### **Sprinting:**

Sprinting is the act of running over a short distance at top speed. Speed along with the upper body strength is required by the sprinters to achieve the high performance in sprinting events. The arms are responsible for maintaining a rhythmic motion in tune with the lower body. The shoulders should be properly positioned and flexible enough to allow the diaphragm to expand unimpeded and provide proper airflow. Most importantly, the torso must have a stable foundation to prevent excess rotation during the running motion.

### **Sprinting Events:**

100M Run, 200 M Run and 400 M Run

### **Previous Studies:**

S.Jayaraman (2011) Asian Journal of Physical Education and Computer Science in sports- Vol.5- Effect of Weight Training and Fartlek Training on Selected Physiological Variables among College Men Students:

His Studies there is a significant improvement of Physiological variables due to Weight Training.

Al Moslim Hasan (2014) Journal of Physical Education and Sport- Effect of combined Plyometric and Weight Training on speed of male students with different body fat

Combined Plyometric and Resistance Training has positive effects on fitness variables such as speed (Ronnestad et al 2008, Rahimi et al 2006, De Villareal et al 2011 etc

### **Methods and Materials:**

The sample for the present study consists of 40 Male Sprinters of Hyderabad out of which 20 are experimental group and 20 are controlled group.

The following are the weight training exercises were given three times a week for eight weeks to the experimental group sprinters.

Biceps Curls,Triceps Curls,Bench Press,Back Press,Bent Over Rowing,Up right Rowing,Wrist Curls,Half Squats,Full Squats,Dead Lifts,Good Morning,Side Wards Bend,Heel raising with weights,Leg Press,Push ups, Sit Ups,Medicine Ball ExercisesDumbbell Exercises

The above exercises used as per the requirement in the three sessions in a week. The controlled group were given general training of sprints.To assess the Upper Body Strength and Speed Pre Test and Post Test were conducted in Pullups Test and 30 M Run

**Pull Ups Test:**

The pull up test is widely used as a measure of upper body strength

equipment required: Horizontal overhead bar, at an adequate height so that the participants can hang from with arms fully extended and feet not touching the floor.

procedure: Grasp the overhead bar using either an overhand grip with the arms fully extended. The subject then raises the body until the chin clears the top of the bar, then lowers again to a position with the arms fully extended. The pull-ups should be done in a smooth motion. Jerky motion, swinging the body, and kicking or bending the legs is not permitted. As many full pull-ups as possible are performed.

**scoring:** The total number of correctly completed pull-ups is recorded. The type of grip should also be recorded with the results

**30 Meters Run:**

purpose: The aim of this test is to determine acceleration and speed.

equipment required: measuring tape or marked track,stopwatch or timing gates, cone markers, flat and clear surface of at least 50 meters.

procedure: The test involves running a single maximum sprint over 30 meters, with the time recorded. A thorough warm up should be given, including some practice starts and accelerations. Start from a stationary position, with one foot in front of the other. The front foot must be on or behind the starting line. This starting position should be held for 2 seconds prior to starting, and no rocking movements are allowed. The tester should provide hints for maximizing speed and encouraged to continue running hard through the finish line.

**results:** Two trials are allowed, and the best time is recorded to the nearest 2 decimal places.

**Results and Discussion:**

This study shows that due to the weight training exercises there is a improvement of Upper body strength and speed among the experimental group of Sprinters and controlled group are not shown any significant difference due to the general training of sprints

Table I:Paired Samples Statistics of 30 M Run and Pull Ups of the Sprinters of Experimental Group and Control Group

			Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Experimental Group 30M Run Pre-Test		3.9300	20	.32461	.07258
	Experimental Group 30M Run Post-Test		3.7600	20	.21861	.04888
Pair 2	Control Group 30M Run Pre-Test		3.9600	20	.29272	.06545
	Control Group 30M Run Post-Test		3.9950	20	.31200	.06976
Pair 3	Experimental Group Pull Ups Pre-test		7.7000	20	1.52523	.34105
	Experimental Group Pull Ups Post-test		9.3000	20	1.71985	.38457
Pair 4	Control Group Pull Ups Pre-test		7.7000	20	1.52523	.34105
	Control Group Pull Ups Post-test		7.5500	20	1.63755	.36617

The Experimental Group 30 Mean in Pre Test is 3.93 and Post Test is 3.76 there is a decrease of the timing from 3.93 to 3.76 due to the Weight Training the Control group Mean in Pre Test is 3.96 and increased to 3.99 due to the general training, there is no faster improvement in the Control group. There will be effect of Weight training for development of speed among sprinters.

The Experimental Group Pullups Mean in Pre Test is 7.70 and Post Test is 9.30 there is a increase of Pullups from 7.70 to 9.30 due to the Weight Training the Control group Mean in Pre Test is 7.70 and decreased to 7.55 due to the general training, there is no faster improvement in the Control group. There will be effect of Weight training for development of speed among sprinters.

Table II: Paired Samples Correlations of Sprinters in 30 M Run and Pull Ups Test of Experimental Group and control group

		N	Correlation	Sig.
Pair 1	Experimental Group 30M Run Pre-Test & Experimental Group 30M Post-Test	20	.960	.000
Pair 2	Control Group 30M Run Pre-Test & Control Group 30M Run Post-Test	20	.972	.000
Pair 3	Experimental Group Pull Ups Pre-test & Experimental Group Pull Ups Post-test	20	.919	.000
Pair 4	Control Group Pull Ups Pre-test & Control Group Pull Ups Post-test	20	.955	.000

**Conclusions:**

Upper body strength will help sprinters to maintain good start mechanics and also helps to counter the torque produced the lower body. In this study due to the weight training exercises there is a improvement in upper body strength and speed among sprinters.

**Recommendations:**

It is recommended that similar studies can be conducted on other events in athletics and also female sprinters. This type of study is useful to coaches to give proper coaching for development of motor qualities for improvement of performance in sprints.

**References:**

Wikipedia, Weight Training  
 Wikipedia, sprints  
 www.topendsports.com  
 Asian Journal of Physical Education and Computer Science in sports

## Impact exercises agility to develop some of the basic movements and their relationship with the Speed transitional players fencing

Assistant professor: Dr. Ishraq Ghalib  
Dr. Teacher: Saja shukr

### Introduction and significance of the research:

Fencing is still up to the present experiencing a lot of obstacles to the process of development of this game for the better. It is noticeable that the training modules that apply to the athletes in this game often are devoid of agility exercises. Agility have a significant and essential role in the performance of the basic movements and move quickly on the field and.

#### 1-1 -Research problem:

through the two researchers experience in this field, they noted that most trainers are not dependent on to give agility in training modules exercises to develop the level of their players respects (functional and physical and skill), the two researchers designed exercises proposed especially for agility to determine Their impact to develop the players' level And find out their relationship to the transitional speed on the field.

### Research objectives:

- 1- Identify the (Agility exercises) to the players (Baghdad Club girl) fencing.
- 2- Identify the impact of Agility exercises on some basic movements (move forward and retreat jump - Counterattack respond) among players (Baghdad Club girl)
- 3- Find out the relationship between (the basic movements and transitional speed) among players (Baghdad Club girl).

### Research hypotheses:

- 1- Agility exercises (which had been prepared) have a positive Impact to develop some basic movements.
- 2- There is a statistically significant relationship between some (basic movements and transitional speed) among players fencing

### Delimitation and limitation:

Researchers rely on a sample of fencing Players (Baghdad Club girl). (12) Player and selected intentional aged (19-23 years) at a rate of length (165 cm), for the period from 10\11\2014 (to) 01\04\2015.

Fencing Hall at the College of Physical Education for Girls - Baghdad University

The researchers did not take into consideration the nutritional habits followed by those injured players or their behavior outside the times of treatment.

### Research Methodology:

The researcher used the experimental method to fit the sample and the nature of the research problem.

### Research sample:

Researchers rely on a sample of fencing Players from (Baghdad Club girl), (12) Player, and selected intentional aged (19-23 years) at a rate of length (165 cm), for the period from 10\11\2014 (to) 01\04\2015.

Fencing Hall at the College of Physical Education for Girls - Baghdad University, They were divided into two groups, an experimental and a control group (6) players, (was used a setting arbitrator experimental design, in (design groups), through pre and posttests.

### Exploratory experience:

Exploratory experiment was conducted on (3) players For the purpose of:

- 1- To identify the validity of the instruments and tools used
- 2- The time it takes for tests
- 3- The efficiency of support staff

**The research procedures:**

**Pretest:**

Pretests: conducted on the date (11/28/2014), after creating all the tools and supplies for and explain how to implement and apply the tests in detail and the number of attempts for each player and how to calculate degrees.

**The main experience:**

Have been application agility exercises proposed by (24) training unit applied to the experimental group over the (6) weeks of (4) training unit in the week, an average of 90 minutes each training unit. And the control group is working on exercises that are given by the coach.

**Agility exercises proposed used in the research:**

- 1- From standby mode (en guard) jump and move forward a single step on a drawn line on the ground in length (10 meters) then retreat and jump step back and then jump and move forward ahead to the end of the line.
- 2- From standby mode (en guard) jump and move forward a single step, then retreat and jump step back, then jump and move forward a single step to do the performance of the arrow movement.
- 3- From standby mode (en guard) jump and move forward a single step, then the player rotation around himself one cycle then retreat and jump step back then the player rotation around him one cycle.
- 4- From standby mode (en guard) jump and move forward a single step, then the player rotation around him one cycle and then jump back by step.
- 5- From standby mode (en guard) jump and move forward in three steps with the player rotation around him one cycle then Jump return step back.
- 6- From standby mode (en guard) jump and move forward a single step and jump back by step and the performance of stabbing movement and return to the standby.
- 7- From standby mode (en guard) jump and move forward a single step (to the right once and once to the left) on the line drawn on the ground in length (10 meters), then retreat (to the right once and once to the left).
- 8- Drawing (5) circles on the ground in different directions with the numbering of these circuits then the player in the jump in the required circuits at speeds and moving to other circuit by instructing.
- 9- Progress and then jump in two steps (rotation around the body) with a jump by step forward and do the movement stabbed.

**Posteriori tests:**

Conducted on (20\03\2015) after completion of the exercises that have been applied within the proposed training curriculum on the Fencing Hall of the College of Physical Education for Girls and under the same spatial and temporal conditions that were conducted in the Pretest tests

**Statistical methods:**

Use the statistical program (spss) to process the results.

Display and analyze test some basic movements related to agility experimental group results table (1)

tests	pre tests		post tests		Difference between Pretest	Difference between posttest	value (t) calculated	Significance
	s	x	s	x				
move forward and retreat jump	5,5	1,1	8,4	1,8	2,9	0,66	15,11	moral
Counterattack respond	5,9	0,7	8,58	0,9	2,6	0,98	9,38	moral
Value of (T) when the Tabulated degree of freedom 11 and the possible error 0, 01 = 3, 11								

Through the table (1) shows mean and standard deviations and the value of the differences between (pre and posttests) for the two tests move forward and retreat jump - Counterattack respond), and the value of (T) calculated the experimental group as it shows the value of (t) calculated (15.11), (9.38 ) for the two tests and compared with the value of (T) Tabulated see that the value of (T) calculated (moral) which is greater than the value (T) Tabulated.

Table (2)

tests	value of (R) calculated	Significance
transitional speed	0,85	moral
move forward and retreat jump		
transitional speed	0,93	moral
Counterattack respond		

Value of (R) when the Tabulated degree of freedom (10) and the possible error (0, 01 = 0, 70)

Through the table (2), which shows the correlation between the transitional speed test (move forward and retreat jump- Counterattack respond), which appeared moral of the two tests, where appeared the value of (R) calculated (0.85) and (0.93) consecutive.

**Discuss the results:**

Through the search results noticed two researchers that there is development in the level of performance of female athletes to some basic movements through the (moral results) and the emergence of the difference between the pre and posttests the experimental group and affected by the program prepared by the two researchers, because the agility of the important physical elements for each player duel, as the game fencing depends on the speed of movements and change direction depending on competitor movement and take appropriate situation, that the correct initialization to the body with the right timing and speed recording touches one after another.

**Conclusions:**

- 1- Agility exercises a positive influence in the development of the level of performance of female athletes.
- 2- Element Agility of great importance in achieving good results in competitions.

**Recommendations:**

- 1- Necessity of using of trainers for Agility exercises during the training modules.
- 2- Work on the development of athletic abilities and some other skills through Agility exercises to reach the highest level.

## **Predictive values of skill (throwing and receiving) in terms of some (physical and sensory abilities and anthropometric measurements) of the arms in the rhythmic gymnastics**

**Dr. Teacher: Ennis Salman Ali**  
**Baghdad University \ college of Physical Education and Sports Science for Girls**

### **Introduction and significances of research:**

Test and measurement science still puts his mark effectively in many sports toward identifying the best athletes and selected according to the requirements and specificity of each game and thus longer necessary to follow the example of indicators and determinants that result from the study of standards and (physical, sensory, etc.) for the athletes in order to choose the most appropriate of them, and here does not depend on only their choice, But the test and measurement tasks continue to predict the capacity of the selected elements, and the health of the expectations that have put based on anthropometric and physical preparations and the possibility of development of the best down to the high results, From here we find that many of the elements and requirements (physical & sensory) physical measurements should be studied and accurately identified and focus on them in order to put qualifying in sports teams & clubs elements, due to the difficulty of the skills that lead in gymnastics rhythmic and high difficulty skills values.

### **Research problem:**

From here researcher believes to reach the predictive values of the skill of throwing and receiving for being one of the important skills in (gymnastics rhythmic) as well as difficult as it provides predictability of approved my appreciation to the level that be upon will be some female students at the limits of what they own capacities and the preparations hoping to contribute simply to preserve this game.

### **Research Objectives**

1. Identify the relationship between capacity (physical, sensory, anthropometric measurements) of the arm, (and performing skill throwing and receiving) in rhythmic gymnastics.
2. Identification of the contribution of some capacity (physical, sensory, anthropometric measurements) of the arms, and the performance skill throwing and receiving in rhythmic gymnastics.
3. Reach the predictive equations for the performance of the skill of throwing and receiving through some capacity (physical, sensory, anthropometric measurements) of the arms in rhythmic gymnastics.

### **Research hypotheses:**

- 1- There are correlation statistically significant differences between some capacity (physical and sensory and anthropometric measurements of the arms), and the performance of the skill of throwing and receiving in rhythmic gymnastics.
- 2- The contribution of some variation of capacity (physical, sensory, anthropometric measurements the arms), and the performance of the skill of throwing and receiving in rhythmic gymnastics.

**Delimitation and limitation:**

The study sample consisted female students the first stage their number (36) students for the academic year (2014-2015)

For the period from 27\ 03\2015 until 04/04/2015, in the interior hall of the College of Physical Education and Sports Science for Girls

The researchers did not take into consideration the nutritional habits followed by those injured players or their behaviour outside the times of treatment.

### **Research Methodology**

The researcher used the descriptive approach in a manner connectionist relationship between variables appropriate to the research problem.

The research sample:

The research sample female students the first stage of the academic year (2014 \ 2015), have been numbered (36) students, students who did not complete the tests, as well as the players clubs who did not abide by the always within the college were excluded from the study, the sample ratio from the original community reached (45%).

First: Description of physical tests:

1. Test measure the strength of grip the arms:

The test is working on the measure (grip strength) through the player caught measuring device (grip strength) and you press strongly grip on the device and record the weight that mark it device unit (Net \ kg), given to the player two attempts is calculated best attempts.

2- Medical test throw the ball the farthest distance with both his arms (weighing 2 kg).

The test measures the explosive power of arms, throwing the player the ball from behind the head and forward to the farthest distance with both his arms, calculated the distance recorded by the ball from the beginning of the shooting to the place fell into it (the unity of the meter), and gives the laboratory two attempts taken the best one of them.

Second: Description of sensory tests:

1- Test (Kinetic frequency rate):

The test measures the Kinetic field (muscular and nervous system), the player will a drip inside four squares painted on paper, the dimensions of (6x10 cm), and at full speed and move from square to another without stopping during the time (40 seconds) for each square and are calculated how many points scored during this time, the player is given only one attempt.

2- Test sensation of direction:

The test measures the ability to sense of direction by the player, the underlying trends drawing on the wall are clearly the player seeing these trends and accurately identified with close its eye, indicate the degree of deviation from the right direction in degrees, give to the player only one attempt.

Third: Anthropometric measurements of the arms:

1- Measure the lengths of the arms include:

2- Length of the arm

3- The length of the upper arm

4- The length of the forearm

5- Length of the Desist (longitudinal axis)

6- Length of the Desist (transverse axis)

Measurements of body circumference

1- Forearm arm circumference

2- Upper arm circumference arm

Evaluation of performance skills:

The Evaluation of the skill of throwing and receiving a maximum from the (10 degrees), and evaluation from the skill (through height of throwing, and not to fall of tool, fortitude and poise the body, acceleration performance, courage and confidence in performance.

Exploratory experiment:

Conducted in the history of 03.03.2015 aimed at identifying the safety and accuracy of the instruments and tools and knowing the time required to carry out the experiment and the difficulties that may occur as well as the readiness of the support staff and find out their duties, and sample exploratory experiment was (8) female students from outside the core sample research

The main experiment:

The implementation of tests and measurements on sample research in the history (03/27/2015) until (04/04/2015), sample results recorded in the forms prepared for this purpose, as it has been taking into

account the implementation of The test according to the instructions correctly and to keep quiet and order, and make utmost effort in performance to achieve correct results serve task of researcher.

**Statistical methods**

1. Mean.2. Standard deviation.3-simple correlation coefficient (Pearson)

4. The coefficient of determination (R).5. Multiple linear regression equation.

Display and analyse test results (throwing and receiving skill and physical abilities).

Shows the (multiple correlation coefficients between the variables under consideration and the percentage of their contribution to the quality of reconcile model. Table (1)

Variables	multiple correlation	R	(F) value	The level of error
throwing and receiving skill	0.912	0.831	42.72	0.000

The contribution of physical abilities Shows the in (skill throwing and receiving) standard error and the value of (T) calculated, and the level of the error. Table (2).

Variables	R	standard error	value of (T) calculated	Level of significance
Fixed limiting	6.483	1.556	4.166	0.000
Grip strength	0.190	2.472	2.88	0.025
Throwing of medical ball	0.170	2.013	3.027	0.018

From tables (1-2) is clear that the contribution of physical capacity in the implementation of (the skill of throwing and receiving) pillar with a significant correlation contribute to the success of this skill and raise the level of performance, as it can not to overlook the role which posed by the physical abilities as a requirement is important in many sporting activities especially in the throwing skills that require power and speed in the implementation of that skill.The contribution of physical abilities and their impact on the skill of throwing seems logical as required by the skill of the performance of the Throwing maximum explosive power instantaneous, and speed of moving towards the tool to receive it without falling, and so the equation predictive of skill throwing and receiving pillar in terms of physical abilities would be:

$$(Throwing\ of\ medical\ ball \times 0.170) + (Grip\ strength \times 0.190) + 6.483 =$$

Display and analyse test results (the skill of throwing, receiving and sensory capacity).

Table (3) Shows the multiple correlation coefficients between the variables under consideration and the percentage of their contribution to the quality of reconcile model.

Variables	multiple correlation	R	(F) value	The level of error
throwing and receiving skill	0.673	0.452	42.72	0.001

Table (4) Shows the multiple correlation coefficients between the variables under consideration and the percentage of their contribution to the quality of reconcile model.

Variables	R	standard error	value of (T) calculated	Level of significance
Fixed limiting	3.010	2.102	3.010	0.087
Kinetic frequency	0.005	0.025	1.532	0.052
Sense of direction	0.097	0.012	3.004	0.076

From tables (3-4) shows that the contribution of sensory abilities that have been measured through the tests (Kinetic frequency and a sense of direction) in the skill of throwing and receiving Model, (appeared with significance, that sense of the nervous system through the field Kinetic and a sense of direction of actors capacity accurate implementation of skill, good receivers Model after throwing up or in the direction of motion path) so the Kinetic sense of increasing the effectiveness of performance and develops for the better, that mastering the student the right direction and the expansion vision to the field of movement will look like that instrumental in the skill of throwing and receiving Model, Therefore, the equation predictive skill for throwing and receiving Model in terms of sensory capacity would be:

$$(Sense\ of\ direction \times 0.097) + (Kinetic\ frequency \times 0.005) + 3.021 =$$

Display and analyse test results (the skill of throwing, receiving and anthropometric measurements.

Table (5) Shows the multiple correlation coefficients between the variables under consideration and the percentage of their contribution to the quality of reconcile model.

Variables	multiple correlation	R	(F) value	The level of error
anthropometric measurements	0.962	0.925	51.433	0.00

It shows the percentage contribution of anthropometric indicators in skill (throwing and receiving) standard error and the value of (T) calculated, and the level of the error. Table (6)

Variables	R	standard error	value of (T) calculated	Level of significance
Fixed limiting	0.795	2.171	3.45	0.077
Length of the arm	0.851	4.170	2.864	0.005
length of the upper arm	0.211	3.633	2.864	0.003
length of the forearm	0.646	3.521	3.057	0.018
Length of the Desist (longitudinal axis)	0.795	3.456	2.280	0.004
Length of the Desist (transverse axis)	0.700	3.383	2.410	0.031
Forearm arm circumference	0.531	3.552	3.402	0.028
Upper arm circumference	0.223	2.838	3.593	0.018

From tables (5.6) shows that the contribution of anthropometric measurements in the skill of throwing and receiving Model has shown (moral links relationship), these indicators effectively contribute to the skill of throwing (shall be a logical relationship), everyone knows that the role which physical measurements contribute to the Games Sports in general and gymnastics rhythmic in particular, and so the physical measurements under consideration influence clearly the length of the parties and the their consistency necessary for the implementation of (hard skills of throwing and receiving), these measurements contribute to absorb the technical requirements in gymnastics rhythmic and skill throwing in particular. The prediction equation (for skill throwing) in terms of anthropometric indicators would be:

$0.795 + (\text{Length of the arm} \times 0.851) + (\text{length of the upper arm} \times 0.211) + (\text{length of the forearm} \times 0.646) + (\text{Length of the Desist (longitudinal axis)} \times 0.795) + (\text{Length of the Desist (transverse axis)} \times 0.700) + (\text{Forearm arm circumference} \times 0.531) + (\text{Upper arm circumference} \times 0.223)$ .

Conclusions:

1- The physical abilities under consideration (grip strength, throwing medical ball) high contribution rate in the prediction of skill (throwing and receiving Model in rhythmic gymnastics)

2- The sensory abilities (Kinetic frequency, a sense of direction) contribution rate is less than the physical abilities and anthropometric measurements in the level of skill (throwing and receiving Model in rhythmic gymnastics).

3- The anthropometric measurements under consideration (arm length of the, the length of the upper arm, forearm length of the, length of the stop, the longitudinal axis, length of the transverse axis to stop, the area around the forearm, upper arm circumference), an effective contribution in the skill of throwing and receiving Model.

4 - The technical requirements (for skill throwing) have affected the privacy of identify the most important variables upon which the predictive equations that resulted from the research.

Recommendations:

1- Adoption of predictive equations that resulted from research in the selection and training of sports talents in this game.

2- Conducting research and studies similar to the skills and tools rhythmic gymnastics and other.

## **Impact of using rehabilitative exercises accompaniment with ultrasound According to the indicator change momentum and strength of the legs muscles in rehabilitation of ankle joint**

**Prof. Suad Abdu Hussien  
Prof. Huda shihab  
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### **Introduction and significance of the research:**

The ankle injuries are the most common injuries, it could reach 85% of joints injuries and that is for the fact that the ankle joint is one of the most complex body joints, The injuries are often torn or stretched ligaments that connect the bones of the ankle, this injury occurs as a result for The bottom of the body different movements Which are not commensurate with the amount of pressure put on this area of the ankle body. The ankle area consists of a total of bones, nerves and ligaments submitted to a group of muscles ankle injury often occurs as a result for violent sports that requires sever side movements as in tennis and basketball and it may happen due to other sports like hiking individuals who are not athletes and of little movements are also exposed to this injury and that's because ankle ligaments lacking its strength and its ability to stretch during movement. A lot of athletes, doctors and experts in the field of sports medicine have dealt with studies within the subject of preparing rehabilitative curriculum to such injured individuals as they differ in points of view in terms of the duration of the rehabilitative curriculum and methods of using rehabilitative exercises depending on the severity and intensity of injury.

### **Research Problems**

The last years have witnessed great development and versatile in the tools and techniques used in physical therapy and rehabilitation and because this treatment does not entail any side effects from using it and it can be used for all ages and stages and for different types of injuries and illnesses and disabilities and to all parts of the body , By including many different means and it aims to reach the maximum level in the rehabilitation of the injured and returning to sports activities or for the rehabilitation of non-athletes injured . And through researchers look on the research and the studies of the rehabilitative aspect of physical therapy , they did not notice any study on the practical side of this issue with linking the mechanical side, which led them to have this experience to know how to take advantage of building an approach based on scientific grounds, such as Bio-mechanics in the development of rehabilitation programs associated ultrasound According to the change of momentum and leg strength in rehabilitation of ankle joint and to maintain the vital organs fitness in the body especially when you drop for a long time from physical activity and a long lay when injured or ill.

### **Research objectives**

- 1-Prepare a rehabilitation approach according to some Bio-mechanics physical indicators (momentum change, muscle strength muscle working on the ankle joint).
- 2- Identity the impact of the rehabilitation approach change momentum and muscle strength of the muscles working at the ankle joint indices.

### **Hypotheses**

- 1- There are significant differences between pre and post tests in the change momentum and muscle strength of the muscles working at the ankle joint indices in a sample search result of the use of shaping the curriculum according to these indicators.

### **Delimitation and limitation**

The research sample consisted of injured players, with a twist and a torn ankle joint ligaments (15 injured), for the period from 15.01.2014 until 15.03.2014. The performance of the qualifying program for research experience in the Peace Center for rehabilitation and physical therapy/ Baghdad - Zayona, and the indoor hall in the physical education college for girls

The researchers did not take into consideration the nutritional habits followed by those injured players or their behavior outside the times of treatment.

### **Research methodology**

The researcher used the experimental method to fit the sample and the nature of the research problem.

#### **Research sample**

The researchers chose to sample their research in the intentional way and it included 15 injured males with a twisted and torn ankle joint after being diagnosed by a specialist doctor for the injury case.

They were selected from the one's attending the peace physical therapy center and they were nominated by the specialist after confirming they're diagnosed by x-ray and CT (MRI) scan magnetic.

Rehabilitative programs were applied on them after completing the drug therapy period (NSAIDs).

#### **Tests used in the research**

First test: the change in the speed direction (change in momentum)

It is just like (Barro Method) test with the use of a camera to film the movement performance.

- The purpose of the test: Measuring the efficiency of the ligaments when you install the foot and change direction (change in momentum)

-Tools used: 5 pillars with a camera for filming and a whistle

- The performance of the test Method: the same performance (zigzag test in the Barro Method) where the camera is placed (15m) form the mid-mileage point and rising its lens off the ground (122cm) allowing the camera filming the full movement from the moment the person who is tested starts at the first pillar till the end of the movement at the fifth pillar the camera starts running at the start signal (whistle) Giving three attempts and taking the best attempt.

- Recording: The film is analyzed after converting it to a CD by the electronic calculator (Pa) using (Timer) programs which we measure time speed between the second and the third pillar, the third and the fourth pillar, and the injured foot is installed at the change in direction to know the first speed and the second and the change in momentum index is extracted by using the following relationships:

Change in momentum = momentum<sub>2</sub> - momentum<sub>1</sub>

Change in momentum = (mass x speed<sub>2</sub> – mass x speed<sub>1</sub>)

This gives the concept to push the exerted force at this moment as the decrease in this value indicates the efficiency of the ligaments strength for the injured man when the direction is changed.

Second test: selecting the explosive power for the legs

- The purpose of the test: measuring the explosive power of the

Muscles of the legs

- Tools used: wall, measuring tape, A burke powder

- The performance of the test Method: the person who is tested stands after immersing his injury with (A burke powder), he raises his arm containing the full material on it to put a mark on the wall with his fingers and he should be noted not to raise the ankles off the ground and the equality between the level of the shoulder from the arms after that he swings both arms up high together then down behind him with knees bent half ( straight angle ) then extending the knees to jump vertically to the maximum possible height and putting a new mark with arm immersed in (A burke powder) full on it for every person who is tested two tries the best one is recorded .

- Recording: The distance between the first and second relationship on how much the person who is tested has an explosive power measured in centimeters.

#### **Prior tests**

The researchers did the prior tests on Saturday 14/1/2014 at ten o'clock in the morning and in the inner hall in the Faculty Physical Education for Girls.

### The Qualifying Program

The researchers prepared a rehabilitation curriculum. After looking at the Arab and foreign sources and conducting interviews with experienced and experts ( ) included in the following curriculum.

A warm-up for the duration (5-10 minutes)-

- Curriculum includes (24) rehabilitation unit (3 units) in the week curriculum continued to (8 weeks).
- The one rehabilitation unit period is (20 minutes) without time for warm up.
- Ultrasound physiotherapy period is (10 minutes)
- Physical therapy by the rehabilitation exercises period is (10 minutes)
- Researchers took into account the intensity where the intensity is (30%)
- repeating the same exercise through rehabilitation unity starts with 5 times) increases with time
- Rest between one exercises (5-1 minutes)

posterior tests

The researchers had the posterior tests on Thursday (15.03.2014) the researchers took into account the same conditions during the prior tests.

### Statistical methods

The researchers used statistical bag (spss) to process data statistically

### Presentation and discussion of results

Table 1

Showing mean and standard deviations and the value of (T) calculated variables in research

The variables	Measuring unit	Prior tests		Posterior tests		T-value		Significance
		s	x	s	x	Tabular	Calculated	
Change in momentum	Kgm.m/s	29.33	221.23	24.11	203.54		7.69	Moral
The explosive power for the legs	M	0.74	1.05	0.53	1.32		3.42	Moral

Through (table 1) we notice the incorporeal showing in the change in momentum test between the prior and posterior tests researchers said that the posterior tests showed the difference to the followed rehabilitation program which includes treatment by ultrasound waves That have thermal effects on the skin and muscles as a result of absorption and increase tissue temperature in the special muscles and reduce muscle stiffness and increase the kinetic term of the joint As well as help increase the absorption of the fabric as in skeletal muscles and nerves and raise the temperature of collagen in tendon and is working to improve the coherence of fiber-producing cells fiber components . In addition to the finished rehabilitation exercises all lead to improve muscle work and efficiency and the strength of tendon that lead to the performance of the movement naturally, and balanced and return to normal life.

When we notice the explosive power for the legs test in (table 1 we find that there are incorporeal conditions between the prior and posterior tests And in favor for the posterior researchers show the difference to the impact of rehabilitative programs prepared by the researchers Which contains ultrasound waves it led to the development of muscle groups operating in the tidal movements and bending the ankle joint and it affects the muscular contraction time and the diastolic is less than what can be guaranteed that a decrease in the pushing time and this shows the evolution of the efficiency of these muscles and motor within ranges of performance, which relied on the shed force during ranges joints Responsible for movement.

### **Conclusions**

1- The prepared rehabilitation program is a positive effect in the variable (change in momentum) of the research sample

2- The prepared rehabilitation program is a positive effect in the variable (explosive power of the two legs to the research sample

### **5-2 Recommendations**

1- Emphasize the attention on the messages of physical therapy during injuries and after finishing the critical condition of the injury

2- Emphasis on strengthening the ligaments of the joint body through rehabilitative exercises

3- Give a scientific special first aid and physiotherapy in the colleges of physical education and of a practical nature.

## **Determining factors that pull crowds to Stadiums during football matches in Ghana**

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### **Abstract**

This study carried a qualitative exercise aimed at establishing the factors that shape fans decision to attend football matches. Nine fans were drawn into the study in a purposeful manner to elicit original data. Data was collected through face to face semi structured interviews with the help of an interview guide. All interviews were audio taped, transcribed and dominant themes coded for analysis of data. The results of the study showed that the availability of star players' cost of attendance, team affiliation, media promotion and fair officiating serve as catalyst to fan attendance to stadiums. Television broadcasting attracted mixed results with stadium facility emerging as a weak determinant to stadium attendance. The study establishes that the decision to attend matches at the stadium is a function of several factors and that no single factor pushes people to the stadium. This notwithstanding, the availability of star players will greatly influence fans to the stadium. Cost of attendance to matches is a key economic factor and finds space in decision making to attend stadiums. Policy makers and practitioners will find this study useful because it comes over as a seminal research that provides empirical evidence to football authorities to underpin their policy decisions on valued information.

Key words: Football, Premier league, factors, spectators, influence

### **Introduction**

Fans have the option of watching football at stadiums or on television. Matches domestically and internationally all attract football fans to the stadium or get glued behind their television sets to catch a glimpse of the action. The increasing number of fans who follow football at stadiums and on television has inspired many sports analysts to conclude that football is an ever rising sport in terms of fellowship worldwide (Szymanski 2005). A major source of income to finance the ever increasing expenditure of football teams emanates from spectator attendance at stadiums (Dietl and Hasan 2007).

In the view of Fallahi, Asadi and Khabiri (2011), football spectating is now a worldwide phenomenon with vibrant following. Countries where football was considered a marginal sport has seen football emerging as a dominant sport with its fans base assuming solid dimensions.

Borland and MacDonald (2003) define fans as a collection of persons with a strong emotional affiliation to a team or player. James and Ridinger (2002) posit that people with immense love for the game of football are deemed to be fans. Fans secure tickets at a cost to watch games and are in jubilant mood when their favorite teams chalk victories. Fans with a strong attachment to a team often are left in melancholic moods when their teams suffer defeats. What are the under currents that drive fans to part with money and are caught in a frenzy in moments of victories or sorrowful when their teams lose is worth exploring (Armstrong, 2002). Consequently, researchers have made appreciable inroads in the quest to find answers to questions bordering on factors that spur fans to stride to the stadium (Cohen & Avrahami, 2005).

Players lift up their performance when fans give them a cheer during football contests. Kelly, Allyn and Bacon (1996) revealed that players get fired up and often exhibit remarkable work rates on the field of play when the atmosphere around the stadium is charged. It is a common spectacle to see players especially captains urging fans to cheer their team in order to motivate players. Football coaches will also occasionally send gesture to fans to be at full voice in an attempt to get players animated to play. When crowds fill stands at the stadium, it creates an atmospheric pressure on players to give off their best. Cheng, Chen and Yao (2004) opined that players respond to massive crowds at stadiums in a positive way by displaying sublime skills and pushing for victories to put their teeming fans in a jubilant mood. Spectators are central in supporting the finances of a team through stadium attendance and are crucial in making football an exciting game to watch. In the explanation of Cheng (2007), the success of a game is underpinned by the level of spectator attendance emphasizing that the glow and attraction of football will diminish if spectator numbers diminish.

Baimbridge, Cameron, and Dawson (1996) reported a downward slide in spectating at stadiums in situations when matches are broadcast live. Fans numbers record a significant downturn when matches are broadcast of free to air television. Garcia and Rodrigues (2002) found a considerable decline in fan numbers at stadiums when football matches are beamed live on television. Televised matches of UEFA Champions League result in drastic decline in fan numbers attending division three and four matches in England when there is a concurrence in the matches (Forest and Simmons, 2006). The Scottish Premier League has its fair share of the negative impact of television broadcast on stadium attendance. In a study conducted by Allan and Roy (2008), it emerged that home team supporters' patronage of matches suffer from 30% drop when matches are broadcast live on Television.

In recent times football clubs have identified and secured new sources of revenue with broadcasting rights gaining prominence (Dietl and Hasan 2007). It is now common sight to find football fans behind television sets watching live matches. In Ghana, television studios have sprung up across the country and are seen showing live matches amidst strong fans presence. This has adversely affected spectating in Ghana with tongues wagging in some scanty quarters about need to restrict live broadcast of matches. Baroncelli and Lago (2006) revealed that, spectating at stadiums in Italy steeped downwards in the 1999 to 2000 football seasons. Strong voices have emerged on the need for football associations and football teams to devise cutting edge marketing strategies to stir increased fans attendance at stadiums during football matches.

Kuypers (1996) also indicated that weak promotional strategies could explain why stadium attendance is receding and not just live television broadcast. Buraimo, Paramio, Campos (2010) analysed match schedules and concluded that matches slated for weekends favor increased attendance than week day matches. However, Garcia and Rodriguez (2002) dissented with Kuypers' (1996) conclusions buttressing that the 1992 to 1996 football seasons in Spain suffered negative effects of television broadcasting despite the fact that only 20% of La Liga matches were broadcast live.

Declining spectator rates in stadiums has bedeviled premiership soccer in Ghana. Spectator attendance has nosedived to a point where it has assumed national discourse. In the heat of sustained criticism against the Ghana Football Association (G.F.A) over poor patronage of football matches at stadiums, the Spokesperson of the GFA has called for live broadcast of matches to be blacked out when premiership matches are being played in Ghana. This call by the GFA is not based on research and is therefore weak on empirical value. This study will seek to find out from ardent followers of the game to determine what factors motivate them to attend or not to attend football matches. The President of the G.F.A was re-elected in August 2015. In his acceptance speech, he made the revival of stadium attendance his utmost target. The outcome of this study will help policy makers in devising strategies that will propel fans to the stadium to watch football matches.

### **Literature review**

Skourtis, Zafeiropoulou, & Assiouras (2011) realized that sport organizations that invest resources in understanding the needs and expectations of their fans will find better ways in satisfying them. Researching into determinants of fans attendance will assist in sustaining crowds at stadiums whilst initiating measures to arrest the slump in attendance in some countries. An array of researchers have availed their findings in football literature in countries in Europe and parts of Asia such as Japan and Australia (e.g. Wann, Grieve, Zapalac, & Pease, 2008; Won & Kitamura, 2007; Correia & Esteves, 2007; Robinson & Trail, 2005; Funk, Ridinger & Moorman, 2004). Skourtis, Zafeiropoulou, & Assiouras (2011) focused on causes of fans patronage in Greece. Fallahi et al. (2011) drew comparisons between motivations behind stadium attendance by fans in different age brackets in Iran and discussed that

different age groups have different reasons for attending football matches. These studies are starved of perspectives from the African continent. Therefore, this study will bring to the fore, insights from Ghana, a strong football nation that is suffering from diminishing spectator rates. Cohen and Avrahami (2005) noted distinctions between factors that inspire fan attendance and hinted that socio-economic factors drive stadium attendance. Available literature is rife with the idea that fans are not motivated by a single factor to attend live matches at stadiums (e.g. Cohen & Avrahami, 2005; Kim, Greenwell, Andrew, Lee, & Mahony, 2008; Won & Kitamura, 2007).

Jumaah (2014) undertook a study on factors that dissuade fans in Kuwait from attending matches. The study outlined physical structures, dearth of quality players, sub-par team performances, poor promotion strategies, hustle associated with ticket purchases, televised matches, media disinterest and unsuitable match schedules to be the factors that make fans attendance tumble. It is the view of football players in Saudi Arabia that the nature of stadium facilities is a disincentive to stadium attendance by followers of the game. Football fans attend matches for different reasons including new stadiums, star studded teams, breathtaking performances and violence (Hoye, Smith, Nicholson, Stewart, & Westerbeek, 2012).

Aminuddin and Lee (2008) buttressed the importance of stadium facilities such as availability and adequacy of car parks, functioning scoreboard, spacious seats and great players. Throwing light on stadium amenities, they pointed to stadium aesthetics, minimal risk, clean stadium environment, sumptuous food and drinks, accessible parking and modern scoreboards. Hill and Green (2000), and Dale, Iwaarden, Wiele and William (2005) emphasized the influential role of physical facilities in stadium attendance. Greenwell, Fink and Pastore (2002) posited that a stadium with adequate parking lots, ease of accessibility, seat comfort and maintain good sanitary conditions will draw fans to stadium during matches than rickety stadiums. Pederson, Kiil, and Kjaer (2011), undertook a study in Denmark and singled out stadium facilities, responsive staff, neat facilities, good maintenance culture and ease of entry and exit as a strong pull factor to stadiums. Wakefield and Sloan (1995) and Yusof and Lee (2008) found that a stadium with classic services is a major factor that determines future stadium attendance.

