



ISSN 2231-3265
(Online and Print)

Volume - 11 No. 1
Quarterly
July 2013 to September 2013

International Journal of Health, Physical Education & Computer Science in Sports

Journal Impact Factor 0.624
Index Journal of Directory of Research Journal Indexing

Published by :
Indian Federation of Computer Science in Sports
www.ijhpecss.org
Under the Auspices
International Association of Computer Science in Sports



<p>Publisher:</p> <p>Indian Federation of Computer Science in sports</p> <p>www.ijhpecss.org and www.ifcss.in</p> <p>under the auspices of</p> <p>International Association of Computer Science in sports</p> <p>Email:rajesh2sports@yahoo.co.in</p>	<p>International Journal of Health, Physical Education and Computer Science in sports ISSN 2231-3265 (On-line and Print) Journal Impact factor is 0.624.Journal published Quarterly for the months of March, June, September and December. IJHPECSS is refereed Journal.</p> <p>Index Journal of Directory of Research Journal Indexing.</p>
---	--

<p>Editorial Board</p> <p>Chief Editor:</p> <p>Dr.Rajesh Kumar, India</p> <p>Editors:</p> <p>Prof.Syed Ibrahim, Saudi Arabia</p> <p>Prof.L.B.Laxmikanth Rathod, India</p> <p>Associate Editors:</p> <p>Prof. P.Venkat Reddy, India</p> <p>Dr.J.Prabhakar Rao, India</p> <p>Dr.Kaukab Azeem, Saudi Arabia</p> <p>Y.Emmanuel S. Kumar, India</p> <p>Dr.Quadri Syed Javeed, India</p> <p>Members:</p> <p>Prof.Ma. Rosita Ampoyas-Hernani, Philippines</p> <p>Dr. Vangie Boto-Montillano, Philippines</p> <p>Dr. Lila Sabbaghian Rad, Iran</p> <p>Prof. Chenlei, China</p> <p>Prof.G.L.Khanna, India</p> <p>Prof.C.V.Prasad Babu, India</p> <p>Prof.Y.Kishore, India</p> <p>Prof. M.Shyam Babu, India</p> <p>Dr.K.P. Manilal, India</p> <p>Dr.Y.S.Laxmeesha, India</p> <p>Y.Emmanuel Shashi Kumar, India</p>	<p>International Journal of Health, Physical Education and Computer Science in Sports is multidisciplinary peer reviewed journal, mainly publishes original research articles on Health, Physical Education and Computer Science in Sports, including applied papers on sports sciences and sports engineering, computer and information, health managements, sports medicine etc. The International Journal of Health, Physical Education and Computer Science in sports is an open access and print international journal devoted to the promotion of health, fitness, physical Education and computer sciences involved in sports. It also provides an International forum for the communication and evaluation of data, methods and findings in health, physical education and computer science in sports. The Journal publishes original research papers and all manuscripts are peer review. . Index Journal of Directory of Research Journal Indexing.The Indian Federation of Computer Science in Sports has been set up the objectives of Dissemination of scientific knowledge concerning computer science in sport and Physical Education.Providing a forum for the exchange of ideas among the Physical Educationists,Coaches,Sports Experts Etc.</p>
---	---

Contents

S. No	Names of the articles	Page.No
1	Physiological aspect of Asanas and Pranayama -Chowdegowda. T.R., Krishna. R. Yadav, Dr. Sundar Raj Urs.,	1
2	An Assessment Of Vital Capacity And Peak Flow Rate Of Active And Inactive Middle Aged Male -Mr. Kalidas Karak, Dr. Susanta Jana	3
3	Motor Abilities And Difficulties Of Physically Challenged Students Of Letran-Calamba: Basis For A Proposed Adapted Physical Education Program – Rhene A. Camarador	6
4	Effect Of Trunk Stabilization And Agility In Comparison To Stretching And Strengthening In Treatment Of Acute Adductor Strain – Sood Ashish, Kalra Sheetal, Yadav Joginder	9
5	The Competitive Trait Anxiety Of Male Coaches In High Level Team Sports - Vangie Boto-Montillano	12
6	The nature of Meta cognition and its revisory usage in learning disorder - Sofia Heidari Kamroudi,Fatemeh Khoshnavay Fomani,Rahmatollah Kharazmi Rahimabadi	15
7	Health-Cultural-Sports Activities Of Physical Education Students Of Private Higher Education Institution In San Fernando City -Lorna Sobrepena Salcedo	20
8	The effect of selected aerobic (Astrand) and non-aerobic (Wingate) exercise tests on liver enzyme and HSP70 in young male -Ali Khajehlandi, Amin Mohammadi Damiyeh	22
9	Assessment Of Academic Anxiety Among Female Adolescents -Sonia Saini , Dalwinder Singh	26
10	Effects Of Different Intensities Of Aerobic Running On The Resting State Blood Glucose, Platelet Account And Plasma Fibrinogen Among Type II Daibetics - C. Kiran Chakravarthi, Dr. M.V. Srinivasan	30
11	Float Like A Butterfly -Syed Farooq Kamal	33
12	Computer Literacy Among Physical Education Teachers In Puducherry – Dr. R. Savarirajan	36
13	The comparison of Growth variation on Height, Weight and Hip measurement among Physical Education Students -Dr. S. Jayaraman	40
14	Analysis Of Speed And Flexibility Among Andhra Pradesh State Level Basketball, Football And Volleyball Players -Dr. N. S.Dilip, Pulluri Srinivas	43
15	Effect of Binocular Depth Perception upon Throwing Accuracy of Female Basketball Players -Prof. C.D. Agashe,Virendra Kumar Singh	46
16	Biomechanical comparison of Genu Varum among Futsal players -Mahdi Amel Khabazan ,Prof. L. B. Laxmikanth Rathod, Amir Shahriar Aryamanesh, Prof. Mohamad Hosein Khabaz	48
17	Effect Of Low Intensity Continuous Training And Yoga Ractices On Vital Capacity Of Mild Hypertension College Teachers -D. Kalidoss, Dr.J.Manohar Chendur Pandi, Dr. D. Sultana	52
18	Quantification Of Physical Responses To Varied Packages Of Yogic Practices AmongWomenCollegeStudents-Dr.M.SivasankarReddy,B.Suman,Penna Baskara	55
19	Assessment Of Occupational Stress Among Physical Education Teachers Of Dakshina Kannada District -Ashok Kumar, Dr. S. Madialagan	59
20	Indigenous Dances: Evolution towards Wellness and Therapeutic Dance Education -Ma. Rosita Ampoyas	64
21	Comparative Analysis of Different Forms of Marching -Mondal Indranil,Mondal Shubhobrota,Bhowmick Sudarsan	69
22	Bio-Magnetism And Body Food –Transformation Into Seven Minerals -Mr. Nagarjunasangem, R.Thirupathireddy,Srinivas. P	72
23	Comparative Study On Fitness And Achievement Motivatioan Among Hill And Plain University Level Players -Jyan Chandra Gurung	74
24	Asparagus Recemosus: Its Therapeutic Potential And Acceptance In Sports Medicine -Baljit Singh Sekhon, Balaji M. Potbhare	77
25	A Study On Motor Fitness In Respect Of Body Fat Percentage Of Middle-Aged Women In North Bengal -Dr. Swapna Ray Barma,	81
26	A Comparative Study Among Urban And Rural Kabaddi Players Respect To Anxiety -Dr. Quadri Syed Javeed, Dr. Katare B J,	85
27	A Study On Pre-Competitive And Post-Competitive Anxiety And Aggression Of National Level Yoga Performers -Dr. Kuntal Thakur,Dr. Sandip Sankar Ghosh	87
28	A Study of Reaction time among Male and Female Interuniversity Kabaddi Players -Dr. Katare B J, Dr. Quadri Syed Javeed,	92
29	Comparison Of Tribal And Non-Tribal Students In The Selected Physical, Physiological And Psychological Variables -G. Appala Naidu, Dr R. C. Reddy	94

30	Effect Of Medicine Ball Exercise On Shooting Ability Among Netball And Basketball Players -Mahesh Chanda, Prof.P.Venkat Reddy	96
31	A Comparative Analysis Of Body Mass Index And Vital Capacity Among All India Inter-University Female Handball Players -Nandalal Singh Thingnam, Reeta	98
32	Effect of varied Aerobic Exercises on select health related Physical Fitness Variables among obese engineering college students -Dr. N.S. Dilip, Mr. Bh Arun Kumar	101
33	Vascular Efficiency Among Adolescents -Jaipal , Dr. Ashok Kumar Sharma	104
34	An Assessment On The Sports Achievement Motivation And Anxiety Level Of Active And Inactive Men -Dr. Susanta Jana, Mr. Kalidas Karak	107
35	Effect Of Exercise On Motor Creativity Of Different Age Group Of Children - Dr. Saugata Sarkar	109
36	Circuit Training And Sports Performance -Dr.Srinivas.S.Kolkur and Dr.Sangeeta.S.Bamman	112
37	The effects of repetition of virtual sport experience on football sport attitude and attitude confidence -Farshad Tojari, Abdolreza Amirtash, Nazila Pourabdolah Farshbafi	115
38	The Effects Of Pre-Season Training Package On The SelectedPhysical Fitness Variables Of Handball Players -P.Buvanendiran.	119
39	Motivational And Emotional Factors In Traditional Sports -Y. Surender, K.Jithendernath, G.Gopichand	123
40	Effect Of Plyometric Training Isotonic Training And Combination Of Isotonic And Plyometric Training On SpeedAnd Muscular Endurance -Mr. M.N. Gnaneshwar, Dr. R. Gopinath	125
41	“Capital Budgeting” – A Case Study -Rallabandi Swarna Kumari	128
42	Analysis Of Self Confidence Among South Zone Senior National Hockey Players -Swamy Kumar. P, Dr. G. Vasanthi.	131
43	Life skills through physical education & sports in life livelihood for school children -Dr.B.Sunil Kumar,Dr.V.Satyanarayana, Srinivas Nallella	133
44	Life Styles for Health, Reproductive Health promotion and STI/STD Management of Rural Adolescent Girls -D.Unmisha, DrM.Najeebullah,	136
45	Comperative Study Of Print Media Coverage Of A Football Match In Different Newspapers -Dr. Asish Paul, Dr. Gopa Saha Roy, Antara Mukherjee, Dr Atindra Nath Dey	139
46	A Comparative Study of Explosive Power among Long Jumpers and High Jumpers of Hyderabad District -Dr.Rajesh Kumar,Dr.J.Prabhakar Rao,Dr.I.Balaram Reddy,Dr.K.Deepa	142
47	Comparative Study On Agility And Endurance Between Football And Basketball Players -Dr. A. Praveen, Mr. S. Binthu Mathavan	145
48	Effect Of Aerobic Circuit Training And Parcours Training On Selected Physical And Physiological Variables Among College Men Students -Dr. S. Nagarajan, Mr. C. Damodharan, Dr. A. Praveen	149
49	Effect Of Weight Training And Plyometric Training OnStrength Endurance And Leg Strength -Mr. R. Lakshmikrishnan, Dr. K. Sivakumar	152
50	Comparative analysis of mental health between male and female students of cochin university of science & technology -Sujith .S, Dr. Ajith Mohan K.R , Dr.T.I.Manoj	154
51	“Fundamental Skills Development A & Evaluation Of Wrestling Sports In Physical Education Through Video Cd: A Case Study On School Going Children”-Dr.A.V.Thoke,	157
52	A Study Of Anthropometric And Biomotor Characeristics Of Young Male Athletes- Dr. Rajashekhar.M.Hiremath	159
53	Effects Of Two Different Fat Reduction With Aerobic Training On Selected Lipid Profile Status And Testosterone Among Middle Aged Men -Dr.R.Venkatesan	162

Physiological aspect of Asanas and Pranayama

**Chowdegowda. T.R., Research Scholar in University College of Physical Education,
 Bangalore University, Bangalore.**

**Krishna. R. Yadav., Research Scholar in University College of Physical Education,
 Bangalore University, Bangalore.**

**Dr. Sundar Raj Urs., Associate Professor in University college of Physical Education,
 Bangalore University, Bangalore.**

Introduction:

Yoga is great ancient discipline, it is recognized as one of the most important and valuable gifts of our culture. The modern era, with the development of Science and Technology provides man more comfort for his basic necessities. But with these comforts only today the world is looking for solutions to solve the menacing problems of unhappiness, restlessness, conditional imbalance etc. Now the time has come to think of change in attitude and take a new dimension to solve the problems. There is the importance of Yoga and spiritual lure. Yoga is the gift of our Rishi culture, is a science and art of pure life style. Yoga offers man a conscious process to solve his problems. Yoga helps the man to evoke the hidden potentialities of man in a systematic and scientific way by which man becomes a full individual. All his faculties physical, mental, intellectual and emotional – developed in a harmony and integrated fashion to meet the all-round challenge. At the modern technological era, with its hectic speed the specialty of the yogic process is that the faculties get sharpened in time with the spiritual progress of man. Yoga refers to a science, which helps to receive an ideal body build-up, mental elegance and excellence of consciousness. Yoga refers to an utmost height of physical mental and spiritual health. Yoga refers to a science of total transformation of life. Yoga is an experiment for expression of truth of life. Yoga is the scientific process of transition of mind to a state of thoughtless sub-consciousness..

