

A COMPARATIVE STUDY ON SELECTED PSYCHO- PHYSICAL FITNESS COMPONENTS OF KABADDI AND KHO-KHO PLAYERS OF DELHI SCHOOLS.

Sunil Kumar , *Sahajad Singh,**Rajendra Shalikram Gore,
**Babulal Dhotre

Research Scholar, J.J.T. University, Rajasthan

*Associate Professor, D.D Dalmiya College Of Physical Education, Jaipur, Rajasthan

** Nital College Nagpur (Maharashtra)

ABSTRACT

The main purpose and objective of the present study was to compare the Kabaddi and Kho-Kho players on the selected physical and mental abilities.

The purpose of the study one hundred players- 50 from the game of Kabaddi and 50 from the Kho-Kho has been selected on purposively and randomly basis, who has won medal/ position in Delhi Scholl Zonal, Inter-Zonal and participated in National School Games during the 2009 and 2010. All the subjects were regularly practicing and competing in their respective sports competition.

INTRODUCTION

The main purpose and objective of the present study was to compare the Kabaddi and Kho-Kho players on the selected physical and mental abilities. In comparing the Kabaddi and Kho-Kho players of Delhi Schools, who has obtained position at Zonal and inter-Zonal or participated in National Scholl Games (SGFI)/ Junior National in thier respective sports competition on selected physical and psychological abilities such as Body Mass Index (BMI), Speed, Standing Broad Jump, Sit and Reach, Sit-Ups, 12minutes Run/walk, Psychomotor ability, Concentration ability and Sports Competition Anxiety between the players of Kabaddi and Kho-Kho.

The necessary data was collected with standardized procedure by administering selected psychophysical abilities tests as suggested by Hardyal Singh and W. Cooper.

The following variables were found significant at both 0.05 and 0.01 level of confidence such as - Body Mass Index „t“ value 7.11, speed test by 40m dash the „t“ value 5.89, Standing Broad Jump the „t“ value 4.24, the flexibility test- Sit & Reach „t“ value 4.96, the test of strength

endurance- 1 minute Sit-Ups the „t“ value 5.29, cardiovascular endurance in form of 12min Run/Walk Test, the „t“ value 5.61, which was significant at both 0.05 and 0.01 level.

The Psychomotor ability found the „t“ value 4.62 and sports competition anxiety test (SCAT, Marten, 1977) was found „t“ value 4.54, which was significant at both 0.05 and 0.01 level of confidence, while the tabulates value required 2.01 and 2.68 respectively.

But the mental concentration ability a test namely- Grid test was applied and found the „t“ value 1.77, which was not found significant at 0.05 level of confidence. Because its calculated „t“ value was less than the tabulated value. It may be due to the similar type of concentration ability among the Kabaddi and Kho-Kho players. The mental concentration ability was measured with grid test of concentration showed that Kho-Kho players had better scores in concentration, but there was no significant difference.

The Kho-Kho players had showed more anxiety. A optimum level of stress and anxiety necessary for optimum / best possible level sports performance. It was found that both the games players found normal level of anxiety but Kho-Kho players had little high level of anxiety than the Kabaddi players may be due to situational aspect and mood state of the players at the time of administration of the test as per the limitation of the study.

The significant difference was found in the Body Mass Index- in relation to the Kaabddi and Kho-Kho players. The kabaddi players group was have more BMI showing greater body mass than the Kho-Kho players group. The significant difference was found in the speed ability- 40m sprint test the Kho-Kho players group had better speed in comparison to the Kabaddi players group. The significant difference was found in the Standing Broad Jump a test of explosive strength in relation to the Kaabddi and Kho-Kho players. The kabaddi players group had high explosive strength, showing greater jumping ability than the Kho-Kho players group.

The significant difference was found in the Sit and Reach test in the Kho-Kho players group had better hips and legs flexibility in comparison to the Kabaddi players group. The significant difference was found in the 1 minute Sit-Ups test of muscular strength endurance in relation to the Kaabddi and Kho-Kho players. The kabaddi players group had better muscular strength endurance of abdomen muscles group, showing greater muscular endurance ability than the Kho-Kho players group.

The significant difference was found in the 12minutes Run/Walk test of cardiovascular endurance in relation to the Kaabddi and Kho-Kho players. The Kho-Kho players group had better cardiovascular endurance, showing greater heart and lungs capacity than the Kabaddi players group.