Brandes, Franck, and Nüesch (2007) examined the German Bundesliga and concluded that a team composed of star players will be a major attraction for football fans in both home and away games. In the United State of America, the major league soccer was found to attract more spectators to stadiums when the teams are featuring players perceived to be stars (Parrish, 2012). Fallahi et al. (2011) observed a correlation between increased spectator attendance and quality stars. This point to the fact that fans are more inclined to troop to stadium and watch matches when they know star players are on parade. Hill and Green (2000) hinted teams that are accustomed to victories because of team quality are the toast of fans than teams that are known for losing matches. This views finds acceptance in Leeuwen, Quick and Daniel (2002) who embrace the opinion that fans are more loyal to teams by way of attendance to stadiums when they get favorable score lines during matches. At the Accra Sports Stadium, it is not uncommon to hear fans threaten to boycott matches when the home team loses against less fancied opposition. Research space has been dominated by findings which link team quality and sublime performances as a pull factor to stadiums (Baade & Tiehen, 1990; Welki & Zlatoper, 1994; Madrigal, 1995; Zhang et al., 1997; Pan, Gabert, McGaugh, Branvold, (1999); Bernthal & Graham, 1999; and DeSchraver & Jensen; 2002).

Football rides on the passion of fans. When a team has a pool of ardent followers, they follow the team in both home and away games. This passion to the team eventually manifest in record fan numbers during matches. Dhurup, Dubihlela & Surujlal (2010) in their study found fans affiliation to a team as a dominant determinant in fans attendance to football matches. Fallahi et al. (2011) and Brokaw, Stone and Jone's (2012) highlighted the positive role team affiliation plays in pulling fans to stadium. In the case of highly dedicated fans, they stand by their teams in times of adverse score lines and their attendance are unaffected by a poor run of losses. and but also reveals that team affiliation has at times been coupled with the team playing quality football if some fans have to be attracted to the stadium. Therefore, when fans develop a sense of belonging and affiliation to a particular team, they are more likely to attend soccer matches in large numbers when such a team is playing.

The quest for an escape route regarding the hustle and bustle of everyday life propels fans to find solace at football stadiums. For such fans, finding happiness with friends in the stands and having entertainment on the fringes is one of the reasons why they will leave their home in favor of stadium. Cohen and Avrahami's (2005) and Skourtis et al.'s (2011) studied factors that spurs Greek fans to attend football

matches and detected the desire to be amongst peers in a frenzied mood to throw their weight behind their teams as a major determinant. For some fans, attending games at stadiums brings them closer to their friends in an exciting mood (Toma, 2003).

The impact of television broadcasts of live matches on fans attendance to stadiums has attracted the interest of researchers and soccer practitioners. Owing to the vast interest of researchers in the area, building consensus on the impact of televised matches on stadium attendance has remained elusive (see Dobson & Goddard, 2001; Price & Sen, 2003; Humphreys, 2002; Leadley & Zygmunt, 2006; Baimbridge et al. 1995; Carmichael, Millington, & Simmons, 1999). Downward and Dawson (2000) identified variations in the impact of television broadcast on different sports disciplines, geographical location and time schedules. Borland and MacDonald (2003) pronounced some of the challenges associated with linking live television broadcast to slump in stadium attendance. It emerged in the study of Buraimo, Forrest, Simmons (2009) that television broadcast of matches on free to air has a profound negative impact on fans attendance to stadiums.

Feeham, Forrest and Simmons (2003) and Brokaw et al. (2012) asserted that football is a normal good that is affected by the forces of demand and supply. Therefore, where it cost more to attend a football match, there will be less attendance. In an economy where wage levels are high, cost of attending a match will have a scanty effect and as Terry, Corland, & Houghy (2002) depict, economic factors holds sway in some circumstances when fans make decisions on stadium attendance. Simmons (1996) showed a strong link between wage levels in a country and stadium patronage but Dobson and Goddard (2011) dissented on grounds that income is a weak determinant of fans attendance to football stadiums.

## **Materials and Methods**

Adoption of appropriate methodology defines the path way a research will take toward attainment of its study objectives. This work adopts a qualitative approach in an attempt to shape the requisite instruments to deploy to gather data and the quantum of respondents that are targeted. Qualitative research involves collecting, arranging, sorting and extracting meaning from data with the researcher's eye and ears serving as filters (Lichtman, 2009). In the view of Johnson and Christensen (2011), qualitative research deals with the collection of non numerical data adding that qualitative research leans toward exploring and discovering a phenomenon utilizing non statistical techniques. This study is geared towards obtaining the pull factors that influences fans to attend football matches and the reasons behind such motivations. Gaining knowledge about the forces that drive attendees to stadiums is central to this study. A variety of ways exist for researches to opt in operationalizing qualitative work (Lichtman, 2009; Johnson & Christensen, 2011).

Qualitative research relies on comparatively small sample sizes with respondents chosen deliberately for their comprehension of the phenomenon being explored (Patton, 2002; Brown and Kandirikirira, 2007). Qualitative research draws strength from depth of understanding acquired from small number of respondents using probing tactics. Isabirye & Surujlal (2012) utilized small sample of seven respondents in their study of determinants of football attendance in South Africa. This study used a sample size of eleven to collect data and analyze data. According to Kvale & Brinkmann (2009) a semi-structured interview is when an interview is being conducted based on predetermined interview guidelines. The aim of the semi-structured interview is to attain contextual relevance and still leaving space for an open dialogue. This ensures that we will not miss valuable information by sticking to exact questions. The purpose of keeping the interview semi-structured is to ensure that the answers from the respondent can be compiled in an analogue way (Kvale & Brinkmann, 2009).

In the exercise of collecting relevant original data, semi structured interviews were used. Semi structured interviews revolves around using written guidelines to obtain data using interview techniques probingly and flexibly ( Gray, 2004, Kvale & Brinkmann 2009 ). The steps taken to conduct the qualitative interviews involved designing the interview guide, engaging informants in a conversation to strike acquaintances and based on mutual understanding, proceed to conduct the interview whilst audio recoding the exercise with the tacit agreement of respondents (David & Sutton, 2004).

Analysis and drawing sense from raw set of data is a crucial segment of research. Burnett (2009) held the view that coherent steps are needed in detailed analysis of data. The researcher listened to the audio taped data, drew comparisons between audio data with and notes taken, transcribed data carefully, identified emerging but dominant ideas and coding them were the steps taken in data analysis and interpretation (Henning et al. (2004) & Ezzy (2010). A second round of axial coding was used to connect

themes from the first coding. In the final analysis, dominant were interpreted to derive results from data analyzed (Hopkin & Lee, 2001; Holliday, 2007; Belawati & Zuhairi, 2007)

## **Results**

The seven respondents were all passionate followers of football. They described themselves as soccer fanatics and love watching the game of football. Not a week passes without them devoting time and space to enjoying football- celebrating when their teams win but also enduring agonies when their favorite team is vanquished. Quality of players emerged as the most influential factor that pulls them to the stadium. They attributed the sharp and steep fall in stadium attendance to the absence of star performers culminating into ordinary displays by teams. Following closely was the cost of attending football matches. The economy of Ghana, despite recording growth has not delivered jobs resulting in spiking unemployment. It is therefore understandable when informants point to cost of tickets and allied transport cost. Team affiliation also emerged as an influential force that attracts fans to stadium. Respondents who have strong attachment to teams will attend matches regularly but added that poor run of form serves as a disincentive to stadium attendance. Promotion of matches in the media also leads to crowds striding to stadiums. The informants struck a chord on the idea that when media hypes a match, it generates keen interest, ignites debate before the match day and results in fans trooping to the stadium. The informants also singled out the performance of referees for mention. According to them, there is nothing more agonizing than to waste time and money to go to the stadium only to find your team defeated on grounds of bias officiating. A stadium facility was a weak attraction revealing that even parks with no seats and shade attract fans when the quality of play is high. Three of the fans expressed revulsion for linking poor attendance to stadiums in Ghana to live broadcast of European football saying that blame be put on poor quality of teams and players. However, the rest of the respondents agreed that, live televised matches of major European leagues have drained stadium attendance.

## **Discussion and conclusions**

### **Quality of players**

All interviewees had a sense of unanimity on the influential role quality of players play in attracting fans to the stadium. In the view of an informant, fans expend energy and resources to enjoy the game citing that the availability of star players spices games. The informants cited the case of the Ghana premier league having a good share of star players in the 1990's and early 2000's- a period that saw rising figures in stadium attendance. Asked why they think the Ghana premier league is bereft of star performers, they cited the craze to play in foreign leagues by players as soon as they assume stardom as the reason why the domestic league is star starved. A respondent criticized teams for selling rising stars to European clubs only to see their talents decay due to lack of playing time.

The informants believed that stadiums will see an upward mobility in numbers if quality players begin to emerge in the league. Six of the informants recalled the match between Hearts of Oak and Great Olympics, both Accra based clubs that drew record crowds owing to the return of three super stars to the fold of Accra Great Olympics after a long sojourn in European league, one of them being Richard Kingston who had kept the post for Ghana in the 2006 and 2010 world cups played in Germany and South Africa respectively. Crowds gathered at the stadium during that epic local derby which ended goalless with fans describing the clash as a memorable encounter. Seven of the respondents placed high premium on star players having a magnetic effect on attendance adding that, star players give fans something to cheer about by displaying skills and masterminding dramatic victories. This finding finds agreement in Fallahi et al. (2011) and Isabirye & Surujlal (2012) who found star players to be a crowd puller in their studies.

### **Cost of attendance**

Respondents breakdown of cost of attendance includes ticket rates and transportation cost. According to two of the respondents, they love going to the stadium with their friends in order to socialize. However, more often they bear the cost. Ticket rates in Ghana compared to other countries may not be considered exorbitant. However, the respondents were quick to point to lack of jobs and low wage rates that makes gate fees expensive. Four of the interviewees in their separate accounts point to the need to have a food or drink at the stadium especially during recess. This adds to the cost of attendance. A respondent expressed surprise at prevailing ticket rates picking it as the reason why matches are played in empty stands. Ask whether a reduction in ticket cost will induce greater attendance, the interviewees posited

that other factors such as quality of teams and players will come into play. This explains why in the study of Cohen and Avrahami (2005), they concluded that no single factor influences attendees to stadiums. Two of the informants expressed misgivings about the lack of sale of advanced tickets. Consequently, fans have to queue on match days amid chaos at times with some fans jumping the queue. Tickets then emerge in a black market fashion and some fans then buy such tickets at astronomical prices. Probing further, the researcher asked if this situation does not represent evidence of fans prepared to pay even higher gate rates to access stadiums. They disagreed. In their view such purchase of tickets at the black market only serve to add to the worsening situation of attendance because buyers of such tickets do so out of frustration and are most likely deterred from attending future matches.

#### Team affiliation

Respondents were having team affiliation in the domestic top flight with the notable exception of three who rather subscribed their affiliation to European clubs. All three were below thirty years. This appears to be a worrying development. If this trend should continue, it will destabilize attendance to stadiums because young fans no more attach themselves to domestic teams. Six of the fans say club affiliation is a force which drives them to the stadium. Four of the six were fans of Hearts of Oak, a traditional club with huge following and glamorous history. They won the African Championship Contest in 2000 and the Confederation of African Football Cup and super cups in 2005 after a long excruciating wait having come into existence in 1911. The fans who support Hearts reported attending regularly but three of them hinged their attendance on the performance of the team. They made it clear that when Hearts are not winning consistently, they boycott matches and cited the current football season of 2015 as a case in point. Hearts have been battling relegation in the season and had to rely on winning a protest against arch rivals Asante Kotoko regarding an unqualified player fielded by the latter. Team affiliation therefore manifest in stadium attendance when teams are on a winning streak. This standpoint dovetails with the opinions of Dhurup et al. (2010) who intimated that fans with strong passion for their teams are commonly found in matches during stadiums.

#### Marketing strategies

Respondents revealed that when matches gain prominence in the media, it triggers massive attendance by fans. The media landscape in Ghana is vibrant with some electronic and print houses dedicated to sports. The respondents disclosed that they all follow events in the media and pointed that matches between Hearts and Kotoko attract fans to the stadium because the media will normally give such matches prominence. Both Hearts and Kotoko are traditional clubs with intense rivalry both on and off field. Respondents espoused the view that European competitions are getting attention in Ghana because the media gives it considerable space. In Ghana, a couple of radio and television stations carry live commentaries and pictures of the English premier league leading to a colossal following of the premiership. The researcher took the pains to listen to sports programmes on radio and realized that the proportion of space given to European leagues far outweigh the time allotted to the domestic league. This robs the domestic competition of media attention and accentuates the dull nature of the league thereby shrinking stadium attendance. Ask what the teams can do to market themselves in the media, the three of the respondents mentioned that team communicators should court the media and engage in pre conferences to herald a match as it happens in Europe. When their attention was drawn to the cost implications to the clubs who are already battling falling revenues and mounting debts, they called on the G.F.A to sponsor media activities of the teams. The discussion became passionate each time the G.F.A is mentioned accusing the football authorities of doing little to spice the league to recapture fans attention. Little wonder the G.F.A President has made reinvigorating fans interest in the local football league his topmost target.

#### Officiating

The respondents cited poor officiating as a disincentive to attend matches. As expected, they pointed to European leagues where fair officiating holds sway. They cited the situation where away teams hardly record wins because of bias refereeing. When the researcher drew their attention to the fact that in all leagues home teams record more victories on their home soil, they stuck to their position that in Ghana bias officiating is pervasive which is why travelling fans are uncommon in Ghana. As to what should be done to improve officiating, they cited improved security and robust sanctioning of referees who bring the game to disrepute because of bias officiating. When the researcher pointed to the idea that refereeing in the major league centers have improved because of the prying eyes of the media, they agreed but attributed the phenomenon to only the Accra Sports Stadium. This conclusion appears to be unique to

Africa and that possibly explain why extant literature contains scant information about refereeing as a force driving stadium attendance downwards.

#### Stadium facilities

So much literature has been spilled on physical structures at stadiums as a major determinant of field attendance. Not so in Ghana. Respondents felt that stadium facilities have nothing to do with stadium attendance. They expressed that view that when European leagues are on recess and players plying their trade in Europe return and train in grassless parks without lorry parks and seats, fans gather to catch a glimpse of their stars standing and inhaling dust. They however believed that stadiums with security facilities for players and fans can boost stadium attendance. The respondents discounted the value of entertainment at stadium as a pull factor but stressed that socialization is a motive for attending stadium. When asked of scoreboards, they supported the view that functioning scoreboards add thrill to stadium experience but considered it a minor variable in the equation of stadium attendance determinants. Most stadiums in Ghana with the exception of Accra, Essipong, Tamale and Kumasi are not up to international standards. They lack car parks, comfortable seats and wash rooms but yet they record some appreciable attendance. This adds to the weight of evidence that Stadium facility is not a major factor when fans make decisions regarding stadium attendance.

#### Television broadcasting

This brought sharply divided opinions amongst respondents. Five respondents made it clear that once a major European match is being televised, they will prefer watching television than going to the stadium. Four of the respondents however will attend matches at the stadium regardless. When those who prefer watching TV were probed, they attributed their stance to lack of glamour in the league insisting that televised matches should not be blamed for the decline in stadium numbers. When the researcher put to them the superiority nature of European leagues because of their hefty budgets which makes Europe the favorite destination of super stars, they stood their grounds emphasizing that they do not expect the local league to parade stars akin to those in Europe but at least they expect the league to be exciting. The four respondents who believed TV broadcast impacts negatively on fans attendance stressed that live broadcast of matches at any time drains the prospects of stadium attendance. Ask whether the authorities should ban the broadcast of matches, they quailed and rather thought rescheduling of matches to avoid clashes with major European matches involving teams such as Chelsea, Barcelona and Manchester United can bolster attendance.

#### Recommendations

This study has implications for policy makers and practitioners who have all bemoaned the decline in fans attendance. Based on conclusions drawn per the discussions, this study recommends that ticket rates be reduced to ensure patronage. The low income levels in Ghana coupled with high employment has left many a soccer fan with weak purchasing power. This has diminished the ability of fans to procure tickets in order to attend matches. Beside, advance ticket sales should be introduced in order to reduce the chaos at tickets point of sale. This will reduce the incidence of black marketing of tickets and reduce the spectre of long queues which discourages some fans from re-patronizing matches. The G.F.A should also assist clubs to adopt plausible marketing strategies and promotional campaigns that can catch the eye of the soccer fan. The teams should court the media to get their team news across to their followers. A well informed fan is likely to attend football matches. Clubs capacity to attract sponsorship should be boosted through capacity building programmes sponsored by the G.F.A. This will allow the teams to strengthen their revenue base thereby getting the wherewithal to attract, retain and motivate stars who will not fall early to the lures of foreign league clubs.

#### Limitations and suggestions for further research

This research utilized the qualitative approach with the help of small samples. This has an obvious limitation of not being able to replicate the outcomes of the research in similar situations. Widening the sample size could add to the store of knowledge in this area of study and perhaps including policy makers and football coaches amongst respondents could reveal interesting insights to the subject. These limitations notwithstanding, this study provides empirical evidence which can be used to shape policy decisions on stadium attendance.

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## **Impact of use a special exercise to develop some of the Optical capabilities & explosive strength on the performance of (jump shot) skill in basketball for the junior category**

**Associate Prof. Iekaa Abdulla Ali**

### **Introduction:**

In the field of Physical Education and Sports Science Research is still contributing to the change the adopted old methods and developing them through adoption of good scientific formulas to raise the training process and all of the games level (individual and collective), a basketball game one of these games that increased their popularity and took a practice significantly to reach into a good position as it contains a wonderful combination in technical performance and variation in the speed of rhythms during the game, this depends on the development of fitness components and their positive impact on performance, Features a basketball game that they need special requirements in the field (physical and skills), such as the need to (strength & speed & accuracy) in the performance of special skills, basketball is a game that will be win or lose it in the last seconds of the game should therefore be follow the modern training methods that would raise the level of (skills and physical) for the player.

### **Research problems:**

Basketball is the difference of the games that attracted the attention of many countries, including Iraq, the duty of those in charge of this game knows the mistakes that may limit the development of this game. Because of the work of Researcher in the field of teaching and training has been able to distinguish a specific vision to the level of sports teams, and after being examined in most of the training curriculum, she's Have noticed lack of concentration from some trainers not to put specific exercises, that the game need to .

Basketball one of the games is characterized by multiple skills and continuous changes in speed during the match that forcing the trainers to Seeking for exercises to develop the game.

Researcher identified the problem by suggesting and preparation exercises to develop some Optical capabilities and explosive strength, and knowing the extent of their influence in developing the performance of the skill (scoring by jumping).

### **Research Objectives:**

- 1- Preparation of special exercises to develop some Optical capabilities and explosive strength and influence in the performing of skill (jump shot) in basketball.
- 2- Identify the values of some Optical capabilities and explosive power to the junior players in basketball in pre and post-tests
- 3- Identify the performance of skill values (jump shot) at the junior players in basketball in pre and post-tests.
- 4- Identify the impact of special exercises to develop some Optical capabilities and explosive strength and influence in performing skill (jump shot) in basketball.

### **hypotheses:**

- 1- There are statistical significant differences between pre and post-test values in testing (the development of Optical ability) and in favour of the post test.
- 2- There are statistical significant differences between pre and post-test values in testing explosive strength in favour of the post test.
- 3- There are statistical significant differences between pre and post-test values test the performance differences in skill (jump shot) in basketball and in favour of the post test.

1-5 delimitation & limitation:

The research sample consisted of junior players in the (Adhamiya Sports Club) in basketball ages (14-16) for the sports season 2015, the their number (6) players, for the period from 02/03/2015 up to 04/05/2015 It has been conducting exercises in the indoor hall (Adhamiya Sports Club) in Baghdad and a laboratory specialist in psychological (14 Ramadan Street) in Baghdad.

**Research methodology:**

The researcher used the experimental method design one experimental group.

**Research sample:**

The research sample is selected carefully in scientific research, because they become representative of the original community honest and truly representative, through which the researcher can determine in accordance with the original community on the problem or phenomenon, which wants to be studied. The research community consists of five sports clubs are (Al Karkh, Kadhimiya, alaskan, alkahrba, Armenian). from First division clubs for basketball junior players in BAGHDAD, numbering 50 players, the research sample was selected by intentional method representing the (Adhamiya Sports Club) aged 14-16 years, Researcher choose 6 players to represent the main sample.

Exploratory experiment was conducted on 4 players of the original community, number of the main sample and the exploratory experiment became 10 players ratio (20%) of the original community.

3-2 determines the optical capacities: Researcher seen on many scientific sources in basketball and related Optical capabilities task, which must be found at the player The researcher prepare a Form included (14) testing Optical capacities, in order to nomination of what is appropriate to the objectives of the research and the experts agreed, to (3 capabilities) got a percentage (90%) and above.

First: Test Optical capacities:

1- Compatibility Test: (between eyes - hand) (Dr.Gernot Schfried).

- Objective of test: measuring the compatibility (between eyes – hand).

- Devices used: vna tests system (VTS).

2- Optical focus Test: (Kamer, Te Biehl: 2001, 53-63).

Objective of test: measuring the visual focus.

- Devices used: vna tests system (VTS).

3- Optical tracking test :( Neuwirth, W: 2001, 206-212).

- Objective of test: measuring Optical tracking

- Devices used: vna tests system (VTS).

Second: Tests physical capacities:.

- Vertical jump test from stability

- By the hands (throwing Medical ball 2 kg) over the head, from standing position

Third: Test skill capability:

- Jump shot from inside the zone (free throwing) time limit (15 sec).

- Purpose of the test: measuring the performance of skill jump shot in basketball.

**exploratory experiment:**

Exploratory experiment was conducted on a sample of the original edition community (4) players from the Assyrian club, date of 02.03.2015.

Note: Those players who have performed exploratory experiment were excluded from the main experience.

**pre-test:**

Researcher conducted a pre-test date of 06.03.2015 a three-day until 08.03.2015.

**proposed exercise:**

The Exercise proposed by the researcher has entered in the sample preparation period specifically in the main section are (90) minutes, the total time of the training unit are 120 minutes, the application of exercises in the training unit ranges from 44 to 63 minutes of the total time of the training unit, which included exercises (24 training unit) distributed over 8 weeks of training, three training units in each week, Application program began on Saturday 03/09/2013, and ended on Wednesday 01/05/2013, taking into account the planning of the differences in the training load, to each unit of training throughout the period of implementation of the program.

**post- tests:**

Researcher Conducted (post-test) on Thursday, 02/05/2013, after the completion of the application of the proposed exercise on the research sample, these tests were conducting in the same circumstances and conditions under which conducted the pre-test.

**statistical means:**

Been using SPSS statistical Bag

**Showing results analysed and discussed:**

(Table -3) Showing results of mean, standard deviations, average differences, differences deviations, value of (t) calculated & tabular, moral significance between (pre and post-tests) for sample tests in the optical capabilities .

(Table -3)

test	measuring unit	n	Pre-test		post test		average differences	differences deviations	(t) value calculated & tabular	significance
			x	s	x	s				
Compatibility between eyes - hand	Degree	6	35	12.443	46.5	9.31	10.7	8.458	3.072	moral
Optical focus			50.2	12.897	65.83	6.524	16.61	15.071	2.883	moral
Optical tracking			44.5	9.834	57	5.341	15.4	1,332	3.612	moral

Degree of freedom (n -1) = 5 and the significance level (0.05) value (T) Tabulated = (2.571).

Researcher believes that the reason for the emergence of this result is the kind of exercise proposed by the Researcher and has received research sample, Researcher focused on strengthening the link between the exciting and appropriate response, and activating the mental processes and Neurological appropriate directives for different situations on according to the nature of the basketball game characterized by speed and accuracy in directing duty kinetic, Frequencies used in these exercises help to increase compatibility between the eye and the hand through the use of appropriate stimuli that contributed to the increase of attention and control to operate neuromuscular manner proportionate with the type and size of exciting and timing, in which the brain is responsible for the organization because the functional eye is the sense receptor and the brain interpret information and awareness and selection of appropriate response after passing the serial mental processes which ends decision-making and implementation.

(Table -4) Showing results of mean, standard deviations, average differences, differences deviations, value of (t) calculated & tabular, moral significance between (pre and post-tests) for sample tests in the Explosive strength for the two tests.

**(Table -3)**

test	measuring unit	n	Pre-test		post test		average differences	differences deviations	(t) value calculated & tabular	significance
			x	s	x	s				

Explosive power of the legs (vertical jump)	cm	D e g r e e	28.97	7.333	38.33	7.554	10.167	7.574	3.288	moral
Explosive strength of the arms (throwing Medical ball 2 km)	m		6.4	2.251	7.5	1.783	1.2	0.576	5.071	moral

**Degree of freedom (n -1) = 5 and the significance level (0.05) value (T) Tabulated = (2.571)**

Researcher believes that the reason for the emergence of these results on its commitment to the use of appropriate exercise for the lifetime of the sample in, (the strengthening of articulares and tendons ligaments) and increase their strength properly does not exceed their physiological, and development of muscle strength appropriately through the use of exercise-like muscular performance in terms of direction of work as was frequent and more intense training, so-sensitive by the difference in the designated exercises for Juniors, a researcher invested body weight and moving with appropriate speed to improve the speed of the kinetic limbs. (Table -5) Showing results of mean, standard deviations, average differences, differences deviations, value of (t) calculated & tabular, moral significance between (pre and post-tests) for sample to test the performance of the (jump shot) skill in basketball .

test	measuring unit	n	Pre-test		post test		average differences	differences deviations	(t) value calculated & tabular	significance
			x	s	x	s				
Performance of (jump shot) skill	Degree	6	4.33	1.037	11.83	2.53	4.5	3.152	4.576	moral

Degree of freedom (n -1) = 5 and the significance level (0.05) value (T) Tabulated = (2.571)

**Conclusions:**

Through data collected by Researcher in the framework of this research, and through statistical treatments used in the extraction results, and after the presentation and discussion of results came out the following conclusions:

- 1-Existence development of the level of optical capacities resulting from the use special exercises.
- 2- Existence development of explosive strength resulting from the use special exercises.
3. Develop explosive strength and optical capacities has led to the development of performance of (jump shot) skill to the sample.

**4-2 Recommendations:**

- 1- Necessity to concentrate opt optical attention and optical tracking, eye-hand and agrees to train optical capacities, this capacities has a major impact in achieving the objectives in the game of basketball.
- 2- Emphasis on use of different exercises and tests to develop some optical and physical capacities for the game of basketball.
- 3- Making this study a starting point for the work of other researchers in other games in the light of age ranges different levels of to reach the achievement of the best sports levels in Iraq

## Longitudinal relations between peer victimization in High Schools and Mental Health in College

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### **Abstract:**

This study examined the longitudinal relationship between peer victimization experience of high school students and depression and suicidal ideation. We analyzed the data of the Youth Panel which were collected by the Ministry of Employment and Labor in Korea. Twenty victimized students were compared with twenty non-victimized peers. Results showed that victimized students in their high school period experienced depression and suicidal ideation more frequently than did non-victimized peers in their college years.

Keywords— peer victimization, depression, suicidal ideation, longitudinal study adolescents

### **Introduction**

Peer victimization is one of common types of school violence, and includes being target of various aggressive behaviors by peers or age-mates (Flannery et al., 2007). School violence includes physical and psychological forms of aggressive behaviors, and in some cases, an entire peer group as well as a few bullies was involved in peer victimization (Flannery et al., 2004).

Although the prevalence, patterns, and related causes and effects of bullying and victimization vary with cultural characteristics, peer victimization has been shown across culture and countries in the world (Park., 2000). Within the Korean context, “wang-dda (bullying in Korean)” is one of major forms of school violence, and wang-dda students were rejected and isolated by peer groups(Kim., 2004). Thus, victims of wang-dda have suffered from loneliness, anxiety, depression, and low self-esteem.

Especially, in Korea, the third year of high school is an important and stressful period during which most students take College Scholastic Ability Test (CSAT) or college entrance exams. Third-year-students are asked to decide making a transition toward either academic career or working career. As a result, high levels of stress by entrance exam might interact with stress by peer victimization, and furthermore, could interfere with students’ adaptation to college and mental health. Thus, this study aimed at investigating the association between peer victimization in the third year of high schools and adaptation to college.

Many previous studies have reported that experience of peer victimization in childhood and adolescence has affected psychosocial problem such as depression and anxiety. In a meta-analytic review of Hawker and Boulton (2000), depression, loneliness, and self-esteem reported larger effect sizes in relations to peer victimization than did social and general anxiety. In addition, Klomek, Marrocco, Kleinman, and Schonfeld(2008) also reported that the students who were victimized by peers were more likely to experience depression and suicidal ideation than did those who were not victimized. In this study, various risk factors for peer victimization were suggested; religion, race, prejudice, language, domestic violence, rumor, sexual joke and cyber bullying. Moreover, victimized students reported higher levels of depression and suicidal ideation even four years later. Similarly, Lawrence(2011) reported that the victims of bullying in high school were more likely to experience depression and suicidal ideation during their college years. Gu and Kim(2013)also showed that peer victimization in high school lead to suicidal ideation in Korea.

The purpose of this study was to examine whether peer- victimization experiences of high school students is related to the mental health in their first years of college. Specifically, we examined longitudinal links between peer victimization and the risk of depression, suicidal ideation, and the level of stress.

## Method

### Participants

The data of 20 college students who experienced peer victimization in their high school period were analyzed in this study. These students were selected from the Youth Panel of The Ministry of Employment and Labor, a longitudinal survey project conducted annually from 2007 through up to now. Initially, 10,206 Korean adolescents aged from 15 to 29 years participated in the study. Out of 864 participants in 2008 data, twenty students identified as victims of school violence were selected. In addition, we intended to compare victimized students with non-victimized peers in this study, and thus, 20 students without victimized experience in a control group were randomly selected.

### Measures

We used the longitudinal panel to do a comparative analysis between data of 2008 and 2009. We asked a question to participants to identify victimized students in 2008. "Do you have experience of peer victimization in high school years?" Students answered yes or no. We also asked the participants whether they had a depression or a suicidal ideation problem in 2009.

## I. RESULTS

Frequencies and percentages of research variables between 2008 and 2009 were reported in table 1 and figure 1.

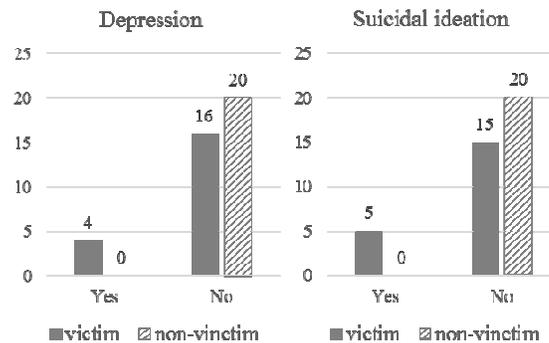


Fig. 1 Frequency of depression and suicidal ideation

Four out of 20 students in the victimized group (20%) reported that they were depressed by e and five out of twenty students (25.5%) had suicidal ideation as well. But, none of students experienced depression or suicidal ideation in the non-victimized group.

**TABLE I: Chi-Square Of The Effect Peer Victimization Gives On Depression And Suicidal Ideation**

Variable	2008 peer victimization involved		χ <sup>2</sup>
	yes(N=20)	no(N=20)	
2009 depression			
Yes	4(20%)	0(0%)	
No	16(80%)	20(100%)	4.44*
2009 suicidal ideation			
Yes	5(25%)	0(0%)	
No	15(75%)	20(100%)	5.71*

\*p<.05

Then, Chi-square analysis was conducted to examine the longitudinal relationship between peer victimization in high school period and depression and suicidal ideation in the first year of college. The results indicated that peer victimization was significantly related to depression and suicidal ideation.

**Conclusion**

This examined whether peer- victimization experiences of high school students is related to depression and suicidal ideation in their first years of college. Results showed that students who were victimized by peer in their high school were more likely to experience internalizing behavior problems such as depression and suicidal ideation. This implies that peer victimization is a significant risk factor for mental health of college students.

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## **Coaches and Players Injuries in Cricket and Boxing during Training and Competition** **A - Comparative Study**

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### **Abstract**

The purpose of this paper will analyze and investigate about the injuries of the coaches of boxing and Cricket at Elite and junior level including situations of the treatments. This study was conducted with a total of 100 subjects, who are currently active Cricket and boxing coaches for all levels like Junior, seniors, Age group, School, College, university, and National Level. The tool used to investigate the nature of sports injuries of the Cricket and boxing leaders based on the training environment was questionnaire, which is composed of 39 questions on age, sex, social background including leadership career, cause and time of injuries during training, type of region of injuries, injury regions based on type of training, first aid and treatment for injuries during training, and prevention of injuries. The questionnaire utilizes self-administered method. First, the form of training exhibited highest injury rate during training was sparring, where attack type that most likely led to injuries was powerful hook. Second, the region of injury that exhibited highest injury rate during training was ligament injury, where upper limb area was more frequently observed than lower limb area. Third, most preferred emergency prevention method was ice packaging, and the most preferred hospital for treatment was western medicine based hospitals. Fourth, most of the coaches generally performed stretching before and after trainings. 18.30% of the coaches reported that they did not wear protection gears during giving training in Boxing including the Coaches who give training to Cricket players for bowling, batting, catching, wicket keeping.

Key words: Cricket injuries, wrist Injury, Boxing coach, cricket coach Training Environment.

### **Introduction**

Boxing and cricket has been very popular sport events for many centuries among spectators however, injuries also accompanied the popularity from the beginning. Although critical neural damage resulted from boxing has not been discovered, the correlation in boxers has been reported through many studies (Heilbronner et al., 2009). King (2009) also commented that, though there does not exist any unique boxing diseases, boxing is one of the sports that are best represented by high potential for injury evoked by training equipment, coaches, and boxers themselves. Especially, amateur boxing has high correlation with acute nerve cell damage. However, since researches on probability of nerve cell damage among amateur boxers are rarely carried out (Zetterberg et al., 2006), it is recommended that researches coming from various perspectives for the prevention of injuries among boxers be conducted. Generally Sports injuries in both sport events are caused from lack of skills, excessive training, mental and physical state of tension, lack of attention, lack of warm-up exercises, and foul or aggressive actions during training or match, in both games and the nature of the injury is related to physical activities and therefore unique injuries are observed for different sports. Among these sports injuries, injuries from martial arts sports account for 10.2% of all sports injuries (Tenvergert, 1992), and boxing is observed to have 23.6% injury rate (Zazryn et al., 2009). Similarly, since boxing requires consistent contact with opponents and high-intensity training, coaches as well as boxers themselves are also exposed to the danger of many injuries based on training environment. Because boxers cannot fight with their full capability and leadership of coaches are questioned when the boxers are injured, injury only results in

damage of their careers regardless of outstanding state of facility and ability of boxers coaches. Bianco et al.(2007) showed that adequate amount of exercise and training is related to increasing expectancy of satisfactory life, and thus boxing may decrease expectancy of satisfactory life as it causes injuries from intentional, repetitive impacts.

Researches on the injuries of boxers due to the nature of boxing are continuously carried out (Ohhashi et al., 2002; Zazryn et al., 2009; Vent et al., 2010), but there is no research case where coaches, who are exposed to unexpected high probability of injury during training, were the subject of injury research in both domestic and international field.

The athletic performance of boxers and cricketers can largely be affected not only by the conditions of boxers and cricketers themselves but also by the state of health of coaches of both sports. Leaders greatly influence by facilitating communication, boosting morale, increasing win rate, enhancing teamwork, and improving athletic performance. Also, it is a critical factor to exercise technical, action influence in order to achieve the goals of the boxers.

From these perspectives, it is important to understand that sports injuries, which are perceived to be usually specific to athletes, can be observed in coaches as well. In the context of boxing, sports injuries of coaches occur more frequently compared to other sports as coaches are more involved in actual training environment through mass boxing (a type of mutual shadow boxing in which boxers face each other without direct hits) and sparring. In addition, as coaches are engaged in training by taking direct punches from boxers during punching mitt training, a representative technical training in boxing, severe damages in wrists, elbows and shoulders could be resulted. Also, with excessive trainings, these damages can potentially be developed into chronic damages, and therefore there are frequently many cases where coaches end their careers due to such damages. Recently, there is an increasing attention being paid to stability of boxers and cricketers but the nature of typical sports injuries or severe damages from boxing and cricket matches is yet to be clearly investigated (Vent et al., 2010). Despite the fact that more attention should be paid to health and safety of both sport coaches, it is difficult to find any researches on the injuries of the coaches. Hence, this study aims to investigate and analyze causes, times, regions, types, situations, first aid and treatment conditions of the injuries the coaches encounter in order to provide basic information utilized to create basis for sports injury prevention and treatment measures for future coaches of both sport.

## **Method**

### **Subjects**

The study was conducted with a total of 100 subjects, who are currently active cricket and boxing coaches and supervisors that participated in the National cricket and boxing Meet as leaders for middle school, high school, university, professional, national division representatives from respective cities and provinces. The subjects understood the objective and the procedure of this study and provided written consents, and instructions were provided to encourage the subjects to respond in full and prevent them from omitting information. The overall frequency of the subjects participated in this study is shown in <Table 1

### **Questionnaire Formulation and Collection**

In this The tool used to investigate the nature of sports injuries of the both sport leaders based on the training environment was questionnaire, which is composed of 39 questions related to age, sex, social background including leadership career, cause and time of injuries during training, type of region of injuries, injury regions based on type of training, first aid and treatment for injuries during training, and prevention of injuries. In order to formulate questions regarding sports injuries resulted from coaching boxers, The study of boxers injuries (Lee, D., 2004) and The study on the injuries of boxers in boxing matches (Lee, J. J., 2006) were referred to revise the questionnaire to suit the coaching environment for boxing coaches. Afterwards, to secure validity of the questionnaire, the questionnaire was finalized after being revised to suit the boxing coaches and their working environment and to reduce the level of difficulty in understanding by conferring with experts in boxing and fields relevant to sports injuries. Also, to verify reliability, after the first confirmation on the questionnaire, test- retest method was used over 3-week interval on 15 cricket and boxing coaches, who are not included in the test subject group but exhibit similar characteristics, in order to assess the reliability of obtained data from evaluation of understanding. The finalized questionnaire was distributed around the opening of the National championship of both Meet with cooperation and consent from the coaches after instructing them with the purpose and the filing method. The coaches of the national team were not participating in the Meet and administered method. The filed questionnaires were retrieved afterwards.