Yoga and Health

Yoga asana impart physical and mental health over the body by controlling, regulating and balancing the effect over the sympathetic and parasympathetic nervous system. Through regular practice of Yoga normal physiological activities of nervous system, flexibility and contractibility of muscles vital capacity of lungs, blood circulation etc such biological processes are toned-up.

Physiological Effects of Yogasana on different systems

Circulatory System

Regular practice of Yogasana promotes purification and circulation of blood in different systems of the body. An accelerated blood flow during Yoga practice helps to deplete various harmful deposits, such as cholesterol in the blood vessels. Thus Yogasanas helps to prevent various disorders related to Cardiovascular system.

Respiratory System

A regular practice of deep Pranayama, Shavasana helps to regulate inspiration and expiration, which, in turn, provides adequate amount of oxygen in the body. Oxygen gets attached to blood and circulates the entire body. A regular practice of Pranayama helps to prevent the infestation of bacterial infection in the lungs, more specifically the apical region of lungs. Especially the saproscopic bacteria are prevented, which subsequently cause T.B. Apart from this, the practice of finer techniques of pranayama, helps to relieve pulmonary disorders, such as bronchitis, pneumonia etc.

Digestive system

Regular practice of Yogasanas activates the contractibility and physiological activity of stomach promoted by asanas..Yogasanas help to regulate these body processes, which thereby control gastric disorders, such as constipation, indigestion and acidity chiefly Yogasanas, which cause positive effects on digestive system include Udar Shakti Vikasak Kriya, Padmasana, Vajrasana, Ardhamatyasendrasana, Gomukhasana, Dhanurasana.

Endocrine Glands:

It has been revealed through extensive researches that various meditative asanas, especially, Padmasana, helps to regulate endocrine secretion of serotonin and dopamine. In such persons in whom there is more secretion of adrenaline and cortisone, meditative asanas such as Padmasana helps to control such secretions. This helps to control serious disorders, such as high B.P., stress and anxiety. Thus, every asana regulate one or the other endocrine gland and thus offers physical and mental health and alleviate disorders.

Muscular System:

A regular practice of Yogic Asanas and Yogic processes tones up muscles and offers flexibility. It normalizes the physiological activities of muscles. Moreover, at minute levels it reconstitutes any damage to muscles. Yogasana accelerates the oxygen supply to blood and thus promotes the normal catabolism of glycogen to release desired level of energy. This helps to regulate the lactic acid level in blood and energy based different metabolic processes continue in a normal manner.

Physiological Effects of Pranayama on Respiratory system

The concept of pranayama is often mistaken for deep breathing. In the later situation, movement of breath is fast and forceful. There is no time for the cells to get soaked in the inhaled oxygen. In pranayama, the movements are so slow that there is adequate time for every alveoli to soak in oxygen. The respiratory system is geared to aerate the internal atmosphere. The venous return is much better due to phasic changes in breathing. The pulmonary vascular bed relaxes to accommodate more inflow of oxygen and blood. Better diffusion of gases occurs. Elasticity of the lungs and the entire respiratory tract is maintained to a ripe old age. The hemoglobin/oxygen saturation is enhanced during kumbhaka, as there is enough time for saturation. The vital capacity, inspiratory volumes are increased. The dead space is reduced. The residual volume is decreased as more complete exhalation is performed. The alveoli are exercised, which promotes excellent excretion of toxins and gases. Due to more efficient changes in blood gases, proper maintenance of pH is achieved. This is the most important requisite, for better cellular function. The ventilation of sinuses is made excellent, promoting good drainage.

Physiological Effects of Pranayam on Digestive system

The flow of breath in sitali pranayama stimulates the taste buds. In other types, the salivary glands get rest. The proper return of lymph and venous blood improves the digestive, absorptive and eliminating functions of the abdominal organs. Constipation is relieved. The Stomach is massaged. The intestines are contracted and reflex expansion promotes excellent blood flow and venous return. The liver and gall bladder are massaged, improving their function. Due to reduction in sympathetic tone, acid secretion diminishes, relieving stress-related peptic disorders.

Conclusion

Our human body is a marvelous piece of machinery. Proper maintenance of it keeps it going without problems to a ripe old age. The practice of Yoga Asanas and Pranayama is unquestionably an ideal method to preserve the health and longevity of our body. Yoga is unique in that it recuperates the entire system. In the Yogic system, the mechanism is quiet and restful. Asanas provide a soothing effect on both the outer and inner organs, The result is organ tranquility. Yogasanas, Pranayam, Bandh, Shatkarma, Dhyan etc. such yogic processes carry specific effects on heart, lungs, nervous system and on endocrine glands. Pranayama and other yogic processes control various clinical disorders. It promotes vital capacities of various endocrine and exocrine glands. Moreover, yogic exercises regulate nervous system excretory system and normalize the nerve stimuli. This helps to regulate and normalizes the physical, mental and social state of the person to lead a normal day to day life. Overall the Yoga practice builds-up a positive attitude in a person, which itself relieves various ailments and offers a heavenly life.

References

- Grade, R.V., Principles and Practice of Yoga therapy, Publication, Taraporevala Bombay, 1972.
- Bernard, T.H. Theos, Hatha Yoga, Publication, Columbia University Press, New York, 1944.
- Brena, S.F., Yoga and Medicine, Publication, Julian Press, New York, 1972.
- Ray, S. Dutta, Yogic Exercises, Publication, JaypeeBrothers, New Delhi 1998.
- Kumar, N, Prakriti Chikitsa Lvam Yoga, Publication, Nirogi Duniya, Jaipur, 2002.
- Hewitt James, The Complete Yoga Book, Publication, Random House, 1983.
- Pandiamani, B.K., Principles of Yoga therapy, social skills and living value based education, Annamalai University Publication, 2004.
- Vishvanathan S., Science of Yoga, Annamalai University Publication, Tamilnadu, 2004.
- Singh, Gurucharan, Contours of Yoga With Reference To Religious Approach, International Yoga Conference, University of Jammu, 2003.

An Assessment Of Vital Capacity And Peak Flow Rate Of Active And Inactive Middle Aged Male

Mr. Kalidas Karak¹

¹ Ph.D Scholar & Lecturer, S.B.S.S Mahavidyalaya, Goaltore, Paschim Medinipur,
 Pin-721128, W.B, E-mail- karak.kalidas03@yahoo.com

Dr. Susanta Jana²

² A. T., Bathanberia Srinibash Vidyamandir (H. S.), Purba Medinipur, W. B.

Abstract

The purpose of the study was to compare the level of Vital Capacity and Peak flow rate of active and inactive middle aged male. Total 52 subjects were taken for the study. They were Active & Inactive Groups. Twenty-six (26) active and Twenty-six (26) inactive middle aged male (40-50 years) were randomly selected for the study. All the parameter i.e. Vital Capacity and Peak flow rate were measured by a reputed physician. For statistical analysis and interpretation of data 't-test' was conducted. It was observed that there was significant difference in Vital Capacity and Peak flow rate. Result showed Active men have higher level of Vital Capacity and Peak flow rate.

Key Words:-Vital Capacity, Peak Flow Rate, Active & Inactive Middle Aged Men.

Introduction:-

In reality, man has explored the outer space but he has not dived sufficiently into the spaces within. Application of science and technology has resulted in cognitive development. Our knowledge and understanding of objects and the world have increased tremendously. In the process, however, man ignored his emotional patterning in life. As a result, in spite of plenty of wealth, physical comfort, and knowledge of sources of energy, space and communication skills, man is dissatisfied, disturbed and unhappy. Selfishness, greed, wrath and lust are playing havoc. They have given rise to distrust, insecurity, anxiety, stress and conflict, and have made individuals and society restless and emotionally and socially weaker. Coleman (1970) rightly remarked, "The seventeenth century has been called the Age of Enlightenment; the eighteenth, the Age of Reason; the nineteenth, the Age of Progress; and the twentieth, the Age of Anxiety" The science and art of yoga has for millennia guided man in his search for truth. Modern man is the victim of stress and stress related disorders which threaten to disrupt his life totally. Being holistic in its approach, yoga offers the best way out of this 'whirlpool of stress'. Yogic lifestyle, yogic diet, yogic attitudes and various yogic practices help man to strengthen his body and mind and develop positive health, enabling him to withstand stress by normalising the perception of stress, optimising the reaction to it and by effectively releasing the pent-up stress through various yogic practices. A short time (30-45 minutes) of regular yogic practice may give mental relief to the people. Yoga has a sound scientific basis and is an ideal tool for improving the health of our masses. . Pranayamas help us to control our emotions which are linked to breathing. Pranayamas also influence our pranamaya kosha i.e. the vital energy sheath. Slow, deep and rhythmic breathing is ideal for controlling stress and overcoming emotional hang-ups. The practice of pranayamas helps us to regulate our emotions and stabilize the mind, which has been compared to a 'drunken monkey bitten by a scorpion'. The findings of the present study will encourage the people of the world to participate in "Yoga program". Active middle aged male are those who regularly used to go for Yoga classes willingly. On the other hand Inactive middle aged male are those who never used to take part in any Yoga classes.

Methodology:-

In the present study all the subjects (40-50 years) were divided into two groups' namely active and inactive group. Active group consisted of Twenty-six (26) male of Midnapore Yoga center, Midnapore, Paschim Medinipur, West Bengal and Inactive group consisted of Twenty-six (26) male staff of a CBSE school, Midnapore, Paschim Medinipur, West Bengal. Physiological parameters selected for the study were Vital Capacity and Peak flow rate. All the parameter i.e. Vital Capacity and Peak flow rate were measured by a reputed Physician.

To assess Vital Capacity and Peak flow rate, Hand held Electronic Spiro meter (Cipla, American Thoracic Society) was used. At the beginning of the test the subjects were asked to place a mouthpiece attached to the Spiro meter in their mouth and to make a tight seal with their lips so all of

the air will go into the Spiro meter After breathing normally they were asked to slowly blow out until their lungs are empty. Then they were asked to take a big deep breath in filling up their lungs completely .As soon as their lungs became full, they were asked to blow out as hard and as fast (blast out) as they can until they are absolutely empty. They were asked to repeat the test until there are three good efforts. The volume was recorded from the digital display. The Vital Capacity and Peak flow rate were recorded in liters.

Results And Discussion:-

For statistical analysis and interpretation of data 't'-test was conducted. The result have been presented in table 1 and 2

Table – 1: Mean, SD of Vital Capacity (liters) and Comparison of t-test Between Means of Active and Inactive Middle Aged Male.

Group	Mean	SD	MD	t-value
Active men	2.37	0.208	0.07	3.55*
Inactive men	2.30	0.188		

*Significant at 0.05 level.

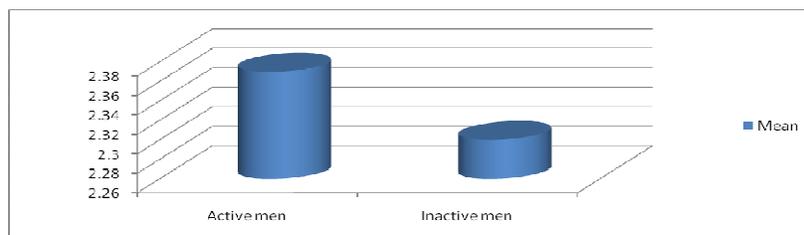


Fig. 1: Graphs Showing Means of Vital Capacity between Active and Inactive Middle Aged Male

Table -1 show that there were significant differences in Vital Capacity of active and inactive middle aged men. The Mean of active and inactive middle aged men were 2.37 and 2.30 respectively.'t' test was applied and t-value (3.55) appeared significant at 0.05level of confidence. Table–1 was illustrated through graphical representation (Fig. 1) for clear understanding of this study.

Table – 2: Mean, SD of Peak flow rate (liters) and Comparison of t-test Between the Means of Active and Inactive Middle Aged Male.