The significant difference was found in the psychomotor ability in relation to the Kabddi and Kho-Kho players. The Kho-Kho players group had better psychomotor ability or eye hand coordination, proving better mental and physical coordination ability than the Kabaddi players group. There was not found any significant difference in relation to concentration ability namely Grid Test. The significant difference was found in the Sports Competition Anxiety Test (SCAT) in relation to the Kaabddi and Kho-Kho players. The Kho-Kho players group had high anxiety level, but both the groups had optimum level of anxiety to perform better in the sports competition.

The safety precautions should always be adopted for the Kabaddi and kho-Kho training and competition for the safety of the players. A study may be undertaken with fully residential subjects of different age groups junior senior, men and women, who were regular in their professional type of training.

OBJECTIVES OF THE STUDY

The main objective of the present study will be to find out the difference between Kabaddi and Kho-Kho players at senior secondary school level in regards to their psycho-physical variables. The formally, the objectives of the study will be as under:

- To find out the different between physical fitness components of Kabaddi and Kho-Kho players such as speed, explosive strength, cardiovascular endurance, coordinative ability, and flexibility.
- To find out the difference between the Kabaddi and Kho-Kho in mental toughness, concentration level and psychomotor ability.

HYPOTHESIS OF THE STUDY

The investigator after going through the review of the related literature was of the opinion to apply null hypothesis for the present investigation. This was done due to very less review found

in this area and moreover, the related literature was not able to decide any directional hypothesis. The null hypothesis set and stated will be taken as:

1. There will no significant difference in physical fitness factors of Kabaddi and Kho-Kho players.
2. There will no significant difference in psychological factors of Kabaddi and Kho-Kho players.

DELIMITATIONS OF THE STUDY

The study will be delimited as following:-

- The study will be delimited to purposively selected 100 male subjects age ranging from 16 to 19 years of Delhi schools, participated at Inter-Zonal and School National (SGFI) Kabaddi and Kho-Kho competition.
- The study will be delimited to 100 male players^{''} at schools levels and 50 male players of Kabaddi and 50 male kho-kho players.
- The investigation will be delimited to selected variables physical and psychological parameters as under:-
 1. **Physical**
 - a. Height
 - b. Body weight
 - c. BMI
 2. **Physical Fitness Components**
 - a. Speed- 40m. Sprint
 - b. Explosive Strength- standing broad jump
 - c. Cardiovascular endurance- 12min. run/walk test
 - d. Coordinative ability- 4X10m. = 40m. shuttle run
 - e. Flexibility- Sit/bend and reach test
 3. **Psychological**- The Psychological abilities measure with selected tests as under-
 - a. Psychomotor ability- eye hand coordination test.
 - b. Concentration- Grid concentration test
 - c. Sports Competition Anxiety Test (SCAT)

LIMITATIONS OF THE STUDY

The findings of the study will be understood by considering the following limitations.

1. Availability of small number of sample size will be one of the limitation of the study.
2. Sophisticated testing equipment and sophisticated equipment for exercises will also be one of the limitation for the present study.
3. Individual differences among the subjects and other factors such as- Life Style, dietary habits, daily routine, will also be considered limitations for the present study.
4. Social stigma behind involving selected subjects in study will also be considered as limitation for the Study.

MATERIALS AND METHODS

For the purpose of the study one hundred players- 50 from the game of Kabaddi and 50 from the Kho-Kho has been selected on purposively and randomly basis, who has won medal/ position in Delhi Scholl Zonal, Inter-Zonal and participated in National School Games during the 2009 and 2010. All the subjects were regularly practicing and competing in their respective sports competition.

Health and Physical Education is defined as the process by which individuals and groups of people learn to behave in a manner conducive to the promotion, maintenance or restoration of health. It is a continuing process of informing people how to achieve and maintain good health; of motivating them to do so; and of promoting environmental and lifestyle changes to facilitate their objective.

In this modern era of competition the psychological preparation of team is as much important as teaching the different skills of a game on the scientific lines. The team is prepared not only to play the games also to win the games it is not the proficiency in the skills which gives victory but more important is the spirit of the players, with which they play and perform their best in the competition.

The research scholar gleaned through all the scientific literature pertaining to Kabaddi and Kho- kho from books, magazines, journals, periodicals available in the various libraries of Delhi and internet surfing/sites. Keeping the feasibility criterion in mind, especially in the case of availability of instruments, the following psycho-physical abilities were selected i.e. Body Mass Index (BMI), Speed, Standing Broad Jump, Sit and Reach, Sit-Ups, 12minutes Run/walk, Psychomotor ability, Concentration ability and Sports Competition Anxiety.