## **Results and Discussion**

### **Causes and time of injuries from Cricket and Boxing Coaches during training**

It is known that the causes of sports injury are excessive training, inappropriate training method, lack of flexibility, imbalance and over-tension of muscular strength, inattentiveness, and lack of training and technique (Ha, I., 1988). Furthermore, while social, psychological elements, such as personality and stress-inducing environment, are claimed to have effects on injuries (Nideffer, 1989; Kerr & Minden, 1988), this study focused on the cause and the time of injuries specific to boxing. Demonstrations with high injury rate during coaching are shown in <Table 2>. The demonstrations with high injury rate during coaching are, in order of highest to lowest, sparring, mitt, sand bag. Sparring is one of the most efficient training methods in boxing (Ghosh, 2010). While sparring has an advantage of showing unnecessary moves and quickly teaching techniques and strategies to the boxers, coaches can be have bruise or scratches as a result of

**Table 1 The demonstration caused a lot of injuries in accordance with the training environment**

Sand bag		Meet		Sparring		Total	
Frequency	%	Frequency	%	Frequency	%	Frequency	%
2	2.5	29	36.25	49	61.25	80	100

**Table 2 The type of attack caused a lot of injuries in accordance with the training environment**

Classification	Sand		Meet		Sparring		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Straight in Boxing	23	23.8	22	16.2	27	21.2	49	22.4
Hook in Cricket	59	61.2	64	70.0	56	63.8	156	59.0
Upper-cut	18	15.0	14	13.8	17	15.0	35	18.6
Total	100	100	100	100	100	100	240	100

**Table 3 Offensive behavior caused a lot of injuries in accordance with the training environment in Cricket and Boxing**

Classification	Meet		Sparring		Total	
	Frequency	%	Frequency	%	Frequency	%
Combination		41.2	46	41.2	66	82.4
Counter	26	32.5	23	32.5	52	65.0
Footwork in Batting	17	16.3	19	16.3	26	32.6
weaving, Ducking	14	10.0	12	10.0	16	20.0
Total	100	100	100	100	160	200

**Table 4 Time caused a lot of injuries in accordance with the training environment**

Dawn		Forenoon		Afternoon		Evening		Total	
Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
21	17.5	8	2.5	62	72.5	9	7.5	100	100

Injuries of both sport coaches on fingers and wrists especially in cricket the injuries of wrist and fingers are very common as a consequence of inappropriate moves during training and competition. Recently, since the international trend in boxing is illustrated by the rise of the boxers with outstanding flexibility taking the initiative during the game through consistent fighting and power-boxing based on the basics of defensive boxing (Kim, K. J. et al, 2010), Korea's heavyweight boxers show gradual enhancement in their power. Thus, punches of the boxers from

heavyweight or heavier division are tremendous in their impact and accidents in sparring demonstration can lead to a serious injury. Hence, coaches must be aware of the strategies of their boxers and cricketers and construct a plan that accurately demonstrates tactics specific to each boxer. Next, it was observed that coaches are most injured during mitt training, where the impact is delivered through wrists, elbows and shoulders in both games. The injury rate for the coaches can increase further when the boxers misuse techniques in their blow. Therefore, during the mitt training, it is important that the coaches wrap their wrists with bandages and participate in the training after sufficiently stretching their arms and bodies, and that the coaches educate their boxers in order for them to demonstrate techniques accurately. In the study conducted by Zazryn et al. (2009) on rates and causes of injuries for boxers, it was reported that boxers exhibit 23.6% injury rate, and that it is important to be prepared with strategies that reflect on the characteristics of the boxers and the possibility of participating in a match.

<Table 3> shows punch types that result injuries during training. The punch type that resulted the most injuries is hook, followed by straight punch and then uppercut. Safet et al.(2008), through a research that analyzed all matches of 80 boxers in international amateur boxing match, mentioned the importance of straight punches and hooks as left hand straight took 28.9%, left hand hook 23.2%, right hand hook 19.5%, right hand straight 15.5% of all attacks on facial area. Because hook is a close range punch and requires boxers to attempt to approach their opponents, it is technique with the most powerful damage. In a research that studied the effect of boxing techniques on the speed of punches and deliver (Piorkowski et al., 2011), hook exhibits greater speed than do other types of punches. During their use of hook, the boxers are under psychological influence to quickly strike and fall out. Thus, they tend to hit with great strength rather than precision, which results in decrease in accuracy and abnormal punch that seem to injure their coaches. Hence, it appears that it may be necessary for the coaches to instruct their boxers to put more emphasis on the accuracy of their hook and straight punches than the strength of their punches. Zhang & Kang(2011) reported in a research that analyzed electromyogram of upper arm and waist muscles of boxers, who were asked to hold 2.5kg dumb-bell and perform straight punch technique until exhaustion, that efforts to increase muscular strength in upper arm and waist areas are required because upper arm and waist are critically important for boxers to perform techniques. Therefore, the coaches need to focus on reinforcements on major muscles involved in primary techniques performed by their boxers. Also, they must focus on instructing their boxers with more weight on accuracy during their trainings because the international boxing matches are becoming more inclined towards counting punches with accuracy. The attacking actions that lead to injuries are shown in <Table 4>. In order of highest to lowest, it was shown that attack moves that led to injuries are combination, counter, footwork, weaving, ducking. As combination technique requires longer punches, there could be an injury when the opponent missed the mitt approaching him. Iide et al.(2008) reported that, through a study on the relationship on demonstrations of offensive and defensive techniques of boxers, the longest technique demonstrated during each round was combination technique with an average of  $2.1 \pm 1.0$  seconds. Providing that there is a unpredicted, misused combination attack that lasts for 2-3 seconds on the coaches by the boxers, there could be a serious, consequential injury. Therefore, it is important to practice combination attack tactics that reflects on the characteristics of each boxer when each boxer perfectly acquired such tactics in advance, and, for in-fighter boxers who utilize power-boxing, various forms of combination attacks must be consulted with the coaches upon training. Also, since single punch or combination attack progresses in a quick manner, boxers need strategies to avoid taking a hit faster than before and understand that the coaches as well as themselves should be aware of these characteristics during their preparations for training (Piorkowski et al. 2011). From sports typically, in many cases, the coaches participate in the trainings without proper warm-ups. It is important not only to conduct warm-ups for boxers but also for the coaches themselves to do sufficient warm-ups and stretching over all parts of their body in order to train their boxers. Kittel et al.(2005) commented that an appropriate, compensative exercises must be included in training programs in order to prevent injuries of boxers; but it is necessary for the coaches to participate in stamina exercises to prevent injuries. Together with such exercises, during trainings, it seems that it would be helpful for the boxers as well as the coaches to prevent injuries and increase effectiveness of the trainings when they participate with concentration. In many sports, frequently used warm-up method is stretching. However, considering the results that show static stretching may decrease athletic performance level of athletes (Behm & Chaouachi, 2011), it appears that warm-ups that apply many forms of stretching, including static and passive stretching, should be used. Because stretching increases flexibility by actively or passively stretching muscles, joints and tendons and decreases the possibility of injuries to act as an important factor contributing to efficient performance of muscle and acquisition of high-degree techniques (Kim, M. Y. et al., 2005), the coaches also must consider warm-ups before dawn and afternoon trainings.

First aid and treatment for injuries during training

The first aid method most preferred by the coaches were ice packaging, followed by massage, taping, spray, M lotion, pressure method, hot-massage and then bandaging. It is important that these first aid methods must be applied to different sports injury types, and the coaches need to know accurately how to systematically apply first aid to different types of injuries. The coaches need to be educated with proper ways of applying first aid because appropriate action taken by the coaches, as well as boxers and cricketers in emergency situations.

### **Types Of Common Injuries In Both Sports in Cricket and Boxing**

AC Joint Injury, Achilles Tendon Rupture Achilles Tendonitis / Tendinitis, ACL Injury Adductor Tendinopathy, Anterior Ankle Impingement, Back Muscle Pain, Bicep Tendinitis Bulging Disc, Bursitis Knee, Bursitis Shoulder, Calf Muscle Tear, Chondromalacia Patella, Corked Thigh, Degenerative Disc Disease, Dislocated Shoulder, DOMS - Delayed Onset Muscle Soreness Facet Joint Pain, Femoroacetabular Impingement (FAI) Gluteal Tendinopathy, Groin Strain, Hamstring Strain High Ankle Sprain, Hip Arthritis (Osteoarthritis), Hip Labral Tear ITB Syndrome, Knee Arthritis, Knee Ligament Injuries Meniscus Tear, Morton's Neuroma, Muscle Strain (Muscle Pain) Neck Arm Pain, Neck Headache, Osgood Schlatter's Osteitis Pubis, Overuse Injuries, Patella Tendonitis (Tendinopathy) Patellofemoral Pain Syndrome, Peroneal Tendonitis, Pinched Nerve

### **Conclusion**

Cricket and Boxing sport today demands greater physical effort from players at vital stages during their careers and predisposes them to a greater risk of injuries. It is the duty of those involved in the treatment of injuries to have a better understanding of the principles of the game and players' specific requirements, to help them reach their full potential. Improved coaching and monitoring of injuries has increased our knowledge in this field and has led to international recommendations to prevent the injuries commonly seen in both sport. It is further stated that the coaches who are involved in both sport for the training and best performance of the players must use the equipments for safety before starting any training so that they could save players and their self from injuries during training in both sports.

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**SOME ASPECTS OF THE MUSCULAR STRENGTH FOR THE VOLLEYBALL PLAYERS AND JAVELIN PLAYERS' IN ATHLETICS**

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**Introduction and importance of research: -**

Sports training methods aimed at developing the level of sports performance reaching "to achieve high levels of achievement in various sports games, the diversity of these methods and the different effects stimulate interested and involved in the field of sports training to choose the means and the most influential contribution in the development of achievement. Sports training are very important in building curricula and programs containing means and exercises, will improve what he needs from requirements used by the player in his game. When building such new approaches and training programs has become a must recognize the coaches and players over the difficulties which are an obstacle to the achievement and improvement of the great achievements, some studies indicate to the importance of training aids which accompany many of the training curriculum, which are designed according to their objectives whether it (physical, skill, plans). The Importance of research is to study comparative evidentiary exercises climbing on the ropes in the development of some aspects of muscular strength for the volleyball players, and javelin players' in Athletics.

**research problem:**

Research idea is that the sport training requires diversity in training methods and the use of effective means to raise performance, including training climbing on the ropes. The researchers believe the use of these exercises lead to the development and improvement of sports performance, so that the research problem in a weakness in the ability to improve the physical, including some aspects of muscular strength among the youth who make up the main base in Games teams. So researchers considered approach to the preparation of training exercises in climbing on the ropes for the development of some aspects of muscular strength for the volleyball players, and javelin players' in Athletics.

**Research objectives:**

1- Prepare a training curriculum to train climbing on the ropes in the development of some aspects of the muscular strength for the volleyball players, and javelin players' in Athletics  
2- To identify the differences between pre and post tests for training (climbing on the ropes) in the development of some aspects of muscular strength of the volleyball players and javelin players' in Athletics.  
3- To identify the differences between post-test tests for training (climbing on the ropes) in the development of some aspects of muscular strength of the volleyball players and javelin players' in Athletics.

**Hypotheses:**

There are significant differences between pre and post tests for training (climbing on the ropes) in the development of some aspects of muscular strength of the volleyball players and javelin players' in Athletics. There are statistically significant differences in post-test between the volleyball players and players' in Athletics.

**Delimitation & limitation:**

The research sample consisted young players (volleyball and track and field) aged (16-18 years). For the period from the 06/28/2014 till 07/09/2014 in the sports hall indoor in the Physical Education College in Jadriya. The researchers are not concerned with eating habits and behaviour of the person players.

**Research methodology and procedures Field**The researchers chose the sample by the way intentional included youth players in volleyball totalling (5), and the youth players in javelin of Athletics game totalling (5).

**The tests used in research:** 1- Test (throwing medical ball) weight of (2 kg) forward over the head from the status of the stability of (explosive strength). 2- Test (pull on the horizontal bar): - using body weight for 10 sec (strength distinctive speed).3- Test (throwing medical ball) weight of (2 kg) for (60) sec (bearing strength).

2-5 exploratory experience:

Exploratory experiment was conducted date of 06.28.2012 on a sample of (3) for the young players.

It can be considered practical training staff assistant in order to find out the problems and negatives they face during a test in order to solve them.Pre-test: Pre tests were conducted on 02.07.2014.

2-training curriculum:The researcher preparing a training curriculum on the basis of the exploratory experience, have been prepared in the curriculum to some sources and scientific references, the researchers taken into account the sample level and by matching exercises, curriculum included 10 weeks of (2) two units training in the week was applied curriculum date of (4 / 7/2014) until (05/09/2014) the implementation of the module took (0 9 minutes), he has been training in gymnastics hall of the Physical Education College in Jadiriyah the availability place and good ropes, for the two groups, the training when the ripples training load 2 /1.

2-6- posteriori tests:Posteriori tests were conducted for the research sample on the day (07/09/2014) after completion of the training curriculum, the researchers were careful to find appropriate conditions for testing post-test in the same pre-test conditions.

3-1 discusses the results (Special strength) of the arms for the two groups (first & second).

Shows the difference (mean, standard deviation, value (T) calculated and Tabulated, in the pre and post tests for the two groups (first and second) to test the (Special strength) of the arms (Table-1- )

Variables	group	Test Difference		(T) calculated	(T) tabulated	significant differences
		X	S			
explosive strength	first group (Volleyball)	3.41	1.06	4.73	2.78	Morale
	second group (Athletics)	3.88	1.21	3.96		Morale
strength distinctive speed	first group (Volleyball)	3.13	0.661	5.02		Morale
	second group (Athletics)	3.90	0.831	5.54		Morale
bearing strength	first group (Volleyball)	4.15	1.04	3.79		Morale
	second group (Athletics)	3.76	1.18	4.21		Morale

Through the table (1) indicate that the value of (t) calculated greater than the value (t) Tabulated, this means that the difference significant. Researchers interpret the moral difference goes back to the vocabulary of the training curriculum prepared by the researchers in developing the strength of the arms, The development in the tests results indicate the effect of exercises climbing ropes in the development of muscle groups working in the movements (flexion and tide) on the joints related to these movements so

that it can affects the muscle contraction and extroversion time which expresses the ability of the player at the highest rates make (explosive power and strength as fast as distinctive and carry power) for the farthest distance, the training which was applied for the two groups (volleyball and Athletics) has led to an increase in strength and rapid response to higher production of muscle according to the resistance used Some researchers believe that the Muscle fibres has the ability to produce great strength in accordance with the resistance to such fibres, the number of (the kinetic of units operating) will increase depending on its ability to produce kinetic energy and this is what interpreted by the two groups of tests to research. Special Force tests for arms

**Shows the difference (mean, standard deviation, value (T) calculated and Tabulated, for the two groups (first and second) in the post-test to the variables of research (Table-2- )**

Variables	group	Test Difference		(T) calculated	(T) tabulated	significant differences
		X	S			
explosive strength	first group (Volleyball)	7.86	0.942	3.614	2.31	Morale
	second group (Athletics)	8.04	1.12			Morale
strength distinctive speed	first group (Volleyball)	8.22	1.64	4.59		Morale
	second group (Athletics)	9.73	1.48			Morale
bearing strength	first group (Volleyball)	16.31	5.44	5.87		Morale
	second group (Athletics)	14.02	7.22			Morale

Through the table (2) note the tests results (explosive strength \ strength distinctive speed\ bearing strength) for both groups (first & second), significant differences appeared in the post tests between the two groups in favour of second group in the Athletics in a test explosive power and strength distinctive speed the researchers Explain this is significant difference to the Training curriculum followed, which led to improving aspects of physical associated movements of the arms during a hit in volleyball, javelin and disc in Athletics, is this type of training (climbing on the ropes) of great benefit in increasing the efficiency of the work of the joints through the link between muscle strength and kinetic movement in the muscles. With regard to (bearing strength), the moral differences between the two groups are in favour of the first set (volleyball) explain the researchers reason moral differences to the curriculum prepared by the researchers a lot of repetitions which lead to the occurrence of adjustments in the internal functions of the body kinetic (and circulatory system) and respiratory and renewing tissues and thus sporting's ability to perform exercises and tests without fatigue.

**conclusion:**significant differences appeared between the pre and post-tests in favour of the post testing of two groups (first volleyball & second Athletics) in the research variables.in the (Explosive strength - strength distinctive speed - bearing strength).Significant differences appeared in the post tests for the two groups (first and second) in favour of the placebo group (track and field) in the following tests, (Explosive strength - strength distinctive speed).significant differences emerged in the post tests in favour of the first group volleyball (bearing strength).

**Recommendations:**

1-researchers recommendation in comparison with other methods of teaching style of climbing on the ropes  
Comparisons of different age groups style of training climbing on the ropes.

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## **Studying Relationship between service quality and spectators' behavioral intentions of Pro League clubs of Golestan Province**

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### **Abstract**

The purpose of this study relationship between service quality and spectators' behavioral intentions of Pro League clubs of Golestan Province. The population of the study consisted of all spectators of Pro League clubs of Golestan province (Gorgan Basketball Team and GonbadKavos Volleyball Team) in 2014 (N=8050) that 367 spectators was selected as research sample that finally 361 questionnaires was returned. For this purpose, Chin Liu (2008) sport service quality questionnaire and behavioral intentions questionnaire developed by Ryu et al (2011) was used. Reliability of questionnaires after a pilot study using Cronbach's alpha test, respectively ( $\alpha=0.82$ ) and ( $\alpha=0.81$ ) were obtained. Descriptive and inferential statistics methods for data analysis were used. Research results showed that there is no correlation between reliability and spectators' behavioral intentions. Correlation coefficient showed that there is a positive and significant relationship between assurance and spectators' behavioral intentions. In addition, a positive and significant correlation was observed between tangibility and spectators' behavioral intentions. Result of research showed that there is no correlation between empathy and spectators' behavioral intentions. Finally, a no correlation was observed between responsiveness and spectators' behavioral intentions.

Keyword:Service Quality, Behavioral Intentions, Spectators, Pro League,Golestan Province.

### **Introduction**

Professional clubs across the world employ different ways of financing such as sponsors, commercial goods promotion, player transfer, selling sports products and services, and ticketing among which generating revenue through spectators of sports events is of special place (Theodorakis, 2004). Hansen &Gauthier (1992) argue that the most important factor in prosperity of professional sports is to increase the number of spectators. Not only do spectators directly provide revenues for professional clubs and leagues by buying tickets, they also play an important role indirectly in revenue generation through attracting sponsors, sale of television rights and subsidiary services (Hansen &Gauthier, 1992). Moreover, their attendance at sports matches makes such events attractive which is an important feature of sports events (O'Neill et al, 1998).

In fact, sports events spectators are customers of sports events and organizations. In recent years, paying attention to customers' needs and being accountable to their demands, either in production or services sectors, have turned into the main and the most necessary tasks or goals of organizations. This fact that more than half of GDPs of most countries in the world is rooted in the services sector and due to unique features of this sector (like direct contact with customers) make this sector very important (Howat et al, 1998). Despite the long time elapsed since the subject of service quality and its assessment methods was brought up, not only has it not lost its importance, it also has gained a significant role more than ever because of the increasing importance of services in countries' economies (Soon Yu et al, 2014). Managers of service organizations are aware that top quality will lead to better performance and

will bring them about benefits such as customer loyalty, accountability to their needs, market share growth and productivity. They deploy service quality as a leverage to create competitive advantage. This will be realized if organizations know how their customers perceive the quality of their services (Roberts et al, 2003). Also, customers' satisfaction is contingent upon service quality and higher service quality would probably increase customers' satisfaction. This attitude would yield customers' commitment, their intention to return, stability in buying services, expansion of commercial relations between customers and service providers, increased patience with likely deficiencies of future service and positive publicity for the organization by customers (Newman, 2001). Research in this area indicates the importance of service quality in forming positive behavioral intentions in customers. In a research titled "the relationship of service quality and satisfaction with customer loyalty in sports gyms (bodybuilding and aerobics) of Tehran", Mahmoudi (2011) showed that there was a significant relationship between service quality and satisfaction and also between service quality and customer loyalty. Saatchian et al (2010) in a research named "the effects of service quality, satisfaction and loyalty on customers' future behavior decisions to attend fitness and aerobics center", concluded that the factors service quality, satisfaction and loyalty were stronger predictors of customers' returning to these centers. The research by Nuviala et al (2012) on the roles service quality and perceived value in satisfaction of sports organizations' customers in Spain showed that service quality and perceived value would affect customers' satisfaction. Theodorakis (2004) showed that service quality played a remarkable role in predicting future behaviors and satisfaction of sports clubs fans in Superleague Greece. In a research titled "investigating the relationships among service quality, perceived value, satisfaction, and behavioral intentions", Lien et al (2011) concluded that service quality affects perceived value, customers' satisfaction and their behavioral intentions (Lien et al, 2011). Calabuig Moreno et al (2010) stated in their research "the effects of service quality and perceived value on basketball spectators' satisfaction in Spain" that the quality of provided services affects spectators' satisfaction (Calabuig Moreno et al, 2010).

There is also interest in service quality in the sports industry such that today, service quality is one of the most important topics in the field of service management and sports marketing (Robinson, 2006). Accordingly, with intense competition between sports service providers, understanding spectators' levels of expectations of sports organizations will allow marketers to determine whether provided services are of acceptable quality (Shonk&Chelladuraie, 2008). Based on these discussions, if sports organization properly understood factors affecting customers' satisfaction, they could better benefit positive outcomes of enjoying satisfied customers because meeting customers' expectations about service quality will lead to higher satisfaction and will make customers loyal to the services. Therefore, given the increasing growth of economic aspects in sport, focusing on the quality of services offered to customers and proper understanding of their expectations will help managers of private and public clubs to provide customers' needs, gain more financial benefits in the light of customers' loyalty and play a greater role in attracting and preserving new customers. Most research done on the quality of sports services in Iran has investigated service quality in bodybuilding or fitness gyms while the quality of services offered to spectators is mostly overlooked. On the other hand, the quality of services and customers' play an important role in customers' behavioral intentions (Nuviala et al, 2012). Many researchers believe that satisfaction operates as a mediator variable and is affected by service quality and price and affects customers' behavioral intentions like intention to return in future and publicity (Calabuig et al, 2010). Understanding the importance of the environment where sports services are provided and also the factors which affect satisfaction and retention of Sports halls' customers is a critical issue for managers of these sports places. On the other hand, focusing on the matter may play an important role in profiting these sports environments (Macintosh & Doherty, 2007). Having these issues discussed and given the importance of sports service quality and customers' satisfaction, this paper tries to answer the question that if there is a relationship between service quality and behavioral intentions of spectators of Pro League clubs of Golestan Province.

### **Materials and Methods**

The purpose of current study is applied and its method is correlated descriptive, which is conducted as a field study. The population of the study consisted of all spectators of Pro League clubs of Golestan province (Gorgan Basketball Team and GonbadKavos Volleyball Team) in 2014 (N=8050). To select sample size, stratified sampling method was used and 367 spectators was selected as research sample that finally 361 questionnaires was returned. The data was collected using sport service quality questionnaire developed by Chin Liu (2008) and behavioral intentions questionnaire developed by Ryu et al (2011). The content validity of the questionnaires was approved by five professors of sports

management. To calculate the reliability of the questionnaires, a pilot study was conducted whereby a number of 30 questionnaires were distributed among spectators. The results showed a reliability coefficient of  $\alpha=0.82$  for sport service quality questionnaire and  $\alpha=0.81$  for behavioral intentions questionnaire, which indicated the consistency of measurement. A demographic data sheet was used to collect the data on personal information including age, level of education and attendance record at sporting events. SPSS software (Version 16) was used to analyze the data. As to the statistical measures, descriptive statistics including frequency, percentage, mean, standard deviation and tabulations were used to describe the data. Inferential statistics including Pearson correlation formula was used to test the hypotheses.

**Results:** The results showed that the participants were 31 years old on average. 67.3 percent of the participants had Diploma or higher degrees and mean of spectators' attendance record at sporting events was 7.3 years.

Table 1. Description of research variables

Statistic Variables	Mean	S D
Reliability	2.81	0.93
Responsiveness	2.85	0.86
Empathy	2.80	0.93
Assurance	3.11	0.89
Tangibility	3.01	0.87
<b>Service quality</b>	<b>2.94</b>	<b>0.70</b>
<b>Behavioral Intentions of Spectators</b>	<b>3.82</b>	<b>0.82</b>

As shown in Table 1, among dimensions of service quality assurance has the highest average and empathy had the lowest average. Mean of service quality scores was 2.94 out of 5 which indicates that the service quality mean scores is higher than average from perspective of spectators. Also mean of behavioral intentions of spectators' scores was 3.82 out of 5.

Table 2. Correlations between research variables

Variables	Spectators' Behavioral Intentions		
	N	r	P
Reliability	361	-0.006	0.910
Assurance	361	0.255	0.001
Tangibility	361	0.189	0.001
Empathy	361	-0.031	0.556
Responsiveness	361	0.090	0.087

Pearson correlation formula was run to examine the relationship between dimensions of service quality and spectators' behavioral intentions. Regarding the results that presented in Table 2, there is no correlation between reliability and spectators' behavioral intentions ( $r=-0.006$ ,  $P\leq 0.910$ ). Also, the results of correlation coefficient showed that there is a positive and significant relationship between assurance and spectators' behavioral intentions ( $r=0.255$ ,  $P\leq 0.001$ ). In addition, a positive and significant correlation was observed between tangibility and spectators' behavioral intentions ( $r=0.189$ ,  $P\leq 0.001$ ). Result of research showed that there is no correlation between empathy and spectators' behavioral intentions ( $r=-0.031$ ,  $P\leq 0.556$ ). Finally, a no correlation was observed between responsiveness and spectators' behavioral intentions ( $r=0.090$ ,  $P\leq 0.087$ ). [table. 2].

### Discussion and Conclusion

With increasing competition in today's world, organizations' needs to employ customer-oriented approaches in their marketing strategies have increased. Organizations have learned that while it is easy to attract customers, turning them into loyal customers is a tough job. Research has shown that customers' satisfaction is not enough alone and that the important thing is to retain the customers and raise their loyalty. This goes beyond service organizations and encompasses other sectors such as sport. One of the most important concerns of clubs' managers and sports marketers is to attract spectators to sports events and to retain them. In this regard, Shonk & Chelladurai (2008) argue that in order to attract spectators to sports events, precise marketing plans which are able to provide spectators' needs are critical.

Findings of the present study showed that no significant relationship existed between reliability and spectators' behavioral intentions; this is not in line with findings of Saatchian et al (2010) and Lien et al

(2011). A significant relationship was found however, between assurance and spectators' behavioral intentions which are in agreement with findings of Saatchian et al (2010) and Lien et al (2011). About tangible factors, findings revealed a significant relationship between tangible factors and spectators' behavioral intentions which is also in agreement with findings of Saatchian et al (2010) and Lien et al (2011). Findings also showed that no significant relationship existed between empathy and spectators' behavioral intentions which is contrary to findings of Saatchian et al (2010) and Lien et al (2011). No significant relationship was found between responsiveness and spectators' behavioral intentions which is also contrary to findings of Saatchian et al (2010) and Lien et al (2011). The quality of services offered to spectators has always been an important challenge facing managers of sports events. Sports spectators would like to receive high quality services in exchange for the money they spend. In this regard, Howat et al (1998) state that two factors are always important for spectators of sports events: the quality of the event and the quality of subsidiary factors related to the event including physical factors trust in human forces that hold the event, their accountability and safety and security. O'Neill et al (1999) argue that subsidiary factors play an important role in spectators' satisfaction in sports events. Creating a calm environment for spectators and appropriate interaction of human forces in charge with spectators, addressing their problems, setting fair prices for tickets and availability of managers holding the event are factors which as O'Neill et al (1999) suggest may lead to spectators' satisfaction and reinforce their verbal publicity of the event for others and their returning to such events. On the other hand, awareness of sports spectators' expectations and providing their needs may bring about emotional loyalty of spectators to sports events. Spectators loyal to sports events play important roles in verbal publicity and can reduce much of marketing costs. Given the results of the present study, the following are suggested: Problems and difficulties of spectators should be identified and duly solved in each tournament. Building an informational bank of spectators and their problems would be of great help. Deploying and training of human forces for appropriate interaction with spectators and understanding their needs and demands. Tangible factors should be reviewed and improved; these include parking lots, chairs, appearance of sports halls, transportation, resting places and subsidiary factors. Focusing on special needs of spectators and human forces of sports complexes. The type of services offered to spectators along with match schedules should be precisely examined and spectators should be informed of the type of services. In this study, only the relationship of service quality and behavioral intentions of spectators in sports events was explored and it is suggested that future research examine other factors affecting spectators' behavioral intentions.

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## **Modelling Touch Football (Touch Rugby): Can Successful Execution Of Line Attack And Defence Be Probabilistically Modelled As Independent Events**

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**Abstract.**In order to investigate the possibilities of modelling sports via attacking and defending options selected by different teams, an example sport of touch football was investigated. Touch football is widely played, however the greatest density of recorded participants is found in Australasia. Despite the large numbers involved, limited published research to date is available on modelling this sport. By logically considering independence between probabilities in line attack for opposing teams, a model of scoring probabilities for different teams was developed and successfully tested for a range of input parameter values. Providing a successful framework for modelling one isolated phase in the sport of touch football is a foundation step for developing a practical mathematical model for representing this sport. There are also implications for potential expansion of such a model to further similar sports.

**Keywords:**Sport Modelling, Independence, Probability, Touch Football

### **Introduction**

Modelling the outcome of phases of a sport match via considering attacking and defending choices This paper is a hypothetical exploration of mathematical modelling of attacking and defending options for different teams within sports and evaluating the best options for these teams. Certainly attempting to divulge the probable outcome of a sports match or ranking teams by investigating offensive and defensive abilities of a team has been considered as a viable avenue to pursue [1], with recent specific examples such as Liu and Hohmann in soccer [2, 3] or Zırhlioğlu in volleyball [4]. Similarly the potential for prediction via examination of a team's ability to execute certain relevant skills or assessing via phases of play has also been preliminarily investigated in other sports. Logically this is very appropriate for a sport such as golf [5]. However this strategy has also been applied to other sports, such as phases of play in ice hockey [6] and in particular volleyball (for example [7,8,9]). In order to consider Markov State based modelling, an example sport of touch football was examined. Due to the unique discrete state based nature of the individual rollball actions for restarting play in touch football [10], it presents a prospect with high potential for this manner of sport modelling.

### **Introduction to touch football**

Touch football (referred to as touch rugby in some countries) is one of the most extensively played sports in Australasia. In Australia, there are over one quarter of a million registered touch football players, as well as half a million school children and up to 100,000 casual players [11,12]. Touch football is mainly popular in those states in which rugby league is also popular (Queensland, New South Wales and ACT), which is not surprising given its origins as a training activity for this sport [13]. While New Zealand has less touch football players than Australia, it is still the largest participation sport within New Zealand with over 200,000 New Zealanders playing the game[14]. In the last year Touch Football has entered into

partnerships with National Rugby League in Australia and New Zealand Rugby (rugby union)[14], evidence of close links between these three different sports.

Touch football is also played in Pacific Island countries such as Samoa, Fiji, The Cook Islands, and Papua New Guinea. Countries such as South Africa, the United Kingdom (with 22 national touch associations across Europe [15]), USA, Japan, amongst others also regularly enter teams in international tournaments. For these other countries, formal touch football competitions may not involve such a high proportion of total participants as for the case in Australasia. However in all countries where there are large numbers of rugby league or rugby union players, touch football is played by an unrecorded number of individuals, either as a social sport or used primarily as a training tool for these other sports. In South Africa touch football (referred to as touch rugby) is used as an introduction to rugby as well as for developing basic skills of the game [16]. Touch football as a sport has grown rapidly within Australia [17]. This growth seems to be replicated to some extent in these other countries; however the greatest density of participants remains in the continent of Australasia. Despite the large number of players and support personnel involved in touch football and potential of health benefits from this activity [18], limited research has been conducted modelling this sport. Some analysis has been conducted on player movement patterns and physiology of players [19-25]. Due to the large number of touch players, both in Australasia and globally, the majority of papers involving touch football use touch players as participant sample groups in a variety of experimental interventions [for example 26-28]. This includes injury studies, though research on injury incidence in touch football have shown injury rates that are not significantly elevated over other football codes [29] or in fact lower [30], implying that the use of touch football players as experimental participants is due to the multitude of such players, as opposed to any heightened injury risk. Interestingly many may have likely experienced touch football in its use in developing skill [31] and game sense for other invasion sports via teaching games for understanding coaching methods [32].

#### **Specifics of attacking and defending options near to the scoreline**

In touch football, when play is near the scoreline, most defensive positions will be forced to give an attacking option to the offensive side. This is necessary, due to there being less onside defensive players than available attackers, with proper offensive positioning, there will always be the potential for unmarked attackers. Therefore the option for defensive structure most ideally selected is typically the one that is hardest for the attackers to execute and defenders must take note of the weaknesses of the attacking side in designing their strategies. Various types of defences present different opportunities for an attacking side to score, highly dependent upon attacking players being able to successfully select and execute the best available option. For example a "man on man" defence does not adjust for the fact that one of the defenders is offside as this defender effected the touch on the person performing the rollball (the act of bringing the ball into play, following a touch or change of possession), for further clarification on this and other touch football terminology, the reader is referred to two compatible playing rule publications by Federation International Touch [33] and Touch Football Australia [34]. In this scenario, the attacking player assigned to this defender is presented with an opportunity to score. In such a situation, given that these two players are of similar agility and no mistakes are made by the attacking team, a touchdown is highly likely to be scored. Several variations of defence are therefore initiated. These options include some variation, either instantaneous or delayed, of compressing the defence around the ruck (the area between the attacking player performing the rollball and the half (the player who is to take possession of the ball, behind the player who performs the rollball)) to force passing plays.

Some defensive strategies involve leaving certain players unmarked. An example would be leaving a player unmarked, such that an attacking player not known for his/her passing game would have the option to create a scoring play if they could execute a long (e.g. 25-30m) pass to an eligible wing (those two players in the team positioned closest to either sideline) receiver using their non-dominant hand. For this particular player, this would represent an unlikely option to be executed successfully and hence a sensible selection of defensive structure. Similar to this example there are numerous other defensive options that attempt to capitalise on the strengths and weaknesses of various attacking teams, including options focused on individual players within a team and those designed according to how the players coordinate their strengths and weaknesses within a team structure. At a district, state or national representational level, these strengths and weaknesses of opponents will usually be well known by the coaching staff of the defending team. As teams are generally aware of each other's strengths and weaknesses, likely defensive and attacking structures can be predicted. However, the situation arises where teams attempt to execute plays according to the opposition structure, which is logically based what their opposition is likely to be predicting them to do. Therefore similar to other elite competitions such as

the National Football League (NFL) [35], for choosing correct play structures, it is important for a team to be aware of their strengths and tendencies from their opponent's perspective.

A few additional terms mentioned include line attack, which will refer to a state of play in which the attacking team has gained sufficient territory that they are close enough to the opponents line in order to launch a successful attack on the following play. Second phase play is used to refer to an attacking play conducted immediately after an unsuccessful attack with the purpose of scoring due to defensive disarray caused by the previous attack.

### **Relevancy to modelling other invasion sports**

Touch football presents an exceptional modelling environment. The reduced framework of this sport, when compared to more complex invasion sports with a greater range of available player actions and multiple scoring systems gives improved potential for probabilistic modelling of the game [10]. Yet as discussed previously [10], it shares many common parameters for its basic framework with other invasion type sports such as rugby union, rugby league and gridiron. Work completed on modelling touch football thus has improved potential for field applicable modelling, additionally a working model and successful methodologies can easily be adapted to these other invasion type sports.

A recent article on the invasion sport gridiron, namely predicting team play calling in the NFL [35], highlights both the recent relevancy and importance of the implications of this work. This paper identifies the importance of modelling invasion sports in general, but specifically the NFL competition, with estimates of one billion people worldwide watching the superbowl. It also identifies the importance of analysing information and preparing reports in order to plan strategy. Predicting team play calling identifies trends in team activities, whilst this work on touch football, although expandable to all invasion sports, can inform decision making by building on this kind of established trend.

## **Model and Analysis**

### **Probability matrices**

To initiate successful modelling, touch football was selected as it is recognized as one of the most simple invasion sports? Let us start by considering the simplest model for touch football.

Consider two hypothetical teams, Team A and Team B. Team A has four set attacking plays designated as  $A_A$ ,  $B_A$ ,  $C_A$ , and  $D_A$  respectively (with the subscript denoting the team) in this example we are using A or D for denoting an attacking or a defending play.  $A_A$ ,  $B_A$ ,  $C_A$ , and  $D_A$  are the probability that the play will be executed as intended by the attacking team. Team B has a set defensive policy with probabilities  $A_D$ ,  $B_D$ ,  $C_D$ , and  $D_D$  of successfully defending moves  $A_A$ ,  $B_A$ ,  $C_A$ , and  $D_A$  respectively. We can therefore denote this as the following pairs of 1x4 probability matrices:

Team A ( $A_A$ ,  $B_A$ ,  $C_A$ ,  $D_A$ ) Team B ( $A_D$ ,  $B_D$ ,  $C_D$ ,  $D_D$ )

For example, using appropriate values (as determined via observation of game video footage and discussion with state level coaches) for hypothetical teams:

Team A (0.7, 0.5, 0.4, 0.3) Team B (0.9, 0.8, 0.2, 0.3)

In this scenario, Team B adopts a defensive structure, which gives Team A the option of scoring via move  $A_A$  or  $B_A$ , but defending moves  $C_A$  and  $D_A$  more effectively (e.g.  $A_A$  and  $B_A$  are quick release (of the ball) plays focusing attack on the central area of the field, whilst  $C_A$  and  $D_A$  focus attack towards the sidelines with for example a long pass).

In order to model this situation, it is assumed that if Team B executes defence correctly, with the probabilities shown above, Team A cannot score from this particular play. In order to score it is required for the defence to be unsuccessful at blocking this particular attack and given that this attack would be presented with an opportunity to score, that Team A successfully executes the appropriate option for this particular play. To re-iterate, in order to score a touchdown, Team A must execute an attack correctly, given that Team B does not defend it successfully.

### **Can attack and defence probabilities be considered as independent events and the role of pressure**

We must thus logically consider the probability that Team A executes their attack correctly and Team B fails to defend appropriately. Therefore we must firstly consider whether attack and defence can be considered as independent events. They may well not be so. Certainly it is well known in sport that when a defence exerts a great deal of pressure on an attacking team it may change (most likely reduce) the probability of successful execution of a move. This could be incorporated into the probabilities of the defence successfully stopping the attack, as a probability of either directly stopping the move or applying pressure, which results in its failed execution. However some teams may respond to this pressure better

than others therefore if probabilistic descriptors are to be designed for incorporation into team statistics then this is best accomplished as a component of the attacking team statistics. There is the possibility for development of a factor that represents pressure. If the defensive team can pressurise the attacking team it could be incorporated into model design such that it will activate a pressure function built into the attacker's probability of success. This could vary across teams, for some teams reducing the chance of successful execution of a move, whilst for other teams it would have little or no effect. This however is very hard to quantify.

The average defending and attacking probabilities, or even the time taken to execute stages within an attack or defence, can be easily measured by examining digitized game video data, using commercial match analysis programs, such as Dartfish TeamPro™ software. Factors such as the pressure a team places on an opponent and how it affects the probability of executing an attack is difficult to measure purely from digitized game data. It could be considered that the distance of defending players from attackers and their approach velocities/accelerations could be extrapolated in order to develop a play pressure function. Such a function could then be incorporated as an additional factor affecting execution of a particular attacking move. This value would be different for different teams as some teams would absorb this pressure poorly and therefore the probability of a successful score would subsequently decrease. Additionally other teams would absorb defensive pressure well, or at a higher level use the momentum of the defenders to contribute to the successful implementation of the first and/or second phase execution of their scoring strategy. This could be examined via analysis of the success ratio of set moves and if this success was dependant on the distance of the defending players from the attackers. Hypothetically this would be an interesting option to examine.

Consider the case for teams with a good level of experience where there is enough game data to be of use to the coaching team. In this situation, if there was enough data to extrapolate a displacement function, the condition would be most likely of little practical significance. This is because most teams at this level would place pressure on the opposition on all plays and all plays would be executed under defensive pressure. It would be most likely that without any pressure from the defensive structure, it would become very easy to execute most moves and this fact would be well known to the higher level performer. For the lower to intermediate level teams with poor technical skills and limited technical coaching the pressure would fluctuate with each defensive action. Excluding defensive mistakes (which would be represented by the defenders failing to execute the correct defence response as per the previously mentioned probability functions), at a higher level all defences would place pressure on the opposition for the key attacking players and plays would therefore be executed under pressure. The degree of pressure would be therefore factored into successful defensive probabilities as all attacking and defending teams at a high level would be used to applying pressure and operating under pressure, so this could be fairly assumed at all plays.