Group	Mean	SD	MD	t-value
Active men	4.69	1.33	0.66	7.218*
Inactive men	4.03	1.24		

*Significant at 0.05 level

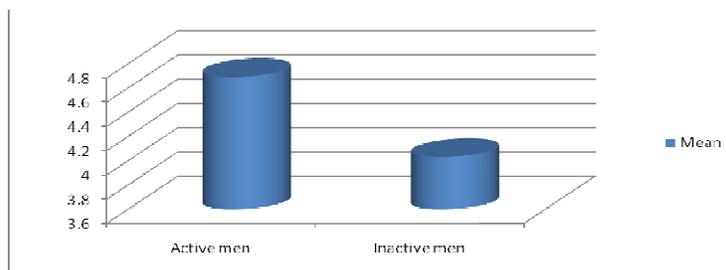


Fig. 2: Graphs Showing Means of Peak flow rate between Active and Inactive Middle Aged Male

Table-2 gives information regarding Peak flow rate of active and inactive middle aged men. Table shows that there were significant differences in Peak flow rate of active and inactive middle aged men. The Mean of active and inactive middle aged men were 4.69 and 4.03 respectively.'t' test was applied and t-value (7.218) appeared significant at 0.05 level of confidence. Graphical representation (Fig. 2) also indicates similar trend of this study.

Conclusion:-

Based on the result of the present study and within the limitation, the following conclusions may be drawn.

- .Active middle aged men show higher level of Vital Capacity in comparison to Inactive men.
- Active middle aged men show higher level of Peak flow rate in comparison to Inactive men.

References:-

- Behera D. Yoga therapy in chronic bronchitis. *J. Assoc. Physicians India* 1998; 46 : 207–208.
- Bhole, M. V. "Effect of Yogic treatment on various lung functions of Asthma patients" in *Yoga Mimamsa*. Vol. XX, No. 4, Jan. 1982, pp. 43 – 50.
- Chai, H. et al. "Long term investigation into the effects of physical therapy in chronically asthmatic children" in *J. Allergy*, 39, 1967, p.– 109.
- Gore, M.M., Gharote, M.L. and Raya Purkar M.V. (2008) effect of 10 minutes Kapalabhati on some physiological functions. *Yoga Mimamsa*, XXXX 18(2), 87-94.
- Javanbakht, M.; Kenari, R. H. and Ghasemi, M. (May 2009). Effects of yoga on depression and anxiety of women. *Complementary Therapies in Clinical Practice*. Volume 15, Issue 2. pp.102– 104.
- Joshi, B. P. Effect of Some Yogic Practice on Human Subjects (Physiological & Psychological), Presented in 14th International Conference on Prana-Anveshan, Bangalore, India, 18-21 Dec, 2003.
- Khalsa, Sat Bir S.; Schultz, L. H.; Cohen, D.; Steiner, N. and Cope, S. Potential mental health benefits of yoga in adolescents. A Review Article published in 1st National Conference on Yoga for Children and Women's Health and Value Education, Oct. 15 – 16, 2009; Kadambini Women's College of Education, West Bengal.
- Krishnan, Dr. Sripriya "Yoga – A Remedy To Respiratory Illness" in Martin J. Bunch, V. Madha Suresh and T. Vasantha Kumaran, eds., *Proceedings of the Third International Conference on Environment and Health*, Chennai, India, 15-17 December, 2003. Chennai: Department of Geography, University of Madras and Faculty of Environmental Studies, York University. Pages 243 – 251.
- Murthy K. R. J.; Sahay B. K.; Sitaramaraju P.; Sunita M; Yogi R.; Reddy V.; Annapurna N; Ramesh M; Prasad V; Reddy E.; Madhavi Sunita; Ramananda Yogi; Venkatarreddy; Vijayalakshmi Prasad; Eswar Reddy. Effect of pranayama (rechaka, puraka and kumbaka) on bronchial asthma - an open study. *Lung India*. 1984 May; 2(2): 187 – 91.
- Murugesan, M. A Review Article published in 1st National Conference on Yoga for Children and Women's Health and Value Education, Oct. 15 – 16, 2009; Kadambini Women's College of Education, West Bengal.
- Nagarathan, R. and Nagendra, H. R. Yoga for bronchial asthma: a controlled study. *Br Med J (Clin Res Ed)* 1985; 291: 1077 – 1079 (19 October), doi: 10.1136/bmj. 291.6502.1077.
- Sodhi, Candy, Singh, Seena and Dandona, P. K. A Study of the Effect of Yoga Training on Pulmonary Functions in Patients with Bronchial Asthma, *Indian J. Physiol. Pharmacol*, 2009; 53(2) : 169 – 174.
- Taimini, I. K. (1996). *The Science of yoga*: Adyar, Madras. The Theosophical Publishing House. ISBN81 – 7059 – 212-7. Eight reprint edition.
- Vedanthan P et al. Clinical study of yoga techniques in University students with asthma : a controlled study. *Allergys Asthma Proc* 1998; 19(1): 3 - 9.

Motor Abilities And Difficulties Of Physically Challenged Students Of Letran-Calamba: Basis For A Proposed Adapted Physical Education Program

Rhene A. Camarador
Colegio De San Juan De Letran Calamba, Laguna Philippines
Rhene_C@Yahoo.Com

Abstract

The study aimed to determine the motor abilities and difficulties of a group of physically challenged college students of the Colegio de San Juan de Letran-Calamba. The study would serve as a basis for designing a proposed adapted physical education (APE) program. The descriptive method of research was used in the study. Survey questionnaire and interview served as instruments in gathering the data. Also, purposive sampling was utilized to include all 70 PCS and four PE faculty members as respondents of the study. Results revealed that Bronchial asthma, heart problems, and scoliosis are the most common conditions of the PCS-respondents and most of them are "poor" in physical-fitness tests. The respondents "agree" that the similar grading system used for both the regular students and the PCS, and the latter's being treated just like regular students in their PE classes when it comes to physical activities are the most common difficulties and challenges encountered in a regular PE program. Although the students often encounter the measures undertaken by the PE instructors to accommodate their needs, still instructors strongly agree that the APE program will provide cognitive, psychomotor, and affective benefits to the PCS.

Keywords: motor abilities, difficulties, adapted physical education, physically challenged students,

Introduction

Physical Education (or PE, for conciseness) is a means of developing motor and sports skills and physical fitness among students. A special PE instruction, which is commonly called adapted physical education (or APE, for brevity) is also given to physically challenged students. The appropriate setting for educating students with disabilities has been the subject of debates for several decades. In this case, special education was originally developed to address the perceived inadequacies of the general education curriculum. The debate today has become even more nuanced, with some advocates urging the adoption of a full-inclusion model that would include all students, regardless of disability, in general education classrooms and curriculum without any of the more traditional pull-out special education resources (i.e., students being removed for special instruction).

Although mainstreaming or inclusion in physical education is being practiced in the Philippines, little is known about the adjustments, difficulties, or challenges encountered by students with disabilities in a regular PE setting. Thus, an APE program either in a special or regular school, particularly in a general PE class, is necessary. It can help eliminate or reduce the obstacles that a child or an adult with disability may come across in his full and active participation in school and society.

This study intended to help the physically challenged students who could not have all their educational needs met in a regular PE class. Also, this paper endeavored to assess the students' capabilities and disabilities in order to design an adapted PE program suited for their preferences and capacities.

Specifically, the study aimed to answer the following questions:

What are the medical conditions of the physically challenged students (PCS) based on the medical record of the school?

What is the motor ability of the PCS in terms of:

2.1 physical fitness, 2.2 object control, 2.3 locomotor skills, and 2.4 perceptual-motor skills

What are the difficulties and challenges encountered by the PCS in a regular physical education program?

What is the extent of the Physical Education (PE) activity preferences of the PCS?

To what extent do the PE instructors perceive the benefits of the APE in terms of the following domains of learning:

5.1 cognitive, 5.2 psychomotor, and 5.3 affective

To what extent do the PE instructors undertake measures to accommodate the needs of the PCS?

Based on the findings, what APE program for the PCS may be proposed by the researcher?

Method

The researcher used the descriptive method with minor qualitative inputs. The respondents of the study were all the PCS enrolled in the service PE program of the Colegio de San Juan de Letran-Calamba. These students were identified based on the medical records of the school. Purposive sampling was employed to include all 70 PCS out of 1,786 students enrolled in regular PE classes. Four PE faculty members of the said locale also participated in the study. They provided more of the information needed to better understand the challenges encountered by PCS in the regular PE program. They gave insights about the inclusion of PCS in regular physical education classes, the modifications and accommodations that can be done to meet the specific needs of PCS, and the support they get from the school in accommodating the PCS.

Results and Discussion

Among the medical conditions of the PCS, Bronchial asthma, heart problems, and scoliosis are the most common conditions of the PCS-respondents. These findings adhere to the study of Pesodas (2002) which revealed that predominantly, asthma and allergies are the health problems suffered by student-respondents. Findings also imply what Westling (2000) claims; that is, students with disabilities are learners who have specific or general disability conditions that may interfere with their functioning in a regular school environment. These disabilities may be sensory, physical, emotional, or any combination of the three. These students need special consideration in the planning and implementation of any physical education program.

Most of the PCS are "poor" in physical-fitness tests. Although they are "good" in their locomotor skills, the difference between the frequencies of good and poor performance ratings are slight. On the other hand, the PCS are "very good" in terms of object control and perceptual-motor skills. The researcher believes in the claim of Savelsbergh (2003) that less physical-activity involvement lower than the optimal-fitness capacity combined with poorer coordination abilities create a downward spiral of negative effects, thus, resulting in even poorer skills. Data imply that the very poor physical-fitness level of the respondents resulted from having acquired bronchial asthma and heart problem.

The respondents "agree" that the similar grading system used for both the regular students and the PCS and the latter's being treated just like the regular student in their PE classes when it comes to physical activities are the most common difficulties and challenges encountered in a regular physical education program. The twelve items rated "fairly agree" by the respondents indicate that the PCS somewhat encounter difficulties and challenges in participating in physical activities, experience a bit of tardiness and make excuses because of medical conditions, and feel worthless when it comes to group performance with their regular classmates. These findings imply that somehow, PCS encounter difficulties and challenges in participating in physical activities. They also experience a bit of tardiness or excuses because of their medical conditions, and they somewhat feel worthless when it comes to group performance with regular classmates.

The study also revealed the PE activity preferences of the PCS. Recreational games, outdoor activities, fitness testing, cheerdance, badminton, and teambuilding games were the most preferred. The principles of experiential learning emphasize the participants' subjective experiences that can lead to an authentic self-exploration and long-lasting learning. This shows that the PCS prefer activities where they could experience fun and adventure at the same time. It can also be inferred that PCS opt to play games that promote camaraderie and togetherness, building a strong bond and relationship among peers in spite of their special medical conditions. Collier (2005) affirms that all people need adequate exposure to activities that help them progress through the required curriculum or program of choice. Therefore, modifications should be made only to the extent necessary to meet the needs of the individual with disability.

Although the respondents "often" encounter the measures undertaken by the PE instructors to accommodate the needs of the PCS in terms of physical activity, assignments and projects, performance test, and grading system, still PE instructors strongly agree that the offering an APE program will provide cognitive, psychomotor, and affective benefits to the PCS. Finally, a proposed adapted physical education (APE) program is developed for the PCS to suit their medical conditions. The program offers a variety of activities based on the PCS' preferences, adaptability, and limitations.

Recommendations

The following recommendations were obtained based on the conclusions drawn: (1) School administrators should create clear guidelines and policies on the implementation of the adapted physical education (APE) program. Specific requirements to validate the results of medical exams of students should also be included. Certifications and waivers from the students and their parents must also be prepared for the agreement and protection of both parties; (2) The school administration should create a provision on having medicines or first-aid kits inside and outside the classrooms or the sports facilities as preventive or safety measures for the students who engage in physical activities; (3) PE instructors should strengthen the accommodations and adaptations given to the students. Being considerate in giving grades or setting a separate grading system may be done to accommodate the PCS. (4) Students, together with their parents, should attend orientations that further discuss the adapted physical education (APE) program and the possible activities suited for the students' capabilities and preferences. Swimming, a therapeutic activity, is highly recommended for the PCS; (5) PE instructors should always take every opportunity that can enhance and further increase their teaching competence. Taking units in special education can be of big help to complement their efforts to accommodate the PCS. They should continue to undertake measures and give considerations to the PCS while these students are still in the inclusion program of the regular PE class; (6) APE program is recommended for the physically challenged students. Although enrolling in the said program is not compulsory, it is still best to offer a special or adapted program that suits the specific needs of students with medical conditions. Moreover, the school administration should adequately provide the necessary facilities and equipment for the APE program; (7) An extensive or comprehensive PE program manual must be made to serve as a guide in the implementation of the APE program, including the provision on the qualifications of APE instructors; and (8) More scientific research and studies should be done to give clearer outcome and provide bases for developing a special program for students.