Clarke (1966) defined „Physical Fitness“ as „the ability of carry out daily task with vigor and alertness without undue fatigue and with ample energy to enjoy leisure time pursuits to meet unforeseen emergencies“. The American Association for Health, Physical Education, and Recreation defines total fitness as: ... that state which characterizes the degree to which the person is able to function. Fitness is an individual's matter. It implies the ability of each person to live most effectively with his potential. Ability to function depends upon the physical, mental, emotional, and spiritual components of fitness, all of which are related to each other and are mutually inter-dependent.

DATA COLLECTION

The necessary data was collected with standardized procedure by administering selected psychophysical abilities tests as suggested by Hardyal Singh and W. Cooper.

The necessary work was done before the start of the test, the first practice sessions were administered several times of each test with the help of the Supervisor. All the tests were administered and explained to the subjects by the scholar categorically and left no ambiguity. Any doubts of the subjects raised were clarified before taking the test, but no special training was given to the subjects.

To find out the difference between Kabaddi and Kho-Kho players of Delhi Schools on their selected Physical and Psychological variables the required statistical calculation were computed with the help of SPSS software in the computer. The difference among all the selected motor abilities and psychological variables, the data were collected and analyzed using the descriptive statistics and „t“ test. The level of significance was set at .05 level. When a two tailed equal group statistical significance mean comparison „t“ test was employed on both the set of data Kabaddi and Kho-Kho players on selected variables, the result found evident significantly in majority of the variables.

RESULTS

The following variables were found significant at both 0.05 and 0.01 level of confidence such as - Body Mass Index „t“ value **7.11**, speed test by 40m dash the „t“ value **5.89**, Standing Broad Jump the „t“ value **4.24**, the flexibility test- Sit & Reach „t“ value **4.96**, the test of strength endurance- 1 minute Sit-Ups the „t“ value **5.29**, cardiovascular endurance in form of 12min Run/Walk Test, the „t“ value **5.61**, which was significant at both 0.05 and 0.01 level.

The Psychomotor ability found the „t“ value **4.62** and sports competition anxiety test (SCAT, Marten, 1977) was found „t“ value **4.54**, which was significant at both 0.05 and 0.01 level of confidence, while the tabulates value required 2.01 and 2.68 respectively.

But the mental concentration ability a test namely- Grid test was applied and found the „t“ value 1.77, which was not found significant at 0.05 level of confidence. Because its calculated „t“ value was less than the tabulated value. It may be due to the similar type of concentration ability among the Kabaddi and Kho-Kho players. The mental concentration ability was measured with grid test of concentration showed that Kho-Kho players had better scores in concentration, but there was no significant difference.

DISCUSSION

The Kho-Kho players had showed more anxiety. A optimum level of stress and anxiety necessary for optimum / best possible level sports performance. It was found that both the games players found normal level of anxiety but Kho-Kho players had little high level of anxiety than the Kabaddi players may be due to situational aspect and mood state of the players at the time of administration of the test as per the limitation of the study.

The significant difference was found in the Body Mass Index- in relation to the Kabaddi and Kho-Kho players. The Kabaddi players group was have more BMI showing greater body mass than the Kho-Kho players group. The significant difference was found in the speed ability- 40m sprint test the Kho-Kho players group had better speed in comparison to the Kabaddi players group. The significant difference was found in the Standing Broad Jump a test of explosive strength in relation to the Kabaddi and Kho-Kho players. The Kabaddi players group had high explosive strength, showing greater jumping ability than the Kho-Kho players group.

The significant difference was found in the Sit and Reach test in the Kho-Kho players group had better hips and legs flexibility in comparison to the Kabaddi players group. The significant difference was found in the 1 minute Sit-Ups test of muscular strength endurance in relation to the Kabaddi and Kho-Kho players. The Kabaddi players group had better muscular strength endurance of abdomen muscles group, showing greater muscular endurance ability than the Kho-Kho players group.

The significant difference was found in the 12minutes Run/Walk test of cardiovascular endurance in relation to the Kabaddi and Kho-Kho players. The Kho-Kho players group had better cardiovascular endurance, showing greater heart and lungs capacity than the Kabaddi players group.

The significant difference was found in the psychomotor ability in relation to the Kabaddi and Kho-Kho players. The Kho-Kho players group had better psychomotor ability or eye hand coordination, proving better mental and physical coordination ability than the Kabaddi players group. There was not found any significant difference in relation to concentration ability namely Grid Test. The significant difference was found in the Sports Competition Anxiety Test (SCAT) in relation to the Kabaddi and Kho-Kho players. The Kho-Kho players group had high anxiety level, but both the groups had optimum level of anxiety to perform better in the sports competition.