There are some plays (such as players that plan to throw a long pass standing deeper and thus further from advancing defenders or giving the ball to an intermediate, unpressured player that is situated in a preferential isolated position to allow undisturbed execution of the pass), which are designed to reduce pressure on the key players at the key points in the play. This bonus would however already be represented in probabilities for correct execution of the particular play as it would already be a higher value, accounting for the fact that this assisted a given team's execution of the play. Importantly some moves are best conducted when the defenders are very close to the attackers in order to reduce the opportunities for the defence to accurately read the play. Therefore use of a displacement from opposition based pressure function would not be appropriate for all plays and at this stage in model development it is best to make an approximation. This approximation would be that at high level of performance, attacking players are accustomed to being pressurised by defence. The defence pressurises attacking teams according to their defensive probability functions and therefore independency within probability functions can be assumed to exist between attack and defence probability functions, however overall probability of scoring is dependent on both of these functions, therefore implying that this latter probability has no degree of independence.

#### **Probabilities of Team A scoring on play A-N against opponent Team B**

The relationship between defensive and offensive probabilities with regard to outcome are illustrated in Figure 1. Let  $P(A)$  be the probability of A successfully executing an attacking play and  $P(B)$  be the probability of B defending successfully. If Team B's defending and Team A's attacking probabilities, as expressed above, are independent,  $A \cap B = P(A)(1-P(B))$ .

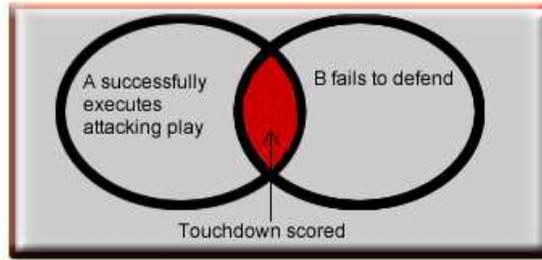


Fig. 1: Defensive and Offensive probabilities for an attack by Team A against Team B

Let us now use Teams A and B from our previous example. The chances of scoring on any set play for set plays A-N are given as follows:

The chance of Team A scoring on any set play (A-N) against opposition B are given below:

$(P(A_A)(1-P(A_B)), P(B_A)(1-P(B_B)), P(C_A)(1-P(C_B)), \dots, P(N_A)(1-P(N_B))$

**Model analysis with example team data**

This equation gives for our example two teams probability matrix:

$(0.7(0.1), 0.5(0.2), 0.4(0.8), 0.3(0.7))$

Which equates to:

$(0.07, 0.1, 0.32, 0.21)$

This implies that the coaching staff are best to employ moves  $C_A$  (with probability of success 0.32) and  $D_A$  (with probability of success 0.21) against this particular defence. These are also the attacking options that the defensive team are making available to the offensive side. Such opportunities are often presented as attacking options because these moves are those which the offensive team is least capable of executing successfully as is certainly the case in this example. However, due to the defensive structure presented, these become the most probable attacking options for scoring. Extrapolating this concept, if sufficient data on defending or attacking teams is not available then a probability could be estimated from successful execution of a particular class of defensive or attacking strategy.

Consider now offensive and defensive line attack profiles for Teams A and B

Team A

Attack profile  $(0.7, 0.5, 0.4, 0.3)$  Defence profile  $(0.7, 0.5, 0.4, 0.3)$

Team B

Attack profile  $(0.9, 0.8, 0.2, 0.3)$  Defence profile  $(0.9, 0.8, 0.2, 0.3)$

We already have calculated  $P(\text{Team A scoring against Team B})$ , we now have  $P(\text{Team B scoring against Team A})$  for the various scoring options available

$= (0.9(0.3), 0.8(0.5), 0.2(0.6), 0.3(0.7))$

$= (0.27, 0.40, 0.12, 0.21)$

While this hypothetical data is for successful execution of line attack/line defence, it can be seen that, per attack executed, the best attacking options for Team B, when playing against Team A are preferentially options  $B_B, A_B, D_B, C_B$ . Different attacking options work well against different defensive patterns and rely upon the attacking team being able to adapt to the scoring opportunities presented by a particular defensive structure. To illustrate this consider a Team C.

It can be clearly seen that different line attacks are optimal for different teams and when facing different categories of defensive structure. For example Team B may have not employed a 'man on man' defence in order to prevent close range touchdowns relying on agility mismatches. This will involve compressing part of the defensive line. The drawback to the compressed defence is it provides opportunities for Team A to score with a long pass. Alternatively, another team may structure their defence in a manner that requires Team A to attempt to use their agility in order to score, by adopting a man on man defensive structure. Due to one defending player being offside at the rollball (due to the necessity of effecting a touch), exploiting this exposure to the defensive structure from this missing player provides the highest probability scoring option.

Consider Team C

Attack profile  $(0.85, C_2, 0.1, 0.1)$

Defence profile  $(0.4, 0.6, 0.7, 0.9)$

So for Team A:

$P(\text{A scoring against C}) = (0.7(0.6), 0.5(0.4), 0.4(0.3), 0.3(0.1))$

$= (0.42, 0.2, 0.12, 0.03)$

This would imply that moves A (with probability 0.42) and B (with probability 0.2) are the attacking options with the higher probabilities of a successful attempt to score. This differs from those that should be employed against Team B due to the alternative defensive structure.

#### **4. Discussion**

By logically considering independence between probabilities in line attack for opposing teams, a model of scoring probabilities for different teams was developed and successfully tested for a range of input parameter values. It is an appropriate assumption to consider independence of attacking and defending probabilities within the confines of the logical model put forward. Using test values, the model has provided appropriate output for one phase of the sport of touch football. This model is a framework for provisional evaluation of scoring probabilities and the outcome of line attack and defence for different touch football teams. Providing a successful framework for modelling one phase in the sport of touch football is a foundation step for developing a practical model for this sport. If the condition of independence is applicable to other similar invasion type sports (particularly rugby union, rugby league, rugby sevens, gridiron), this model can therefore also be adapted to relevant phases in these other sports for which the criteria is met. There are thus also implications for potential expansion of such a model to additional similar sports.

Given the focus placed on prediction of team structures in invasion sports, in recent publications, the ability to model the outcome probabilities from the interaction of different structures is also of high importance. The methods used in this paper could assist in identifying the optimal offensive or defensive structures for invasion sports. While this model is, at this stage simplistic, it is the foundation from which a more in-depth model can be designed.

A factor of interest in future research is to consider whether there can exist teams D, E and F such that  $P(D \text{ scoring against } E) > P(E \text{ scoring against } D)$  and  $P(E \text{ scoring against } F) > P(F \text{ scoring against } E)$

But yet where  $P(D \text{ scoring against } F) < P(F \text{ scoring against } D)$

A condition of cycle intransitivity, which if met, given the importance of line attack/defence, namely the only method to score points, would have serious consequences for the meaning of individual contests and design of tournaments.

#### **5. Conclusions**

Many factors are considered in this paper, some only in the outline format necessary for generating foundation principles for modelling line attack within this sport, requiring further evaluation and exploration in future works. The simple probabilities involved within this paper could be crudely estimated from observing game data. This paper however, allows some ability to investigate the statistical significance of any trends based upon number of data points selected from and allows, albeit crude, at least some degree of quantifiable basis for results prediction and selection of attacking or defending options chosen by coaches. This includes identifying attacking moves and defensive options which will be most appropriate against given opposing team structures.

#### **6. Acknowledgements**

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## Relationship Between Motor Abilities And Smash Skill Of Badminton Players

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### **Abstract**

The purpose of this study was to evaluate the relationship between motor abilities and smash skill of badminton players for which 80 badminton players (50 boys and 30girls) were selected from various badminton coaching centers of Haryana having age ranged from 13 to 16 years. Motor abilities namely agility, balance, flexibility, explosive power (SBJ&VJ), reaction time, speed, strength were measured by conducting 10 yards shuttle run, Stork balance, bend and reach, standing broad jump (SBJ), Sargent jump(VJ), Nelson hand reaction, 30 meter dash, sit-up tests. Hicks smash skill test were used to assess the badminton skill of the selected subjects. Pearson Product moment coefficient of correlation with significant level at ( $p<0.05$ ) was used to examine the correlations between smash skill and agility, balance, flexibility, explosive power, reaction time, speed, strength. Pearson Product moment coefficient of correlation and with significant level at ( $p<0.05$ ) was used to examine the correlations between smash skill and agility, balance, flexibility, explosive power, reaction time, speed, strength.

Keywords:Badminton, Smash skill, Motor ability, Boys, Girls.

### **Introduction**

Motor Fitness refers to the ability of an athlete to perform successfully at their sport. The components of motor fitness are agility, balance, power, speed, reaction time etc. Motor fitness might be referred as an efficient performance in such basic requirements as running, jumping, dodging, climbing, swimming with sustained efforts in variety of situation and therefore, would involve such element as power, agility, speed, balance. "Motor fitness is the final criterion through which all other elements of physical fitness or total fitness are seen and measured in man."(Book 1982). Importance of motor fitness can be described in these words that "motor fitness and competitive performance go hand in hand with athleticism."

Badminton is a racquet sports played by either two opposing player in (singles) or two opposing player (Doubles), who takes position on halves of rectangular court that is divided by a net. Unlike many sports badminton does not use a ball: badminton uses feathered projectile known as a shuttlecock. The shuttlecock is strongly affected by wind; so the competitive badminton is always played indoors. From 1992, badminton has been an Olympic sport with five events: men's and women's singles, men's and women's doubles, and mixed doubles, in which each pair consists of a man and a woman. It is highly important for badminton players to be mentally and physically fit.

Objective of the study: The problem has been stated as the relationship between motor abilities and smash skill of badminton players of Haryana.

Methodology and procedures: The study has been conducted on the sample of 80 badminton players (50 boys and 30girls) which were selected from various badminton coaching centers of Haryana having age ranged between 13 to 16 years. Motor abilities namely agility, balance, flexibility, explosive power (SBJ&VJ), reaction time, speed, strength were measured by conducting 10 yards shuttle run, Stork balance, bend and reach, standing broad jump (SBJ), Sargent jump (VJ), Nelson hand reaction, 30 meter dash, sit-up test and Hicks smash skill test (Barrow) were used respectively to assess the badminton skill of the selected subjects. Pearson Product moment coefficient of correlation with significant level at ( $p<0.05$ ) was used to examine the correlations between smash skill and agility, balance, flexibility, explosive power, reaction time, speed, strength.

Findings: mean difference of motor fitness variables and smash skill of boys and girls badminton players has been given in table 1 and shown in figure 1.

Table 1 :Mean difference between the score of motor fitness and smash skill variables of boys and girls badminton players.

Sr. No.	Variables	Boys		Girls		S.E.D	't'
		Mean	S.D.	Mean	S.D.		
1	Speed	5.19	0.53	6.18	0.11	0.15	6.15
2	Agility	10.18	0.84	10.87	0.61	0.22	3.05
3	Strength	46.76	5.98	34.52	12.28	3.14	3.89
4	Flexibility	5.65	1.98	3.21	1.93	0.56	4.35
5	Reaction time	2.65	0.33	5.59	7.44	1.61	4.35
6	Balance	7.80	4.87	5.03	3.24	1.25	1.81
7	Explosive power(VJ)	16.04	3.58	11.07	2.41	0.92	2.20
8	Explosive power (SBJ)	76.02	9.36	55.57	8.15	2.55	8.16
9	Clear test	73.95	9.36	54.66	17.04	5.07	3.79
10	Smash skill	60.04	10.32	48.57	17.72	4.62	2.48

Significant at 0.05 level

The results in the table 1 depicted that the mean of speed of boys and girls badminton boys players was 5.19 and 6.18 second respectively, whereas the mean of agility was 10.18 and 10.87 second, for strength was 46.76 and 5.98, for flexibility was 5.65 and 1.98 , for reaction time was 2.65 and 5.59 second, for balance was 7.80 and 5.03 second, for (VJ)explosive power was 16.04 and 11.07 inch, explosive power (SBJ) was 76.02 and 55.57 inch, for clear test was 73.95 and 54.66 for smash skill was 60.04 and 48.57 respectively.The S.D of speed of boys and girls badminton players was 0.53 and 0.11 second respectively, whereas the mean of agility was 0.84 and 0.61 second, for strength was 5.98 and 12.28, for flexibility was 1.98 and 1.93, for reaction time was 0.33 and 7.44 second, for balance was 4.84 and 3.24 second, for (VJ) explosive power was 3.58 and 2.41 inch, explosive power (SBJ) was 9.36 and 8.15 inch, for clear test was 9.36 and 17.04 for smash skill was 10.32 and 17.72 respectively.The calculated t value for speed was -6.15\*, agility -3.05, strength 3.89\*, flexibility 4.35\* reaction time -4.35\*, balance 1.81, leg power 2.20\*, explosive power 8.16\* clear skill 3.79\* and smash skill was 2.48\*. The value of 't' test was found significant at  $p < 0.05$  level in case of speed, agility, strength, flexibility, reaction time, leg power, explosive power, clear skill and smash skill except the balance .

Figure 1: Means of motor fitness variables and skills variable of smash of boys and girls badminton players of Haryana

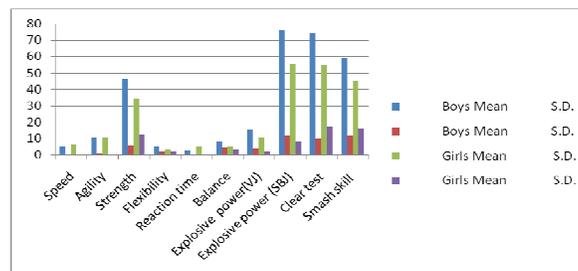


Table 2  
Coefficients of correlation of smash skill with motor fitness variables of boys badminton players

Sr. No.	Variables	R	'p' value
1	Speed	-0.208	0.194
2	Agility	-0.419	0.006*
3	Strength	0.380	0.014*
4	Flexibility	0.365	0.020*
5	Reaction time	-0.366	0.021*
6	Balance	0.251	0.116
7	Explosive power (VJ)	0.202	0.812
8	Explosive power (SBJ)	0.205	0.054*

\*significant  $r_{.05}(38) = 0.054$

Table 2 revealed that there were statistically significant relationship between smash skill and motor fitness variables of agility ( $r = -0.419$ ), flexibility ( $r = 0.365$ ), reaction time ( $r = -0.366$ ), strength ( $r = 0.380$ ). The values for these variables were found significant at 0.05 level. However, coefficient of correlation between smash skill and motor fitness variables of speed ( $r = -0.208$ ), balance ( $r = 0.251$ ), explosive power (VJ) ( $r = 0.202$ ) and explosive power (SBJ) ( $r = 0.205$ ) were not found to be statistically significant. Graph- 2 Graphical representation of Coefficients of correlation of smash skill with motor fitness variables of boys badminton players

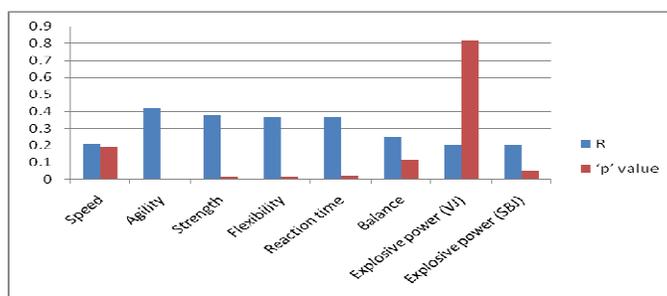


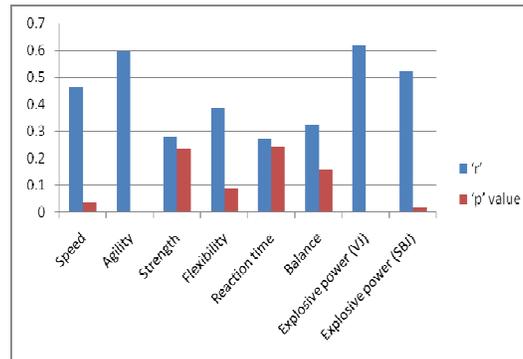
Table 3 Coefficients of correlation of motor fitness variables with smash skill of girls badminton players

Sr. No.	Variables	'r'	'p' value
1	Speed	-0.465	0.035*
2	Agility	-0.596	0.004*
3	Strength	0.279	0.235
4	Flexibility	0.388	0.090
5	Reaction time	-0.271	0.244
6	Balance	0.326	0.158
7	Explosive power (VJ)	0.622	0.004*
8	Explosive power (SBJ)	0.522	0.017*

\*significant  $r_{.05}(18) = .444$

Table 3 indicated that there were statistically significant relationship between smash skill and motor fitness variables of speed ( $r = -0.465$ ), agility ( $r = -0.596$ ), (SBJ&VJ) explosive power ( $r = 0.522$  &  $0.622$ ). The values for these variables were found significant at 0.05 level. Whereas coefficients of correlation between smash skill and motor fitness variables of flexibility ( $r = 0.388$ ), strength ( $r = 0.279$ ), reaction time ( $r = -0.271$ ), balance ( $r = 0.326$ ), were not found to be statistically significant.

Graph- 3 Graphical representation of Coefficients of correlation of motor fitness variables with smash skill of girls badminton players



### Discussion of findings:

It has been observed from the findings that the boys badminton players had shown significant relationship between smash skill and agility, strength, flexibility, reaction time, explosive power (SBJ). The results indicated that smash skill ability can be improved by agility, flexibility, strength, reaction time, and explosive power (SBJ). Similarly Chang (2007) observed the significant correlation between badminton compound skills namely long serve, drive, clear, four corners and motor abilities on grip strength, shuttlecock throw, standing long jump, one minute sit-ups, 800 meter run, shuttle run, upper limb reaction speed, and 50 meter run. The results of the present study for girls badminton players indicates that the smash skill was significantly correlated with speed, agility, (SBJ & VJ) explosive power. These findings were supported by the study of Tergerson (1965) he revealed significant relationship between badminton playing ability and motor abilities namely strength, agility, flexibility, and power in college level women badminton players.

### Conclusions:

In the light of the findings and limitations of the present study the following conclusions were drawn: Motor fitness variables of agility, flexibility, reaction time, strength and explosive power (SBJ), showed significant relationship with smash skill of boys badminton players. Insignificant correlation was observed between smash skill and speed, balance, explosive power (VJ) of boys badminton players. Motor fitness variables of speed, agility, explosive power (VJ, SBJ), showed significant relationship with smash skill of girls badminton players. The Motor fitness variables of strength, balance, flexibility, reaction time for girls badminton players did not showed any significant relationship with smash skill of girls badminton players.

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## **Effect Of Six Weeks Yogic Exercises Training On Muscular Strength Development Of Athletes**

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### **Abstract**

Yogic exercises not only increase the general strength but also tone up the muscles because these exercises stretch out the muscles and due to their slow stretch and hold nature along with breathing mechanism improves the muscular tone and strength of the muscles. To achieve the purpose of the study six weeks yoga training was administered and Kraus–Weber test is framed to find out the minimum muscular strength required to participate in the training programme and also to find out the improvement in muscular strength after the training programme. The 120 athletes (Boys) who represented Gulbarga (20), Raichur (20), Bidar (20), Yadgir (20), Bellary (20) and Koppal (20) districts in the state level athletic meet ranging from 15-17 years of age were drawn as subjects. The results clearly indicated that the six weeks yoga training was improved muscular strength. Hence it is concluded that there is a positive and significant effect of yogic exercises in the improvement of muscular strength of athletes.

Key words: Yogic Exercises, Muscular strength

### **Introduction**

The person who is physical fit will be able to carry out the essential of his job without undue fatigue. Fitness is characterized by man's ability to function efficiently with in his potentialities. Fitness implies not only the acquisition of certain physical skills but also the ability to withstand the emergency demands training and competitions. High level of strength is essential to good performance in all-athletic games and in some events strength is of almost important. Greater strength often results in better performance. Its relative significance various depending of the nature of the particular activity. A person having muscular fitness can carry out his daily routine efficiently and effectively with least effort and strain. Muscular fitness plays an important role in all aspects of athlete's performance improvement. Yogic practices not only make the internal organs fit but also strengthen the muscles. Yogic exercises increase the general strength and tone up the muscles because these exercises stretch the muscles, due to their slow movement and held position with breathing mechanism improves the muscle tone. The word "Training" has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years.

### **Essence Of Yoga In The New Millennium**

All yoga exercises and processes aim at purification, nervous control and coordination of muscles. They give gentle exercise to the body as a whole including individual organs. The simplicity of technique, lack of fatigue and non-requirement of any accessories are great advantage of yogic exercises. Yoga can make people aware of their bodies and further make them realize the need of emotional and physical well being.

Now amongst the physical exercises most effective ones are Yoga and Naturopathy. The main target is health and mind culture. I express my heartfelt realization to the elite assembly that yoga exercises can help mankind in this endeavor to solve the physical problems so that health for everybody in the 21<sup>st</sup> century can be ensured. These Yoga practices especially Yogasana can cure and help in preventing diseases, helps in regulating the breathing mechanism and increasing vital capacity, develops the

muscular fitness, Fitness, endurance, strength and flexibility and is considered as the most cost benefit therapy.

### Objectives Of The Study

The purpose of the study is to assess the selected yogic exercises intervention on strength (muscular strength) development among the athletes.

To study the effect of yogic exercises on the muscular strength of the athletes.

### Methodology

The Kraus- Weber test consists of six tests; the first five tests were used to find out the muscular strength and the last one to indicate the flexibility. All the six tests, namely Abdominal Psoas (A+), Abdominal minus Psoas (A-), Psoas and lower abdomen (P), Upper Back (UB), Lower Back (LB) and Length of back & hamstring muscles (BH) are modified and were used to test 120 athletes ranging from 15 to 17 age group. The modified Kraus-Weber test were conducted on the athletes, the pre training performance of athletes is recorded. After the training again the Kraus-Weber test was administered to find out the improvement in the muscular strength of the athletes.

### Test Administration

In order to assess the muscular strength of the subjects the modified Kraus-Weber tests were administered are given below.

Tests

Abdominal Plus Psoas muscles (A+), Abdominal Minus Psoas muscles (A-), Psoas and Lower abdomen (P), Upper Back (UB), Lower Back (LB) Back and Hamstring (BH)

Apparatus

Wrestling mat, Stop watch and Yogic exercises

The yogic training consists of the following selected yogic exercises.

Sitting yogic exercises

Paschimotanasana (The Posterior Stretch) Ardha Matsyendrasanas Padmasana (The lotus Posture)

Sawankasana (The Hare Posture) Standing yogic exercises Talasana (Palm Tree posture)

Trikonasana (The Triangle Posture) Padahastasana (The Feet and Hands Posture) Utkatasana

### Procedure

The modified Kraus-Weber Tests were administered to the athletes. The each test item is demonstrated correctly to the athletes and then asked them to do the same. The yogic exercises are also demonstrated correctly and asked them to do the same.

Training Schedule

WEEKS	MORNING	EVENING
1 <sup>st</sup> week	Sitting yogic exercises 30 minutes	Standing yogic exercises 30 minutes
2 <sup>nd</sup> week	Sitting yogic exercises 40 minutes	Standing yogic exercises 40 minutes
3 <sup>rd</sup> week	Sitting & Standing yogic exercises 50 minutes	Sitting & Standing yogic exercises 50 minutes
4 <sup>th</sup> week (6 days)	-do-	-do-
5 <sup>th</sup> week (6 days)	Sitting & Standing yogic exercises 40 minutes	Sitting & Standing yogic exercises 40 minutes
6 <sup>th</sup> week (Alternate one session each day)	Sitting & Standing yogic exercises 40 minutes	Sitting & Standing yogic exercises 40 minutes

Statistical Technique

Mean, Standard deviation and t-value were used to compute the data

### Analysis And Interpretation Of Data

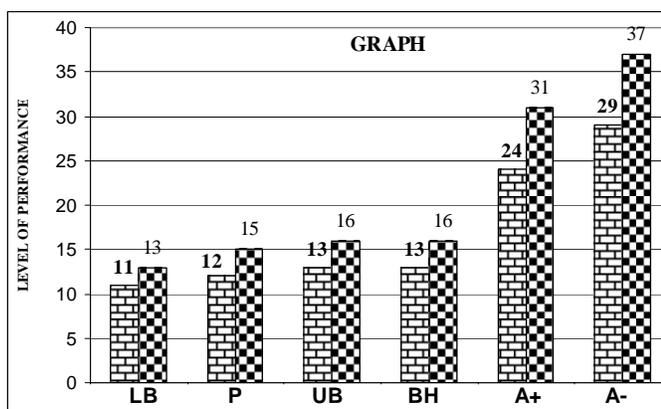
From the data obtained the flowing are tabulated for analysis.

Table-1:Pre and Post-training performance of athletes

Training		A+ (in 1mt.)	A- (in 1mt.)	P (in secs)	UB (in secs)	LB (in secs)	BH (in secs)
Pre-training	M	24	29	12	13	11	13
	SD	3.4	4.1	2.8	3.1	2.6	3.1
Post-training	M	31	37	15	16	13	16
	SD	4.9	4.6	3.4	3.9	3.3	4.2
t - value		9.7*	10.78*	5.65*	5.00*	3.95*	4.77*

\*Significance at 0.05 level

Table-1 and graph shows the mean scores of pre and post training performance in modified Kraus-Weber test. It clearly shows the significance difference in the performance of the athletes in two conditions. Thus, yogic asanas introduced to the athletes are responsible for bringing improvement in the muscular strength. The Yogic exercises influence the muscular strength in the athletes is proved.



### Conclusions

The selected yogic exercises intervention improved the strength (muscular strength) among the athletes. The positive and significant effect of yogic exercises on the muscular strength of the athletes. The selected yogic exercises because of their slow movement and held position improve the muscular tone. This improved muscle tone of the abdominal, lower back, upper back and back & hamstrings is responsible for the improvement of muscular strength of the athletes.

**Recommendations:** The results of the survey taken of the muscular fitness of the athletes should be great concern to the coaches and trainers in the welfare of the athletes. The results bring out the weakness of the athletes and also suggest the importance of including suitable yogic exercises for the improvement of muscular fitness. A larger scale of study may be conducted on state, national and international athletes and also on different genders for longer periods.

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## Exercise During Pregnancy

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### Abstract:

Exercise is an important component of a healthy lifestyle and, as such, is recommended during pregnancy. The American College of Obstetricians and Gynecologists recommends that women with low-risk pregnancies participate in moderate-intensity exercise during their pregnancy. The exercise during pregnancy is beneficial to both mother and fetus. Activities such as aerobics, impact and nonimpact activities, resistance training, and swimming may be beneficial during pregnancy. Physical exercise is beneficial for women during pregnancy and also in the postpartum period; it is not associated with risks for the newborn and can lead to changes in lifestyle that imply long-term benefits.

### Introduction:

Pregnancy is an ideal time for positive lifestyle modification, including increasing physical activity and eating a more healthy diet. During pregnancy, a women's body undergoes extensive changes which needs many adaptations. The physical and hormonal changes occur gradually throughout the 9 months of pregnancy and these are reversed in a matter of weeks during postpartum recovery. The women who keep fit during pregnancy are more relaxed and cope better with the emotional and physiological strains of pregnancy. So all women would be encouraged to do physical activity. The exercise during pregnancy is beneficial to both mother and fetus. The pregnant women who exercise have a better sense of well-being due to a number of positive effects from exercise such as weight management, better body image and self-esteem, improved sleep, increased energy level and psychological well-being. In the absence of medical complications, pregnant women should be engaged to physical activities and maintain an active lifestyle during pregnancies. However, some modifications in exercise pattern may be necessary because of the normal anatomic and physiological changes of pregnancy and fetal requirements. The exercise should be done in systematic way, the intensity and load of exercise should not exceed their daily activity. The aerobic exercises, swimming are beneficial.

### Contra-indications for Exercise During Pregnancy:

The pregnant women shouldn't engage in exercise, when the pregnancy is high risk as follows; Hypertensive disorder of pregnancy., Incompetent cervix. Growth restricted fetus., High order multiple gestations., Previous spontaneous abortion. Previous preterm birth. Mild/moderate cardiovascular and respiratory disorder. Anemia. Malnutrition or eating disorder. Pregnancy with high blood pressure, diabetes. Cardiac disease , Restrictive lung disease , Persistent bleeding in the second and third trimesters Intrauterine growth restriction, Preterm prelabour rupture of membranes, Heavy smoker (more than 20 cigarettes a day) , Orthopedic limitations , Poorly controlled hypertension , Extremely sedentary lifestyle Unevaluated maternal cardiac arrhythmia , Poorly controlled thyroid disease , Morbid obesity (body mass index greater than 40) , Poorly controlled diabetes mellitus , Poorly controlled seizures

### Points to be Keep in Mind:

Confirm a pregnancy is not a high risk one.

Contact with the gynecologist and regular medical checkup in order to know growth and development of fetus.

Warm up and cool down with each exercise session.

Start slowly.

Exercising pregnant women should ensure adequate fluid intake before, during and after exercise, wear loose-fitting clothing, and avoid high heat and humidity to protect against heat stress, especially during the first trimester.

Intensity of exercise should not exceed pre-pregnancy levels.

It is best to exercise for 30 to 45 minutes 3 to 5 times each week. She should be able to carry on a conversation during exercise. Avoid getting overheated. Do not exercise on very hot or very cold days.

Avoid any type of exercise that can cause even mild trauma to your stomach. Avoid activities which require sudden starts or stops, jumping, or rapid changes in direction.

**Guidelines for Exercise During Pregnancy:**

The exercise program may include aerobic, strength and stretching exercise

**Aerobic Exercises:**

Aerobic exercises also known as cardiovascular (heart and lungs) exercise. When the people do aerobic exercise their heart rate raises. This causes blood to circulate more quickly around the body and as a result more oxygen reaches the muscles. Swimming, running, fast walking, aqua aerobics and dancing are examples of aerobic exercises

For most pregnant women, 30 minutes of moderate aerobic exercise most days is encouraged. She should be able to hold a conversation easily whilst exercising.

If she has not regularly exercised before pregnancy, gradually increase activity by adding five minutes to exercise program per week, until reach 30 minutes per day.

The intensity of the activity is based on age and physical fitness.

Table 1.; Shows that the heart rate zones are appropriate for most healthy pregnant women (Wolfe & Mottola, 2002).

MATERNAL AGE	FITNESS LEVEL OR BMI	HEART RATE RANGE (beats/minute)
Less than 20	-	140-155
20-29	Low	129-144
	Active	135-150
	Fit	145-160
	BMI > 25kg m <sup>2</sup>	102-124
30-39	Low	128-144
	Active	130-145
	Fit	140-156
	BMI > 25kg m <sup>2</sup>	101-120

. For example, if you a pregnant women active and 32 years of age, her heart rate during activity should not exceed 145 beats per minute.

**Strength Conditioning Exercise:**

It is important to condition all major muscle groups during both prenatal and postnatal periods. This form of exercise helps to increase overall fitness and involves slow, controlled movements such as weight bearing exercises.

**Avoid lifting heavy weights.**

Do not lift any weights while lying on your back.

Begin slowly. Gradually increase the number of times performs each exercise. Do not work muscles to the point of fatigue. Do not hold the breath. Exhale on exertion, inhale on relaxation using high repetitions and low weights. If you are beyond four months or 16 weeks of pregnancy, avoid exercises while lying on your back. The enlarged uterus may decrease the flow of blood as it presses on a major vein or artery. Past 4 months of gestation, exercises normally done in the supine position should be altered such exercises should be done side lying or standing. Avoid rapid changes in direction and bouncing during exercises. Stretching should be performed with controlled movements. Abdominal exercises are not recommended if diastasis recti develop.

**Stretching Exercises:**

Stretching the muscles before and after activity will prevent muscle soreness and stiffness. Before aerobic activity, warm the muscles and joints with a slow movement such as hands and arm's muscles stretch, leg's muscles stretch. These exercises can be used both before and after activity. Remember never stretch muscles when they are cold or stiff and don't over stretch the muscles.

**Posture:**

Posture is very important for pregnant women. Backaches are a frequent complaint among pregnant women. Emphasis on correct posture and neutral pelvic alignment. Neutral pelvic alignment is found by bending the knees; feet shoulder width apart, and aligning the pelvis between accentuated lordosis and the posterior pelvic tilt position.

**Exercises to Avoid:**

Do not do any exercise where you lie flat on your back after the first 3 months of pregnancy.

Do not use ankle weights, do double leg lifts or do full sit ups. This strains your back.

Do not do any activity that may cause jerking, bouncing or high impact movements.

Do not play water ski, snow ski or scuba dive.

Heavy weight training lifts that involve maximal isometric muscle contractions are thought to put too much stress on the cardiovascular and musculoskeletal system.

Exercises which involve lying on the stomach.

Standing still for long periods of time is not recommended.

Any activities which require changes to the Centre of gravity should be avoided as this can cause balance problems. This includes vigorous racquet sports such as squash and tennis.

Exercises done past point of fatigue, that create pain, or that induce hyperthermia should not be performed by the pregnant woman.

**Warning Signs to Stop Exercise:**

Dizziness or feeling faint ,Headache ,Shortness of breath before exertion,Difficulty getting your breath whilst exercising ,Pain or palpitations in your chest,Pain in your abdomen, back or pubic area,Pain in your pelvic girdle ,Weakness in your muscles , Pain or swelling in your leg/legs ,Painful uterine contractions or preterm labour ,Fewer movements from baby ,any 'gush' of fluid from the vagina,Excessive fatigue

Vaginal bleeding

**Conclusion:**

Exercise is safe and encouraged during a normal healthy pregnancy. If the woman exercised before she became pregnant, she can continue exercising at the same level. If pregnant women are just starting an exercise program, talk to the doctor and start slowly. There are some health conditions that may limit your exercise. A review of the evidence suggests that, in most cases, exercise is safe for both mother and fetus during pregnancy and women should therefore be encouraged to initiate or continue exercise to derive the health benefits associated with such activities.

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## **Relationship between Common Sports Injuries and Football Players Lines in First Division Clubs in Republic of Yemen**

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### **Abstract:**

The present study aims to find out the most common sports injuries and its relationship with football players lines among first division clubs in republic of Yemen. The Current study used descriptive method due to appropriate to achieving study aims by questionnaire to collect study data. Study sample selected purposely and included 114 players from football players who belong to first division clubs in republic of Yemen. The study results showed that the most common types of sports injuries occur among football players in first division clubs in republic of Yemen are rupture sprain, contusion, wound and fracture respectively. While the most common parts of body suffer sports injuries among football players are thigh, ankle, knee, head, hand, leg respectively. As for the most common types of sports injuries according to football players lines among goalkeeper are contusion, fracture, sprain and concussion, in defense players line are rupture, sprain, contusion and wound, in middle players line are wound, rupture, sprain and fracture, in attack players line are sprain, rupture, contusion and fracture. While the most common parts of body suffer sports injuries according to football players lines among goalkeeper are head, hand, wrist and chest, in defense players line are knee, thigh, ankle and foot, in middle players line are thigh, ankle, knee, in attack players line are foot, thigh, ankle and leg. There is a relationship between types common of sports injuries and football players lines. Also There is a relationship between types common of sports injuries and football players lines in first division in republic of Yemen.

**Key words:** Sports Injuries, Football players Lines.

### **Introduction:**

Sports injuries are associated with sports activities and lead to player inability to participate in performance and positive movement of time period according to the injury type and body part. (Allawi, Mohammad H., 1998, 14-16)

Sports injuries vary according to type of sports activity, team games injuries differ than individual games injuries, in the games which consist a friction direct between players are an increasing occurrence of injuries more than games that do not have contact direct between players, also the injuries vary according to performance type and player efficiency and fitness. (Riyad, Osama, 1998, 24)

Football game is a team games, which is characterized by violent physical friction with opponent because footballers movements require to strong muscular effort during physical and skills performance, thus the muscles produce power maximum in less time as possible such as what happens in running, jumping, passing and shooting or sometimes when struggling to acquire ball that lead to occurrence of injuries whether during a match or training. (Charlton, J. and Kidman, L. , 1997, 2)

Football players are mostly distributed according to their tactical duties into goalkeeping, defense line, middle line and attacking line, the distribution of players differ according to way used in playing and the injuries differ from play center to other according to performance nature in each center. (Ibrahim, Mufti M. and Yassin Mohsen A., 1991, 226) The injury is hindering achievement continuous progress for player to achieve sports levels high . It occurs with player before competition, which leads to loss team efforts, time and money without any benefit, so the injury consider a problem. (Fink, Hardy, 1992,142)The information about sports injuries and prevention help us to study players during sports movements in different times for individual and team games to predict of injury before it occurs and to determine injury type and location that associated with sports activity in order to prevention of player from injury. (Rushdie, Mohamed A., 2003, 87)Sports injuries prevention is a most important aspect in sports medicine field and programs prevention that help player to avoid injuries in sports activities field. (Christian, Martens M., Harry, J. S. and Shark, B. J., 1981,145)Injury is a one of the most important reasons that may lead to the end of sports future for player, therefore it has become a prominent phenomenon in different sports injuries fields. Sports injuries still occur in various competitions of sports and spread particularly in football game, which occupies the first rank in the Arab world and whole world. (Abdulrazzaq, Medhat Q., 2000, 60-61)Sports injuries are one of most important problems that need to study. Injuries risks vary from one activity to other, but the injuries occur in football game more than other games. (Abdulrahman, Mohammed F., 1982, 40)The researchers observed through football competitions in first division in Yemen that there are some sports injuries more prevalent among football players, also they found that these injuries are associated with football players lines (goalkeeper, defense line, middle line and attack line). This led the researchers to find out common sports injuries according to type and body part by calculate the relationship between common sports injuries and footballers lines.

**Hypotheses:**

- There are most common types of sports injuries occur among football players lines in first division clubs in republic of Yemen.
- There is a relationship between common types of sports injuries and football players lines in first division clubs in republic of Yemen.
- There are most common parts of body suffer sports injuries among football players lines in first division clubs in republic of Yemen.
- There is a relationship between common parts of body suffer sports injuries and football players lines in first division clubs in republic of Yemen.

**Objective of study:**

The study aims to identify the most common sports injuries according to types and parts body among football players and to find outa relationship between common sports injuries and players lines in first division in republic of Yemen.

**2. Materials and method:**

The study utilized descriptive method because it is an appropriate to achieve study objectives. The study data were collected by using a questionnaire divided into two parts; types of sports injuries and body parts that are suffered to sports injuries, the questionnaire have got objectivity through experts opinions, while the questionnaire have got consistency through calculate reliability analyst by scale alpha. In study data analysis using SPSS statistical package.

**Sample of study:**

The study sample was selected purposely and included 114 players from football players in first division 14 clubs in republic of Yemen.

Table (1): Homogeneity of study sample in some growth rates (Age, height, weight)(N=114)

Variables	Unit	Mean	S.D	Skewness
Age	Year	25.78	2.872	- 0.312
Height	Cm	176	4.235	0.420
Weight	Kg	74.69	7.23	1.095

The table no.(1) shows there are not statistically significant differences in mean and skewness between the sample of study in (age, height, weight) were limited to the value of skewness between (-3,3+) which indicates to homogeneity of study sample.