References

- Collier, D.H. (2005). Instructional strategies for adapted physical education. In J.P. Winnick. *Adapted Physical Education and Sports* (109-130). Champaign, IL: Human Kinetics.
- Pesodas, C.Y. (2002). The capabilities and disabilities of typical college physical education students in the University of San Jose-Recoletos: A proposed adapted physical education. Unpublished Master's Thesis. University of San Carlos, Cebu City.
- Savelsbergh G., Rosengren K., Van Der Kamp J. & Verheul M. (2003). Catching action development. In Savelsbergh G., Davids K., Vander Kamp J., Bennett S. J. *Development of movement coordination in children* (191-212). New York: Routledge.
- Sherill, C. (2004). *Adapted physical activity, recreation, and sports: Crossdisciplinary and lifespan*. 6th Ed. New York: McGraw-Hill.
- Stillwell J. & Willgoose C. (1997). *The physical education curriculum*. 5th Ed. U.S.A.: A Viacom Company.
- Westling, R.L. & Fox, L. (2000). *Teaching students with severe disabilities*. 2nd Ed. Prentice Hall, Inc.
- Winnick, J.P. (2005). *Adapted physical education and sports*. 4th Ed. U.S.A.: Human Kinetics.

Effect Of Trunk Stabilization And Agility In Comparison To Stretching And Strengthening In Treatment Of Acute Adductor Strain

Sood Ashish¹, Kalra Sheetal², Yadav Joginder³

¹MPT Student, Department of Physiotherapy, Dashmesh College of Physiotherapy, SGT group of institutions, Gurgaon, India Email-docsood1986@gmail.com

²Associate Professor, Department of Physiotherapy, Dashmesh College of Physiotherapy, SGT group of institutions, Gurgaon, India Email-sheetal1237@rediffmail.com (corresponding author)

³Principal, Dashmesh College of physiotherapy, SGT group of institutions Gurgaon, India Email-jogiyadav2@gmail.com

Abstract

To our knowledge, there are no prospective, randomized studies in the literature investigating the effectiveness of different rehabilitation programs for the treatment of acute adductor strain. To compare the effect of 2 different rehabilitation protocols for acute adductor strain by evaluating time needed to return to sports and reinjury rate during first 2 weeks and 2 months after return to sports. 30 patients having acute adductor strain were assigned to either group A - icing, stretching and progressive resistance exercises or group B - icing, stretching, progressive resistance exercises, agility and trunk stabilization. Both groups received the selected treatment until their MMT score reached 5 and VAS scale 0. A functional testing profile was done to check the strength of affected lower limb compared to the unaffected limb on the last day of treatment. Group B treatment protocol was better than group A in terms of early return to sports and reinjury rates.

Keywords: Trunk, Stabilization, Adductor Strain, Agility,

Introduction

Adductor strain is defined as an injury to the muscle tendon unit that produces pain on palpation of the adductor tendons or its insertion on the pubic bone with or without pain during resisted adduction. Risk factors for adductor strain include adductor tightness, previous adductor injury, and hip adductor-to abductor strength imbalance. These include core muscle weakness or delayed onset of transversus abdominus. Proper injury treatment and rehabilitation should be implemented to limit the amount of missed playing time and avoid surgical intervention. An adductor strain is also common in those participating in sports such as soccer, swimming, hockey, martial arts and tennis etc. Trunk stabilization and neuromuscular control exercises have also been shown to be effective in promoting return to sports in athletes with chronic hip adductor pain³. Agility represents the ultimate in neuromuscular control because it is a product of the coordination between the musculoskeletal and neural systems for interpretation of sensory information and integration of that information into task-appropriate motor output. Designed to replicate the demands of sport and exercise, functional tests are used by clinicians to determine an individual's readiness to return to play after injury or illness.

Methods

An Experimental study design was used for this study. Inclusion criteria included age-18-30 years, male subjects, tenderness on palpation within the muscle-tendon unit of the adductors and pain with resisted hip adduction but minimal to moderate loss of strength and minimal to moderate restriction of motion. Subjects injured within the past 10 days. Exclusion criteria were subjects with Grade 3 acute Adductor Strains, Non Acute Adductor Strains, Bilateral Adductor Strain, Previous history of ipsilateral leg Adductor Strain, Other causes of groin pain. 30 subjects were randomly assigned to 1 of 2 intervention groups with 15 subjects in each group. Each group had 2 treatment phases. Both rehabilitation programs were completed as a daily home exercise program. Subjects were asked to independently track their exercise compliance by recording days they performed the complete prescribed rehabilitation program on a log and to report their compliance at each follow-up visit. Subjects were contacted to inquire about the injury recurrence through telephone within 2 weeks and 2 months after return to sports. Rehabilitation protocols for both groups were adopted from studies in review articles.

Group A :Phase 1: Ice over inner thigh for 20 minutes, Supine lying adductor stretch, Submaximal (25-50%) isometric adduction.

Phase 2: Subjects progressed from exercises in phase 1 to exercises in phase 2 when they could walk with a normal gait pattern and no pain in concentric hip adduction against gravity

Supine lying adductor stretch, Standing Adductor Stretch, Straight Leg Raise, Hip adduction in standing, Ice for 20 min if any symptoms of local fatigue or discomfort are present

Group B : Phase 1: Ice in long sitting for 20 minutes, Supine lying adductor stretch, Submaximal (25-50%) isometric, Prone abdominal body bridge, Supine extension bridge, Side Bridge, Forward Lunges on each side, Unilateral Forward Lunges with reciprocal Arm movements on each side, Single-leg stand progressing from eyes open to eyes closed.

Phase 2: Subjects progressed from exercises in phase 1 to exercises in phase 2 when they could walk with a normal gait pattern and no pain in concentric hip adduction against gravity.

Supine lying adductor, Standing Adductor Stretch, Straight Leg Raise, Hip adduction in standing, Side Lunges, Forward Hops, Side to Side Hops, Sumo Squats, Push-up stabilization with trunk rotation, Fast feet in place, PNF trunk pull-downs with Thera band, Ice for 20 min if any symptoms of local fatigue or discomfort are present. Functional tests "Triple Hop Distance Test" and "Crossover Hop Distance Test" for both groups were performed as subject's MMT grade reaches 5 and VAS scale shows 0 grade pain. If subjects reported inner thigh tightness during their tests, they were not allowed to return to sports. Subjects were encouraged to continue their rehabilitation program at least 3 days per week for 2 months after returning to sports.

Result

Table 1: Comparison of No. of days for return to sports between Group A and Group B

Group	Mean	T	p
Group A	39.60 ± 16.405	4.316	.001**
Group B	20.27 ± 5.650		

** Highly significant

Between group analysis of Reinjury rates showed that there was a significant difference in the Reinjury rates between Group A and Group B at 2 weeks and 2 months ($p < 0.05$) with lesser no. of reinjuries occurring in group B. Overall reinjury rate for group A was 66.66% and for group B was 13.33%.

Table 2: Between group analysis of Reinjury rate at 2 months

Fisher's exact test			P
	Reinjured	Non-Reinjured	.0078*
Group A	10	5	
Group B	2	13	

*significant at $p < 0.05$

Between group analysis of Triple hop test & Crossover Hop Distance test showed that there was no significant difference in the readings of Uninjured to Injured legs (percentage difference) of Group A and Group B ($p > 0.05$).

Table 3- Between group analysis of Triple Hop Distance of Uninjured to Injured legs (percentage difference)

Triple Hop Distance	Group	Mean	T	p
Uninjured leg - Injured leg	Group A	9.5196 ± 3.48743	.248	806NS
	Group B	9.1710 ± 4.17573		

NS-Not Significant

Table 4- Between group analysis of Crossover Hop Distance test of Uninjured to Injured legs (percentage difference)

Crossover Hop Distance	Group	Mean	T	p
Uninjured leg - Injured leg	Group A	7.1122 ± 3.66280	-1.594	.112NS
	Group B	8.9170 ± 2.41172		

NS -Not Significant

Discussion And Conclusion

Average time required to return to sports from the day of start of rehabilitation program for subjects in Group A was 39.60 days, while the average time for subjects in Group B was 20.27 days. Thus suggesting that Group B treatment protocol was better than group A treatment protocol for early

return to sports. The rate of reinjury was significantly greater in Group A as compared to Group B at 2 months after returning to sports. Thus suggesting that rate of reinjuries were lesser in gp B. Statistical analysis of functional testing profile data (Triple hop distance and Cross over hop distance test) did not show any difference between the 2 rehabilitation groups on the absolute values of injured legs, uninjured legs and percentage differences of uninjured to injured legs. These results suggest that these functional tests have a limited ability to predict which athletes with an adductor injury are ready to safely return to sports. A study by Marc A. Sherry et al. in case of acute hamstrings strain stated that agility and trunk stabilization required neuromuscular control, while limiting end range tension on the muscles. It also controls the early range of motion for dynamic activities by controlling the direction of movement. Frontal plane movement will not increase the length of hamstrings muscle tendon unit as much as sagittal plane movements. This allows early loading of the injured tissue and return of quick movements without overstressing the healing tissue. The early loading on the hamstrings muscles at a protected muscle tendon length may help to reduce muscle atrophy. The controlled direction of movement permits early retraining of quick changes in agonists and antagonists muscle contractions of muscle that control hip and pelvis movement. The findings of the study were similar to the results demonstrated by Holmich and colleague. Holmich et al. demonstrated that individuals with long standing adductor pain had less pain and improved sports performance after undergoing an active rehabilitation program that aimed at improving strength and coordination of the muscles acting on the pelvis, as compared to individuals who completed a rehabilitation program consisting of modalities and stretching. To conclude a rehabilitation protocol consisting of Icing, Stretching, Progressive Resistance Exercises, Agility and Trunk Stabilization is found to be more effective than a protocol emphasizing isolated Icing, Stretching and Progressive resistance exercises in promoting early return to sports and reducing the chances of injury recurrence

Acknowledgement

We are grateful to all the subjects who participated in the study and to the hospital staff who helped in carrying out the project.

References

1. Sim FH, Chao EY. (1978). Injury Potential in Modern Ice Hockey. *American Journal of Sports Medicine*, 6:378-
2. Lovell G. The diagnosis of chronic groin pain in athletes: a review of 189 cases. *AusSciMedSport*.
3. Holmich P, Uhrskou P, Ulnits L, et al. Effectiveness of active physical training as treatment for long-standing adductor-related groin pain in athletes: randomized trial. *Lancet*. 1999;353(9151):439-443.
4. Nielsen AB, Yde J. Epidemiology and traumatology of injuries in soccer. *Am J Sports Med* 1989;17:803-7.
5. Tyler TF, Nicholas SJ, Campbell RJ, Donellan S. The effectiveness of a preseason exercise program to prevent adductor muscle strains in professional ice hockey players. *Am J Sports Med* 2002;30:680-3.
6. Ekstrand J, Gillquist J. The avoidability of soccer injuries. *Int J Sports Med* 1983;4:124-8
7. Schmidt, R.A. & Lee, T.D. (1999). *Motor control and learning: A behavioral emphasis* (3rd ed.). Champaign, IL: Human Kinetics.
8. R. Tyler Hamilton et al. Triple-Hop Distance as a Valid Predictor of Lower Limb Strength and Power. *Journal of Athletic Training* 2008;43(2):144-151
9. Marc A. Sherry, Thomas M. Best. A Comparison of 2 Rehabilitation Programs in the Treatment of Acute Hamstring Strains. *Journal of Orthopaedic & Sports Physical Therapy*. 2004;34;116-125.
10. Stephen J. Nicholas and Timothy F. Tyler. Adductor Muscle Strains in Sport. *Sports Med* 2002; 32 (5): 339-344.

The Competitive Trait Anxiety Of Male Coaches In High Level Team Sports

Associate Professor Vangie Boto-Montillano
De La Salle University Dasmariñas
Cavite, Philippines

Abstract

The purpose of the research is to determine the anxiety levels of the Male Coaches in High Level Team Sports. The study uses the instrument formulated by Rainer Marten, called the Sports Competitive Anxiety Test for Adult (SCAT-A). The respondents are 55 male coaches of various team sports from the national training pool and from collegiate teams such as the National Collegiate Athletic Association (NCAA) and University Athletic Association (UAAP). The 15-item instrument is especially intended to measure anxiety traits of adult coaches aged 15 years and older. Except for items 6 and 11 which carries a reverse scoring and items 1, 4, 7, 10 & 13 which are not included in the scoring because these do not measure anxieties, all items are scored as follows: hardly ever (1 point); sometimes (2 points); and, often (3 points). Two items (6 and 11) that require reverse scoring are encoded as reversed right at the start of the raw data processing. This means that a respondent's choice of or tick on "hardly ever-1" is automatically encoded as "often-3". A tick on "sometimes-2" remained as is. All statistical computations in this study are aided by version 10 of the Statistical Program for Social Sciences (SPSS/PC+). The methods of analysis for the three problems are frequency, percentages for the 1st problem; mean scores and descriptive mean (mean value) for the 2nd problem; and Analysis of variance (ANOVA) for 3 or more independent samples for the 3rd problem.