The scholar has drawn certain conclusion and suggested some recommendations for the future research which may be conducted in related area. The similar study may be undertaken for female players or counter part of male Kabaddi and Kho-Kho players. The similar study may be conducted by taking others important variables which affects the performance of the Kabaddi and Kho-Kho players along with others important physical, physiological and psychological variables. Similar study may be undertaken by comparing the players of the other team games sports competition and comparing the players of the other teams" games sports competition.

A similar study may be undertaken by comparing the players of the individual sports competition and comparing the players belonging to different socio-economic status, geographical conditions and variation in ethnicity. The same type of study can be conducted on other different level of subjects such as Senior National or International level. It is also recommended that the training programme for Kabaddi and Kho-Kho players should be different as per their respective needs and requirements of the games. The training for the speed and flexibility should not be neglected for the Kabaddi players as these are important factors to apply difficult technique in Kabaddi as well as to avoid injuries.

The safety precautions should always be adopted for the Kabaddi and Kho-Kho training and competition for the safety of the players. A study may be undertaken with fully residential subjects of different age groups junior senior, men and women, who were regular in their professional type of training.

REFERENCES

Adian, P. Moran, **“The Psychology of Concentration in Sports Performance- A Cognitive Analysis Psychology”** press publisher (1996) P-12-13.

Aiadan, P.Mohan., **The Psychology Of Concentration In Sport Performers A Cognitive Analysis.** Erlbaum, U.K: Taylor And Francis Psychology Press Publishers, 1990, P- 203-204.

Bharshandar, JR., Bharshankar RN., Deshpande VN., Kaore SB., Gosavi GB., **“Effects of Yoga on Cardio Vascular System in Subjects above 40 Years”**, Department of Physiology, Govt., Medical College ,Nagpur (April 2003) p.p.-22-26

Bhomik, A. Kumar. (1987): **“Comparison of Selective Physiological Parameters Between Soccer and Kabaddi Players”** Unpublished master’s Disertation.

Biddle, **“European Perspectives in Exercise & Sports Psychology.”**, Human Kinetic publishers & inc.(1995) P.180.

Birkel, DA, Edgren L. **“Hatha Yoga- Improved Vital Capacity of College Students”**, School of physical education, Ball state University, Muncie, USA. (Nov. 2000)p.p.55-63

Bull, S. J. (1991). **Personal and situational influences on adherence to mental skills training.** Journal of Sport and Exercise Psychology, 13, 121-132.

Charles, Roy., **“The Body Size, Strength Muscular Endurance and Power of Top flight English Rugby and Soccer Players,”** Completed Research in Health, Physical Education and Recreation (1964); p.135.

D.A. Wuest and Charles A. Bucher, **Foundation of Physical Education and Sports** (10th edition), St. Louis, Times Mirror/Mosby College. Publishing, 1987, p- 188.

Debnath, Tushar Kanti, **“Comparative Study of Selected Physiological Variables in Football, Kho-Kho and Table –Tennis Players.”**Bibliographical Dissertation Abstracts. H.V.P.M. Publication, Amaravati (Maharashtra), 1990.

Dhanaraj, & V. Aubert, **“Effect of Yoga and 5 BX Fitness Plan on Selected Physiological Parameters,”** Ph.D. Thesis, The University of Alberta, Edmonton, Canada(1974).

Dennis, Burstein., “ **The Effects of Using Video Imagery Fusion In Learning Swimming Skills**”, Dissertation Abstracts International, 46:11 (May 1986) 3283

Davis, Henry-IV, Zaichkowsky Leonard, “**Explanatory Style Among Elite Ice Hockey Athletes- Perceptual and Motor Skill.**” (3pt.1); 1998: pp. 1075-1080.

Filaire, F., et al., “**Anxiety, Hormonal Responses and Coping during a Judo Competition**”, Iowa S. University 2001.

Fredrick, Fisher Hough, **Effects of Varying Imagery Perspective and Imagery Time on Performance of the Putting Stroke in Golf,**” Dissertation Abstract International, 55:12 (June 1995): 3781-A

G. Alkinson, et. Al., “**A comparison of Circadian Rhythm in work performance between physically active (morning 8:00 A.M. to and evening 4:00 P.M. to 6:P.M.) and inactive subject**”, Ergonomics, 36:1-3 (1993), 273-281.