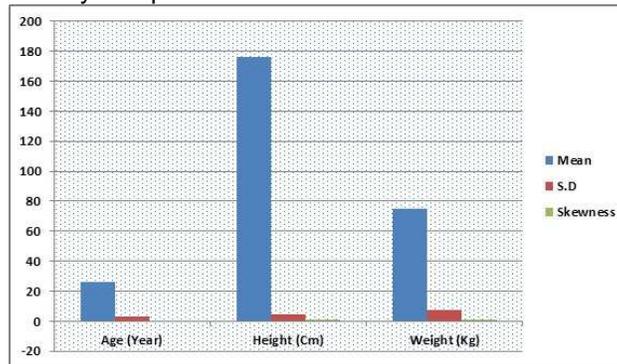


Figure (1): Homogeneity of study sample in some growth rates (Age, height, weight) (N=114)

### 3. Results Discussion:

Table (2): Common types of sports injuries occur among football players lines (N=114)

Type of Injury	Goalkeeper N=13		Defense line N=42		Middle line N=34		Attack line N=25		Total N=144	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Contusion	3	23.08	7	16.67	4	11.77	4	16	18	15.79
Rupture	1	7.69	13	30.95	7	20.59	5	20	26	22.81
Sprain	2	15.39	8	19.05	5	14.71	8	32	23	20.18
Dislocation	1	7.69	1	2.38	2	5.88	-	-	4	3.51
Wound	1	7.69	5	11.90	8	23.53	2	8	16	14.04
Fracture	3	23.08	3	7.14	4	11.77	3	12	13	11.40
Calcification	-	-	3	7.14	3	8.82	2	8	8	7.02
Concussion	2	15.39	2	4.76	1	2.94	1	4	6	5.26

The table no.(2) shows that the most common types of sports injuries occur among football players in first division clubs in republic of Yemen are rupture (22.81%), sprain (20.18%), contusion (15.79%), wound (14.04%) and fracture (11.40%) respectively, while according to football players lines among goalkeeper are contusion (23.08%), fracture (23.08%), sprain (15.39%) and concussion (15.39%), in defense players line are rupture (30.95%), sprain (19.05%), contusion (16.67%) and wound (11.90%), in middle players line are wound (23.53%), rupture (20.59%), sprain (14.71%) and fracture (11.77%), in attack players line are sprain (32%), rupture (20%), contusion (16%) and fracture (12%).

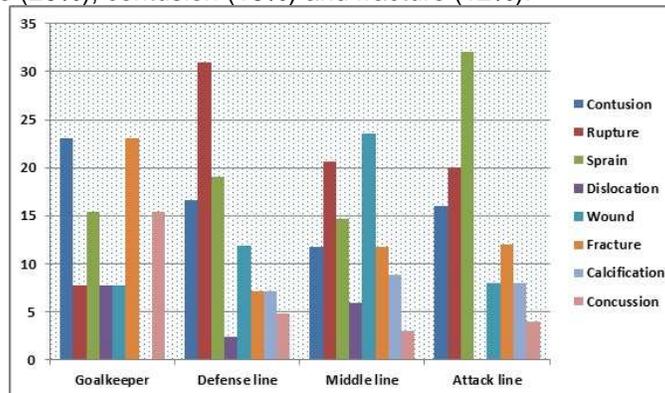


Figure (2) Percentages of common types of sports injuries occur among football players lines (N=114)

Table (3): Relationship between common types of sports injuries and football players lines (N=114)

Chi-square ( $\chi^2$ )	Freedom Degree	Standard Error	Significant (P-value)	Decision
46.82	27	0.05	0.02	Significance

The table no.(3) shows that the Chi-square ( $\chi^2$ ) is (46.82), degree of freedom is (27) and P-value is (0.02) at (0.05) level (standard error). This indicates relationship between types common of sports injuries and football players lines in first division in republic of Yemen.

Table (4): Common parts of body suffer sports injuries among football players lines (N=114)

Part of Body	Goalkeeper N=13		Defense line N=42		Middle line N=34		Attack line N=25		Total N=114	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Head	3	23.08	2	4.76	-	-	1	4	6	5.26
Face	-	-	1	2.38	-	-	1	4	2	1.75
Shoulder	1	7.69	1	2.38	1	2.94	-	-	3	2.63
Elbow	-	-	1	2.38	-	-	-	-	1	0.88
Forearm	-	-	-	-	1	2.94	-	-	1	0.88
Wrist	2	15.39	1	2.38	-	-	1	4	4	3.51
Hand	3	23.08	2	4.76	1	2.94	-	-	6	5.26
Ribs	-	-	1	2.38	1	2.94	-	-	2	1.75
Chest	2	15.39	-	-	-	-	1	4	3	2.63
Abdomen	-	-	1	2.38	-	-	1	4	2	1.75
Back	-	-	-	-	1	2.94	2	8	3	2.63
Pelvis	-	-	1	2.38	1	2.94	-	-	2	1.75
Thigh	-	-	8	19.05	11	32.36	4	16	23	20.18
Knee	1	7.69	10	23.81	5	14.71	1	4	17	14.91
Leg	-	-	2	4.76	1	2.94	3	12	6	5.26
Ankle	1	7.69	6	14.29	9	26.47	4	16	20	17.54
Foot	-	-	5	11.91	2	5.88	6	24	13	11.40

The table no.(4) shows that the most common parts of body suffer sports injuries among football players in first division clubs in republic of Yemen are thigh (20.18%), ankle (17.54%), knee (14.91%), head, hand and leg same percentage (5.26%) respectively. while according to football players lines among goalkeeper are head and hand same percentage (23.08%), wrist and chest same percentage (15.39%), in defense players line are knee (23.81%), thigh (19.05%), ankle (14.29%) and foot (11.91%), in middle players line are thigh (32.36%), ankle (26.47%) and knee (14.71%), in attack players line are foot (24%), thigh and ankle same percentage (16%) and leg (12%).

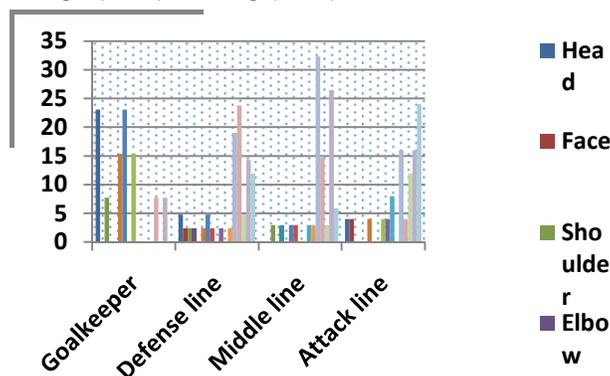


Figure (2) Percentages of common parts of body suffer sports injuries among football players lines (N=114)

Table (5): Relationship between common parts of body suffer sports injuries and football players lines (N=114)

Chi-square ( $\chi^2$ )	Freedom Degree	Standard Error	Significant (P-value)	Decision
95.56	57	0.05	0.00	Significance

The table no.(5) shows that the Chi-square ( $\chi^2$ ) is (95.56), degree of freedom is (57) and P-value is (0.00) at (0.05) level (standard error). This demonstrates a relationship between types common of sports injuries and football players lines in first division in republic of Yemen.

**Discussion:**

The results mentioned above in table no. (2) found that most common types of sports injuries occur among football players were rupture, sprain, contusion, wound and fracture respectively, these confirms the first hypothesis and table no. (3) proved the second hypothesis that a relationship between types of sports injuries and football players lines was (P=0.02). while table no (4) clearly indicated that most common parts of body suffer sports injuries were thigh, ankle, knee, head, hand and leg respectively, this achieved the third hypothesis, also the table no. (5) showed that a relationship between parts of body suffer sports injuries and football players lines was (P=0.00).

These results are consistent with study (Ibrahim, Mufti M. and Yassin Mohsen A., 1991) which demonstrated that the types of sports injuries most commonly occur with football players were contusion, rupture, sprain and fracture.(Saeed, Mohammed S.,1999) has study about types of sports injuries among of football youth resulted that most injuries were rupture, contusion and ankle sprain.

(Rophaael, Hayat A., 1986) her study indicated that the rupture was mostly occur in muscles and ligaments due to less physical preparation and not sufficient muscles warming-up that require it for physical performance.

(Shata, Mohammed S.,1981) realized that the football players use their legs frequently and frictions between them lead to increases sports injuries occurrence in lower limb more than upper limb except goalkeeper who suffered sports injuries in upper limb.

Our results are similar with the study results (Derwish, Hossam A., 2007) that the most parts of body suffer sports injuries in football players are in lower parts (thigh, knee, leg, ankle, foot) more than upper parts (head, chest, face).

(Attiah, Shehab S., 2002) mentioned that the sports injuries of football players are associated with playing lines alike in the goalkeeping, defense line, middle line and attack line players.

All results of previous studies mentioned above supported our results in current study. So we can say that all four hypotheses are achieved to a great extent.

**Conclusions:**

After study results and discussion, the present study indicates to some clearly conclusions as follows:

1. Most common types of sports injuries occur among football players in first division clubs in republic of Yemen are rupture sprain, contusion, wound and fracture respectively.
2. Most common types of sports injuries according to football players lines among goalkeeper are contusion, fracture, sprain and concussion, in defense players line are rupture, sprain, contusion and wound, in middle players line are wound, rupture, sprain and fracture, in attack players line are sprain, rupture, contusion and fracture.
3. There is a relationship between types common of sports injuries and football players lines in first division in republic of Yemen.
4. Most common parts of body suffer sports injuries among football players in first division clubs in republic of Yemen are thigh, ankle, knee, head, hand, leg respectively.
5. Most common parts of body suffer sports injuries according to football players lines among goalkeeper are head, hand, wrist and chest, in defense players line are knee, thigh, ankle and foot, in middle players line are thigh, ankle, knee, in attack players line are foot, thigh, ankle and leg.
6. There is a relationship between types common of sports injuries and football players lines in first division in republic of Yemen.

### **Recommendations:**

1. Adoption the scientific bases during physical preparation process and training programs according to fitness characteristics, which reduce sports injuries occurrence.
2. Attention to general and special physical preparation and warming-up according to weather state before training and competition.
3. Focus on healthcare for football players through use health card system for each player which includes written all health information about player.
4. Providing of specialized medical crew to provide first aid and treatment during sports injuries occurrence and provision the needed first aids tools, also conduct rehabilitation courses in first aids field for trainers in case there is no physician.
5. Teaching and training the football players about sports injuries prevention in order to protect them and to reduce occurrence of sports injuries during training programs and competitions.
6. Commitment to diagnosis of sports injury, continuous rehabilitation and medical supervision during treatment and rehabilitation and conduct check-ups and tests for injured player before return to participate in training and competitions.
7. Making sure from safety of playing tools and playground, with confirming on prevention tools to reduce sports injuries before practice sports activity.
8. Wear sports uniforms which an appropriate to weather, especially during rest periods during training or competition, also after finishing to leave playground.
9. Attention to healthy psychological and nutrition for football players through providing specialists in both fields.
10. Conducting similar studies to find out types and causes of sports injuries and its relationship with players lines and centers in other team games which have no included in this study.

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## A Comparative Study of Mental Health and Enthusiasm among Inter university Kabaddi Players

**Quadri Syed Wajeed**

### **Abstract**

Aim of the Study: To Search the mental health and Enthusiasm among interuniversity kabaddi players  
Hypotheses: 1.Boys' interuniversity kabaddi players will be significant high Enthusiasm than the girls' interuniversity kabaddi players. 2. Boys' interuniversity kabaddi players will be significant high mental health than the girls' interuniversity kabaddi players. Sample: For the present study 120 Sample were selected from Aurangabad University, Maharashtra State. The effective sample consisted of 120 subjects, 60 subjects were boys' interuniversity kabaddi players and 60 subjects were girls' interuniversity kabaddi players. The age range of subjects was 18 to 25 years (Mean 21.25, SD 3.85). Tools Multi Assessment Personality Series (MAPS) (1996): this scale was constructed and standardized by Psy Com. Mental Health Inventory (MHI): Mental health inventory constructed by Dr. Jagdish and Dr. A K Srivastav. Variable Independent variable- 1. Gender a) Boys' b) Girls' Dependent Variable 1. Mental Health 2. Enthusiasm Conclusions: 1. Boys' interuniversity kabaddi players had significant high Enthusiasm than the girls' interuniversity kabaddi players. 2. Boys' interuniversity kabaddi players had significant high mental health than the girls' interuniversity kabaddi players.

### **Introduction:**

Good Physical Health improves Mental Health. Body-mind relationship is an established fact. Those who enjoy good physical health are most likely to have good mental health which includes mental poise and balance, emotional control etc. When we say ' sound mind in a sound body', we accept that adequate supply of oxygen – which is done only through vigorous exercise – to nerves, smooth muscles and the brain contributes to the maintenance of good mental health. We do not think with brain alone, even the amount of hemoglobin present in our blood affects our

Thinking. Besides this, balanced diet and good physical exercise are the main factors of helping us maintain good mental health too. Participation in games and sports presents opportunities for promoting emotional health and preventing delinquency. Studies by Hardman and Kane have confirmed that athletes with higher performance are more emotionally sound and less anxious while studies by Sperling, Ruffer, Tillman, Whiting and Stembridge, Brunner etc. reveal that extroversion is more prominent in athletes than in non-athletes.

Mareike Kunter, Yi-Miau Tsai, Uta Klusmann, Martin Brunner, Stefan Krauss, Jürgen Baumert (*October 2008*) Students' and mathematics teachers' perceptions of teacher enthusiasm and instruction. This article investigates teacher enthusiasm and how it relates to instructional behaviours. We distinguished teachers' enthusiasm for the subject matter of mathematics from their enthusiasm for teaching mathematics. A total of 323 teachers and their 9th-grade classes participated in the study. Questionnaires were used to assess teachers' enthusiasm and instructional behaviors from both the teacher and the student perspective. Structural equation modeling revealed that teachers who were more enthusiastic about teaching showed higher quality instructional behavior—both self-reported and student-rated. By contrast, enthusiasm for mathematics as a subject matter predicted teachers' self-reports, but not students' ratings, of instructional behavior.

K.L. Lamb, K. Roberts, D.A. Brodie (1990) Self-perceived health among sports participants and non-sports participants. This paper examines and compares the self-perceived health (SPH) of a sample of sports participants ( $n=1385$ ) and a matched sample of non-participants ( $n=292$ ). Ratings of health were generally found to be favourable among both samples, but a non-parametric analysis of their distributions revealed that the SPH of sports participants was significantly ( $P < 0.0001$ ) better than that of the non-participants. SPH improved with age among both samples, but above the age of 34, the non-participants' perceived health ceased to be inferior to that of participants. Controlling for age and gender revealed no difference in SPH above 24 years among males and 34 years among females. SPH was related to a variety of additional health-related factors. Multiple regression analysis was used to identify the predictors of SPH for both samples, and highlighted marked differences between them in the type and number of contributory factors. It is suggested that participation in active sports may enhance health awareness, especially among the young, and that future studies of this kind among sports populations should take account of the levels of commitment (frequency, duration and intensity) to sport.

**Aim of the Study:**

To Search the mental health and Enthusiasm among interuniversity kabaddi players

Hypotheses:

Boys' interuniversity kabaddi players will be significant high Enthusiasm than the girls' interuniversity kabaddi players.

Boys' interuniversity kabaddi players will be significant high mental health than the girls' interuniversity kabaddi players.

**Sample:**

For the present study 120 Sample were selected from Aurangabad University, Maharashtra State. The effective sample consisted of 120 subjects, 60 subjects were boys' interuniversity kabaddi players and 60 subjects were girls' interuniversity kabaddi players. The age range of subjects was 18 to 25 years (Mean 21.25, SD 3.85).

**Tools**

Multi Assessment Personality Series (MAPS) (1996):

This scale was constructed and standardized by Psy Com. It consists of 147 sentences and each item provide three alternatives the subjects had to select one of the three alternative and this test used Split-Half and Test-Retest Reliability Coefficients & Factorial Validity.

Mental Health Inventory (MHI):

Mental health inventory constructed by Dr. Jagdish and Dr. A K Srivastav. 56 items are in the questionnaire and each of the items has four responses – 1. Almost always true, 2. Some time true, 3. Rarely true and 4. Almost never true. The reliability of the inventory was determined by split-half method using odd-even procedure. Overall mental health reliability coefficients is .73 and Construct validity of the inventory is determined by finding coefficient of correlation between scores on mental health inventory and general health questionnaire (Gold beig, 1978) it was found to be .54.

Procedures of data collection

One instrument could be administered individuals as well as a small group. While collecting the data for the study the later approaches was adopted. The subjects were called in a small group of 20 to 25 subjects and there seating arrangements was made in a classroom. Prior to administration of test, through informal talk appropriate rapport form. Following the instructions and procedure suggested by the author of the test. The test was administered and a field copy of test was collected. Following the same procedure, the whole data were collected.

Variable

Independent variable-	1. Gender	a) Boys'	b) Girls'
Dependent Variable		1. Mental Health	
		2. Enthusiasm	

### Statistical Analysis and discussion

Mean, SD and 't' Value of boys' and girls' interuniversity kabaddi players on dimension enthusiasm and mental health.

Table No. 1

Dimension	Gender						t- ratio	df	p
	Boys' (N =60)			Girls'(N = 60)					
	Mean	SD	SE	Mean	SD	SE			
Mental health	165.36	7.10	0.58	149.74	8.59	0.96	10.85**	118	0.01
Enthusiasm	11.02	3.22	0.41	7.25	2.47	0.31	7.19**	118	0.01

0.01= 2.63, 0.05= 1.99

Table no. 1 shows the mean of mental health score of boys' interuniversity kabaddi players 165.36 and girls' interuniversity kabaddi players 149.74. The difference between the two mean is highly significant at both level ('t'= 10.85, df =118, P < 0.01).

Second mean of enthusiasm score of boys' interuniversity kabaddi players 11.02 and girls' interuniversity kabaddi players 7.25. The difference between the two mean is highly significant at both level ('t'= 7.19, df =118, P < 0.01).

### Conclusion:

Boys' interuniversity kabaddi players had significant high Enthusiasm than the girls' interuniversity kabaddi players.

Boys' interuniversity kabaddi players had significant high mental health than the girls' interuniversity kabaddi players

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## **Comparative Study of Speed and Agility among Base Ball Players and Cricketers of Osmania University**

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### **Introduction**

Cricket is a bat-and-ball game played between two teams of 11 players each on a field at the centre of which is a rectangular 22-yard long pitch. The game is played by 120 million players in many countries, making it the world's second most popular sport. Each team takes its turn to bat, attempting to score runs, while the other team fields. Each turn is known as an innings. The bowler delivers the ball to the batsman who attempts to hit the ball with his bat away from the fielders so he can run to the other end of the pitch and score a run. Each batsman continues batting until he is out. The batting team continues batting until ten batsmen are out, or a specified number of over's of six balls have been bowled, at which point the teams switch roles and the fielding team comes in to bat.

Baseball is a bat-and-ball game played between two teams of nine players each who take turns batting and fielding. The offense attempts to score runs by hitting a ball that is thrown by the pitcher with a bat swung by the batter, then running counter-clockwise around a series of four bases: first, second, third, and home plate. A run is scored when a player advances around the bases and returns to home plate.

Players on the batting team take turns hitting against the pitcher of the fielding team, which tries to prevent runs by getting hitters out in any of several ways. A player on the batting team who reaches a base safely can later attempt to advance to subsequent bases during teammates' turns batting, such as on a hit or by other means. The teams switch between batting and fielding whenever the fielding team records three outs. One turn batting for both teams, beginning with the visiting team, constitutes an inning. A game comprises nine innings, and the team with the greater number of runs at the end of the game wins. Baseball is the only major team sport in America with no game clock, although almost all games end in the ninth inning.

### **Motor Components required for Cricketers and Base ball players**

- 1.Speed / Quickness, Balance & Coordination
- 2.Motivation & Self Confidence, Skill and Technique
- 3.Strength & Power, Reaction Time
4. Analytic & Tactical Ability
- 5.Flexibility, Agility
- 6.Body Size and Composition, Aerobic Endurance.

The Purpose of the present study to find out the Speed and Agility among Male Base Ball Players and Male Cricketers of Osmania University.

### **Methodology:**

The sample for the present study consists of 20 Male Base Ball Players and 20 Male Cricketers Players of Osmania University. To assess the Speed and Agility the 50 M Run Test and Shuttle Run Test Were conducted among Base Ball Players and Cricketers

50 M Run:

Sprint or speed tests can be performed over varying distances, depending on the factors being tested and the relevance to the sport.

purpose: The aim of this test is to determine acceleration and speed.

equipment required: measuring tape or marked track, stopwatch, cone markers, flat and clear surface of at least 70 meters.

procedure: The test involves running a single maximum sprint over 50 meters, with the time recorded.

results: Two trials are allowed, and the best time is recorded to the nearest 2 decimal places.

#### Agility Shuttle Run Test

This test describes the procedure as used in the President's Challenge Fitness Awards. The variations listed below give other ways to also perform this test.

purpose: this is a test of speed and agility, which is important in many sports.

equipment required: wooden blocks, marker cones, measurement tape, stopwatch, non-slip surface.

procedure: This test requires the person to run back and forth between two parallel lines as fast as possible. Set up two lines of cones 30 feet apart or use line markings, and place two blocks of wood or a similar object behind one of the lines. Starting at the line opposite the blocks, on the signal "Ready? Go!" the participant runs to the other line, picks up a block and returns to place it behind the starting line, then returns to pick up the second block, then runs with it back across the line.

scoring: Two or more trails may be performed, and the quickest time is recorded. Results are recorded to the nearest tenth of a second.

#### Results and Discussion:

The Results of the Study shows that Cricketers are having better Speed a Compare to Base ball Players and Base ball Players are having the better agility compare to Cricketers.

Table-I: Mean values of 50 M Run between Cricketers and Base Ball Players

	GROUP	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
50 M	Cricketers	30	7.01	0.23	0.07	-1.80	38.00	0.09
	Base Ball Players	30	7.29	0.45	0.14			

In Table –I the Mean Values of 50 M Run of Cricketers is 7.01 and Base ball Players is 7.29 The Average Mean of Cricketers in 50 M Run is lesser than the Base Ball Players. It was found that Cricketers are having good speed compare to Compare to the Base Ball Players. Hence it is also concluded that Speed bowling is required in Cricket compare to Base Ball and Cricketers are having better speed than Base ball players.Speed plays an important role in Cricket and base ball to exhibit the high level of performance.

Table-II Mean values of Shuttle Run Test between Cricketers and Base Ball Players

	GROUP	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Shuttle run Test	Cricketers	30	15.38	0.56	0.17	2.53	38.00	0.02
	Base Ball Players	30	14.10	1.20	0.37			

In Table –II the Mean Values In Shuttle Run Test of Cricketers is 15.38 and Base ball Players is 14.10. The Base Ball Players are having better agility compare to Cricketers.

#### Conclusion:

- 1.It is concluded that Cricketers are having better speed than Base Ball Players.
- 2.It is concluded that Base Ball Players are having better agility than Cricketers.
- 3.Conditioning Exercises plays a major role for improvement of speed among Base Ball and Cricketers.

#### Recommendations:

1. Similar studies can be conducted on other Events and among females.
- 2.This study also helps the physical educators and coaches to improve their training regime to excel in Base Ball and Cricketers.

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International Journal of Health,physical Education and computer Science in Sports

## **A Comparative Study of Anxiety among Sprinters and Cross Country Runners of Hyderabad**

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### **Introduction:**

Sport Psychology is the scientific study of people and their behaviours in sport. The role of a sport psychologist is to recognize how participation in sport exercise and physical activity enhances a person's development. Anxiety or feeling physically and mentally anxious can present in different ways, such as fear and nervousness, which creates hindrances to achieve high performance in sports. Track and Field dominated the ancient Greek athletic festivals, and was also popular in Rome, but declined in the Middle Ages. In England track was revived sporadically between the 12th and 19th century the first college meet occurred in 1864 between Oxford and Cambridge universities. SPRINT involves the athlete to attempt to run at peak speed for the complete duration of the race. The period of the race is essentially short lasting fraction of seconds and even before this period of time is reached, the killing effect of lack of oxygen the vital fuel for moment is starting to paralyze the muscle involves it

In athletics and track and field, sprints (or dashes) are races over short distances. They are among the oldest running competitions. The first 13 editions of the Ancient Olympic Games featured only one event—the stadion race, which was a race from one end of the stadium to the other. There are three sprinting events which are currently held at the Summer Olympics and outdoor World Championships: the 100 metres, 200 metres, and 400 metres. These events have their roots in races of imperial measurements which were later altered to metric: the 100 m evolved from the 100 yard dash, the 200 m distances came from the furlong (or 1/8 of a mile), and the 400 m was the successor to the dash or quarter-mile race

Cross country running is a sport in which teams and individuals run a race on open-air courses over natural terrain may include surfaces of grass, and earth, pass through woodlands and open country, and include hills, flat ground and sometimes gravel road. It is both an individual and a team sport; runners are judged on individual times and teams by a points-scoring method. Both men and women of all ages compete in cross country, which usually takes place during autumn and winter, and can include weather conditions of rain, sleet, snow or hail, and a wide range of temperatures.

Cross country running is one of the disciplines under the umbrella sport of athletics, and is a natural terrain version of long-distance track and road running. Although open-air running competitions are pre-historic, the rules and traditions of cross country racing emerged in Britain. The English championship became the first national competition in 1876 and the International was held for the first time in 1903. Since 1973 the foremost elite competition has been the IAAF World Cross Country Championships

**Methodology:**

The sample for the study consists of 100 Sprinters and 100 Cross Country runners of Hyderabad District in Telangana those who have participated in various Athletics Events held in Hyderabad during the Year 2015-2016 between the age group of 18-20 Years. SCA Test is used for the study

**Results:**

Table No. 1 Showing the Sprinters and Cross Country Runners Shows the Mean, S.D, S. E. and t value of Anxiety

Group	MEAN	S.D	SE	N	df	t
Sprinter	22.58	2.28	0.19	100	198	37.21
Cross Country	32.86	2.50	0.20	100		

Mean of anxiety score of the sprinters Mean is 22.58 and that of the Cross Country Runners Mean is 32.86 The difference between the two mean is highly significant ( $t= 37.21$ ,  $df =198$ ,  $P < 0.01$ )

**Discussion:**

It was found the Cross Country runners have significantly high anxiety than the sprinters. The Cross Country runners are more anxious about their success and defeat before and during the event. Whereas in sprints where muscle power and technique is playing vital role to achieve better performance. Anxiety differs from event and individual.

**Conclusion:**

It is concluded that Cross Country runners have significantly high anxiety than the sprinters. Because they concentrate more tactics to give level best performance to win the Competition, where as the Sprinters concentrate on technique at the start & finish and muscle power to give the high level of performance. It is recommended that special coaching is to be given to overcome Anxiety to achieve high excellence in sports. The Coaches must prepare all the sports persons with high level psychological preparation to excel in sports and games.

**Recommendations**

1. While selecting the runners for specific event it is recommended that on the findings of the research regarding the specific anxiety should be considered.
2. This type of Study is useful to the Coaches and Physical Education Teachers to train the Students as per the requirements of the Psychological variables for the performance in sports.
3. Conducting a similar study, by adding other psychological factors such as goalsetting, Achievement motivation, concentration and imagery.
4. Doing a similar study on Individual and Team Games.
5. Comparing anxiety and self confidence between elite and non-elite athletes indifferent regions. Conducting a similar study among female sprinters and long distance runners.

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## **Father methods of treatment as perceived by the Sons and their relation to television watching for students of fifth primary stage**

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### **Introduction and significant of research:**

Family is system in which the elements of appropriate behavior for generations are available to create their tendencies appropriate desires, affecting influence essential in the satisfaction of the basic needs of child, in particular, leads a way that is bringing up the child in his early years a significant role in influencing the configure of his personality.

Father have a significant role in the socialization of the sons and their education and satisfy psychological needs, child growing up in a sound environment it is availability to him sensation of familiarity and confidence, and the opposite note that there are some sons resorting to other means to try to fill the gap and psychological needs suffered by.

from these methods is a television and children's programs, which is an effective means of communication with a direct impact on the wishes of the Sons in order to fill the gap against the methods of their fathers, and under these enticements and excitement carried by such programs how to achieve all what is impossible to them through these programs because of ill-treatment from their fathers, so we see some of sons run away from this reality to fantasy and reality, which are filling their wishes and psychological needs through it.

Through this explanation researcher believes the importance of recognizing the Father methods of treatment as perceived by the Sons and their relation to television watching and the urgent need to shed light on this subject.

### **research problem:**

Proceeding from nature of the relationship that develops between sons and their parents and influence that was negative or positive in the formation of his character and inclinations and the Disorders that occur in his life, father is considered support to the mother in education, some Sons learn from their fathers patterns of social behavior and some of them find the shortfall caused by father methods treatment for create to them a sense of inferiority, some Sons tries to compensate for this shortfall towards to the Televisions watching is considered an integrated world everything required by sons from wishes and tendencies to satisfy what fills this shortage, These Sons affected by these programs its negatives and positives considerably, so it's become part of their lives, the problem is in identifying Father methods of treatment his Sons and their relation to watching television programs.

### **Objectives Search:**

- 1-To identify the parental treatment methods as perceived by the sons among a sample research
- 2-To identify the relationship between the methods of treatment of the Father as perceived by the sons and watching television.

### **Hypotheses:**

1. There is correlation statistically significant between the methods of treatment of the Father as perceived by the sons and watching television.

### **Delimitation and limitation:**

Original community consists total (150 - student) from the fifth grade of primary school (Rusafa first), in the governorate of Baghdad they have been selected from three primary schools randomly from the following schools:

- 1- Nasser Primary School for Boys

2- Hassan ibn thabt primary school for boys

3- Ansar Hijjah primary f school or Boys

The researcher has no interest in dietary habits which belong to the sample research.

### **Research Methodology:**

The researcher used the descriptive method Correlative which aims at finding relationship between two variables.

### **Select a sample:**

The study sample consisted from the (150-student) in order to experiment Research the main, and (20-student) for the exploratory experiment, they were randomly selected by intentional sample, and has been chosen that stage for the appearance of the changes and emotions they have because of the transitional age group, which is called (Late stage age), as well as ideas that characterized by that stage, the sample was selected by the following criteria:

1-Father is alive.

2-The student lives with his father in the same house.

3-should not be the parents separate.

3.2 Tools used in research:

- Questionnaires students.

- Application Form for data discharge.

- Questionnaire for Father Methods of treatment.

- Questionnaire to quality of favorite programs among a sample research.

### **Scale Father Methods of treatment:**

The researcher used this measure (Samia Braam, 2011) to identify the methods of treatment fathers as perceived by the sons, the scale consists of five methods for the treatment of fathers, are: (separation, command and control, oscillators, increased security, normal treatment methods), the scale included two photos (a - father) and (b - mother), each photo contains five sub-scales and all sub-scale consists of (10 - phrases) except the fifth style, which consists of (20 - a), Image used in this study are (a - belonging to the father), which requires the student to think a little bit and then answer the way they he see the father treatment him. Scale correction: The answer is: (Yes) or (No)

The answer Yes Obtains (Two Degrees), the answer No Obtains (One degree)

### **Scientific conditions of scale:**

1- Validity of the scale (a) specific father:

Validity from the important characteristics of the judgment on the validity of the measuring instrument and ability to measure what it was placed to measure the capacity to be measured (Ahmed Suleiman 0.376).

Validity measure ostensibly achieved by displaying the scale on a group of experts and specialists \* in psychology to judge the validity of the measure.

\* Specialists: Prof.: Khaleda Ibrahim - A: Saad Ali Zayer - Assistant Professor: Kazem Asia).

2- Stability:

Test stability is a test that has a high degree of accuracy and proficiency, consistency and objectivity in placed to be measured (Mohamed Sobhi 193), the researcher applying the exploratory experiment on a sample from origin's community (20 - student),

After the data discharge researcher used (retail method midterm) to identify the (the degree of scale stability).

The results led to that the value of the correlation coefficient between the two halves scale of (0.895) and after the application of Spearman Brown equation to correct the degree to which was (0.944) which is higher than tabular value of the (0.444) under the level of significance (0.05) and the degree of freedom (18) this shows scale to obtain a high degree of stability.

Questionnaire to quality of your favorite programs when son:

- The researcher using a questionnaire about the quality of television programs favorites among children prepared by the researcher (Ahmed Mohamed, 2003) consists of (15- paragraph), the researcher has offered the questionnaire a group of experts psychology \* and validate of its paragraphs on the selected sample, then the researcher distribution of the questionnaire to the research sample: Correction the questionnaire:

Correction the questionnaire in the light of four options (always - often - sometimes - never) as the gradient of the positive paragraphs are as follows

1- (Always) gets (4 - degrees).

2- (Often) gets (3 - degrees).

3- (Sometimes) gets (two degrees).

4- (Never) gets (one degree).

It should be noted that all the paragraphs of the questionnaire were positive and thus the highest mark that can be obtained is the student (60 - degrees), and the lowest mark can be obtained by the student is (15 - degrees).

3.5 statistical methods used:

1- mean:                      2-standard deviation:                      3- Simple correlation (Pearson - Spearman).

Table -1- shows the mean and standard deviation and the value of the middle hypothesis of research measures

Scales	middle hypothesis	Mean	Standard deviation
Separation Method	15	16.85	1.08
Control method	15	18.43	1.51
Oscillators Method	15	17.82	0.96
extra protection Method	15	19.31	0.87
normal treatment Method	30	22,35	0.606
Television watching scale	37.5	48.64	0.48

Table (1) shows that the middle hypothesis of the scale of parental treatment methods Method segregation has reached (15) and Mean (16.8) with a standard deviation (1.08), while the control method has reached middle hypothesis (15) and Mean (18:43) with a standard deviation (1.51), while the Oscillators Method stood at middle hypothesis (15) and Mean (17.82) with a standard deviation (0.96), while the extra protection Method for parents stood at middle hypothesis her (15) and Mean (19.31) with a standard deviation (0.87), either normal treatment Method for parents reached her middle hypothesis (30) and Mean (22.35) with a standard deviation (0.606), The Television watching scale his reached Middle hypothesis (37.5) and Mean was (48.64) with a standard deviation (0.48).

Table (2) shows the use of simple correlation coefficient (Pearson) shows that there is a (positive) correlation between each of the Father methods of treatment and of the methods (Separation, command and control, Oscillators, extra protection) This means that whenever characterized the treatment of the father as perceived by the sons by Separation, command and control, Oscillators, extra protection, this leads to an increase in watching television

Table -2- shows the values of the correlation coefficient between parental treatment methods

Father methods of treatment	Calculated value of the correlation coefficient	Tabulated Value *	Statistical significance
Separation Method	0.694	0.174	positive Significant
Control method	0.711	0.174	positive Significant
Oscillators Method	0.678	0.174	positive Significant
extra protection Method	0.546	0.174	positive Significant
normal treatment Method	0.685-	0.174	positive Significant

\* Below the level of significance (0.05) and the degree of freedom (148)

Father used these methods in the treatment of his sons infects the relationship between them kind of intransigence family becomes narrow and dangerous place, leading to threat of the sons (Samia Braam 0.1803), for this we find the child withdraws to the world of television, which represents for him an established fact in his life on the grounds that he live in my imagination world of television thereby acting to strengthen this magical world through visual and audio effects embodied by the technological developed for the time being, That inverse correlation relationship - between the normal style of treatment and watching television, a researcher explain that to the importance of the interaction between parents

and their children and the implications of this interaction features to give sons positive personal pattern that trends in safety and peace of mind gained through such treatment, Family sources of psychological stability among the sons The methods of the existing socialization on mutual respect and methods of normal treatment and the feeling of acceptance from his father and obtaining the needs and respect for the independence and appreciation for his opinion, the methods normal in the upbringing of natural growth and proper for the sons of factors child arises, he feels the love of his father predominates understanding in this family is growing and has a sense of security psychological and mental health.

**Conclusions:**

- 1- Increase parents through methods (Separation & control, oscillators & extra protection) leads son's to increase of watching television.
- 2- Increase parents' normal treatment Method for their sons leads to a decline in watching television.
- 3- Child works on compensate for the (non- normal treatment) of his fathers by focusing on watching television to get what he needs.

**Recommendation:**

- 1- Educate parents on the importance treatment by methods together with children through educational institutions.
- 2- Parents should give more attention to the family in order to care for the upbringing of their children sound social upbringing aim of increasing their sense of psychological comfort.
- 3- Parents should be able to follow the quality of programs watched by children on television and identify programs that work on the pedagogical educational upbringing.
- 4- Educate the sons to tell the difference between non-normal treatment of parents for them and the normal treatment that are in their favor by helping school counseling.

## **Intolerance and its relationship with self-esteem among students preparing teachers Institute**

**Ph.D. student \ teacher: Khansaa Sabri Mohammed Ali  
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### **Introduction and significance of research:**

The concept of Intolerance referred to by literature humanities and social sciences, Intolerance is different and varied forms The concept of Intolerance referred to by literature humanities and social sciences, Intolerance is different and varied forms which is a preconceptions, linked to the mind of the individual take the form of a fanatical Modeling in which people are classified into different qualities of religious, ethnic and social attributed to a set of characteristics that describe each group specific descriptions such as treason and treachery and atheism and shabbiness, And these stereotypes are a distorted perceptions do not reflect reality, and are characterized by a small gap or a large child acquired by the across cultural composition through raise him within the family or outside in the other social surroundings.

Psychology defines Intolerance as the direction of rigidly fraught emotionally (the self-direction + emotions intolerance), or ideology or prejudging with or (the most part) against the group or individuals or the subject, is not based on a logical basis or acceptable or scientific fact knowledge, but maybe to myths and legends based. The researcher believes that the concept of "Intolerance negative or positive direction toward a case or idea is not based on a rational basis did not provide scientific evidence of truthfulness, as the characterized by Intolerance that direction is fraught with excessive emotions make thinking away from objectivity and common sense that the individual intolerance towards his group makes him feel love toward them and hatred toward all else of groups. That self-esteem is one of the concepts that scientists have tended to be studied in recent years, is an important and effective factor in the individual agrees and mental health, and depended estimate oneself at any stage of the life cycle on the environment and how to interacts with those around him and their outlook to him, self-esteem "is that dimension evaluative in a complex network of the knowledge buildings such as trends and beliefs that relate to itself and give in its entirety, "the concept of self-esteem". Therefore, the researcher believes that the study of stage of youth is important and necessary in every society make us more capable dealing with young people on one hand, and on their understanding of themselves and phenomena psychological deeply present the other hand, the perception of the problem and how serious is the awareness in an attempt to find a solution to that problem is the initial knowledge for the beginning of resolved.

### **Research Problem:**

Characterized the research problem by answering the following question Is there a relationship between intolerance and self-esteem among this segment of the society under the conditions experienced by the youth and what kind of relationship.

### **Objectives:**

Objective of research to identify the relationship between of intolerance and self-esteem among a sample research

### **Hypothesis:**

No statistically significant differences between intolerance and self-esteem among a sample research.

### **Definitions of the Research Terms:**

Intolerance: a reflection of the values of the individual layout affecting the make judgments presets has on them without adequate justification, in issues and beliefs of the character of the community, such as a reliable beliefs - beliefs an initial agreed - Authority beliefs - beliefs illogical, and that most of them taste matters.

Self-esteem: Smith defined that personal judgment of the individual self-value, which is expressed through individual attitudes towards himself and that's honest formed by the individual about himself depends primarily on the appreciation of the same.

Institute of preparation teachers: are the institutions that accept graduates of middle stage in accordance with the conditions set by the Ministry of Education / General Directorate of preparation, training and grant graduates of these institutes diploma after five years of study and then employ teachers in primary schools.

### Research Methodology:

The researcher used the descriptive approach appropriate to the nature of this study, which will enable us to achieve the objectives of access to research.

Research sample:

Preparing teachers Institute, Students from the fifth stage, Total (25 - student), from the original community totaling (50 - student).