Introduction

Coaching is one of the most demanding tasks in the field of sports. Lawther (1998) notes that it is a form of leadership that involves more than guiding individuals, teaching skills and transferring knowledge. It requires a certain degree of charisma and credibility so that trust and confidence shall take place in the relationship between the coach and the people he is guiding and teaching, the athletes. Vince Lombardi, one of America's football coaches once said "Win the hearts of the people that you coach." Indeed, a coach must possess a charisma and leadership, and must be somebody who influences without bullying, who gains respect without demanding it, and who wins the hearts of his athletes without threatening them. What happens to a team of athletes without a person directing, guiding and coordinating their efforts? Training will be in disarray. The team is like a herd of sheep without a shepherd. Everyone works on his own way; confusion set in; teamwork can never be installed. As Tutko and Richards (1971:65) put it, "coaching is much more than just winning games; it entails making athletes a master of their respective sports skills." Coaching, therefore, intends to make not just champions out of ordinary talents, but also to instill values from sports; it makes athletes enjoy competitions with others, and makes them feel good about themselves. High level or elite coaches are faced with greater challenge, than those who ordinarily coach lower level teams or whose teams are engaged in lower level competitions. This implies that highly competitive sports activities involve greater expectations from a coach. Thus a high level coach is usually faced with greater task to perform with excellence. Tutko and Richards (1971:67) further note, "one who coaches organized team or whose team competes in high level competitions requires a training that is scientific, putting a high premium on athletic excellence and achievement." In this kind of situation, coaches experience game pressures that might give them unpleasant reactions or behaviour in their relationship with their athletes. Others experience provocative disturbances, disturbed mind-set and concentration, as well as ineffective decision-making.

Since competition is one of the most stressful situations for a coach, and one of the factors is assessing his performance as a coach, or in determining his failure or achievement, this competitive situation gives him pressure and anxiety. The people expectations and the team's managers or authorities give the coach pressure and anxiety to bring out the best out from his team. This is in the same manner that the performance of his team measures his credibility and dignity as a coach.

The personality of a coach is very crucial. As Rushall (1970:167) points out, “knowledge of the personality of an individual is important for maximizing individual responses...” However, there are far too many variables in coaching for one to prescribe an ideal coaching personality for each sport. Although it is not within the sphere of this study to investigate on these ideal coaching personality types, there are societal and environmental influences too many to mention, as well as personal events that can affect a coach’s behaviour from one year to the next, or in his interaction with different kinds of athletes.

It is worthy to note in this study how high level coaches surmount these kind of pressures in their profession. Ogilvie (1970:76) highlights in his speeches that professional coaches must possess high level of tough-mindedness in order to endure the stress associated with tough competitions, and fan expectations. This means that professional or high level coaches “must project a wide-range of desirable attributes in the face of tough decisions in the midst of potentially stressful situations.”

Moreover, coaches are not spared of such a feeling of anxiety. Martens (1971:151) states that anxiety is viewed as a feeling of nervousness and tension, and threatening to one’s essence of personality; self-esteem, self-worth.” Martens further notes that sports anxiety is fear and apprehension of an upcoming or an ongoing competition. This means that coaches in a competitive sports event can feel anxious about a lot of things, like the performance of their team, and how the competition will turn out. It is like putting the coaches’ personality, self- esteem, and self-worth in spotlight.

Thus, while anxiety among coaches is an integral part in sports competitions, it is unfortunate that no study to measure competitive anxiety trait among Filipino coaches (Grassroots or high level) has ever been undertaken. This study is a breakthrough in sports. Findings in this study will set a turning point to many sports administrators, leaders and sports enthusiasts, for so much time, effort and resource investments have been poured into the training of high level athletes where coach plays a significant part.

Methods

This chapter presents the research procedure undertaken to realize the objectives of the study. The purpose of this research was to accurately portray the characteristics of the male coaches in high level team sports in terms of anxiety level.

A descriptive research design was used to achieve the aim of this research, which is to find out the anxiety level of high male coaches in team sports.

The descriptive research presented quantitative descriptions in a manageable form, describing the anxiety traits of male coaches considered significant in the study. Likewise, descriptive statistics was used to summarize a set of sample observations gathered from the survey forms.

Seventy (70) male coaches from various team sports of the national training pool and of collegiate teams such as the NCAA and the UAAP were the respondents of the Sports Competitive Anxiety Test for Adult (SCAT-A) questionnaires. Of the 70 questionnaires distributed to the high level male coaches, only 55 accomplished forms were considered because 15 of these forms were considered invalid due to insufficient information.

Five (5) sport events were represented by 55 male coaches belonging to the NCAA and the UAAP. However, the researcher did not consider it important to classify these 55 coaches into NCAA or UAAP coaches. Beside, the researcher had no intention of comparing the coaches of the two athletic leagues based on association membership but rather on age, sports events, length of service and educational background.

All statistical computations in this study were aided by version 10 of the Statistical Program for Social Sciences (SPSS/PC+). This, to the researcher’s view, is the latest statistical tool used to measure variables in any social or physical research studies. The methods of analysis for the three problems are: frequency, percentages for the 1st problem; mean scores and descriptive mean (mean value) for the 2nd problem; and Analysis of variance (ANOVA) for 3 or more independent samples for the 3rd problem.

Results

Sub Problem 1: Profile of the respondents as to:

Sports events coached: Majority of the respondents are coaches of basketball followed by the coaches of volleyball.

Age: The coaching field is dominated by young coaches with ages ranging from 26 to 30. However, a good number of older coaches are still actively involved in this profession precisely because of their competitive style in coaching and unique experienced.

Length of coaching experience: Majority of the coaches are young in terms of experience with only less than two years to five years to their coaching credit.

Educational background: Most coaches who are actively involved in high level coaching do not have formal education in physical education and sports. A great majority of them did not pursue courses in Bachelor of Physical Education (BPE) or Certificate in Physical Education (CPE).

Sub Problem 2: Anxiety level of coaches grouped according to:

2.1 Sport events coached: Coaches of volleyball, softball and football seem to experience low level of competitive anxiety. This may be attributed to the fact that majority of the coaches of these three sports belong to the older age brackets with ages 31 years old and above. It may be inferred also that the older the person becomes, the more confident he likewise becomes of himself. Spielberg (1972:24) reminds that anxiety is the fear of failure, thus, with higher confidence of oneself, the fear of failure decreases. The low anxiety levels felt by the coaches of these three sports may be due to their absence of international coaching experience. It is observe and based from interviews with coaches that those who have international exposure have higher anxiety because they have this fear of possible failure and that they fear the high expectations of people from them.

Basketball coaches suffered the highest level of competitive anxiety. This may be attributed to the fact that majority of them belong to the younger group of 25 below to 35 years old. Further, among these four sports, basketball is the most watched sports in the country.

2.2 Age: Generally, the young group seems to be less affected by competitive stress as shown by their low competitive anxiety level to the other age group. This infers that the young coaches who are also mostly single in civil status do not expect high performance, and may not felt any fear of losing, thus, projecting low anxiety levels.

2.3 Length of coaching experience: The most experienced coaches and the least experienced ones displayed higher anxiety levels than the others. Those with lesser experience felt more stress as they are pressured to prove their best, and those who have the longest coaching experience likewise felt great stress because they know that people expect them to perform better. The greater the pressure to perform better, the greater the stress experienced.

2.4 Educational background: The group without formal education in Physical Education and Sports enjoyed lower competitive anxiety level than the group with coaches who took up formal course in Physical Education and Sports. This infers that those with formal training feel greater stress because as they understand more about bio-mechanics and other training requirements, they become more conscious of how their team may perform. This perception gives them greater pressure to perform better.

Sub Problem 3: Significance of the difference in competitive anxiety level among the coaches grouped according to sport events, age, length of coaching experience and educational background.

Significance of the Difference in the Anxiety Level of Coaches

Coaches grouped according to:	F ratio	Associated Probability	Decision
Sports Events	0.8879	0.5183	Accept Ho
Age Brackets	1.1865	0.4446	Accept Ho
Length of coaching experience	0.6522	0.6707	Accept Ho
Educational Attainment	1.154	0.3962	Accept Ho

There were no significant differences in the competitive anxiety levels of the coaches grouped according to sport events, age, length of experience and educational background. Therefore, the hypothesis that there are no significant differences in the competitive anxiety levels of the coaches is accepted.

Recommendation:

Because trait anxiety is a relatively stable personality trait, and according to some theorists, is developed over time, it is recommended that coaches in the high level sports (National Training Pool and Institutionalized Collegiate Teams) should be subjected to a regular monitoring or inventory of their competitive traits. This is very essential so that early psychological interventions, such as mental toughness training program, among others, be instituted for coaches.

An early introduction of basic mental toughness training among coaches in the grassroots in the school sports program must be considered highly important.

The coaches of volleyball and softball, though found to have low anxiety levels are recommended to enhance their mental training on self-confidence, positive energy control, and visual and imagery control, among others

References:

- Allport, Gordon. "Individuality and Uniqueness in Personality." In Robin Vealey, ed. Personality and Sport: A Comprehensive View. USA: Miami University Press, 1981
 Bull, Stephen S. Sport Psychology: A Self-Help Guide. NJ: Prentice Hall, 1991.
 Gill, D. Psychological Dynamics of Sport. Champaign III: Human Kinetics, 1986
 Hoehn, Robert G. Solving Coaching Problems: Strategies for Successful Team Development. Boston: Allyn & Bacon, 1983.

The nature of Meta cognition and its revisory usage in learning disorder

Sofia Heidari Kamroudi
Faculty of Teacher Training university, Imam Ali(PBUH)- IRAN
Fatemeh Khoshnavay Fomani
PhD student & lecturer in School of Nursing and Midwifery, Tehran University- IRAN
Rahmatollah Kharazmi Rahimabadi
Chairman of Guilanan Special Education Association
Faculty of Teacher training university, Imam Ali(PBUH)- IRAN

Introduction

Education experts always pay attention to Meta cognition, knowing the human cognitive processes and finding some ways in order to reinforce and improve these abilities . Education researchers and experts are broadly interested in the learners' type of knowledge level. The passive information receiving and its maintenance is not the learning index needed in the future. Now it is expected learners to think critically about what they heard or read and to consider the relationship between ideas and being decided in the process. The concept of Meta cognition was first introduced by Flavien. He defines Meta cognition as any knowledge or action that its subject is cognition or regulating the cognition. Meta cognition differs from cognition. Cognition involves all the high mental processes such as , thinking , reasoning , creativity , intelligence , and other processes involved in information processing such as , information storage and retrieval accuracy .The above mentioned processes refer to an external content and subject, while Meta cognition is used for someone's knowledge in learning. The knowledge of human being from his or her cognitive system is the major emphasis in the Meta cognition. In this regard the learner tries to know his or her cognitive system, to decrease the ways of learning barriers ,to establish optimal methods of learning and to regulate all of the thinking stages in himself .Persons who have high power of Meta cognition , are careful about understanding the relations between the realities of issue ,and they consider their selected solutions . They analyze complex issues in the form of more detailed stages and by asking themselves they control directions of their thought. Different researches about the role of meta cognition in different areas such as, problem solving is conducted. In the most of these researches is seen that qualified persons in meta cognition are more successful than others. For example Kay observed that meta cognition behaviors have an important role in problem solving, and concluded that the differences of people in problem solving can be attributed to their meta cognitive differences. And these differences are less associated with the level of basic knowledge or even the selections of the solution's strategies. On the basis of learning transmission , Brown believes that since meta cognition knowledge is likely the base of learning matter , then acquiring such a knowledge means to being aware of rules and strategies ,and the objectives of issue lead people to correspond their cognitive abilities to new practice and topic in a more effective and relevant way. Meta cognition is referred to any behavior, thought, or learner's action that he uses them through the learning process , and its objective is helping acquisition, organizing knowledge and skill storage as well as facilitating of using them in the future. According to what mentioned, in order to consider the role of cognitive skills in learning process , this paper is designed .In this regard it first consider the concept of meta cognition and then it will consider the meta cognition based training pattern, the role of meta cognition skill in learning process as well as meta cognition role associated with teacher and learner.

Definition of meta cognition and its relevant terms

Meta cognition is any cognitive knowledge or activity which its subject is cognition or regulating the cognition and is divided to two dimensions of meta cognition knowledge and meta cognition experience.