Garg, A. Thibodeau and Kevin T. Patton, “**Anatomy physiology.**” (2nd edition) London Mosby (1993) p-5

Genger, Ann Fahleson, “**Imagery Orientation Effects Associated with Students Cognitions During Instruction Of A Novel Jai Alai-Like Skill**”, Dissertation Abstracts International , 47:1 (July 1986) 118

Gharote, M.L., “**Effect of Yogic Exercises on The Strength and Endurance of The Abdominal Muscles of The Females,**” Vyayam Vidhyam, 4:1: (1970), p.p. 11-13

J. E. Loehr, **Mental Toughness Training For Sports: Achieving Athletic Excellence.**

Lexington, MA; Stephen Greene Press, 1986.

Jones, John W. N. George, Altmann Robert, Dreschlex Brian, “**Development of the Sports Performance Inventory- A Psychological Measure of Athletic Potential.**” Journal of Business & Psychology. 15 (3); 2001: 491-503.

Kamlesh, M.L., “**Psychology in Physical Education and Sports.**”, (3rd edition), Metropolitan Book. Co. Pvt. Ltd. New Delhi (1987) P-18 &19.

Kumari, Latika, “**A Study of Selected Physical and Physiological Characteristics in Women Cricket Players**” Unpublished (2007) P.1-2

Lawther, John D. **“The Learning and Performance of Physical Skills,”** Prentice Hall, Inc., Englewood Cliffs, New Jersey: (1977); p. 45

Lynnette, Overby, Young, **“A Comparison of Novice and Experienced Dancer’s Imagery ability Respect to Their Performance On Two Body Awareness Tasks”**, Dissertation Abstracts, 47:10(April 1986), 3698-A.¹

Meyers, Michael C; Leunes, Arnold; Bourgeois, Anthony E, **Psychological Skills Assessment and Athletic Performance in Collegiate Athletes**, Journal of Sports Behavior, 1966 Jun; Vol. 19 (2) : 132-145.

Middleton et al. **Discovering Mental Toughness: A Qualitative Study of Mental Toughness in Elite Athletes.** Self Research Centre Biannual Conference, Berlin. 2004.

Mishra, Sharad Chandra. **“Fitness and Health Education,”** Sports Publication 7/26; Ground Floor, Ansari Road, New Delhi; (2005); p. 411-414.

Mohammad, J., et. al., **“Selective Physiological, Psychological and Anthropometric characteristics of Kuwaiti world cup soccer Team”**, International Journal of Sports Science and Physical Education, vol.3 (1) Feb. (1991).

Mohinder, Singh, **Health and Food:** (New Delhi: Sports Publication, 2003); pp 187-209.

Moran, Adian P. **“The psychology of concentration in sports performance a cognitive analysis psychology”** press publisher (1996) P12-13

Narang, P., **“Play & learn Hockey’** Published by Khel Sahitya, Kendra, 2003,p.72

P.H., Mairiaux. et.al, **“Prediction of Mean Skin Temperature in Warm Environments”**, European Journal of Applied Physiology, 56.6 (1987): P.686-692.

Ramaden, J.M., **“Selected Physiological, Psychological and Anthropometric Characteristic of the Kuwaiti World Cup Soccer Team.”** “Dissertation Abstract International 46 (Oct 1985).P.924-A

Ray, Dipendranath (1989); **“Status of Physical Fitness and Physiological Parameters of Offensive and Defensive Players of Soccer and Hockey”** Unpublished master’s Dissertation. P.33

Rushall, B. S., & Lippman, L. G. (1997). The role of imagery in physical performance. *International Journal for Sport Psychology*, 29, 57

Slone Larry Allen, **The effect of Mental Practice And Physical Practice of the Improvement of Golf Swing**, *Dissertation Abstracts International*, 53: 9 (March 1993) 3141-

Smith, Denial Elon, **“Evaluation Of An Imagery Training Program With Intercollegiate Basketball Player”**, *Dissertation Abstracts International*, 48:2 (August 1987) 3369-A.

Singh H. **“Science of Sports Training”** by, DVS Publication, New Delhi:1991.

Sindhu, L.S. and Kumari, K. (1993) **“Relationship between Activity and Blood Pressure”** abstract, VII National conference on sports science and physical education., Punjab University, Patiala, 1993

Stall J., K.Beckett, S.McLean, and K.Plusquellac, **Mental Training In The Pool**, *Documentation Service*, 13:4 (1990): 94

Stancak A Jr., Kuna M, Srinivasan, Vishnudevananda S, Dostalek C., **“Kapalabhati – Yogic Cleansing Exercise For Vascular and Respiratory Changes.”** *Institute of physiological Regulations, Czechoslovak Academy of Science*, (Oct.1991).p.p.-126-34.