Methods used in the research:

1- Intolerance scale: Depending on the literature and previous studies and measurements relevant as a study (Khalid Ahmed Hajim 2014), the researcher formulates (38) paragraph measure the intolerance each paragraph of the test has four answers:

Are 1- Strongly Agree \ 2-Agree \ 3- Strongly reject\ 4- Reject

The researcher display paragraphs of this scale on experts and specialists in the field of education and psychology.

2- Measure of self-esteem: Depending on the literature and previous studies and measurements relevant as a study (Salem successful Suleiman Mohammed, 2010), the researcher formulate (25), paragraph measure the self-esteem each paragraph of the test seven answers:

Are (Start, very rarely, a little so, sometimes, it is gone through a lot, most of the time, all the time) and take degrees (7/6/5/4/3/2/1), respectively.

The researcher display paragraphs of this scale on experts and specialists in the field of education and psychology.

2-4 exploratory experiment:

In order to avoid difficulties that may face the work of the researcher was conducting exploratory experience on Sunday (17/5/2015), in the classroom of the preparing teachers Institute (Rusafa - 2), the total of students who conducted exploratory experiment on them (5-students) note that the exploratory experiment students they are excluded from the main experiment, After the completion of this experiment the researcher was able to identify all the obstacles that accompanied the exploratory experiment to avoid them and control them during the application of the main experiment to search.

### Statistical methods:

The researcher using a program (Excel) for data processors statistically:

Showing results analyzed and discussed:

Table (1) shows the statistical processing and quality of the natural distribution measures of dispersion

statistical processing Variables	sample Number	standard deviation	Sprains	Mean	Period Confidence Average of 95%		Extent of values		Standard error
					maximum limit	Minimum limit	Highest value	Less value	
intolerance	25	10.808	-0.787	88	90.66	81.73	58	102	0.464
Self-esteem		8.649	0.101	115.68	119.25	112.10	133	100	

Table (1) shows us the correlation coefficient between intolerance measure of self-esteem, was the mean of intolerance (88) and the mean of self-esteem was (115.68), we note that the natural variables of intolerance and self-esteem was the standard error (464.0), while the standard deviation intolerance was (10.808), and self-esteem was (8.649) The sprains coefficient of intolerance (-0.787) and self-esteem was (0.101).

Table 2 shows the correlation coefficient between the scale of intolerance and self-esteem

statistical processing Variables	sample Number	Value (R) calculated	Value(sig) calculated	Morale correlation
intolerance	25	0.321	0.129	Morale
Self-esteem				

Table 2 shows us the correlation coefficient between intolerance and self-esteem scale, we note that the value of (R) calculated (321.0) which is greater than the value (sig) calculated the amount of (129.0), so the relationship between the two variables Morale.

In light of the results the researcher has reached the following conclusions:

**Conclusions:**

- 1- through the analysis of the results found that self-esteem was not affected by variable trends intolerant (religious or sports, nationalism, tribalism) but mainly influenced by large intolerant trends only.
- 2- There is a relationship between certain personal characteristics and trends intolerant among the youth.
3. Increase of self-esteem among the youth may contribute to interact with others and in determining the nature of their perceptions of themselves and adopt positive ideas among the youth about their community.

**Recommendations:**

- 1- Interest in the work among the youth outreach programs to reduce intolerance and raise the level of self-esteem and encourage them to have the acceptance and tolerance and give opportunities for dialogue between them and their parents.
- 2- Need for the various media to contribute to the increase family awareness of damaged intolerance, and how to deal with it.
- 3- Fills the intellectual vacuum for youth through lectures, seminars, cultural and media.

## A comparative study of physiological responses between 200 m and 400 m swimming competitions

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### Abstract

The purpose of current study was to establish a physiological profile for young swimming players by determining their responses during 200 and 400 meter swimming. Twenty-four young swimmers participated in this study. The results demonstrate no significant difference between 200 m and 400 m swimmers data in rest heart rate, maximum heart rate, ventilation and lactate in the rest before swimming at  $p \geq 0.05$ . However, the results demonstrate significant difference in other physiological variables and swimming time of the two swimming distances at  $p \leq 0.05$ . The physiological response result of young swimmers is an important predictor for coaches to monitor and plan training programs

Keywords: Physiological responses, swimming, Front crawl

### Introduction

The identification of the variables that are able to predict swimming performance is one of the main purposes of the swimming science community (Barbosa, Costa, et al., 2010). The physiological measurements during the competitions indicate a cumulative effect of the repeated sequences of activities and suggest there is a high metabolic demand on the athletes (Rodriguez, 1994). Swimming performance is related, on a regular basis, to the anthropometric and physiological variables, and several original research and review papers reported such interplay between the swimming performance and the swimmer's physiological profiles (Barbosa, Bragada, et al., 2010; Tomikawa & Nomura, 2009). In context of physiological responses during swimming 200 and 400 meter competitions, swimming performance is strongly dependent on aerobic and anaerobic parameters (Laffite et al., 2004). Variables such as  $VO_{2max}$ , blood lactate, ventilation, fatigue indicator are very important components for young swimmers during 200 and 400 meter competitions. Lactate threshold has also been considered as a parameter of performance prediction (Rodriguez & Mader, 2003). The velocity associated with the  $4\text{mmol}\cdot\text{L}^{-1}$  lactate threshold (Fernandes et al., 2003; Fernandes et al., 2008) has been addressed in the recent literature. Freestyle swimming events represent most of the races available in swimming competitions. Moreover, the front crawl is the fastest swimming technique and the one used largely in freestyle events. Within these events, the 200m and the 400m distances are the ones for which the highest number of swimmers regularly register in a competition. Hence much attention has been given to these freestyle events and to the front crawl technique. Some studies have described the physiological and/or anthropometric profile of the 200m and 400m front crawl specialists (Hellard et al., 2008; Laffite et al., 2004; Troup, 1991). But, to the best of these authors' knowledge, little effort has been made to compare both swimming competition in physiological responses.

(Barbosa, Pinto, et al., 2010) suggested that, there are several approaches to predicting swimming performance of swimmers such as comparing different distances of swimming competitions. The use of predicting swimming performance aims to compare selected variables among swimmers in with different competitions. Statistical models allow the identification of the best predictors of swimming performance for a given condition. Much research on swimming performance is done based on the comparison of groups at different competitive levels (Fernandes et al., 2006; Seifert et al., 2007). However, few of them have tried to predict swimming performance based on the physiological profile.

The aim of the present study was to compare the selected physiological responses of young swimmers between 200 m and 400 m front crawl swimming competitions to identify a physiological profile that account for the prediction of swimming performance in the 200 m and 400 m front crawl. It was hypothesized that the factors explaining the performances would be different under the two swimming competitions.

### Materials and Methods:

#### Subject

Twenty-four young swimmers from Al-Rwad club in Tenth of Ramadan City participated in this study. The young swimmers registered in Egyptian federation of swimming and competed in the Egyptian swimming championship for distance 200 m and 400 m freestyle swimming events. Twelve swimmers were included in the prediction of the 200m front crawl performance and twelve in the prediction of the 400m front crawl performance. Swimmers were included in a given event prediction model based on their best performance in each swim race. All young swimmers and their parents were informed about the study purposes and procedures, and they signed an informed consent form. Descriptive data of age, height, body mass, body mass index and training experience presented in (Table 1), which demonstrate the descriptive anthropometric variables of 200 m and 400 m young swimmers, which *p*-value refers to high homogeneity between all swimmers.

Table 1. Descriptive data of swimmers (values are mean  $\pm$  SD)

Variables	200 m swimmers (n = 12)	400 m swimmers (n = 12)	<i>p</i> -value
Age (year)	13.08 $\pm$ 0.42	13.04 $\pm$ 0.40	0.80
Height (m)	1.49 $\pm$ 0.02	1.50 $\pm$ 0.02	0.44
Weight (kg)	46.08 $\pm$ 3.18	45.33 $\pm$ 1.07	0.45
BMI (kg/m <sup>2</sup> )	20.82 $\pm$ 1.69	20.29 $\pm$ 0.58	0.31
TE (year)	6.88 $\pm$ 0.43	6.79 $\pm$ 0.40	0.63

BMI = Body mass index and TE = Training experience

### Procedures

The experimental testing was conducted in the first month of the macro cycle of the season (after the transition period post-winter competitive season and before the Egyptian swimming championship for distance 200 m and 400 m freestyle events) in swimming pool of Al-Rwad club in Tenth of Ramadan City. Swimmers were instructed to avoid any high-intensity training sessions two days prior to the experiment to minimize the possible effect of fatigue. The experiment was carried out within a single testing session. After standard anthropometric measurements, all players warmed up for 10 minutes and 5 min active stretching, and then the testing session began with the swimming 200 m and 400 m for subjects. The test was conducted in the afternoon (between 04:00h and 05:00h pm) and in an environmental temperature of 25-28°C and a humidity of 50-60 %.

#### Swimming performance assessment

The swimmers performance was collected at the same time as the physiological assessment by using the Suunto Heart Rate Memory Belt. Each swimmer group did the 200 m or 400 m front crawl test with an underwater start. Subjects performed the swimming race alone to prevent any drafting or pacing effects. Subjects were assigned to each distance according to their best competitive performance and were asked to swim as if they were in a timed competitive race.

#### Physiological Responses assessment

The heart rate belt attached directly to the skin at three points to the swimmers, eliminating the need to wear a belt around the body and thus minimizing skin contact. Recordings of heart rate HR, oxygen consumption  $VO_{2max}$ , ventilation VE, and excess post-exercise oxygen consumption EPOC were taken by using Suunto Heart Rate Memory Belt during the two distances of swimming and transferred using USB data cable to a computer for analysis. Software, Suunto Training Manager is used for the data collection from the belt. For accuracy, the variability of Suunto Memory Belt and software approved by (Martin et al., 2011). Blood lactate sample was taken three times (rest, after exhaustion and 5 minutes after exhaustion) during a race. Capillary blood samples were collected from the finger to determine the blood lactate concentration with a hand-portable lactate analyser (Accusport, Boehringer, Mannheim, Germany).

#### Statistical analysis

Standard descriptive statistics (mean and standard deviation) were calculated for each variable. Normality of distribution of residuals was tested by means of the Kolmogorov-Smirnov test. The independent t-test was computed to compare significant differences in selected physiological responses variables according to the swimmer's group variable (200m versus 400m). Statistical significance was accepted at an alpha level of  $p$ -value  $\leq 0.05$ . All statistical tests were performed using the SPSS statistical software 16.0 (Chicago, IL).

## Results

The results of current study are presented in the (Table 2).

Table 2. Physiological responses and swimming performance time data of young swimmers during 200 m and 400 m competition (values are mean  $\pm$  SD).

Variables	200 m event (n = 12)	400 m event (n = 12)	$p$ -value
HR rest (beats.min <sup>-1</sup> )	77.40 $\pm$ 3.34	75.30 $\pm$ 2.98	0.17
HR maximum (beats.min <sup>-1</sup> )	202.90 $\pm$ 4.09	204.20 $\pm$ 3.12	0.28
HR recovery 5 min (beats.min <sup>-1</sup> )	135.50 $\pm$ 4.06	140.20 $\pm$ 7.81	0.00**
VO <sub>2max</sub> (ml/kg/min)	56.30 $\pm$ 3.77	61.31 $\pm$ 2.42	0.00**
VE (l/min)	56.10 $\pm$ 3.28	58.20 $\pm$ 4.01	0.27
EPOC (ml/kg)	118.30 $\pm$ 3.02	123.60 $\pm$ 2.41	0.00**
Lactate rest (mmol.l <sup>-1</sup> )	1.14 $\pm$ 0.11	1.57 $\pm$ 0.03	0.76
Lactate maximum (mmol.l <sup>-1</sup> )	13.82 $\pm$ 0.47	10.97 $\pm$ 0.35	0.00**
Lactate recovery 5 min (mmol.l <sup>-1</sup> )	8.08 $\pm$ 0.67	6.21 $\pm$ 0.40	0.00**
Swimming time (min)	2.10 $\pm$ 0.05	4.39 $\pm$ 0.03	0.00**

HR = heart rate, VO<sub>2max</sub> = oxygen consumption, VE = ventilation, EPOC = excess post-exercise oxygen consumption, ml = milliliters, kg = kilogram, mmol.l = millimoles per liters, min = minutes; \*\* Significant at 0.05 level (2-tailed)

The results of (Table. 2) demonstrate no significant difference between 200 m and 400 m swimmers data in rest heart rate, maximum heart rate, ventilation and lactate in the rest before swimming at  $p \geq 0.05$ . However, the results demonstrate significant difference in other physiological variables and swimming time of the two swimming distances at  $p \leq 0.05$ .

## Discussion

The results in (Table. 2) reported that, the heart rate value at the rest time and maximum after the both swimming events showed non-significant. In addition, the ventilation and lactate at the rest also showed non-significant. The physiological variables such as heart rate and lactate at the rest period before the swimming are logical to found without difference, swimmers before the events relatively are similar because all players were a one team and underwent to the same endurance training, also the age value of swimmers related to this physiological variables (Zamparo et al., 1996). The maximum heart rate and ventilation non-significant results may be observed without difference between the 200 m and 400 m swimmers because of the nature of both swimming events, both swimming distances need relatively same demands capacity such as maximum heart rate and ventilation, also the age of the swimmers is related to the maximum heart rate, and ventilation it could be the time of season or mechanical constraints during swimming were lower the precision of such estimates to predict true swimming performance (Barbosa, Silva, et al., 2010), however in respect of data, the maximum heart rate and ventilation values were higher in the longer event swimmers. The heart rate value at 5 min recovery, VO<sub>2max</sub>, and the recovery indicator (EPOC), blood lactate at the maximum and after 5 min recovery and swimming time were significantly different between the 200 m and 400 m swimmers. Maximum blood lactate only was significantly higher in the shorter event swimmers, the current results concerning the maximum blood lactate consisted with the previous results of (Capelli et al., 1998; Troup, 1990, 1991), who reported that shortest events are quite dependent from anaerobic pathways and with increasing distance the partial contribution of the aerobic pathways have a trend to be higher.

The results of current study concerning the VO<sub>2max</sub> consisted with previous studies of (Van-Handel et al., 1988), who reported that VO<sub>2max</sub> is a good predictor of the swimming time performance. The mean values of VO<sub>2max</sub> in current study of both swimming events are within those reported by (Fernandes et al., 2003; Fernandes et al., 2008), although the subjects' peak VO<sub>2max</sub> in the current study was considerably lower than that in (Fernandes et al., 2003; Fernandes et al., 2008). Differences in the test material that used in current study, as well as in the equation that was used to calculate the VO<sub>2max</sub> by Sunnto training manager software, may help to explain the mismatch with the referred studies.

The heart rate value at 5 min recovery and the recovery indicator (EPOC) showed higher in the longer event swimming 400 m, these finding results could be explained by the time and energy of swimming, which are different between the two swimming events. In addition, the 200 m swimming event depends on the anaerobic energy more than the longer swimming event 400 m front crawl. The mean values for maximum and recovery 5 min blood lactate were also lower than those reported in the literature for trained swimmers performing the same distances, especially in the 200m distance (Lindh et al., 2008).

Thus, the study concludes that, the physiological responses of 200m and 400m swimmers are different, except some logical variables such as heart rate and blood lactate at the rest time before swimming. In addition, the peak mean of  $\dot{V}O_{2max}$  combined with training experience and age, may explain the 200m and 400 m front crawl best season performance with high precision.

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## **Comparative study to learn some of the free swimming skills, according to the simple sensory learning patterns**

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### **Introduction and Significance of research:**

Students are different among themselves through their abilities to learn the methods of learning patterns and motivation to face the educational problems, this variation make attention increasingly to take into account individual differences among students and deal with them according to the different patterns learning,

Educators are seeking to organize the learning conditions relating to students and environmental conditions that surrounds them, these conditions depends on the students' abilities such as (mental, emotional and pattern of their personality and style of their thinking and raises their motivation and strengthens attention It makes them in mental and physical condition to accept learning .,

So it requires from teachers work hard to apply the scientific program classifies students according to their learning pattern and thinking.

Should take into account the learning patterns for learners in order to reach effective learning to achieve the wishes of students and their needs, so it cannot use the same patterns of educational methods for all students

importance of research through appreciation and understanding by teacher to individual learning patterns and their role in improving learning, Teacher can make students excel in learn to free swimming skill by identifying learning styles have a in swimming lesson, and enables them to develop the knowledge and practical abilities and overcome their weaknesses in order to increase strengths they have.

### **Research problem:**

Researcher worked on the education select your preferred pattern among her students in a swimming lesson and experience the pattern of so-called intangible or cognitive map class, by classifying students according to the simple sensory learning styles, then direct them to method that best fits pattern of education in the acquisition of practical and theoretical knowledge.

Researcher put the problem in the following question:

What is the appropriate style to learn free swimming skills among students of the third stage in the College of Physical Education and Sports Science Baghdad University?

### **Objectives:**

- 1-To identify the (patterns sensory learning simple) among a sample research
- 2- Classified research sample for swimming lesson, according to the patterns sensory learning simple
- 3- To identify the differences at the (learning swimming skills) according to the patterns sensory learning simple among a sample research.

### **Hypotheses:**

- 1- Variation in patterns sensory learning simple among a sample research.
2. Differences at learning some of the free swimming skills, according to the patterns of simple learning.

### **1.5 Delimitation and Limitation:**

The research sample consisted of students from the third stage in the College of Physical Education and Sports Science for girls Baghdad University,

And of their numbers (true - a student), for the period from 09/11/2014 until 04/06/2015, in the swimming pool College of Physical Education and Sports Science - University of Baghdad.

Dietary habits followed by the students are not of interest to the researcher in this study.

## Research Methodology:

Research sample:

The researcher identified the community and the research sample female Students College of Physical Education and Sports Science for girls at third phase of a swimming lesson and their numbers (97-student). It was selected as in the intentionally manner and they represent (100%) of the original community.

It was ascertained that there are no students from previous years or educated already or from sports clubs player's within the research community, the research sample divided of intentionally according to the patterns learning by relying on learning sensory simple patterns scale into four groups, as follows:

- 1- Female students with visual pattern their number (31) students.
- 2- Female students with auditory pattern their number (19) students.
- 3- Female students with performativity pattern and their number (40) students.
- 4- Female students with written pattern their number (7) students.

Researcher sample division has adopted in accordance with the learning patterns, the fact that the sample ore has never learned how to swim skills; the researcher did not conducted homogeneity and parity to the research sample.

### Tests and scales used in the research:

#### Scale patterns learning:

has relied on learning styles and worked to scale employment in the field of sports, to be appropriate to learn the lesson the sport of swimming. Through four simple vocabularies learning patterns are (auditory learning pattern, learning performativity pattern, visual learning pattern, learning pattern written) and each pattern includes a set of paragraphs. The way to answer paragraphs scale showing distinguish learning pattern prevalent among the student, learning the simple pattern prevailing which is higher than his mean on the hypothesis center in one of the four learning styles.

#### Learning performance of some swimming skills:

Was evaluated skill performance directly to learn three skills in swimming are (buoyancy, flow, and free swimming -10 m) Evaluation from 10 degrees, according to the smooth flow kinetic and their compatibility and accuracy, through the practical exam for a swimming lesson.

#### Exploratory experimental:

Researcher conducted the exploratory experimental test on a sample of the research community number reached (4 - Female students), to identify main difficulties facing the work of Researcher during the tests and research procedures. Ten o'clock on Saturday 11/8/2014, the purpose of this experiment:

- To make sure clarity of the instructions paragraphs of the questionnaire.
- 2- To identify the difficulties faced by Researcher in order to avoid them when applying the questionnaire in its final form.
- 3- Identify and classify Female students according to their learning patterns. Researcher did not conduct (pretests) to learn some swimming skills because of that sample learn for the first time (sample ore). Researcher relied on a comparison between the (posttests) in groups according to the research and learning pattern.

1.6 procedures:

you determine the pattern Female students, it was applied vocabulary swimming lesson for the period from (11/12/2014 until 05/04/2015), The implement the program approved by the school curriculum female students for each educational unit in a time of week (120-minute) for each educational unit, after complete the implementation of vocabulary of the curriculum, a posteriori tests were conducted on (04\06\2015), to learn some swimming skills.

#### Discuss and analysis of the results and:

Display the results of the research sample classification according to the patterns learning.

Table (1) it shows the statistical sights of the sample individuals in the learning patterns sensory simple scale

Learning pattern prevailing	Number of sample	mean	hypothesis center	standard deviation
visual pattern	31	39,8	30	1,65
performativity pattern	40	41,3		3,51
auditory pattern	19	38,7		2,87
written pattern	7	36,5		0,97

Table shows (1) that the research sample varied in (learning patterns sensory cognitive simple), it is found that (31 - Female students) was one of the visual pattern, and (40 - Female students) was one of performativity pattern, and (19 - Female students) was one of the auditory pattern, and (7 - Female students) was one of written pattern all mean calculations is the largest from the hypothesis center (30 degrees)

Display the results of learn some swimming skills to the research sample according to the patterns learning.

Table (2) it shows the statistical sights (analysis of variance) between the individuals research sample to learn some swimming skills

Swimming skills	Analysis of variance	Sum of squares	Degrees of freedom.	average squares	value -v- Calculated	Level error	Significant differences
buoyancy	Between groups	65,19	3	21,7	16,6	0,000	moral
	Inside groups	125,77	93	1,35			
	Total.	190,96	96				
flow	Between groups	158,77	3	52,92	44,4	0,000	moral
	Inside groups	110,73	93	1,19			
	Total.	269,5	96				
free swimming 10 m	Between groups	98,55	3	32,85	28,1	0,000	moral
	Inside groups	108,69	93	1,16			
	Total.	207,25	96				

\*Moral at the level of significance < (0 , 05)

For the purpose of finding the difference in learning some swimming skills among the research sample according to the learning patterns of sensory cognitive simple, was the use of analysis of variance, it is found from the table (2) that the values of (P) calculated for the three skills when compared to the level of error that was (0, 000) It's less from the level of significance (0,005) and this means that there are significant differences in learning some swimming skills among the research sample according to the patterns sensory learning simple, For the purpose of finding differences in favor of any type was used Act (L.S.D) Less significant difference, as shown in the table (3).

Table (3) it shows the value of the less significant difference between the mean to learn some swimming skills, according to the learning patterns

mean to learn some swimming skills according to the learning patterns		mean difference	Level error	Significant differences	
buoyancy	visual pattern - performativity	7,2-5,77	*1,43	0,000	moral
	visual pattern - auditory	5,15-5,77	0,62	0,330	Non moral
	visual pattern - written	4,85-5,77	0,92	0,486	Non moral
	Auditory pattern - performativity.	7,02-5,15	*1,25	0,000	moral
	Auditory pattern - written.	4,85-5,15	0,3	0,560	Non moral
	Written pattern - performativity.	7,02-4,85	*2,17	0,000	moral
flow	visual pattern - performativity	7,85-6,54	*1,31	0,000	moral
	visual pattern - auditory	4,84-6,54	*1,7	0,000	moral
	visual pattern - written	4,28-6,54	*2,62	0,000	moral
	Auditory pattern - performativity.	7,85-4,84	*3,01	0,000	moral

	Auditory pattern - written.	4,28-4,84	0,56	0,252	Non moral
	Written pattern - performativity.	7,85-4,28	*3,57	0,000	moral
free swimming 10 m	visual pattern - performativity	7,22-5,87	*1,35	0,000	moral
	visual pattern - auditory	4,84-5,87	*1,03	0,002	Non moral
	visual pattern - written	4,57-5,87	*1,3	0,005	Non moral
	Auditory pattern - performativity.	7,22-4,84	0,27	0,573	Non moral
	Auditory pattern - written.	4,57-4,84	*2,38	0,000	moral
	Written pattern - performativity.	7,22-4,57	*2,65	0,000	moral
*Moral at the level of significance < (0 , 05)					

in table (p) show that the research sample from performativity pattern individuals are the best learning styles to skill (buoyancy and flow free and swimming), followed by the research sample from visual style it was the best from auditory and written patterns to learn the skill (flow and free swimming -10 m).

#### **Discuss the results:**

Through Table 3 Showing a sample of the research outweigh the (performativity pattern) to skills and learn to swim, followed by a sample from research (visual pattern) excelled in skill (flow and free-swimming) better than the group (written and auditory pattern pattern).

Researcher explain that to the female students (performativity pattern) are focusing on the practical details of performance and learning skills Mastery, through practical performance and this make them one of the best patterns to performance and learn some swimming skills.

Preferred working performativity pattern to work they were able to achievement a new task through trial and discover through experimental without having to refer to the written instructions. The owners of this pattern have the ability to use all or parts of the body (fingers, hands, arms) to solve a particular problem, A good example of this activity athletes in various colors, when you view sports, work or frequent and similar movements (kinetics story), they enjoy the lessons that include practical activities, and they have a good synergistic kinetic and physical capacities and sports good.

Owners Visual pattern, has excelled in skill (flow and free-swimming), as the visual system of the learner first receives the information and stores it and visualization it can be retrieved through the practical performance of the skills. In this mode the Female students depends on the acquisition of knowledge on the optical visual memory and perception, companions this pattern focuses on the visual stuff and includes photographs and charts, and the exhibits, films, blueprints, these learners using sentences like (let me see) and they have the ability to achievement a new task after watching to explain by models or see the performance.

#### **Conclusions and recommendations:**

##### **Conclusions:**

- 1- Differences emerged in the pattern of third stage female students learn in swimming lesson.
- 2- Performativity pattern Excelled female students in learning some swimming skills on the female students other styles.
- 3- Female students' visual style excellence in learning the skill (flow & free swimming, 10. m) female students on the auditory and written pattern.

##### **Recommendations:**

- 1- To encourage the teaching staff in order to diversity in the use of different teaching methods to make it suitable for all types of female students in order to improve the learning process and access them for the better.
- 2- Taking into account the learning patterns of female students at educational curricula.
- 3- Taking into account the learning patterns matching the teacher and students because of its active role in the educational process.
- 4- And guide students the necessity communicate about the question and discovery and promotion of curiosity for more information and therefore have to develop the community.
- 5- Conducting studies are similar to patterns different sports and events.

## Directiveness And Self-Esteem, And System Of Values In The Students Of Physical Education

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### Abstract

The objective of this study was to determine the degree of directiveness in the students of the Physical Education Faculty at teacher training college, differing in gender, and in relation to their self-esteem and values. An analysis of the obtained results showed statistically significant relation between the degree of directiveness and self-esteem in the examined students. 'Family security' and 'health' obtained the highest scores in the group of terminal values, while 'a world of beauty' (beauty of the nature and art) – the lowest. In the group of instrumental values, the highest score was given to the following traits of the personal character: 'loving and ambitious' (hard-working with ambitions) and 'honest' (veracious and truthful). The lowest value the examined students attributed to the 'broad-minded' (wide horizons). Generally, high scores in DS scale were accompanied by the low or equally high self-esteem.

*Key words:* directiveness, self-esteem, personal values, physical education students

### Introduction

It is assumed that directiveness is an indispensable feature of the effective leadership, i.e. „leading people from the superior position (dominance)” (Brzozowski, 1997, pp. 70). Dominance is related to the self-confidence, i.e. being convinced that the one's behavior is correct. According to Ray's concept of directiveness, it is related to the authoritarian and dogmatic personality (Ray and Lovejoy, 1983). Authoritarian personality is characterized by dominating, highly conservative opinions and attitudes, and a perception of the world through the stereotypes and schematic 'inflexible' reasoning. Ray (Ray and Lovejoy, 1983) is convinced that directiveness is a personality trait of imposing own will and a tendency to aggressive dominance; being a feature of authoritarianism. It seems, however, that directiveness means more than authoritarianism alone as it is related to: aggressiveness, motivation of the success, assertiveness, discrimination, conservatism, prejudice, and rule. This concept is confirmed by the research of Ray and other authors (Heaven, 1985; Ray, 1984, 1985, 1986, 1989; Ray and Lovejoy, 1988).

In psychology, self-esteem is related to the positive or negative attitude to the 'Ego', generalized, relatively stable assessment of 'Myself'(Rosenberg, 1965; Szewczuk, 1985; Blascovich and Tomaka, 1991). Self-esteem from this point of view is one of the 'Ego' concepts, subjective construct based on the perception and self-esteem (Anastasi and Urbana, 1999; Baumeister et al., 2003; Dworakowska et al., 2008). As a matter of fact it results from an autoregulation in the system of a discrepancy between 'Ego' ideal and 'Ego' real (Higgins, 1987). It is also an indicator of our social status (Baumeister and Leary, 1987) and the basis of the self-esteem and effectiveness (Carr, 2009). Self-esteem may be both global and specific (Crocker and Major, 1989), open and hidden (Bosson, 2006), and treated as a trait and state (Rosenberg, 1989; Brown and Marshall, 2006). Positive self-esteem may be both stable and unstable (Kernis and Goldman, 2006; Dzwonkowska et al., 2008). Its components include among other: evaluation of the own physical attractiveness, interpersonal skills, sense of humor, cognitive skills, and numerous capabilities, e.g. manual, locomotive. Rosenberg (1965) distinguishes two dimensions of the self-esteem: high (positive attitude toward oneself) and low (negative attitude toward oneself). Rosenberg emphasizes that high self-esteem means being 'sufficiently good' and worthy human being. However, it doesn't always mean that such a person perceives him/herself better than the others (Rosenberg, 1965; Dzwonkowska et al., 2008).

Further, such terms like 'the value and personal values', which are the subject of interest in several sciences (anthropology, economy, philosophy, psychology, sociology, theology etc.) are differently defined and bear different meanings (Rokeach, 1973; Misztal, 1980; Wojciszke, 2002; Jaworowska et al., 2011; Ciecuch, 2013). For instance in psychology, these terms are discussed in the context of the discipline, defined theory, and often within philosophical assumptions of the author. In the Ciecuch's opinion (2013, pp. 11), only one consent relies on the fact that 'the value' is a kind of psychological abbreviation and usually means preferences of the value. 'Value' is for instance understood as a "feature of the said object (object, human being, idea) in relation to the subject that object needs, desires, and interests ..." (Szewczuk, 1979, pp. 319). 'Values' means what the man willingly or unwillingly respects and starves for. However, the majority of the definitions and descriptions of value formulates it as the concepts and beliefs of the desired target states or behaviors, which overcome specific situations, are directed by the choice and evaluation of both behavior and events and are arranged according to their relative importance (Rokeach, 1973; Wojciszke, 2002, pp. 178). According to Korczyński (2005), values are images of the desire, achievement of the things, which are the most important to satisfy men's needs. Events, which man praises or may be a standard, pattern of behavior, i.e. a rule, how man should or not should act, may also be treated as values (Homplewicz, 1996; Denek, 1999; Gołaszewska, 1994; Korczyński, 2005).

Out of diverse interpretations of „values”, concept named the Value Survey (VS) by Rokeach is a test measuring the values [In Poland, the most popular and mostly used is VS version, named Skala Wartości (Scale of Value) by Brzozowski, 1986,; 1987,;1996)]. Rokeach Value Theory (1973) is a part of more general concept of personality; understood as a system of beliefs, in which one may distinguish ten main parts and subsystems (Brzozowski, 1966). According to this theory, it is assumed that the values mean: "a persistent belief, defined way of the conduct or the ultimate state of an existence, being personally or socially preferred in comparison with an alternative way of the conduct or the ultimate state of an existence, it is, therefore, a standard guiding human actions" (Brzozowski, 1986, pp. 528). This hierarchical system, arranged in accordance with a relative importance, forms a consisted pattern of the elements, a set being a certain entity, conditioned of the permanent, logic arrangement of its elements (Rokeach, 1973, pp. 5).

Gacek (2003) stresses out the significance of the values' system regulative function, expressing itself by the effect on the human cognitive, emotional, and behavioral system, i.e. formation of the specific attitudes and behaviors of the subject. It is true when one of the convictions is related to the 'ego' and another is the value. Then, the values are imperative for the action (Rokeach, 1973; 1979).

According to Żukowska (2007, pp. 212) "self-esteem is an internal process ongoing in the human psyche. When one feels it, the whole chain of various processes starts and may be influenced by the physical activity". Self-esteem may be important for the psychic resistance (McKay and Forming, 2002). It may be the source of a positive or negative feeling (Sparks, 1995), may affect environment, and even change an appearance and behavior (Lindefield, 1995).

## **Materials and Methods**

### Participants

Forty one students (II term) of the Physical Education Faculty at the Physical Education and Sports Academy in Gdańsk participated in this study. There were 17 female students (41.46%) and 24 male students (58.54%), aged between 20 and 25 years ( $X=21.32$ ;  $SD\pm 0.96$ ).

### Procedure

Diagnostic poll, using questionnaire, included three scales. Two scales were related to the Likert method of summated ratings (Brzeziński, 1980), and the third scale – ranks attributed to the particular values of the scale. The obtained results were analyzed with basic statistical techniques through the SPSS software.

The first used scale was Ray Directiveness Scale (1984) in the complete Polish version (D – 26), adapted by Brzozowski, 1997). This scale measures directiveness as some trait of personality, i.e. tendency to impose own will to other people and lead them from the superior position (dominance). It includes 26 questions in the questionnaire of questions and answers (PTP, 1997). Each respondent had to choose one of the given answers (YES, ? mark, NO). The obtained answers were compared with the key. Then, the scores for all questions were calculated. The raw result relates to the temporary standard ten. The obtained results may be qualitatively classified to low (1 – 4 sten), medium (5 – 6), and high (7 – 10 sten). „High results of this scale prove dominance and dominance acceptance as well as the firmness and determination, and sometimes an inclination to the irritation /aggressiveness”. „Low results of the Ray

Directiveness Scale may indicate relatively higher level of the submissiveness, lower determination and firmness, more rare inclination the irritation (aggressiveness)” (Brzozowski, 1997, pp. 70 – 71).

The second scale – Rosenberg Self-esteem Scale (SES), which is one dimensional tool enabling to evaluate the level of the general self-esteem (relatively constant inclination, understood as conscious positive or negative attitude to ‘Myself’). This scale consists of 10 diagnostic statements. Respondents have to indicate a degree of agreement with every statement. Answers are scored from 1 to 4 (1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree. Research with the use of SES may be carried out individually or collectively (Dzwonkowska et al., 2008).

The third scale used in this study was Rokeach Value Survey, adapted by Brzozowski (1989, 1996). It included a list of the 18 terminal values (referring to the most important goals to be achieved during the whole life-time) and 18 instrumental values (referring to the means of achieving terminal values) as it is in the original G version.

**Results**

Relationship between the degree of directiveness in the examined students and their self-esteem

The obtained results of the directiveness degree (SD) correlation with SES of the students are shown in Table 1. In this case Spearman correlation coefficient proved statistically significant at p=0.007.

Table 1. Spearman correlation coefficient for the sten assessment of the directiveness degree (SD) vs. SES

Variables	N	R - Spearman	t(N-2)	p
SD & SES	41	0.415	2.851	0.007

Correlation coefficients are significant at p<0.05.

Directiveness and personal values of the examined students

An analysis of the „terminal values” hierarchy (TV – median) showed that the lowest score, i.e. the highest value (HV) was 'family security' (M=1). The second was 'health' (M=3). The lowest value responders attributed to the value defined as 'a world of beauty' (beauty of the Nature and art.). Detailed histogram is presented in Figure 1.

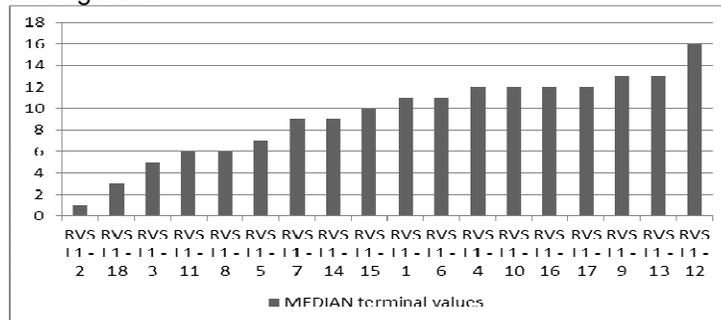


Figure 1. Terminal Values hierarchy (median)

In the set of the instrumental values, responders valued the most such trait of the character as 'loving' (M=4) and 'ambitious' (hard-working and with ambitions), and 'honest' (frank and truthful) at the same time (in both cases M=6). The lowest position responders attributed to the person of 'broad-minded' (so called broad horizons) (M=14). Figure 2 shows distribution of the analyzed instrumental values.

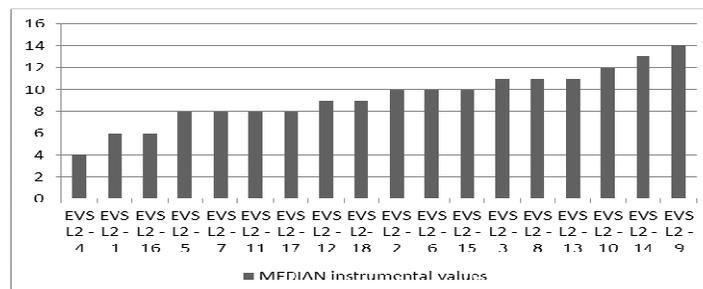


Figure 2. Hierarchy of Instrumental Values (median) for the examined students

Diversity of responders because of the high and low degree of the directiveness (SD scale) showed a different picture of the preferred hierarchy of TV and IV. It was found that the responders of a low SD (1 – 4 sten) and high TV (7 – 10 sten) valued most the 'family security' (care of close relatives) and 'Health' (physical and psychic well-being) as well as 'an excited life' (life full of challenges and actions) (Figure 3).

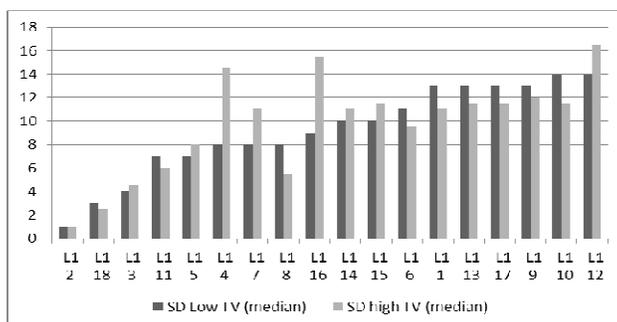


Figure 3. Degree of the directiveness and low and high sense of the terminal values  
 Next, students of high SD (7 – 10 sten) and low TV (1 – 4 sten) mostly valued such values as: 'a world of beauty' (beauty of the nature and art), 'Equality' (fraternity and equal chances for everybody), and 'Pleasure' (nice, peaceful life). The impression was that for this group of students hedonist values were the most precious. On the contrary, the students of the low SD and high IV preferred the following instrumental values: 'loving' (cordial, affectionate), 'honest' (veracious and truthful), and 'clean' (tidy, neat), while the responders from the opposite group, i.e. high SD and low IV scores, appreciated mostly such instrumental values as 'imaginative' (bold, creative), 'broad-minded' (wide horizons), and 'self-controlled' (reserved, internally disciplined). The data are presented in Figure 4.

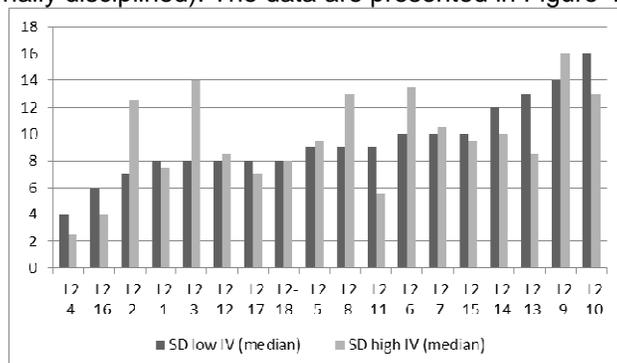


Figure 4. Degree of the directiveness and low and high preference of the instrumental values  
 An analysis of the degree of directiveness (SD) and sense of the self-esteem enabled to notice their similar distribution. Interference of these results with the use of sten scale showed the analogous percentage for both SD and SES. 1 – 4 sten was treated as low, 5 – 6 as medium, and 7 – 10 high scores. It was found that the low scores in both SD and SES obtained 29.27%, medium – 43.90%, and high – 26.83% of respondents respectively. The most characteristic is the fact that the high SD scores (meaning the high degree of directiveness) were usually accompanied by low or equally high self-esteem. These data are presented in Figure 5.