Meta cognition is: (Cetinkaya &Erktin) practice and cognitive strategy including, 3 categories of knowledge about regulating cognition and knowledge about cognition and two types of correlative meta cognition. Cognition is occurred when a person is aware of his or her cognitive abilities and regulating it, and the second part of meta cognition is a thought which thinking is made and observed through it. (Perfect and Schwartz) . Meta cognition knowledge and meta cognition awareness are different from each other. Meta cognition is said to one's explicit and clear knowledge, while

awareness of meta cognitive components refers to our sense and experiences.(Kuhn) They are including the most comprehensive ideas and beliefs and content-independent practical skills which store in one's long term memory and facing meta cognition practices is recalled. Meta cognition components undertake two major functions: including both relative knowledge of cognitive subjects which aware someone from his or her cognition and thinking characteristics and regulate cognitive activities.Regulating cognition comprises 3 major s kills: planning, reviewing and evaluation. (Mohseny 1383) Meta cognition state is a kind of meta cognition which have 4 meta cognition awareness, cognitive strategy, planning and self assessment components. Meta cognition state is defined as a transitive state from a person's conceptual and intellectual situations, which has fluctuations in the intensity and changes over the time. But as quoted by Cetinkaya &Erkin 1996 trait meta cognition is applied to a relatively stable personal difference in individuals and their response to conceptual situations with different levels of meta cognition sate.(Oneill & Abedi2002).Meta cognition control are conscious and unconscious decisions we made them on the basis of reviewing process results . (Perfect & Schwartz). Theoretical bases and the results of the study indicate that meta cognition and its components are associated with academic achievement .(Korial, Maayan & Nussionson 2006) ;(Aguust Brady 2005) (Knouse 2008) ; (Bradford & Steve) ; ((Perfect and Schwartz) ; (Artino 2008) ; (Haidar & Najabi2008). Although the comprehensive definition of meta cognition seems to be challengeable and hard, most of the researchers agreed that meta cognition is called to identifying and knowing.More critically Meta cognition is someone's knowledge about the way of his or her learning. Flavel defined meta cognition as the awareness of cognition and cognitive processes and control, regulating and active review of cognition.From the perspective of information processing theory, Dual Fulk consider meta cognition as the executive control processes such as, attention, review, practice, organizing, and manipulating information.The term "meta cognition" is someone's knowledge about his or her cognitive processes and the way of optimal use of them to achieve learning objectives. In other words, meta cognition is someone's knowledge or awareness of his or her cognitive system. Metcalfe and Shimamura consider meta cognition as a means of manipulating and regularizing the cognitive processes. Brown represents meta cognition in two ways of cognitive activities or processes and methods using for regulating cognitive processes.

Meta cognition elements

Meta cognition processes have two independent but relevant elements; one of them is meta cognition knowledge and another one is meta cognition experience. Meta cognition knowledge is associated with knowledge regarding to mind and its function.Meta cognition knowledge includes practice and strategy and someone's knowledge about himself or herself. Meta cognition is achieved, when a person is being aware of his or her cognitive abilities and disabilities.For example from the Rous perspective some one who is aware of his or her memory weakness, has a meta cognitive knowledge which announce him to do a appropriate action for compensating his disability. In general, meta cognition refers to what a person knows about himself or about cognition, and meta cognition experience is called to those meta cognitive experiences and sentimental experiences associated with cognitive action.Meta cognition experiences may be conscious and notable or less notable. People are less aware of their activities, unless through a cognitive activity such as ambiguity they face a fault in the sentence. It is here that meta cognition warn them they have problem and should think of a remedy for solving it. Meta cognitive experiences help a person to find that how much has developed? What problem has toward achieving the goal? Flavel has mentioned 3 components of a person's knowledge about his or her cognitive system, a person's knowledge about his or her meta cognitive system, a person's knowledge about strategies.

A person's knowledge about his or her cognitive system

This component refers to a person's knowledge regarding to what he or she should know about learning and information processing and comprises some information such as the memory abilities, the memory levels and their capacity, the way of considering subjects and controlling processes. Being aware of these memory abilities and true estimating of these abilities can help a person in obtaining maintenance and right use of what he or she learns. A person's knowledge about duty It includes knowledge about nature, quality, and the way of that duty which a person is going to being involved with it. If subjects are not selected carefully at the beginning of processing, recalling will face difficulty, as inefficiency of memory is most likely due to the user's inattention at the beginning of process.In order to true information processing, the learner should be able to being aware of his or her ability at that subject. A person's knowledge about strategies This component suggests the awareness of cognitive and meta cognitive strategies and that a person knows where and when and from what strategy he can use?Having knowledge about those strategies which are using in various

stages of maintenance and information retrieval (organizing, mental review, focus and so on) can be effective in obtaining and reminding .Paris and Vinograd place meta cognitive strategies in the two dimensions of self knowledge and control and process knowledge and control. Self-knowledge and control includes 3 parts: commitment, insight, and accuracy. Process knowledge and control comprises 2 major elements: the types of effective knowledge in meta cognition and executive control of behavior. The types of effective knowledge includes: predicate knowledge, process knowledge and conditional knowledge. Executive control comprises the value of evolution, designing and ordering. Meta cognition has various elements that have an important role in improving the control of meta cognitive processes and these elements in interaction and mixing each other lead to improve the cognitive action.

Generating elements of meta cognition

Esra and Meshmen believe that elements are involved in generating and establishing a person's meta cognition theory that includes: cultural and learning elements, personal generating and congruent interaction. Meta cognition theories are generated through internalization of culture by means of social learning. Common (joint) social concepts are transferred to learners through informal experience. The most explicit type of cultural learning is direct training of the ways of meta cognitive skills and coordinating this skill to learners. Like a program whose aim is increasing conditional, processing, and predicating meta cognition knowledge about reading. In addition of cultural learning which is influenced by formal and informal training, individuals themselves build personal structures or institutions to develop their skills and cognitive strategies and to organize their meta cognition knowledge, and also being able to make conditions become strategic receivers. Congruent interaction comprises a process that has social organizing which is different from cultural transition and personal institution. These individuals have similar level of cognition which their interaction leads to increase a person's function in cognitive duties.

Necessity of meta cognition skill training

The essential aim of meta cognition training is self-control and self-training, so that learners become independent learners who can correct, lead and regulate their learning and cognitive processes toward their given aims. Many of learning and learning transition problems are derived from the lack of skills and meta cognitive strategies. The above mentioned skills and strategies give an individual the possibility of selection, regulation, management, and as a consequence the possibility of cognitive processes. So it is necessary for learners to be trained regarding some skills such as organizing, observing the planning and identifying the aim of training. So they can become dominant in deciding cognitive strategies and new basis can be generated. Otherwise, solving the new practices which they have not seen before is difficult for them and so training such strategies is distinctive. Cognitive training requires training the special strategies of duties. While meta cognitive training emphasis on regulation technique training, evolution and the way of using cognitive strategies. In order to know these two training we suggest active and proactive differences. Proactive training is considered as a perspective in cognitive skills training which is done on the content. By this training, learner, have not any knowledge about the importance and effectiveness of their given strategies and do not regulate their efficiency, for example it is trained to the learner to do annotating of the subjects. The findings indicate that such methods do not lead to maintain and extend the trained strategies. Meta cognitive training is an active approach to training, thereby one can consider importance of using functions and cognitive processes. The learner knows that he should highlight the important points and how it is valuable for him and by doing so, his learning output will increase. Regulation and leading on cognitive processes and activities is trained in this method of training. Anyway, meta cognition should not consider as the final aim of training, but it should be consider as an opportunity for priming the learners with necessary knowledge and skill to manage their learning, so that they will be skillful and curious in their future duties.

Training patterns based on meta cognition

The first method is mutual training. This method was innovated by Palinskar and Brown to improve the reading and comprehension process. In this method, 4 strategies such as asking, summarizing, explaining, and clarifying the complicated points and future events are used to improve the training process. The mutual training method is done as the form of grouping. In this method, the trainer and two or four learners are made a learning group. The group activity is in this order: first the trainer and the learner read parts of a text for themselves voicelessly. Then, they apply summarizing, asking, clarifying and predicting processes on the covered text. Next, the trainers and the learners study some other parts of subject. This time one of the learners plays the role of the trainer. This procedure

continues until it is required. They may not be able to use given strategies correctly at the beginning of action. In these conditions, presenting the clues are required guidelines. Another method is mutual asking. This method was innovated by Manro and includes: represent the aim by trainer, (reading the sentence by trainer and learner, respectively), asking the question from each other, answering to the given questions properly, arguing about the presented answers by the learners and the trainers through referring to the text information, persuading the learners to asking high level questions, (if the learners ask high level questions the teacher will say to them that it is a good question, before answering I should think about it, if the questions are low level, he just answers to them, and he persuades them by asking high level questions.) and continuing this method until is required. Montangive, verger, and Mugan, suggest 4 important techniques in regards to meta cognition skills which includes: direct process trainings, problem solving strategies, process sampling, and feedback to function. Determining the level of strategic knowledge of the learners and the amount of using these strategies is important. Being aware of basic knowledge, the level of learning style skill and information processing, strategic activity and motivating the learners for learning will help the trainers in representing the effective and enough training. The explicit training of process and problem solving strategies require immediate corrective feedbacks to the learners function and representing positive reinforcement, great and dominant learning. In this method every lesson takes the form of a play to facilitate learning, and to ensure the existence of cognitive process and self-regulation the learning of the learners. In this method learners are actively involved in learning through primary discussion about the importance of problem solving and their personal function on pretest and the aims of the function which designed for them. Process sampling includes a deep thought during doing the cognitive activity. This training strategy emphasis on learning through imitation and provides learners with an opportunity in observing and hearing the way of problem solving. The trainer as a sample indicates the learners how to recall every thing they think and do during the problem solving. This strategy leads to self-regulation skills of the learners. In order to regulate the function of the learners and for indicating that how, when and how much they have developed, the trainer should be reflected. In this way the learners are motivated to be active in all stages and problem solving strategies, especially in identifying unmotivated learners and motivating them by appropriate feedbacks is important. The learners should know what behaviors and responses are exactly reinforced, so that they can repeat it. Reinforcing the learners indicates that they become more successful in problem solving and this leads to self-confidence and they can extend their learning to other areas.

The role of meta cognition in learning process

The purpose of cognitive strategies, organizing, repeating, mental review and extend or make a link between subjects. Meta cognition means the knowledge about self learning and regulating it. As cognitive strategies are learning strategies, meta cognitive strategies are kinds of plans for regulating on cognitive strategies and leading them. Major meta cognitive strategies can be placed in 3 forms of regulation planning, ordering, and regulation. Meta cognition has a major role in successful learning. In order to meta cognitive consideration and determining the effective components of meta cognition, successful learning is important. The students, who have a powerful internal motivation for learning, use complicated cognitive process such as extending or organizing. The important role of components and meta cognitive skills in the effective learning of excessive studies is shown explicitly. Based on a study which has done on the students who were on the seventh grade of school in the experimental sciences and English language lessons, Pentrich and Degervet concluded that meta cognition has positively associated with the students learning. The studies of Bransord, Sternbeg, and Zemermer show that there is a positive relationship between self-awareness and learning and self-awareness is a requirement for learning. Many of the learners consider the learning problem as a result of their disability, while their real problem is the way of using learning strategies. Self training in learning is an important factor in academic –achievement and self –trainer learners by determining some aims plan and evaluate for achieving to them. Those who more use self – determining (self-training) have more development in their education, self – determining (self-training) make students to be active in a meta cognition, an incentive and a behavior in managing their ideas and learning , and control their learning.

The role of meta cognition in relation to the trainer and the learner

Meta cognition has an important role in the learning process. For the trainer and learner paying attention to meta cognition means that the learners can promote their learning by being aware of their thought during the reading, writing, and problem solving. And the trainers can easily reach positive insight to learning and accuracy (meta cognition elements) through internalization and systematic

practice. First of all, in this process the responsibility of inspecting the learning is transferred from the trainers to the learners. And second, self – perception and positive incentive is reinforced in the learners. In this way meta cognition generates its personal insights to its ideas and grows independent learning. Moreover, the trainer act as a sample for the learners, and the trainer as well as the learners spend a lot of his time for planning and immediate cognition of the samples associated with the content and class training, involving in problem solving, regulating on the learning process and training. And when the learners do not achieve their goals, the trainer changes the strategies into more attempt to achieve cognitive and meta cognitive goals in his professional life and in the teaching task.

Conclusion

If the aim of education is growing individuals who can be responsible for their learning, then, first is necessary to grow this characteristic in the trainers. One of the major reasons of the lack of teaching the meta cognition skill in the class and lack of emphasis on the meta cognition strategies is that the trainer do not attention to these strategies or do not any knowledge about it. The trainer should facilitate these trainings through decreasing the external control and through teachercenteredness. Thus, this insight should change in the trainers. In this regard, the trainer should pay attention to the learning methods and increasing the independence of learning and learners skills in learning rather than focusing on the magnitudes of the learning of the learners. The learners can develop their learning skills through training of the meta cognition and try to obtain knowledge, in this way they become active learners.

References

- Anderson, N. J. (2002). The role of metacognition in second language teaching and learning. Brigham young university. Eric
- Artino, A. R. (2008). Learning online: understanding academic success from a selfregulated learning perspective. (Unpublished Doctoral Dissertation, Connecticut University).
- August- Brady, M. M. (2005). The effect of a metacognitive intervention on approach to and self – regulation of learning in Baccalaureate Nursing students. *Journal of Nursing Education*. 44(7). 297-304.
- Beckman, P. (2002). Strategy instruction. *Eric Digest*.
- Bradford, S. Bell., & Steve, W. J. (2008). Active learning: Effects of core training design elements on self – regulatory processes, learning and adaptability. *Journal of Applied psychology*, 93(2): 296-316.
- Cetinkaya, P., & Erkin, E. (2002). Assessment of metacognition and its Relationship with Reading comprehension, Achievement and Aptitude. *Journal of Education*, 19(1), 1-11.
- Eslami Rasekh, Z., & Ranjbary, R. (2003). Metacognitive strategy training for vocabulary learning. *Teaching English as a second or foreign language*. 7(2). 5-15.
- Haffman, B., & spatariu, A. (2008). The influence of self – efficacy and metacognitive promoting on math problem solving efficiency. *Contemporary Educational psychology*. 33(4): 875-893.
- Haidar, A. H., & Najabi, A. (2008). Emirati high school students understandings on their understanding. *Research in science & technological Education*. 26(2): 215.
- Knouse, L. E. (2008). AD/HD, metamemory, and Self- regulation in context. (Unpublished Doctoral Dissertation, faculty of The Graduate school, Greensboro University).
- Koriat, A., Maayan, H., & Nussinson, R. (2006). The intricate relationships between monitoring and control in metacognition: lessons for the cause and Effect relation between. *Journal of experimental psychology*, 135(1), 36
- Kuhn, D. (2000). Metacognitive development. *Current directions in psychological science*. 9: 178-181.
- Larkin, S. (2009). Metacognition in young children. First published by Routledge.
- Metcalfe, J. (2009). Metacognitive judgments and control of study. *Current Directions in psychological science*. 18(3): 159-163.
- O'Neill, H.F. & Abedi, J. (1996). Reliability and validity of a state metacognitive inventory: Potential for alternative assessment. *The Journal of Educational Research*, 89(4): 234- 245.
- Perfect, J. T., & Schwartz, B. L. (2004). *Applied metacognition*. Cambridge University.
- Rezvan, S., Ahmadi, S. A., & Abedi, M. R. (2006). The effects of metacognitive training on the academic achievement and happiness of Esfahan University conditional students. *Counseling psychology Quarterly*. 19(4): 415-428.
- Schleifer, L. F., & Dull, R. B. (2009). Metacognition and performance in the Accounting classroom. *Issues in Accounting*
- Skitka, L. J. (2002). Do the means Justify the ends, or do the ends Justify the means? Value protection model of justice. *Reasoning personality and social psychology Bulletin*. 28: 452-461.
- Son, L. K., & Metcalfe, J. (2000). Metacognitive and control strategies in study time allocation. *Journal of Experimental psychology: Learning, Memory and cognition*. 26: 204-221.
- Zulkiply, N., Raduan kabit, M., Abd Ghani, K., & Hidayah Abas, N. A. (2008). Metacognition: Wath roles does it play in student's academic performance? *The fifteenth international conference on learning*. University of Illinois. Chicago,

Health-Cultural-Sports Activities Of Physical Education Students Of Private Higher Education Institution In San Fernando City

Lorna Sobrepena Salcedo
Don Mariano Marcos Memorial State University, City of San Fernando, La Union, Philippines
E-mail: lhoi_33@yahoo.com

Abstract

The purpose of this study is to determine if the tertiary schools in San Fernando City are doing their part in the conduct of the Physical Education Activities. The output of the study will serve as their guide and basis in determining the deficiency of P.E. program thereby they could help update the program. Furthermore, it will serve as a guide on proper instruction and implementation of physical education to meet the objectives and goal of the program. The success of the program could motivate and reinforce learning among students.

Keywords: Physical Education, Health, Culture and Sports

Introduction:

The right to participate in fitness and in sports activities is embodied not only in the Philippine Constitution but also in the International Law developed by the United Nations. In relation to this, the International Charter of Physical Education and Sports under Article 1 clearly states that the responsibility of every state is to provide its constituent's equal opportunity and access to Physical Education and Sports Program. It further states that the practice of Physical Education and Sports is a fundamental right of all and this right should not be treated as different from the right of adequate food, shelter and medical care.

Therefore, Physical Education as a program in an institution of learning must provide interests among college students and encourage them to participate in P.E. activities in order to develop in them varied and desirable human qualities such as respect for the rights of others, sportsmanship, self-confidence, self-control, camaraderie, self-discipline, and belongingness. The cultivation of liking peer, enjoyment and appreciation, individuality and initiative among students would be likewise developed as this is possible through sports play for their fun or for competition. Exposure to sports serves as a stepping-stone among students to acquire leadership, follower ship, experiences and skills that will bring them away from entertaining the situation of cruelty, absenteeism, drug addiction, alcoholism, smoking and other untoward activities.

Methodology:

The subjects of this study were the students of the Private Higher Educational Institutions in San Fernando City. This was sampled thru total enumeration with few or less than 100 respondents.. The descriptive method was adopted since the present study is concerned with the present Health-Cultural-Sports Activities of P.E. Students of Private Higher Educational Institutions in San Fernando City. The researcher used the questionnaire as the main tool of the study. The statistical tools such as the mean average, percentages were used in making the interpretation of the data clear and understandable so that the problem will be answered.

Frequency or percentage was also used to determine the activities conducted in the Private Higher Educational Institutions in San Fernando City.

The average weighted mean was used to determine the extent of Health-Cultural-Sports activities to develop students, the adequacy of the facilities and equipments, the availability of facilities and equipments, and also the degree of seriousness on the problems they encounter.

Results and Discussion:

The analysis of the data shows that even there is a moderate scarcity of equipment and facilities students have a significant performance in their health-cultural-sports activities towards their physical, mental, emotional and social development.

Conclusion:

Health and Cultural activities slightly help student's development as gauged from the average result under cooperation, participation, sportsmanship, competition, socialization and coordination. However, sports activities have a full pledge effect on the development of students. Thus, physical education and sports are interrelated which is important medium for optimum child development of social, emotional, mental as well as physical.

Recommendation:

Periodic monitoring and evaluation of the program should be conducted to gather immediate feedback, which could be bases for improvement and development.

References:

- Andin, Carmen T. The Teaching of Physical Education in the Philippine Schools. Philippine Normal College, Manila, 1998.
- Calderon, Jose F. Gonzales, Expectacion G. Methods of Research and Thesis Writing. National Bookstore, Inc., 1993.
- Andin, Carmen T. Organization and Management of Physical Education and Sports. Philippine Normal College, Manila, 1994.
- De Leon, Hector S. Philippine Constitution. LL.B. University of the Philippines. 1997.
- Tayag, Nile S. Towards a Revolution in Fitness and Sports. IFI, Philippines, 1997.
- Treece, Eleonor and Treece, James. Elements of Research. St. Louis: The C.V. Mosby Co., 1986.
- Unpublished Materials
- Austere, Diosdado. "Status of Secondary Physical Education in Province of Zambales". (Unpublished M.A. Thesis, BSU of Bagiuo City, 1992)
- Bag-ao, Eduardo S. "Status of the Secondary and Tertiary Levels in both Public and Private schools in the Three Cities of Misamis Oriental". (Unpublished M.A. Thesis).
- Batac, B.D. "The Physical Education Program in the Intermediate Grades". (Unpublished Master Thesis; Oasis Educational Foundation, Balaoan, La Union).
- Linkod, R. " Students needs and Interests in P.E: Implications to Curriculum and Instruction". (Unpublished Masters Thesis, PSU, Bayambang, Pangasinan).
- Llanes, A. " Status of Teaching Physical Education in the Private Secondary Schools in Manila District". (Unpublished M.A. Thesis, University of Manila, 1974).

The effect of selected aerobic (Astrand) and non-aerobic (Wingate) exercise tests on liver enzyme and HSP70 in young male

Ali Khajehlandi¹, Amin Mohammadi Damiyeh²

Department of Physical Education, Islamic Azad University, Gachsaran branch, Iran.

Abstract

Heat shock proteins (HSP) are from proteins family playing crucial role in maintaining cellular hemostasis and protecting cells in an acute and chronic stressful conditions. Liver also has important roles on intermediating metabolism compound, detoxifying and removing toxins especially during exercise. Therefore, the purpose of this study was to investigate the alternation of blood liver enzyme and heat shock proteins (HSP70) levels after Wingate and Strand tests in male students. Method: Forty healthy and sedentary young men (20 athletics and 20 non-athletics) with the mean age (23/3±3) participated in this study. They were selected randomly and subjected to exercises with 3 days intervals. Results: The results showed significant reduction in HSP70 ratio after non-aerobic Wingate test and significant increase after aerobic Strand test between athletics and non-athletics male ($p < 0/05$). But, there were no significant differences in AST, ALT, and ALP plasma concentration between the two groups ($p > 0/05$). Conclusion: Finally, based on the results of the study, it can be inferred that the threshold response of the inflammatory elements to various exercise activities is different. The sufficient time for the cellular response to exercise and the individuals' physical fitness levels are among the important elements in this respect. The exercise duration and intensity for triggering HSP are different between athletics and non-athletics male.

Keywords: heat shock protein, Aspartate aminotransferase, Alanin aminotransferase, Alkaline phosphatase

Introduction

Based on their pattern, intensity and duration, physical activities cause different kinds of harmonies in human body systems. Exercising positively affects internal organs like liver, kidneys and brain (MIRDAR et al., 2008). Liver is of a great importance in providing metabolic compounds and removing toxins, especially when swimming (NOAKES et al., 1982. FALLON et al 1999). The most important enzyme in liver is aminotransferase. These enzymes include aspartate aminotransferase (SGOT or AST), alanin aminotransferase (SGPT or ALT) and alkaline phosphatase (ALK.PH). Liver enzymes are measured to diagnose liver diseases (KALYANI et al., 2006. FEEMAN et al., 2001. HICKMAN et al., 2004). This is why studying this organ and its enzymes is very important. On the other hand, heat shock proteins (HSPs) form a protein family that plays a key role in maintaining cellular homeostasis and protecting cells in chronic and acute stressful situations (GEOROGOPOLIS et al., 1993). Accumulating HSP70 proteins takes place as a result of excessive heat, ischemia, hypoxia, energy discharge, acidosis, formation of reactive oxygen species, etc (GEOROGOPOLIS et al., 1993). It seems that increasing HSP70 expression in muscles is a part of natural response to exercise known as exercise harmony (GEOROGOPOLIS et al., 1993). Some researches have investigated effects of physical activity on HSP70 level in human and animal samples (CHUNG et al., 2008). Results of some studies show that exercise causes metabolic changes and HSP70 production, while some other researches show otherwise (FEHRENBACH et al., 2005, HIROSE et al., 2004, PEAKE et al., 2005, LANCASTER et al., 2005). Liu et al. (2004) reported that HSP70 was increase in boatmen's muscles after 4 weeks of exercising (LIU et al 2004). Many studies showed that HSP70 level in blood increases as a result of some diseases (LEE et al., 2005, ROHDE et al., 2005). On the other hand, running on treadmill for 3 hours after exercise does not increase the level of this protein (LOCKE et al., 1990). Some researchers stated that long and intense exercise might be the cause of chronic liver damages (CINAR et al., 2006, SUZUKI et al., 2006, CLARKSON et al., 2006). Kinoshita et al. (2003) investigated the relationship between intense exercise and damages of liver cells in male rats.

They found that the rats that ran for 120 minutes although did not experience liver damage right after exercise, but had a significant increase in liver enzymes after 6 hours. Nonetheless, increase in AST and ALT was not significant (KINOSHITA et al., 2003). There are several reasons for accumulation of HSP70 proteins in natural situation, including excessive heat, ischemia, hypoxia, energy discharge,

acidosis, formation of reactive oxygen species, etc. Since exercise causes metabolic changes like these factors, this is not surprising that it may cause formation of heat shock proteins, as well as (MARSHALL et al., 2006, FEBBRAIO et al., 2000, KEVIN et al., 2002, NIESS et al., 2000, SAMELMAN et al., 2002) In the above-mentioned studies reactions of athletes' and non-athletes' bodies were not analyzed simultaneously in a standard way. Due to the importance of heat shock proteins in cellular homeostasis and liver functions, we use two sets of exercises with different intensities in athlete and non-athlete groups. In this study we try to determine whether the level of HSP70 and liver enzymes formation has any relationship with exerciser's physical abilities. Is there a certain level of activities necessary for formation of these proteins and enzymes? Since exercise causes metabolic changes, it might be said that intensity and duration of activities and exerciser's physical abilities affect the level of liver enzymes and HSP70. Therefore, this study uses two types of standard tests on athletes and non-athletes.