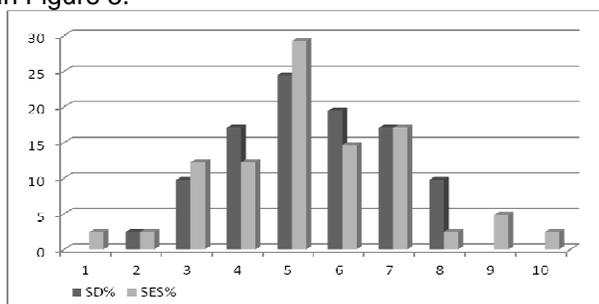


Figure 5. Percent distribution of sten scores of SD and SES

## Discussion

The obtained results of this study showed that the degree of directiveness in the examined students is related to their self-esteem. Significant was the fact that the students of the high degree of directiveness (SD) and low scores of the terminal values (TV) valued mostly such a hedonistic values as: „a world of beauty” (beauty of the nature and art), 'equality' (fraternity and equal chances for other people), 'pleasure' (nice and peaceful life). Whereas the students of the low degree of directiveness (SD) and high IV preferred such values as: 'loving' (cordial, affectionate), 'honest' (veracious and truthful), and 'clean' (tidy, neat). The students of high SD and low IV cherished the most the following instrumental values: 'imaginative' (bold, creative), 'broad-minded' (wide horizons), and 'self-Controlled' (reserved, internally disciplined). Such a hierarchy of values meaning a responders' attitude to their competence is frequently seen in people accepting domination. Characteristic for the examined students was the fact that the relatively high scores of SD scale were accompanied by the low or equally high self-esteem, i.e. positive or negative attitude to the 'myself'. Other authors confirmed these results (Dzwonkowska et al., 2008). Such combination of directiveness and self-esteem may determine behavior of the individual. Żukowska (2007, pp. 213) is convinced that „neither overestimation of self-esteem nor its underestimation favors non-conflict development of the athletes. Self-esteem contrasting with these extreme cases is characterized by realism not only in the assessment of one's capabilities but also an assessment of situations seen in the sports”. In the discussed case, positive and statistically significant correlation between the degree of directiveness (SD) and self-esteem (SES) of the examined students was noted. Relatively high percentage (26.83%) of respondents showing high degree of the directiveness and simultaneously high & low self-esteem may be alarming in view of their future work as the physical education teachers, coaches, and instructors in various sport disciplines. One cannot ignore that such traits may considerably affect the social development of the examined students both facilitating and causing difficulties in their relations with other people. It is also probable that such individuals may feel fear and anxiety in the difficult situations (especially while communicating with their pupils) resulting from the lack of control of their own behavior as such; the reality which is pointed out by the results of other studies (Jasiński & Tkachuk, 2014).

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## Anthropometric Variables In Malaysian Swimmers of Various Age Groups

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### **Abstract**

Swimming belongs to the unique limited group of sports, which are highly competitive and at the same time are enormously popular as participation sport. Being both skillful and physical in nature, swimming requires certain type of body proportions and body composition to be successful competitively. The purpose of this study was to investigate into the body weight and total fat % dynamics of Malaysian swimmers of various age groups as a pre-requisite for high competition performance. Weight and fat % was measured using body composition monitor with scale (Omron, Karada Scale, HBF-361). Anthropometric variables of 99 leading swimmers were measured during the Age-Group MILO-PRAM Malaysia National Championships, 2011 and KarnivalSukanMajlisSukanUniversiti Malaysia (MASUM)2013. Increases in body mass dynamics were observed with Malaysian male swimmers along with obvious reduction of total fat % from 11-12 to 13-14 and further up to 15-17 years of age. However, at the age of 18 and above weight increase was accompanied by undesirable statistically significant increase in the total body fat %. As of the body mass and % total body fat dynamics, National population female swimmers demonstrated the trend of increasing both the body weight and fat % from younger to elder age groups. Right from the age group of 11-12, further to 13-14, to 15-17 and 18 and above body weight increased constantly. That alone won't matter much, but the total body fat percentage from the age of 11 to 12, to 13-14, 15-17, and 18 years and above age groups increased almost linearly. The trend is showing no growth of potential in either male or female National population swimmers towards International performance with age progression.

Keywords: Anthropometry, swimming, body mass, fat %.

### **Introduction**

Body composition appears to be a good descriptive characteristic of elite swimmers. As a rule, elite swimmers tend to have ectomorphic body types. That is, they are relatively lean (i.e. a low percentage of body mass is carried as fat tissue) when compared to the endomorphic body type. Muscularity would be described as 'lean muscled' rather than the 'heavy muscled' mesomorphic body type. The body shape is typically flat and wide at the shoulder, tapering to a narrow waist (i.e. the torso tapers in a V-shape as viewed from the front). The amount of body fat is one factor that may be controlled. To a large extent, one's body fat can be reduced through good nutrition practices and adequate aerobic training loads. Muscularity is also subject to the type and amount of exercise performed. However, ectomorphs tend to retain a 'lean muscular' appearance without developing excessive muscle bulk, which is typically the case in swimmers. Close relationship between performance and the body's anthropometric characteristics has been known for quite a while, but it was not until the fifties that research in the area intensified. Since then, many anthropometric and physiological characteristics of the human body have been investigated and related to swimming performance. In this study, we concentrated on anthropometrical profile of Malaysia top swimmers from various age groups inclusive of weight, and body composition of swimmers using the measures of BMI and body fat percentage.

## Methodology

Body weight and fat % patterns were studied for 99 leading swimmers during the Age-Group MILO-PRAM Malaysia National Championships, 2011 and KarnivalSukanMajlisSukanUniversiti Malaysia(MASUM)2013. Age groups and number of swimmers researched during the Championships were as follows:

11 & 12 years old boys (10) & girls (12), 13 & 14 years old boys (11) & girls (10), 15 to 17 years old boys (14) & girls (17) and 18 and above old boys (11) & girls (14)

Body weight and fat % patterns were analyzed with the purpose of studying:

Body weight and fat % relationships gender and age group wise, BMI dynamics with age and gender with Malaysian swimmers

Weight and fat % was measured using body composition monitor with scale (Omron, Karada Scale, HBF-361). Data was analyzed through SPSS statistical package version 20.0.

## Results

### Findings on Male swimmers

Descriptive statistics on weight, fat % and body mass index for Malaysian various age groups male swimmers is presented as means and SD in Table 1.

Table 1: Body weight, fat % and BMI Malaysian male swimmers (Mean±SD)

Variables	Age Groups			
	11-12(n=10)	13-14(n=11)	15-17(n=16)	18 and >(n=11)
Age (years)	11.3±0.48	13.23±0.47	15.94±0.93	21.0±1.26
Weight, kg	37.84±5.69	51.85±7.71	62.96±8.47	65.13±7.95
Total Fat %	17.77±2.58	14.25±3.15	13.29±2.47	16.46±5.16
BMI	17.59±0.93	19.53±1.9	21.11±2.07	22.21±2.35

Body mass index with Malaysian male swimmers showed steady increase from younger to older age groups, which is basically normal. The trend is actually linear and depicts a straight and rather expected development from the normal growth and development prospective (Fig. 1).

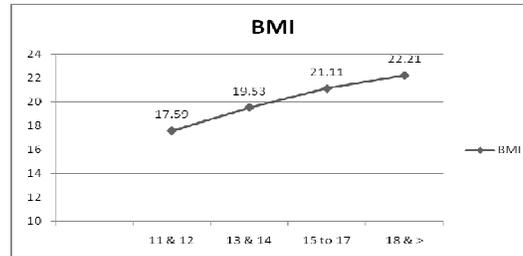


Figure 1: Dynamics of BMI with Malaysia male swimmers

Further analysis of body weight and fat % age wise dynamics showed that BMI dynamics alone isn't good enough for an accurate assessment of age dynamics of swimmers' major anthropometric variables. Although the positive and statistically significant ( $p < 0.05$ ) from one age group to another weight improvements were observed with male swimmers from 37.84±5.69 kg to 51.85±7.71 kg to 62.96±8.47 and finally 65.13±7.95 at the age of 11-12, 13-14, 15-17 and 18&> years of age respectively, fat percentage dynamics has not been encouraging at all (Fig. 2).

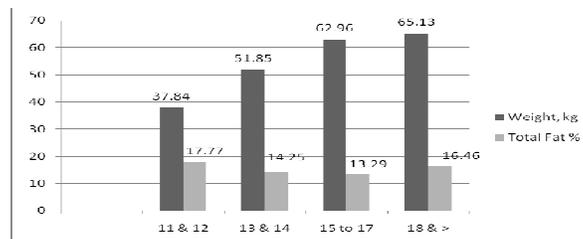


Figure 2: Dynamics of weight and total fat % with Malaysia male swimmers

Statistically significant ( $p < 0.05$ ) decrease in fat % from  $17.77 \pm 2.58$  to  $14.25 \pm 3.15$  then further to  $13.29 \pm 2.47$  in the age groups of 11-12, 13-14 and 15-17 has not been however extended into the elder age group of 18 & above, in which it increased significantly ( $p < 0.05$ ) to  $16.46 \pm 5.16$  as compared to the values of 15-17 age group.

### Findings on Female swimmers

Descriptive statistics on weight, fat % and body mass index for Malaysian female swimmers of various age groups is presented as means and SD in Table 2.

Table 2: Body weight, fat % and BMI Malaysian female swimmers (Mean  $\pm$  SD)

Variables	Age Groups			
	11-12 (n=12)	13-14 (n=10)	15-17 (n=18)	18 and >(n=14)
Age (years)	11.33 $\pm$ 0.49	13.4 $\pm$ 0.52	15.56 $\pm$ 0.71	22.5 $\pm$ 1.65
Weight, kg	39.4 $\pm$ 6.78	47.29 $\pm$ 4.1	54.79 $\pm$ 7.05	54.94 $\pm$ 7.05
Total Fat %	18.92 $\pm$ 2.56	20.71 $\pm$ 1.48	22.91 $\pm$ 2.11	24.04 $\pm$ 2.77
BMI	17.29 $\pm$ 1.81	19.07 $\pm$ 1.26	20.82 $\pm$ 1.86	20.96 $\pm$ 1.54

Body mass index with Malaysia female swimmers shows steady increase from younger to elder age groups, which is normal. There is no difference in the improvement pattern between male and female National swimmers' population as such (Fig. 3).

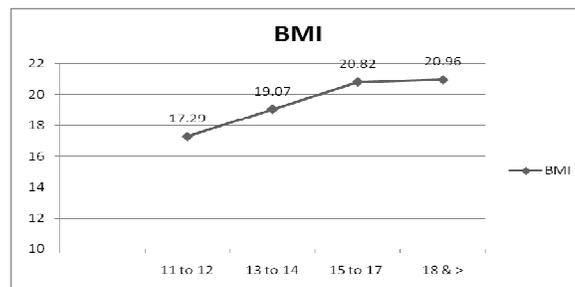


Figure 3: Dynamics of BMI with Malaysia female swimmers

As of the weight and % Fat dynamics, National population female swimmers demonstrated an undesirable trend of increasing both the body weight and fat % from younger to elder age groups.

Right from the age group of 11-12, further to 13-14, to 15-17 and 18 and above body weight raises constantly from  $39.4 \pm 6.78$  kg to  $47.29 \pm 4.1$  kg to  $54.79 \pm 7.05$  kg and finally to  $54.94 \pm 7.05$  kg (Fig. 4).

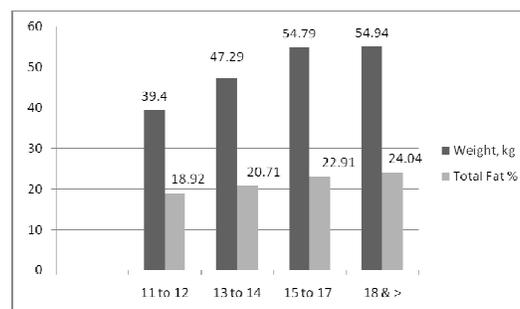


Figure 4: Dynamics of weight and total fat % with Malaysia female swimmers

That alone won't matter much, provided the growth in body mass is related to the increase in the fat free mass (FFM), but in our case the total body fat percentage also keeps increasing from  $18.92 \pm 2.56\%$  at the age of 11 to 12, to  $20.71 \pm 1.48\%$  further to  $22.91 \pm 2.11\%$ , and finally to  $24.04 \pm 2.77\%$  in 13-14, 15-17, and 18 years and above age groups respectively. Such dynamics obviously shows that increases in body mass are fat, rather than FFM related.

## Discussion

Relationship between performance and mass, height, length of arms and leg, has shown negative correlation between swimming time and weight and also between swimming time and leg and arm length (Smith, 1978). Height, arms span, mass, total height and body density influence the performance in short swimming events (Keskinen, Tilli & Komi, 1989). Positive weight improvement observed with Malaysian male swimmers goes in line with the previous studies (Plyley, Wells, & Schneiderman-Walker, 2006) and was in fact expected. Another feature observed was obvious reduction of total fat percentage from 11-12 to 13-14 and further up to 15-15 years of age. But at the age of 18 and above weight increase ( $65.13 \pm 7.95 \text{ kg}$ ) was accompanied by undesirable increase in the total body fat % ( $16.46 \pm 5.16 \%$ ). Typically, the weight increases are not related to improvements in FFM, rather in fat accumulation. With that trend, fat percentage is on the high side, not just as for swimmers, but as for any member of athletic population. As of the weight and % Fat dynamics, National population female swimmers demonstrate the trend of increasing both the body weight and total body fat & from younger to elder age groups.

Right from the age group of 11-12 further to 13-14, to 15-17 and to 18 years and above, body weight rose up constantly. Differing from the male swimmers, fat percentage went up as well, basically signifying no improvements in muscularity. Moreover, fat percentage got into rather non-athlete typical figures right from the age of 15 onward. The study comparing young Chinese and Estonian swimmers aged about 13 years showed females at 50,31 and 48,14 kg body weight respectively and males at 51,59 and 50,67 body weight (Cicchella, et al., 2009).

No significant differences in BMI were found between Estonian and Chinese swimmers, both in male and in female. Estonian male young swimmers showed a BMI of 18,86 and female - 19,55 while the Chinese male had BMI of 18,83 and female of 18,91 (Cicchella, et al., 2009).

In previously conducted swimming research (Plyley, et al., 2006), measures of body weight were found to increase with age, but body fat percentage did not, which suggested that it might be important to establish good nutritional habits and fitness at a young age. Although the larger proportion of fat mass in the female swimmers is claimed to allow for more buoyancy, which could be an advantage that allows females to kick at a higher rate and with a better buoyancy profile than male swimmers (McLean & Hinrichs, 1998), that might be an advantage for endurance swimmers rather than for sprinters and middle distance swimmers.

Observed trend is not at all showing the growth of potential in female National population swimmers towards International performance with age progression. It may indicate that over 18 years old National male as well as female swimmers practically reduce their training loads and are in fact getting less active in comparison to their previous active training years. This in turn may be related to the change in priorities towards pursuing educational goals rather than the sports excellence ones.

In fact, strenuous training programmes are supposed to keep body-fat levels low resulting from high total energy expenditures during daily workouts, so a high body fat level and endomorphic physique are incompatible with success in swimming, except perhaps in endurance events. The greatest advantage of the buoyancy added by fat may be in enabling the learner to keep afloat more easily while acquiring stroking skills (Reiley, Sechner, Snell, & Williams, 2005). For the elite swimmers the concept is highly doubtful however.

It's worth mentioning that among the limitations of the study was the absence of National Team swimmers in the collected data base, which could have affected the outcome of the study and make the body fat percentage issue not applicable to the International level Malaysian swimmers.

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## A qualitative study of organizational factors affecting participation in leisure time sport activities in Iran

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### **Abstract:**

The purpose of this study was to investigate organizational factors affecting participation in leisure time sport activities in Iran. The research method was qualitative and the statistical sample consisted of 21 sport experts and managements. Deep interviews were used to collect data. Validity of the research was confirmed by giving the feedback to the interviewees and using their comments and reliability of the research was approved by Cohen's kappa coefficient (0.736). The grounded theory method was utilized to analyze data. The results showed some organizational factors including "planning", "education", "financial resources", "human resources", "partner organizations", "marketing", "infrastructures and equipments", "development strategies" and "regulations and rules" affect participation of people in leisure time sport activities. So, different organizational factors are effecting in participation of people in leisure time sport activities that should be noticed.

Key words: Sport activities, Leisure time, Organization, Qualitative

### **Introduction**

A lot of factors influencing in participation in leisure time sport activities and recognition on these factors is an important prerequisite of planning and implementation of intervention programs. Most previous researches emphasize in psychological theories related to participating in physical activities (3). However, health behavioral change includes different factors such as social, emotional and cognitive factors (5) and for investigating these factors, five level affecting health behavioral conditions including intrapersonal, interpersonal, organizational, community and public policy factors should be noticed (2). So, because organizational level is one of the five levels affecting health behavioral change and the percentage of participation in sport activities is low; the purpose of this research is to answer the question that which organizational factors influence in participation in leisure time sport activities.

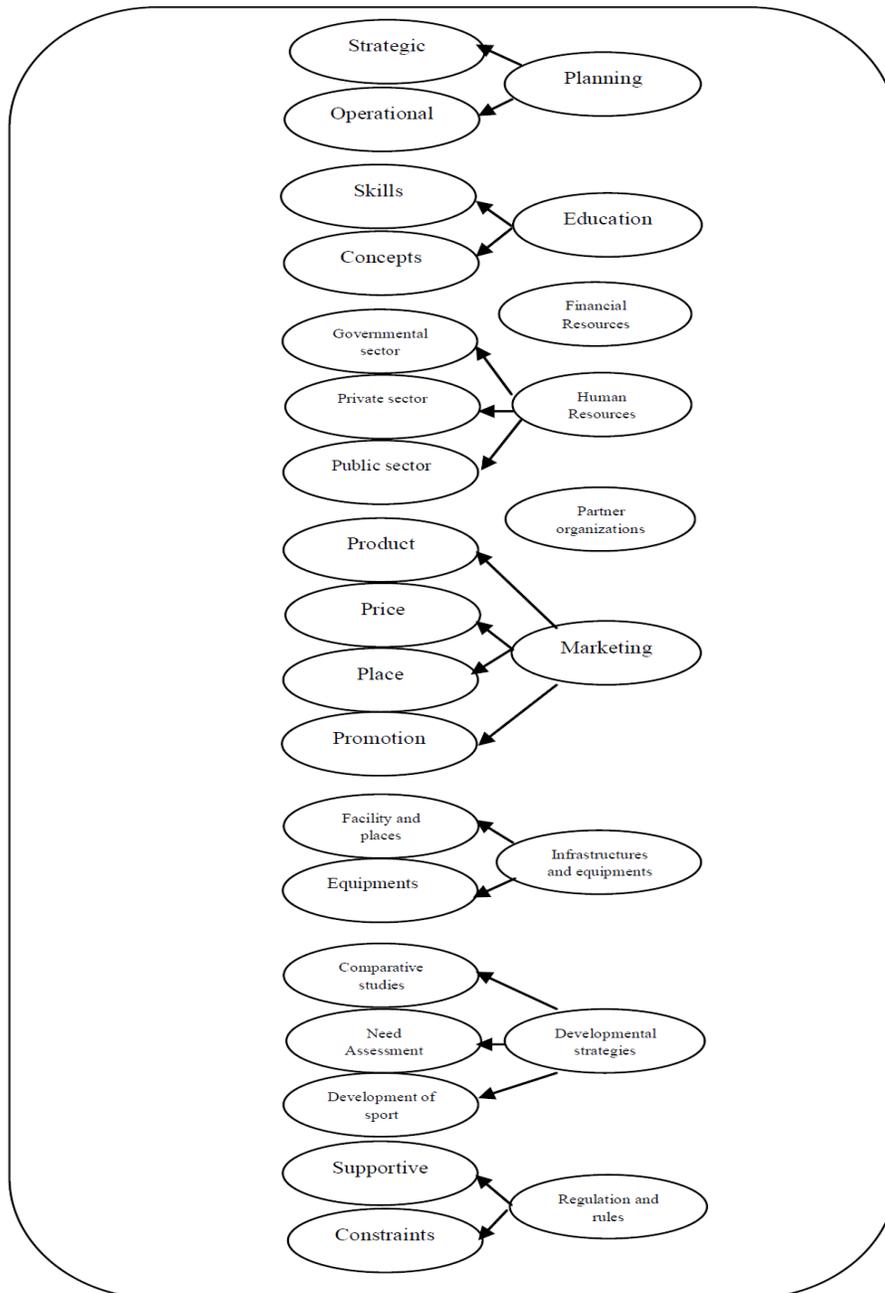
### **Methodology**

This study is a qualitative research. Statistical sample consisted of 21 faculty members and experienced managers selected by snowball method. Data collected through deep interview with experts and Interviews continued until theoretical saturation. The validity of research was determined by giving the results to the interviewees and paying attention to their comments. Reliability was approved by Cohen's kappa coefficient (0/736). Data analysis was done by grounded theory method in three steps: open, axial and selective coding.

### **Results**

As the first step of grounded theory analysis, in open coding of 21 interviews, 73 open codes were determined. In axial coding, previous determined codes were put in 20 axial cods and in selective coding axial codes were categorized in nine groups of planning, education, human resource, financial resource, partner organizations, marketing, infrastructures and equipments, development strategies and regulations

(fig 1). Planning includes strategic and operational planning, education consists sport related skills and concepts, human resources is divided into governmental, private and public sectors, marketing includes product, price, place and promotion, infrastructures and equipments refer to sport facility and places and sport equipments, development strategies consists of comparative studies, need assessment and development of sport and regulation and rules is divided into supportive and constraints rules.



**Fig1.Organizational factors affecting participation in leisure time sport activities**

## Discussion

The results showed having strategic and operational planning is necessary to increase people participation in leisure time sport activities. Making strategic council of sport for all, holding conferences, festivals and neighborhood sport competitions should be noticed in planning process. In this respect Christiansen et al (2014) emphasized on the policy making and strategies. In the field of education, sport skills and concepts should be educated to the citizens in order to enable them for participating in sport activities. In this regard Yan et al (2013) noticed having sport skills is a significant effect on sport participation. Financial resource is another important variable. In this regard, government should allocate sufficient budget. Also, paying to public donations, sponsors and different stakeholders can be helpful to supply financial resources. Using and expert human resources is emphasized to develop participation of citizens in leisure time sport activities. Employing skilled and experienced teachers and coaches in schools, parks and sport centers should be noticed. Coordination partnership of different organizations working in this field is another important managerial factor. Designing integrated policies, having clear tasks and roles of each organization and interaction and convergence of different organizations have significant effect on people participation in sport activities. Marketing and its related factors has an undeniable role in this respect. Supplying equipment of different sports, giving cheap sport related services, having high accessibility to the sport facility and places, having suitable public transportation system, advertisement, public relation and distributing informational brochure and catalogs can be effective in this regard. Sport infrastructures and equipments is the other effective variable. Having suitable urban architecture and structure, having health roads, having suitable play grounds in schools, having good sport places and sport equipments are important variables for increasing sport participation of a society. In addition to the mentioned variables, paying attention to the developmental variables such as doing comparative studies, talent identification, development of basic sports such as gymnastics, track and field and swimming can be helpful. Having supportive regulations such as giving financial support to the investors, forcing organizations for paying attention to the sport, giving facility to the personnel having regular participating in sport and giving opportunities for family participation can be effective in sport participation. In this regard Rowe et al (2013) determined factors such as urban planning policies, active transportation policies, educational policies, sport policies, health policies, environmental policies, work place policies and financial policies.

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## A Comparative Study of Agility among Cricketers and Foot Ball Players of Andhra University

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### **Abstract:**

The Significance of the present study to find out the Agility among Cricketers and Foot Ball Players of Andhra University. The objective of this study to determine the Agility of Foot Ball Players and Cricketers. The sample for the present study consists of 20 Male Cricketers and 20 Male Foot Ball Players of Andhra University. To assess the Agility the Shuttle Run Test Were conducted among Cricketers and Foot Ball Players . It was found that Cricketers are having good agility compare to Foot Ball Players . The essential motor component for successful cricket performance is to accelerate, change direction quickly and move the feet quickly at crease and to run faster between the wickets.This Study is helpful to Coaches to prepare the Cricketers and foot ball players to improve the motor ability components.

Key Words:Agility, Cricket, foot ball, faster etc

### **Introduction:**

Cricket is a bat-and-ball game played between two teams of 11 players each on a field at the centre of which is a rectangular 22-yard long pitch. The game is played by 120 million players in many countries, making it the world's second most popular sport. Each team takes its turn to bat, attempting to score runs, while the other team fields. Each turn is known as an innings. The bowler delivers the ball to the batsman who attempts to hit the ball with his bat away from the fielders so he can run to the other end of the pitch and score a run. Each batsman continues batting until he is out. The batting team continues batting until ten batsmen are out, or a specified number of over's of six balls have been bowled, at which point the teams switch roles and the fielding team comes in to bat.

In professional cricket the length of a game ranges from 20 over's per side to Test cricket played over five days. The Cricket are maintained by the International Cricket Council (ICC) and the Marylebone Cricket Club (MCC) with additional Standard Playing Conditions for Test matches and One Day Internationals. Cricket was first played in southern England in or before the 16th century. By the end of the 18th century, it had developed to be the national sport of England. The expansion of the British Empire led to cricket being played overseas and by the mid-19th century the first international match was held. ICC, the game's governing body, has 10 full members. The game is most popular in Australasia, England, the Indian subcontinent, the West Indies and Southern Africa.

Football refers to a number of sports that involve, to varying degrees, kicking a ball with the foot to score a goal. Unqualified, the word football is understood to refer to whichever form of football is the most popular in the regional context in which the word appears: association football known as soccer in some countries.

The significance of this study is to find out the explosive Strength among Cricketers and Foot Ball players of Andhra University. This Study will bring true facts of explosive Strength motor quality exists between Foot ball players and Cricketers.

**Methodology:**

The sample for the present study consists of 20 Male Cricketers and 20 Male Foot ball players of Andhra University. To assess the Agility the Agility Shuttle Run Test were conducted on Cricketers and Foot ball Players by the qualified Officials.

**Agility Shuttle Run Test**

This test describes the procedure as used in the President's Challenge Fitness Awards. The variations listed below give other ways to also perform this test.

purpose: this is a test of speed and agility, which is important in many sports.

equipment required: wooden blocks, marker cones, measurement tape, stopwatch, non-slip surface.

procedure: This test requires the person to run back and forth between two parallel lines as fast as possible. Set up two lines of cones 30 feet apart or use line markings, and place two blocks of wood or a similar object behind one of the lines. Starting at the line opposite the blocks, on the signal "Ready? Go!" the participant runs to the other line, picks up a block and returns to place it behind the starting line, then returns to pick up the second block, then runs with it back across the line.

scoring: Two or more trails may be performed, and the quickest time is recorded. Results are recorded to the nearest tenth of a second.

**Results :**

Table-I Mean values of Shuttle Run Test between Cricketers and Foot Ball Players

Test	GROUP	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Shuttle run Test	Foot Ball Players	20	15.38	0.56	0.17	2.53	38.00	0.02
Shuttle run Test	Cricketers	20	14.10	1.20	0.37			

In Table –I the Mean Values In Shuttle Run Test of Cricketers is 14.10 and Foot ball Players is 15.38. The Cricketers are having better agility compare to Foot ball Players.

**Discussion:**

**Agility is a combination of acceleration, deceleration and changing direction.** To create fast, multi-directional movement, you need to teach your body to move, challenging your central nervous system to adopt a movement pattern and perform it successfully. Once it's learnt correctly it will be stored in what may be termed 'muscle memory.' Cricket movements are complex combinations of smaller, simpler movements. The reason some players are better at performing certain movement skills is that they more easily bring together all the smaller movements and co-ordinate them. Breaking agility down into it's components and training them independently is the first step. These movements are:

- **Foot speed**
- **Balance & Reaction**

**Foot speed is the ability to touch the foot quickly to the ground while reducing the time that the foot is in contact with the ground .**

The Foot Speed Ladder forces legs and feet to adapt to the demands of the spaces between rungs and provoke fast patterns of footwork. The length of the Ladder allows for repeated movements for fast and effective learning, and the rungs may be manipulated for a variety of drills

**Conclusion:**

- 1.It is concluded that Cricketers are having better agility than Foot Ball Players.
- 2.Conditioning Exercises plays a major role for improvement of agility among Foot ball Players and Cricketers.

**Recommendations:**

1. Similar studies can be conducted on other Events and among females.
- 2.This study also helps the physical educators and coaches to improve their training regime to excel in Foot ball and Cricketers.

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## **Effect Of Recreational Physical Activity On Mental Health Among adolescence School Students**

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### **Abstract:**

To elucidate the effect of physical activity on mental health among adolescence school children, present intensive experimental study was conducted on a sample of 60 subjects (30 male and 30 female). The age of subjects was ranged from 14 to 15 years. Mental Health of the subjects was evaluated by using the Mental Health Inventory (M.H.I.) of Jagdish and Srivastava. The subjects were randomly assigned to the experimental (N=30) and control group (N=30). The experimental group was engaged in the recreational physical activity programme (warming up and one out of Basketball, Kho-Kho, Soccer followed by cooling down) for 40 minutes in a day, 4 days in a week for 6 weeks. Control group was not engaged in any physical activity programme. Pre and post-test scores of experimental and control groups were compared by employing t test. Descriptive statistics were also carried out. Findings revealed that the mental health of adolescence school children was improved of the experimental group as the t (-4.17) value of pre and post-test differed significantly at .05 level whereas no significant difference was found in the pre and post-test score of control group (t=.34) on the variable mental health. Physical activity may be used effectively by the teachers as a strategy to improve the mental health among the school children including other health benefits.

Key Words – Physical Activity, Mental Health and Adolescence

### **Introduction**

In the world of today everyone is threatened by increasing population and degraded circumstances. Health is and has been always one of the most important areas where people need to focus. The expression "Mental Health" consists of two words- 'Mental' and 'Health'. 'Health' generally means sound conditions or well-being or freedom from diseases. Mental health, therefore, means a sound mental condition or a state of psychological well-being of freedom from mental disease (Singh, 2004).

World Health Organization (1948) defines health as "a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity." It describes health as having different dimensions; and mental health is one of its important components. Mental health can be described as the ability to respond to many varied experiences of life with flexibility and a sense of purpose. It is the state of balance between the individual and the surrounding world. It could be seen as a state of harmony between oneself and others, a coexistence between the realities of the self and that of other people and that of the environment. Concept of health extends beyond the proper functioning of the body; it includes controlled emotions, a sound and efficient mind. This means that mind and body both are working efficiently and harmoniously (Kaur, 2007).

The benefits of the physical activity on general health or physical health are world- wide known. Physical activity can play a role in preventing mental health problems and improve the quality of life of those experiencing it. There is a substantial body of evidence that shows a positive relationship between physical activity and mental health and illness (Biddle & Mutrie, 2001; Callaghan, 2004; Saxena et al., 2005). Physical activity has been found to improve mental health conditions, particularly anxiety, depression and general well-being (Schmitz et al., 2004). The physical activity has positive impact on mental health and also regulating stress factors. Therefore, an attempt will be made by the researcher to examine the effect of recreational physical activity on mental health.

#### Methodology and Procedure

To examine the effect of physical activity on mental health among adolescence school children, this intensive experimental study was conducted on a sample of 60 adolescence school children (Male=30 and Female=30) of Rayat International School, SaheedBhagat Singh Nagar, Punjab. The age of subjects was ranged from 14 to 15 years. Mental Health Inventory (M.H.I) developed by Jagdish and Srivastvawas used to measure the mental health of the adolescence school children. The subjects were randomly assigned to the experimental (N=30) and control group (N=30). The experimental group was engaged in the recreational physical activity programme (warming up and one out of Basketball, Kho-Kho, Soccer followed by cooling down) for 40 minutes in a day, 4 days in a week for 6 weeks. Control group was not engaged in any physical activity programme. Pre and post- test scores of experimental and control groups were compared by employing t test. Descriptive statistics were also carried out. Level of significant was set at .05 level.

#### Findings

Significance of mean difference of pre-test scores of experimental and control group on the variable mental health has been given in table 1.

Table 1. Significance of Mean Difference of Pre Test Score of Experimental and Control Group on the Variable Mental Health

Variables	Groups	Mean	S D	S. E. M	M.D	S.E. Diff.	t Value
Mental Health	Experimental	153.47	12.05	2.20	1.0	2.910	0.34
	Control	152.47	10.43	1.90			

\*Significant at .05 level  $t_{0.05 (58)} = 2.00$

Table 1 indicated that the experimental and control group did not differ significantly on pre and post-test score on the variable mental health as their t value was 0.34.

Significance of mean difference of pre and post-test score of control group on the variable mental health has been presented in table 2.

Table 2. Significance of Mean Difference of Pre and Post-Test Score of Control Group on the Variable Mental Health

Variables	Control Group	Mean	S D	S. E. M	M.D	t Value
Mental Health	Pre- Test	152.47	10.43	1.90	-.03	-.014
	Post-Test	152.50	12.48	2.28		

\*Significant at .05 level  $t_{0.05 (59)} = 2.00$

Table 2 revealed that no significance difference was existed between the pre and post-test scores of control group as the t value was -.014 which was statistically insignificant at .05 level.

Significance of mean difference of pre and post-test scores of experimental group on the variable mental health has been presented in table 3.

Table 3. Significance of Mean of Pre and Post-Test Score of Experimental Group on the Variable Mental Health

Variables	Experimental Group	Mean	S D	S. E. M	M.D	t Value
Mental Health	Pre- Test	153.467	12.0480	2.1997	-4.13	-4.17*
	Post-Test	157.600	13.1872	2.4077		

\*Significant at .05 level  $t_{0.05(59)} = 2.00$

It may be observed from the table 3 that the pre and post test score of experimental group on the variable mental health differed significantly at .05 levels as their t value was -4.17.

Conclusion- Intensive recreational physical activity programme of 6 weeks improved the level of mental health among the experimental group of adolescence school children whereas the level of mental health remained approximately similar among the subjects assigned to the control group.

### Discussion of Findings

The level of mental health was improved in the experimental group which was engaged in 6 week intensive recreational physical activity programme. It may be due to the fact that the physical activity helps the body to produce the endorphin hormones which are the body's natural pain medication hormones, makes an individual feel better, improves mood, increase pleasure, and minimize pain. Therefore, mental health was improved of the subjects. The physical activity also improves the functioning of brain by improving the blood circulation of brain. These findings are supported by the findings of Zanuso et al. (2012) and Bicer et al. (2012).

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## Determining Intrapersonal Factors Affecting Participation In Leisure Time Sport Activities In Iran

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### **Abstract:**

The purpose of this study was to determine intrapersonal factors affecting participation in leisure time sport activities in Iran. The research method was qualitative and the statistical sample consisted of 21 sport experts and managements. Deep interviews were used to collect data. Validity of the research was confirmed by giving the feedback to the interviewees and using their comments and reliability of the research was approved by Cohen's kappa coefficient (0.736). The grounded theory method was utilized to analyze data. The results showed some intrapersonal factors including "skills", "motivations", "physical characteristics", "psychological characteristics" and "knowledge" affect participation of people in leisure time sport activities. So, different intrapersonal factors are effecting in participation of people in leisure time sport activities that should be noticed.

**Key words:** Sport activities, Leisure time, Intrapersonal, Factors

### **Introduction**

Although physical activity has been associated with a lower risk of some types of cancer, cardiovascular disease, diabetes, and obesity, a large proportion of the population remains insufficiently physically active (Ishii, 2010). An understanding of the contributing factors which encourage individuals to engage in physical activity is important for promoting population-based physical activity (Sallis, 2002). As one of the main factors affecting health related behaviors, intrapersonal factors have been studied in many societies (Glanz et al, 2008). With (2008) declared motivation has a significant effect on sport participation. Plotnikoff et al (2008) said among constructs of social cognitive theory, self efficiency has more effect on physical activities. In addition Li (2010) noticed self regulation has significant influence on leisure time physical activities. Yan et al (2103) said some intrapersonal factors such as self efficacy, physical fitness, knowledge and self perception contribute to behavior of physical activity among young people. In this respect Eime et al (2014) reported perceived competence is a barrier to participate in physical activity and sport.

Review of literature showed intrapersonal variables influencing on participation in leisure time sport activities are different in any society. So, because the level of sport activity in Iran is very low and determining intrapersonal variables is an important step in policy making and designing recreational sport development strategies, the purpose of this study is to determine intrapersonal factors affecting participation in leisure time sport activities via a qualitative method.

### **Methodology**

This study is a qualitative research. Statistical sample consisted of 21 faculty members and experienced managers selected by snowball method. Data collected through deep interview with experts and Interviews continued until theoretical saturation. The validity of research was determined by giving the results to the interviewees and paying attention to their comments. Reliability was approved by Cohen's kappa coefficient (0.736). Data analysis was done by grounded theory method in three steps: open, axial and selective coding.

## Results

As the first step of grounded theory analysis, in open coding of 21 interviews, 30 open codes were determined. In axial coding, previous determined codes were put in 8 axial cods and in selective coding axial codes were categorized in 5 groups of “skills”, “motivations”, “physical characteristics”, “psychological characteristics” and “knowledge” (fig 1).

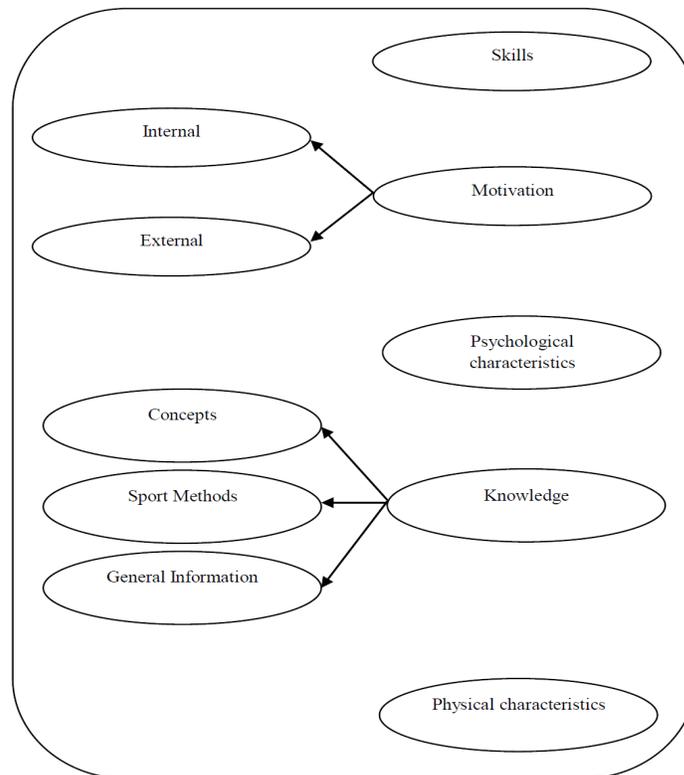


Fig1. Intrapersonal factors affecting leisure sport participation

The components of the skill include “sport skills”, “social skills”, “mental skills” and “having athletic experience”. The components of internal motivation consist of “entertainment and pleasure”, “health” and “having social interaction”. Also, “fitness”, “glaring”, and “attention to doctor advices” are external motivations. Psychological factors include “interest”, “self efficacy”, “self regulation”, “self-confidence”, “positive outcome expectancy”, “mental relaxation”, “will and determination”, “personality” and “attitudes”. The components of knowledge include “concepts”, “sport methods” and “general information”. Physical characteristics include “physical health”, “previous sport injuries” and “physical fitness”.

## Discussion

The results showed “skills”, “motivations”, “physical characteristics”, “psychological characteristics” and “knowledge” are affecting on participation in leisure time sport activities. Different researches have studied these variables. For example Rowe et al (2013) reported some individual factors such as knowledge, attitudes, motivation, sport skills, sport injuries, educational level, social-economical status, self efficacy and disabilities contribute to leisure sport participation.

The components of the skill include sport skills, social skills, mental skills and having athletic experience. Different researches have emphasized on these variables. In this regard Elkins et al (2007) declared “learning sport related skills” is an important factor negotiating constraints of leisure sport participation. So, it is recommended to prepare a situation for increasing the sport skills of citizens. For example paying attention to schools educational physical activity classes and educating sport skills to the students can be helpful in this respect.

Factors influencing motivation is divided into external motivations and internal motivations. The components of internal motivation consist of entertainment and pleasure, health and having social interaction. Also, fitness, glaring, and attention to doctor advices are external motivations.

Mc David (2012) differs between internal and external motivations and notice internal variables have more effect on doing sport activities. Also, Borkoles et al (2014) declared motivation is an important intrapersonal factor affecting sport and physical activity Participation.

The results showed psychological factors such as interest, self efficacy, self regulation, self-confidence, positive outcome expectancy, mental relaxation, will and determination, personality and attitudes affect leisure sport participation. In this respect Borkoles et al (2014) mentioned some variables including self efficacy, interest, pleasure, self-confidence and self-awareness contribute to sport participation. Also, Schwarzer (2008) noted positive outcome expectancy is an important variable affecting intention to participate in leisure sport activities. "Knowledge" is another factor influencing people participation in leisure time sport activities. This variable has been divided into three categories including concepts, sport methods and general information. Knowledge of concepts refers to concepts of leisure time, concepts of health, importance of sport and physical activities and risk perception. Knowledge of sport methods includes ability of using sport equipments and knowing the suitable method of doing sports. General information includes having information about sport clubs and being aware of inactivity and sedentary lifestyle problems. It means for increasing leisure sport participation of people it is necessary to increase the sport related knowledge of citizens. Physical characteristics contributing leisure sport participation include physical health, previous sport injuries and physical fitness. Different studies such as Borkoles et al (2014), Rowe et al (2013) and Yan et al (2013) emphasized on physical characteristics of people as an important factor influencing participation in leisure sport activities. So, it can be recommended paying attention to physical characteristics of citizens in policy making and deigning strategies can be facilitating people participation in leisure time sport activities. It can be concluded paying attention to different intrapersonal variables affecting participation in leisure time sport activities in policy making and strategies can help increase amount of participation in sport and physical activities.

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## Contribution Of The Mr. Universe Sri Manohar Aich In The Domain Of Physical Culture

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### **Abstract:**

Sri Manohar Aich, the Indian bodybuilder given the title "POCKET HERCULES", out of adoration from British media, in Scotland, Abardin city after defeated everyone in the world championship and pulled off an enormous 275 pound there. The purpose of the study was to find out the contribution of Sri Aich in the field of physical culture, to know his major achievement, to get knowledge from his training and practices, diet that made him eminent in the society, to know his contribution towards the bodybuilders, to know his established gym centres, health and fitness centres and became a sports icon in the country. The data was collected through questionnaire, interview. The questionnaire consist of 94 questions divided into 24 heads prepared in English and Bengali in structured close form, standardized from expert of the same field. The primary source of information was he, himself, his family members, his students. Secondary source of information were members of bodybuilding fraternity, articles, newspapers, audio tapes, etc. Manohar Aich is a living legend to all who love physical culture and want to maintain and promote health, fitness and wellbeing throughout life. Mr. Aich is a living source of energy and inspiration to all irrespective of age and sex who intend to enjoy a disease free, stress and tension free meaningful and abundant life. He established that physical limitation can't be an impediment to achieve success in the field of physical culture and therefore referred as 'Sports Icon'.

KEYWORDS: Fitness, Physical Culture, Domain.

### **Introduction:**

As physical culture becomes increasingly popular and profitable, the rose intense national and then international competition amongst the founders or promoters of various systems. Both public gyms and institutions tended to take an eclectic approach whereas private physical culture clubs and organizations often promoted particular exercise systems according to nationalistic loyalties. Physical Culture has been used synonymously for physical training. It implies that through various physical activities health may be promoted. Sri Manohar Aich is a Bengali Hindu, born on 17<sup>th</sup> March, Tuesday, 1914 in Bangladesh (Then East Pakistan), District Comilla, in a remote and small village called Putia (Dhamti). During his teenage, he grew up in Dhaka, Currently, he lives in Dum Dum. Mr. Universe named "POCKET HERCULES" due to his small frame and "Iron Man" because of hard feats, he does. At the height of his career his chest measured 54 inches (approximately 140 m), waist 23 inches, wrist of 24 inches (58 cm). He looks more a Buddhist monk than a master bodybuilder. When the 1.50 m tall bodybuilder competed in the 1952, Mr. Universe Contest in London, his statistics were awe-inspiring: Biceps – 46 cm, chest – 1.2 m, when swollen forearm – 36 cm and wrist – 16.5 cm. It was the perfectly chiselled, muscle rippling 'V' – Shaped Frame that eventually bagged him the top prize in the short category.

From the age of 5-6, Mr. Aich started body fitness by seeing his relative brothers and up to 2012, he had regularly involved in physical fitness exercises. But due to his health condition and other problem, he took off from day to day exercises but whenever he got time, use to go for walking. At the age of 100 years, Mr. Aich has lost his tooth, but his wrinkled skin cannot completely conceal the carefully sculptured physique at his prime, his eye sight has diminished, but don't use spectacles. Particularly due to his physique type, he was admired by others and it contributes the factor for selecting this particular type of

sport. Bodybuilding happened to Aich by sheer coincidence. He slapped a British officer for an offensive remark during the Quit India Movement, he recalled and said "It was in the Calcutta jail that I got fascinated by weights and bodybuilding which becomes my first love since then." He also practiced his metal bending skills on the bars of the cell.

Mr. Aich would stun audience by bending iron bars with his teeth and neck, using his belly to balance on the sharp edges of sword or dragging weights of more than 200 kgs. He added other skills such as tearing apart large books and rippling his belly muscles to the accompaniment of songs from the classic Bollywood film 'Mera Naam Joker', to his repertoire when he joined circus companies later on. A few of his tricks involve squats and can walk with 300 kgs (660 lb) on shoulder demonstrating muscle control and tearing 1500 page book. He can tear Bengal Panjika in 4 parts. He has toured all over the world for body building shows and has been widely acclaimed for his strength and muscle control, he was the only one who could do the best free chest step. Earlier Aich continues to train for upto 90 minutes at his age and stretches after his workout, he accomplishes this at his own gym studio, "DE PHYSIQUE" in Kolkata, which has produced Indian Champions.

#### **Achievements At A Glance**

YEAR	TITLE	CATEGORY	POSITION
1950	Mr. Hercules	-	First
1951	Asian Games	56 kg	Gold
1951	Mr. Universe	Short group	Second
1952	Mr. Universe Championship	Group – 3	First
1952	World Champion of Spring Pulling	Spring of 275 Pound Tension	First
1954	Asian Games	56 kg	Gold
1955	Mr. Universe	Short group	Third
1958	Asian Games	56 kg	Gold
1960	Mr. Universe	-	Third
1962-1976	Toured & Shows muscle control in various circus party		
1976-2005	Performed various stage shows		
2003	Mr. India		First

Felicitation:

Mr. Aich has been selected as a judge of the championship organized by World Federation of Best Physique, held in USA, with an honorary body building show of Mr. Aich. He was the first Indian body builder on such a big platform and expenditure of his journey was paid by the Government of West Bengal.

#### **Life Time Award Details**

AWARDS	ORGANISATON	YEAR
Life Time Achievement	Amateur Bodybuilding	1952
Life Time Achievement	J.C.T Classic Bodybuilding	1993
Hero Honda Sports Award	Hero Honda	2005
Diamond Award	Sri Shanmukhananda Hall	2012
Indian Fitness and Bodybuilding	IFBB Federation	2012
Bango Bhibhusan Award	Govt. Of WB	2015

Diet and Exercise: His basic diet consists of: Rice (along with other starch), Dal, veggies, milk, in fruits he likes, mango, banana, jackfruit, guava, and among non vegetarian item, he likes to have freshwater fish, lentils was consumed in small measured proportion, kept him going strong and his attitude to ignore

worries kept him long healthy life. He initially chooses the food stuff for healthy body and to maintain proper training includes the following: Mixture of ground pulses and cereals and soya bean mixture is a high protein. In his childhood, according to his own interest near his house, he use to hang rope on the mango tree by tying as an ring on his wrist and hand, he did hand exercises, after that by collecting iron plates and dumbbell, he engaged himself in power exercises. No one was his master or guru for any specific training. Mr. Aich started bodybuilding with exercises and his repertoire including free hand exercises with up to 100 repetition per set, push-ups, squats, pull ups, leg raising and traditional sit ups, don he also does body weight calisthenics exercises with up to 100 repetition per set. He had practiced his metal bending skills on the bars of the cell & practice on his own without any equipments, sometimes for 12 hrs in a day. He used to do power exercises 10 times during the time of competition and if his capability permits, then he again does 5 times more. At the age of 93, he did, Bench Press-180 lbs, Squat- 245 lbs.He had established first gym, named Studio-De-Physique, for physical culture, behind Mahindra Chandra College at Shyambazar in Kolkata. Mr. Aich runs a gym from January 1999, with the help of his son, which was previously located in north Calcutta, when the college took the over the land of the gymnasium, he shifted and rebuilt his gymnasium at his own residence- 23, Joggi Para Road, Dakhin Para Satgachi road, Dum Dum, Kolkata, with the name as Manohar Aich International Fitness and Multigym. His son Bishnu Aich also runs a fitness centre & Multi gym in the name of Bishnu Manohar Aich's – Fitness Centre & Multi Gym", Bishnu Aich is a fitness consultant and life style therapist. Earlier, As working in the gym of glitzy gymnasium & health spas, Aich gets his hands dirty with student in a traditional akharas. Six decades later, Aich heads the gym to help his son run the fitness center and spend days guiding juvenile, hopefuls to reach the heights of bodybuilding that he did. Although his two sons did not take up body building, Mr. Aich mentoring has earned him rewards earlier. Therefore, he helped to produce Indians top bodybuilders including eight times National Champion "Satya Paul". While another protégé, Premchand Dogra scooped the Mr. Universe Title in 1988. With his great effect of training produces the various Body Builders:

Surojit Das - Mr. Hercules, (1958).Premchand Dogra, - Mr. India & Mr. World, (1980).

#### **Journey of the Championship**

His journey is a history. It is very difficult to rise under this small area. It was not possible if, Mr. Aich had inordinate mind strength. This was proven that his path will not be full with bed roses. His temple is his body, and he was the priest of the temple. Starting from his own practise and creation of a perfect body and also encouraging his fellows with a perfect training program, He has not only given us enjoyment by presenting his body at various places, he also tried his best to encourage people to get understood of the value of a healthy lifestyle. To become Mr. Universe is not easy, there were various stages that one has to pass one by one, like, champion of state, Mr. India, Mr. Asia and then the Mr. World competition / championship. He was born to become Mr. Universe. So, he took part in the Mr. World championship. A pint-sized Mr. Universe winner who began beefing up his muscle while doing time in a British Colonial prison. Sri Manohar Aich, have low stress and happiness in the face off, adversity have kept him alive all these years, he never allowed any sort of tension to grip him. He is an inspiration to all the people and pertain eminent potentially to reach the goal and overcome all the obstacles in life.

#### **Conclusion:**

Mr. Universe and a three times Asian Gold medalist Mr. Manohar Aich is a living legend to all who love physical culture and want to maintain and promote health, fitness and wellbeing throughout life. Mr. Aich is a living source of energy and inspiration to all irrespective of age and sex who intend to enjoy a disease free, stress and tension free meaningful and abundant life. It is unbelievable as well as a wonder that Manohar Aich with a height of 4 feet 11 inches got the popular title of "Pocket Hercules" which establishes that physical limitation can't be an impediment to achieve success in the field of physical culture and therefore referred as 'Sports Icon'. He believes that body building does not only train body, it purifies the mind at the same time. Human body, he reveals, is a holy shrine which should be kept free from any ignoble strife and without self control we are nowhere near it.

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## Effect Of General Conditioning Program On Agility, Explosive Leg Strength And Speed Performance Of College Girls

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### Abstract

Effect of General Conditioning Program on Agility, Explosive Leg Strength and Speed Performance of College Girls examined on 30 students from Government Degree College, Dharmanagar were selected as subjects randomly. The age level of students ranges between 18 to 21 years. Shuttle run, 50 meter dash and Standing Broad Jump were selected as criteria to measure Agility, Explosive Leg Strength and Speed Performance. Subjects were equally divided into Control group and Experimental group. General Conditioning program was given to Experimental group. Control group was not allowed to participate in the training program. The General Conditioning program was given for 2 months (8 weeks) to the Experimental group. Pre-test and post-test random group design was used for the present study. The data collected from the subjects were statistically analyzed with 't' ratio at 0.05 level of significance to find out significant difference among Experimental group and Control group on Agility, Explosive Leg Strength and Speed Performance of College Girls. The analysis of the data indicates that General Conditioning Program improves Agility, Explosive Leg Strength and Speed Performance of College Girls

### Introduction

It is very important to know that before attempting any specific work one must do the general work first. Sometime conditioning refers to training which means doing physical exercise for the improvement of performance and *for maintaining strong athletic performance throughout a practice, game or training session. Conditioning develops the body's ability to meet the energy demands of various sports, both anaerobic and aerobic.* Physical exercise is any bodily activity that enhances or maintains Physical Fitness and overall Health and wellness. Athletes should undergo conditioning tests and participate in conditioning workouts that mimic their sport.

Agility enables an individual to rapidly and precisely alter the position and direction of the body and is an important ingredient for successful participation in wide variety of sports. An agile person can quickly and efficiently mobilize the large muscle groups of the body in order to make rapid changes in direction of movement. Agility involves coordinating quickly and accurately the big muscles of the body in a particular activity.

Explosive leg strength is a compound element of motor fitness. It needs specific muscular strength, speed of limb movement and skill in integrating and coordinating the action. Increased velocity of parts of the body is related to improved neuromuscular initiation, co-ordination and precision of movement patterns. Successful sporting performance at elite levels of competition often depends heavily on the explosive leg strength of the athletes involved.

One of the major requirements in many sports is speed. In sports such as sprinting, soccer, cycling, hockey, fencing, games and many other team sports, speed is a major factor determining the overall outcome. In fact, all skill-related components contribute to speed. Speed requires the expenditure of a large amount of energy in a short period.

So, it is very important to know the changes in physical fitness component of girls after undergoing certain training as girls are becoming the great pillar of Indian Sports.

**Objective of study**

The purpose of this study was to find out the effect of General Conditioning Program on of agility , leg explosive strength and speed performance of college girls.

**Methodology**

This study is designed to determine the effects of 2 months (8 weeks) general conditioning program on Agility, Explosive Leg Strength and Speed Performance among the College Girls. The subjects of the study were 30 college Girls from Government Degree College, Dharmanagar. The age level of the subjects ranges between 18 to 21. These subjects were randomly assigned to two groups that are experimental group and control group. Each group consisting of 15 subjects. The experimental group under-gone general conditioning program, the control group was not allowed to participate in the general conditioning program.

Table.1

General Conditioning Program (Common for Every Week)

Days	Warm up Activity/Duration	Main activity/Duration of Recovery	Cooling down activity/Duration
Monday	1/2 km jog & free hand exercise /15 mins	Plyometric training/30 mins	Stretching exercise/15 mins
Tuesday	1/2 km jog & free hand exercise /15 mins	Weight training/30 mins	Stretching exercise/15 mins
Wednesday	1/2 km jog & calisthenics exercise /15 mins	Slow continues training/30 mins	Relaxative yoga session/15mins
Thursday	1/2 km jog & calisthenics exercise /15 mins	Fartlek training/30 mins	Stretching exercise/15 mins
Friday	1/2 km jog & free hand exercise /15 mins	Speed Training/30 mins	Massaging session/15 mins
Saturday	1/2 km jog & calisthenics exercise /15 mins	Circuit training/30 mins	Stretching yogic asanas/15 mins

All the subjects were tested on Agility, Explosive leg strength and Speed performance before and after 08 weeks of training with the help of experts Physical Instructors of Dharmanagar. The scores recorded in seconds, meters and seconds for agility, explosive leg strength and speed respectively. The collected data were statistically analyzed by't' ratio. The level of significance was fixed at 0.05 level of confidence.

**Findings**

TABLE 2

Computation of 't' Ratio Between Pre and Post Test Means of Experimental and Control Group on Agility

Group	TEST	MEAN	SD	SEM	MEAN DIFF	't'
Experimental group	Pre	12.042	1.053	0.271	0.59	6.90
	Post	11.449	.966	0.25		
Control group	Pre	11.855	1.2017	0.31	0.034	0.60
	Post	11.82	1.148	0.29		

\*significant level at 0.05 confident (2.145)

Table I reveals the computation of 't' ratio between pre and post-test on agility of college girls the mean values of pre and post test of experimental group were 12.042 and 11.449 respectively. Since the obtained 't' ratio 6.89 was greater than the required table value 2.145, it was found to be statistically significant at 0.05level of confidence for degrees of freedom 1 and 14.

The result clearly indicated the agility of experimental group had been improved due to the influence of General Conditioning Program. 't' ratio between pre and post test of control group were 11.855 and 11.82 respectively. Since, the obtained 't' ratio 0.60 was less than the required table value 2.145, it was found to be statistically not significant at 0.05 level of confidence degrees of freedom 1 and 14. The result clearly indicates that the control group had not shown any significant improvement.

FIGURE 1: Bar Diagram Show the Agility of Experimental Group and Control Group of Pre Test and Post Test

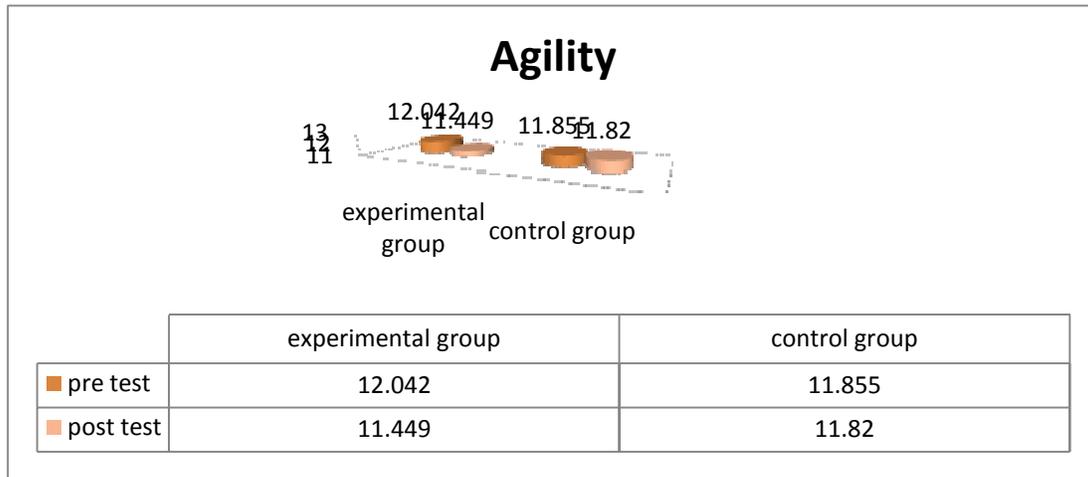


TABLE 3: Computation of 't' Ratio between Pre and Post Test Means of Experimental and Control Group on Explosive Leg Strength

Group		MEAN	SD	SEM	MEAN DIFF	't'
Experimental Group	Pre	1.770	0.132	0.034	0.032	4.553
	Post	1.801	0.125	0.032		
Control Group	Pre	1.770	0.138	0.035	0.162	0.986
	Post	1.608	0.156	0.040		

\*significant at 0.05(2.145)

Table I reveals the computation of 't' ratio between pre test and post on leg explosive strength of college girls the mean values of pre and post test of experimental group were 1.770 and 1.801 respectively. Since the obtained 't' ratio 4.553 was greater than the required table value 2.145 it was found to be statistically significant at 0.05 level of confidence for degrees of freedom 1 and 14. The result clearly indicated the leg explosive strength of experimental group had been improved due to the influence of General Conditioning Program. 't' ratio between pre and post test of control group were 1.770 and 1.608 respectively. Since, the obtained 't' ratio 0.986 was less than the required table value, it was found to be statistically not significant at 2.145 level of confidence degrees of freedom. The result clearly indicated the control group had not shown significant improvement.

FIGURE 2: Bar Diagram Show the Leg Explosive Power of Experimental Group and Control Group of Pre Test and Post Test

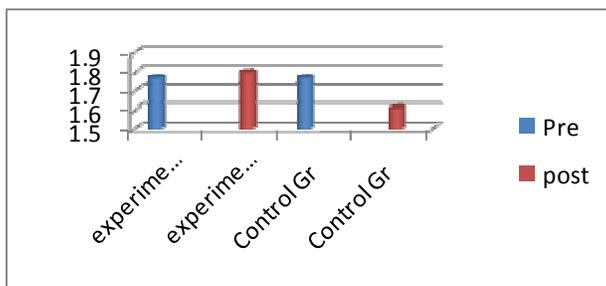


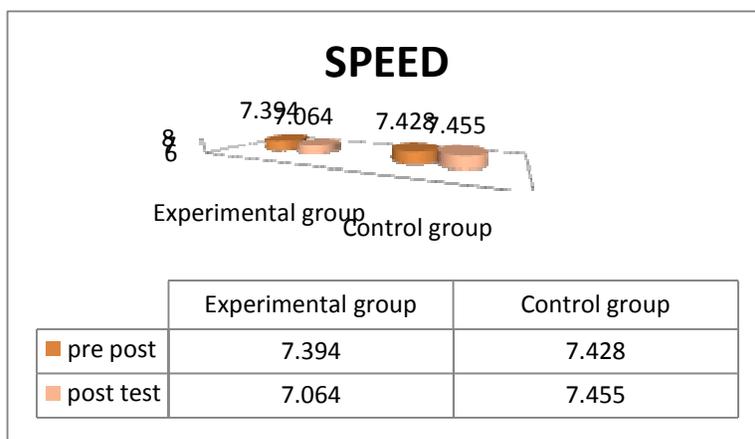
TABLE 4  
Computation of 't' Ratio Between Pre and Post-test Means of Experimental and Control Group on Speed

Group		MEAN	SD	SEM	MEAN DIFF	't'
Experimental Group	Pre	7.394	0.86	0.222	0.330	5.935
	Post	7.064	0.96	0.2486		
Control Group	Pre	7.428	0.87	0.2268	0.0273	1.186
	Post	7.455	1.000	0.2584		

\*significant at 0.05 (2.145)

Table I reveals the computation of 't' ratio between pre and post test on speed of college girls the mean values of pre and post test of Experimental group were 7.394 and 7.064 respectively. Since the obtained 't' ratio 5.935 was greater than the required table value 2.145, it was found to be statistically significant at 0.05 level of confidence for degrees of freedom 1 and 14. The result clearly indicated the speed of experimental group had been improved due to the influence of General Conditioning Program. 't' ratio between pre and posttest of control group were 7.428 and 7.455 respectively. Since the obtained 't' ratio 1.186 was less than the required table value 2.145, it was found to be statistically not significant at level of confidence degrees of freedom 2.145. The result clearly indicated the control group had not shown significant improvement.

FIGURE 3: Bar Diagram Show the Speed of Experimental Group and Control Group of Pre-test and Post-test



## Discussion Of Findings

For this study the effect of eight week General Conditioning program was imposed on college girls to see the changes on select physical fitness components. There were significant improvement on agility, explosive leg strength and speed performance as obtained 't' ratio values 6.89 , 4.553 and 5.935 of agility, explosive leg strength and speed performance respectively were greater than table value 2.145. On the other hand in control group there were no significant improvements in relation to agility, explosive leg strength and speed performance as obtained 't' values 0.60, 0.986 and 1.186 were less than table value 2.145

## Summary And Conclusion

The purpose of the study was to see the effect of General Conditioning Program over selected Physical fitness component namely, agility, explosive leg strength and speed performance of college girls. The subjects of the study were 30 college Girls from Government Degree College, Dharmanagar. These subjects were randomly assigned to two groups that are experimental group and control group. Each group consisting of 15 subjects. The experimental group undergone general conditioning program, the control group was not allowed to participate in the general conditioning program. The scores recorded in seconds, meters and seconds for agility, explosive leg strength and speed respectively. The collected data were statistically analyzed by 't' ratio. The level of significance was fixed at 0.05 level of confidence. The results showed that there were significant improvement on agility, explosive leg strength and speed performance due to 8 weeks of General Conditioning Program.

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## **Sports Psychology And Its Methods**

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### **Introduction**

Sports Psychology is a recent but extremely important branch of the modern science of sports. It is the applied branch of psychology which is one of the youngest branches of human knowledge. Sport psychology is a specialization within psychology that seeks to understand psychological/mental factors that affect performance in sports, physical activity and exercise and apply these to enhance individual and team performance. It deals with increasing performance by managing emotions and minimizing the psychological effects of injury and poor performance. Some of the most important skills taught are goal setting, relaxation visualization, self-talk, awareness and control, concentration using attribution training and periodization. Sports psychology is the scientific study of people and their behaviors in sports. The main job of sports psychologists is to recognize how participation in sports exercise and physical activity enhances a person's development. So it can be said that Sport Psychology is (i) the study of the psychological and mental factors that influence and are influenced by participation and performance in sport, exercise and physical activity, and (ii) the application of the knowledge gained through this study to everyday settings. Sports psychology professionals are interested in how participation in sport, exercise and physical activity may enhance personal development and well being throughout the life span. Sport psychologists are also involved in assisting coaches in working with athletes as well as helping improve athletes' motivation.

### **What Is Sports Psychology**

The role of psychology in sports has given birth to a new branch of psychology called "Sports Psychology" or "Psychology of Sports". The different sports psychologists have defined the discipline of Sports Psychology as below: -

According to John D. Lawther (1951), "Sports Psychology is an area which attempts to apply psychological facts and principles to learning, performance and associated human behavior in the whole field of sports."

Robert N. Singer (1972) says that sports psychology explores one's behavior in athletics.

Dr. Ghose (1998) defines sports Psychology as "the science of athletes' mind and their faculties."

Cox (1985) says that Sport Psychology is "a field of study in which the principles of psychology are applied in a sports setting".

Gill (1986) writes that Sport psychology is "the branch of sport and exercise science that seeks to provide answers to questions about human behavior in sport".

Finally we can say that the sports psychology is a science which deals with a systematic study of sportsman behaviour and it also deals with the psychological factors which affect any player's performance deeply.

### **Method Of Sports Psychology**

Sports psychology is a systematic and scientific study of athletes in playing situations. Being a science, it has its special tools, procedures or methods which help in the collection and organization of facts or data. Being an empirical study, sports psychology uses various methods to analyze the different phenomena of athletic behaviour. Methods save time, energy, efforts and enhance the efficiency. According to Oxford Dictionary, "Method is a way of doing something, system of procedure, orderliness, conscious regularity etc. In sports psychology, usually three methods are used to conduct research work on the athletes. They are following:

Observation method  
Experimental method  
Survey method

### **Observation method**

Observation means observing the behaviour of others in natural or uncontrolled conditions. It consists of simply observing bodily actions, bodily changes, gestures, facial expressions, sounds and movements of persons. In this method, we get information about another person. For example, when we see a person in anger, we observe what the mental condition of that person is. What physiological changes occur in that person. Out of various form of research investigations, it is considered important method for collecting data. This method is also called or naturalistic observation. Observation is of two types:

Controlled observation

Uncontrolled observation.(naturalistic observation)

the external behaviour is the expression of internal conditions of a man. Hence. the study of external behaviour is indirectly the clue of mental condition. It is very old method. The founder of this method was William James who used observation technique in his studies.

Steps of observation

1. *Adequate planning*: the first step involve in method of observation is adequate planning. the observer should plan what to observe and how to observe the behaviour aspect of the person.

2. *Observing the Behaviour*: After planning, the actual process of observation should start. Observation is directly perceiving or observing the behaviour with the help of sensory organs e.g.; if we want to observe the social behaviour of children, we can observe it when they assemble and play.

3. *Recording of Observation*: The observation should be carefully and immediately noted and recorded. Minimum time should be allowed to pass between happening and recording. It will make the observation most objective. We can take the help of tape recorder or video camera; which may be used while observing any phenomena.

4. *Analysis of Observation*: After recording the observation, it should be analyzed. If the data are collected numericallv. it should be statistically analyzed adequately.

5. *Generalization and Interpretation*: The last step in the process of observation is interpreting and generalizing the observation. After analyzing the data, the same may be interpreted accordingly on the basis of some established theories.

### **Experimental method**

The experimental method hold central position in sports psychology. In psychology, the basic scientific method is experimentation. The experiment is observation under controlled conditions. In this method, artificial mental processes are created in laboratory under the conditions required by the experimenter. This enables the experimenter to study the problem under the desired conditions which can be altered according to the requirements. The scientist designs an investigation in such a way that it involves a direct analysis of all the major conditions of the hypothesis. Preferably the investigation takes the form of an experiment which is carried out under rigidly controlled conditions during the systematic variation of one of these conditions in particular. These characteristics allow the reproducibility of the conditions under which a given experiment is performed.

Essentials of experimental method

The following are the essential features underlying the experiment:

1. Psychological laboratory: It should be well equipped with sophisticated apparatus.

2. Experimenter: He is the person who is conducting the experimentation. 3. Subject: Person on whom experiment is being conducted.

4. Stimulus: It means any event in the environment which impinges on the organism or strikes the individual to react.

5. Response: It is the reaction to the stimulus. It can be defined as change in behaviour which can be observed. Observable change in behaviour is known as response.

6. Variables: The term variable means that which can be varied or changed. A person's intelligency or personality would be consider as psychological variables.

### **Experimental design**

1 *One group design*

One group post test design

One group pre test post test design

2 *Two group design*

S. no	Group	Pre test	Treatment	Post test
1	Exp	T <sub>1</sub> E	X	T <sub>2</sub>
2	Control	T <sub>1</sub> C	No treatment	T <sub>2</sub> C

### **Survey method**

In cases where the nature of the problems makes laboratory study unfeasible, the psychologist often goes into the field and makes observation of events as they occur. This is called survey method. Psychologists make the extensive use of the survey method which is based on the sampling by direct observation. This method makes use of various techniques of collecting data such as tests, questionnaire, observation, interview and use of statistics in analyzing the data. This method is often used in the field of Sports Psychology. Survey method is that which is used and employed by psychologists in investigating a variety of problems. Attitudes are studied in this way, public opinion polls involve survey techniques and follow-up studies of college graduates which determine the value of certain college courses in later work activities, these are but a few of the problems which are being studied through survey method, In the same way, much information regarding the performance of the athletes is collected with the help of this method. In survey method the investigator focuses upon specific types of behaviour that he feels, are important in light of previous experience in gathering data and drawing conclusions from them. Survey method is also called as field experiments. when the observations are made under normal and natural condition, they are known as field experiments. There are many problems which can be investigated under field observation some are mentioned below.

Problem relating to the athletes

Problem relating to the leadership

Problem relating to the formulation of public opinion

Problem relating with social development

### **Advantage of survey method**

The main advantage of this method lies in the fact that the behaviour observed occurs under natural conditions rather than the unnatural conditions of the laboratory. While some problems can be studied only through surveys by using questionnaires or interview.

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## Study on Effect of Weight Training on the Performance of Long Jumpers of Khammam District

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### Introduction:

Sports training is systematically planned preparation with the help of the exercise methods which realizes the main factors of influencing athlete's progress. The content of training includes all the basic types of preparation of the sportsman-physical, technical, tactical, psychological, and physiological.

Weight training is a common type of strength training for developing the strength and size of skeletal muscles. It uses the weight force of gravity (in the form of weighted bars, dumbbells or weight stacks) to oppose the force generated by muscle through concentric or eccentric contraction. Weight training uses a variety of specialized equipment to target specific muscle groups and types of movement.

Sports where strength training is central are bodybuilding, weightlifting, powerlifting, and strongman, Highland games, shotput, discus throw, and javelin throw. Many other sports use strength training as part of their training regimen, notably; mixed martial arts, tennis, American football, wrestling, rugby football, track and field, rowing, lacrosse, basketball, baseball and hockey. Strength training for other sports and physical activities is becoming increasingly popular.

### Methodology:

The sample for the present study consists of 20 Male Long Jumpers out of which 10 are experimental group of Long Jumpers and 10 are controlled group of long Jumpers of Khammam District between the age group of 18-20 Years. Weight Training Exercises were given to Long Jumpers Experimental group such as Step Ups with weights, Half Squats, Bicep curl, tricep curl, bent over rowing, bench press, leg press, good morning etc for eight weeks along with general training of Long Jump and Long Jumpers Control group were given the general training of Long Jump. Pre Test and Post Test were conducted for Long Jump Test for the Long jumpers by the qualified Technical Officials of Athletics. For the present study the following variables were selected:

Long jump performance

Long Jump Test

The long jump is a power event that comprises of the following four phases:

Approach run up

Take off

Flight through the air

Landing

To achieve maximum distance in the long jump the athlete will have to balance three components - speed, technique and strength

## Results

Table I: Showing the Mean values and Independent Samples Test of Long Jump between experimental and control groups of Long Jumpers

Variables	Group	Pre Test Mean $\pm$ SD	Post Test Mean $\pm$ SD	t	P - Value
Long Jump	Experimental	5.78 $\pm$ 0.222	6.08 $\pm$ 0.198	6.72	0.000
	Control	5.68 $\pm$ 0.215	5.64 $\pm$ 0.211		

\*Significant at 0.05 level

The Mean Values of Experimental Group Long Jumpers is 5.78 in Pre Test and Post Test is 6.08 in Long Jump Test. There is a improvement of Experimental group Long Jumpers Mean from 5.78 to 6.08 due to the due to the Weight Training. The Mean Values of Control Group Long Jumpers is 5.68 in Pre Test and Post Test is 5.64 in Long Jump Test. There is a decrease in the performance of control group Long Jumpers Mean from 5.68 to 5.64 due to the due to the general Training. Hence it is concluded that the Long Jumpers has increased in Long Jump Performance due to the Weight Training.

## Conclusion

The result of this study warrants the following conclusions:

Long jump performance was significantly improved through Weight training.

Weight training contributed better in long jumpers .

## Recommendation

Based on the result and conclusion, this study recommends the followings:

1. Long jumpers can take advantage from Weight training to exhibit better performance in long jump event.
2. Further research can undertaken with modification in the training intervention so that Weight training could be of immense use for improving jumping ability needed for high jumpers, gymnasts etc.
3. Similar type of study can be conducted on different age and sex groups participating in different sports.

## References:

Wikipedia, Weight Training

[www.topend sports.com](http://www.topend sports.com)

<http://www.brianmac.co.uk/longjump>

## **Comparison Of Selected Physical Fitness Variables among Rem And Nrem Sleeping Pattern Men inter-Collegiate Players**

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### **Abstract**

The present study was designed to compare the selected physical fitness variables of Rapid Eye Movement and Non Rapid Eye Movement sleeping pattern inter collegiate players. Thirty male inter collegiate players enrolled Andhra University College of Engineering, Visakhapatnam were selected randomly as subjects. The age of the subjects ranged from 18 to 28 years. The selected subjects were divided into two groups. (GROUP I) is the REM sleeping pattern group and (GROUP II) is the NREM sleeping pattern group. The physical fitness variables cardio respiratory endurance and muscular strength are selected as criterion variables the variables were assessed by the standardized test items. Cardio respiratory endurance was assessed by coopers 12 minutes run and walk test muscular strength by chin ups. The data were collected from each group and statistically analyzed by using dependent's test. The result shows that there is a significant difference exist on endurance and muscular strength among the REM and NREM groups in endurance and muscular strength.

Key words: Rapid Eye Movement, Non Rapid Eye Movement

### **Introduction**

Sleep is a poorly definable term; the mechanism and process behind sleep are not completely clear and even vaguer is the function of sleep, changes in brain metabolism and neuronal activity have lead to defining two different kinds of sleep, Rapid Eye Movement (REM) and non rapid eye movement (NREM) why two kinds of sleep occur is still a mystery as well. Generally NREM sleep activity is found in neurons in the pre optic and basal for brain region. REM activity can be located in the Pons and adjacent mid brain region. (Davis 2011)

### **OBJECTIVE OF THE STUDY**

To analyze the importance of sleeping pattern in sports and training

Try to explore the relationship between the sleeping pattern and the physical fitness

### **Methodology**

To achieve the purpose of the study thirty men inter collegiate players studying Andhra University College of Engineering, Visakhapatnam were selected as subjects. The age of the subjects ranged from 18 to 28 years. The selected subjects were divided into two groups (Group I) is the REM sleeping pattern group and (Group II) is the NREM sleeping pattern group. The physical fitness variables cardio respiratory endurance and muscular strength are selected as criterion variables. The variables were assessed by the standardized test items. Endurance was assessed by coopers 12 minutes run and walk test and muscular strength assessed by chin ups. The data were collected from each group and statistically analyzed by using dependent 't' test at .05 level of significance.

### Analysis of Data

The data pertaining to the variables in this study were examined by using dependent 't' test to find out the significant difference for each variables separately in order to determine the difference and tested at .05 level of significance. The analysis of dependent 't' test on data obtained for cardio respiratory endurance of REM and NREM have been analyzed and presented in Table I.

TABLE –I: Mean And Dependent 'T' Test Of Rem And Nrem On Cardio Respiratory Endurance

GROUP	MEAN	STANDARD DEVIATION	't' Ratio
REM	1828.67	81.90	5.420*
NREM	1497.00	222.38	

\*Significance at 0.05 level. (Cardio vascular endurance test score in numbers)  
(The table value required for .05 level of Significance with 28 is 2.04)

Table I indicates the mean values of REM players and NREM players 1828.67 and 1497.00 respectively the obtained t ratio value 5.420 was greater than the table value 2.04 at .05 level of confidence so that I conclude that there was significant difference between the REM and NREM inter collegiate players on cardio respiratory endurance.

The analysis of dependent 't' test on data obtained for Muscular Strength of REM and NREM have been analyzed and presented in Table II.

Table – II: Mean And Dependent 'T' Test Of Rem And Nrem On Muscular Strength

GROUP	MEAN	STANDARD DEVIATION	't' ratio
Rem	3.87	2.32	.82
Nrem	3.80	2.11	

\*Significance at 0.05 level. (Muscular strength test score in numbers)  
(The table value required for .05 level is Significance with 28 is 2.04)

Table II indicates the mean values of REM players and NREM players 3.87 and 3.80 respectively the obtained t ratio value .082 was lesser than the table value 2.04 at .05 level of confidence so that I conclude that there was no significant difference between the REM and NREM inter collegiate players on muscular strength.

### Result And Discussion

The results of the study shows that the REM and NREM sleeping pattern men inter collegiate players have the significant difference in cardio respiratory and there is no significant difference in muscular strength.

### Conclusions

The result showed that there was significant difference in cardio respiratory endurance of REM and NREM men inter collegiate players

There was no significant difference among the REM and NREM men inter collegiate players on muscular strength.

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