Materials And Methods

The study conducted in 2012 in Gachsaran Azad University. Participants were consisted of 40 men (20 athletes and 20 non-athletes) with the average weight of 72.3 ± 3 kg average height of 173.2 ± 5 cm, body mass index of 24.18 ± 2.5 , age range 23.3 ± 3 and 20.17 ± 5.46 fat percent. They were selected randomly and subjected to exercises with 3 days intervals. They were informed on research objectives, procedure, applications and possible consequences. After signing agreement on participating in the research, physical measurements were performed. Height of participants was measured while they were having no shoes, their feet were kept together and their buttocks, shoulders and back of the heads were in touch with height-meter. Their weight was measured light-dressed, without shoes, using a Seka digital scale (made in Germany). In order to measure body mass index, weight was divided by square of height. Body fat percent was calculated using three-point skifold method (thigh, stomach and chest), Jackson & Pollack formula, and Lafait caliper (made in USA) (JACKSON, 1985). The participants first performed Wingate anaerobic test and after three days completed Astrand aerobic test. Wingate test includes 30 minutes activity on monarch bicycle with full power. When participants reach the speed of 100 rpm, the test starts automatically with the resistance equal to 7.5% of their body weight. In the Astrand test was carried out in six minutes while the participant had attached sphygmograph. In this test it is important that the participants' heartbeat rate does not reach its maximum. Blood samples were taken one hour before and after each test. Serums were taken using centrifuges with the speed 4000 rpm. Required instruments are kits for measuring HSP70, kits for measuring liver enzymes (MAN model, made in Iran) and Monarch bicycles (E839 model, made in Sweden). Data was analyzed using SPSS software and descriptive statistics methods. In addition, Kolomogrov-Smirinoff test was used to investigate whether data is normal, ANOVA variance analysis was used to address intra-group changes of liver enzymes and HSP70 and Student T test was used for intra-group comparison. Significance level was defined as $p < 0.05$.

Results

General information of athlete and non-athlete groups is presented in table 1. Pre-test results are not significantly different in two groups. Findings for athletes showed that the level of heat shock proteins significantly decreases after Wingate anaerobic test ($p=0.03$) and significantly increases after Astrand aerobic test ($p=0.04$). Additionally, it was observed that for non-athletes, the level of this protein significantly decreases after Wingate anaerobic test ($p=0.08$) and significantly increases after Astrand aerobic test ($p=0.06$). Subsequent tests showed that this protein decreases after Wingate test in both groups, while the level of decrease in non-athlete group is more significant. Likewise, both groups experience an increase after Astrand test, while the level of increase in non-athlete group is more significant (graph 2 and 1a). However, after conducting both tests, AST, ALT and ALP plasmatic concentration is not significant in athlete and non-athlete groups ($p > 0.05$, graph 2 and 1b-d).

Discussion

As duration of exercise increases, more heat shock proteins will be formed. Results of this study showed that when a cell goes under stress it is more likely to produce heat shock proteins. However, the important point is that the cell should have enough time to produce the protein. Since Wingate test takes place in a short period (30 seconds), the cell does not have enough time for self-protection and this is more obvious in non-athletes. As anaerobic activities are done in high rate and intensity, physical stress is high in both groups, especially non-athletes. As can be seen in graph 1, both groups experience decrease in the protein, but this is more significant in non-athletes. This may be due to the

fact that athletes have more physical ability to exercise so that their body can prevent excessive decrease in HSP70. On the other hand, after Astrand anaerobic test the level of HSP70 had decreased in both groups.

As mentioned before, when an individual experiences some level of stress (physical activity), his body cells go under a self-protection process, but the reaction requires them to be physically ready (LANCASTER et al., 2005). The results are consistent with findings of Marshall et al (2006) that reported 1 to 16 percent reduction in aerobic activities (MARSHALL et al., 2006). HSPs play different roles including facilitating protein integration, transferring proteins, attaching damaged proteins and reactivating them, repairing and designing protein complexes, preventing protein accumulation and decomposing unstable proteins (THOMPSON et al., 2001). In addition, they can be used in medical diagnosis as signs of cellular damage (POCKLEY et al., 2003). Some studies show that exercise, like many other factors, causes metabolic changes and HSP70 formation. The level of HSP increases in body organs after long and intense physical activities, but some researchers report otherwise (KERGEL KC., 2002, ASEA A., 2005). This increase is more significant in non-athletes and this is due to the higher level of physical stress in this group. Athletes are physically more ready for exercise and as a result this test cannot produce sufficient stress to form HSPs in their cells. Intense exercise results in metabolic disorders and cellular damages. Then, transferring processes, cellular repair and protein synthesis takes place (MIRDAR et al., 2008). The results of this study show that after Wingate and Astrand tests, amount of some intracellular enzymes like keratin kinase increases. Since athletes have more physical abilities, this increase is less significant in this group. This shows that muscle inflammation takes place in both groups. Therefore, cells should produce HSP70 to protect them against inflammation. Nonetheless, this protein formation was observed only after Astrand test. This may be due to short period of Wingate test that does not give enough time to cells for self-protection. On the other hand, the results show that these tests cannot increase liver enzymes. There are a large number of studies on liver enzymes, like the one conducted by Mirdar et al (2007). They investigated effects of one exercise session a day, for one week, on some liver enzymes like aspartate aminotransferase (SGOT or AST), alanin aminotransferase (SGPT or ALT) and alkaline phosphatase (ALK.PH) in active girls. Results of this study showed that AST level significantly increases in first, fourth and seventh days, and considerably decreases after 23 hours rest. The level of ALT increases significantly in fourth and seventh days and then decreases meaningfully after a 24-hours recovery (MIRDAR et al., 2008). The influencing factor on liver enzymes is duration of exercise. When exercise takes place in several weeks, the level of changes in ALP, AST and ALT is significant (PETTERSSON et al., 2008). Insignificant results of this study may be due to low intensity of exercise and limited number of sessions.

Conclusions And Practical Application

Scientific result of this study is that duration and intensity of exercise affects defensive power of body cells. Therefore, there are two factors influencing self-protection ability in human body: physical ability to produce HSPs in both athletes and non-athletes and sufficient time to produce protective proteins in cells. Consequently, more attention should be paid to exercise intensity and durability and the number of exercise sessions. Athletes and instructors should try to obtain maximum physical ability in their exercise plans, because it can help athletes to produce protective proteins as much as possible. Dependent variables were not studied here. Therefore, investigating them in different times (including recovery time) can be subject of future research.

Reference

- Mirdar, SH, Nobahar M, Safiri H, Sadeghipoor B. (2008). Effects of exhaustive exercise session per day for a week on some liver enzymes girls. *Journal Research of Sport Science*, vol 18 paper 141-156.
- Noakes TD, Carter JW. (1982). The responses of plasma biochemical parameters to a 56- Km race in novice and experienced ultra-marathon runner. *Eur J Appl Physiol*. 49(2): 179-186.
- Fallon KE, Sivyer G, Siver K, Dave, A (1999). The biochemical of runners in a 1600 Km ultramaraton. *Br J Sport Med*. 33:264-269.
- Kalyanil B, Rakesh P, Sujata E. (2006). Effect of exercise and dietary modification on serum aminotransferase level in patient with nonalcoholic steatohepatitis. *J Gastroenterology and Hepatology*. 21:191.
- Feeman E, Guillermo C, Cristina L. (2001). Making sense of blood work in greyhounds. *Animal health diagnostics laboratory*. 517:353-365.
- Hickman IJ, Jonsson JR, Prins JB, Sash DM, Purdie AD. (2004). Modest weight loss and physical activity in overweight patients with chronic liver disease results in sustained improvements in alanineaminotransferase fasting insulin, and quality of life. *BMJ Publishing group Ltd & British Society of gastroenterology*. 53: 413-419.
- Georogopolis C, Weleh W. (1993). Role of the major heat shock proteins as molecular chaperones. *annu. Rev. Cell Biol*. 9: 601-634.
- Chung J, Nguyen AK, Hensridge DC, Holmes AG, Stanley Chan MH. (2008). HSP72 protects against obesity-induced insulin resistance. *Proc Natl Acad Sci U S A*. 105(5):1739-1744.

- Fehrenbach E, Niess AM, Voelker K, Northoff H, Mooren F C. Exercise intensity and duration affect blood soluble HSP72.(2005). *Int J Sports Med.* 26, 552–557.
- Hirose L, Nosaka K, Newton M, Laveder A, Kano M, Peake J, Suzuki K. (2004). Changes in Inflammatory mediators following eccentric exercise of the elbow flexors. *Exerc Immunol Rev.* 10: 75-90.
- Peake J M, Suzuki K, Hordern M, Wilson G, Nosaka N, and Coombes J.(2005) . Plasma cytokine changes in relation to exercise intensity and muscle Damage. *Eur j Appl Physiol.* 95(5-6):514-521.
- Lancaster GI, Febbraio MA.(2005) .Exosome-dependent trafficking of HSP70: a novel secretory pathway for cellular stress proteins. *J Biol Chem.* 280, 23349–23355.
- Liu Y, Lormes W, Wang L, Reissnecker S, Steinacker J M (2004). Different skeletal muscle HSP70 responses to high intensity strength training and low - intensity endurance training.*European Journal of Applied Physiology.* 91:330-335.
- Lee W, Jones D, Eves N, Mackey J.(2005). Effects on exercise training on antitumor efficacy of Doxorubicin in MDA-MB-231 breast cancer Xenografts. *American Association for Cancer Research. Clin cancer Res.*11(18):221-30.
- Rohde M, Daugaard M, Jensen MH, Helink K, Nylandsted J.(2005). Members of the heat-shock protein 70 family promote cancer cell growth by distinct mechanisms. *Genes & Dev.*19: 570-582.
- Locke M, Noble EG, Atkinson BG.(1990). Exercising mammals synthesize stress proteins. *Am J Physiol Cell Physiol.* .258: C723–C729.
- Cinar K, Coban S, Idilman R, Tuzun A, Sarioglu U M, Bektas M A.(2006).Long-term prognosis of nonalcoholic fatty liver disease. *J Gastroenterol Hepatol.* 21(1): 169-173.
- Suzuki K, Peake K, Nosaka K, Okutsu M.(2006). Changes in markers of muscle damage, inflammation and HPS70 after an Ironman triathlon race.*Eur J Appl Physiol.* 98:525-534. 21.
- Clarkson P, Kearns A, Rouzier P, Rubin R, Thompson P.(2006)Serum creatine kinase levels and renal function measures in exertional muscle damage.*Pediatric Critical Care Med.* 38(4):623-627.
- Kinoshita S, Yano H, and Tsujia E.(2003). An increase in damaged hepatocytes in rats after high intensity exercise. *Acta Physiologica Scandinavica.* 178(3):225-230.
- Marshall H, Ferguson RA, Nimmo MA.(2006). Human resting extracellular heat shock protein 72 concentration decreases during the initial adaptation to exercise in a hot, humid environment. *Cell Stress Chaperones.* 11(2), 129–134.
- Febbraio MA, Koukoulas I.(2000). HSP72 gene expression progressively increases in human skeletal muscle during prolonged, exhaustive exercise. *J Appl Physiol.* 89(3): 1055-1060.
- Kevin J, Earl G.(2002). Exercise-induced elevation of HSP70 is intensity dependent. *J Appl Physiol.* 93: 561–568, 2002
- Samelman TR.(2000). Heat shock protein expression is increased in cardiac and skeletal muscles of Fischer 344 rats after endurance training. *Exp Physiol.* 85: 92–102.
- Niess AM, Fehrenbach E, Schlotz Sommer M, Angres C, Tschositsch K. (2002). Effects of RRR- α -tocopherol on leukocyte expression of HSP72 in response to exhaustive treadmill exercise. *Int J Sports Med.* ; 23(6), 445–452.
- Jackson AS, Pollock ML.(1985). Practical assessment of body composition. *Physician Sportsmed.*130:76-90.
- Thompson HS, Scordilis S P, Carlson Pmlohrer WA.(2001). A single bout of eccentric exercise increases HSP27 and HSC/HSP70 in human skeletal muscle. *Acta Physiol Scand.* 171:187-193.
- Pockley A, Graham P.(2003). Heat shock proteins as regulators of the immune response. *The lancet.* 362(9382): 469-476.
- Kergel KC.(2002). Heat shock proteins: modifying factors in physiological stress responses and acquired thermotolerance. *J Appl Physiol.* 92:2177-2186.
- Asea A.(2005). Stress proteins and initiation of immune response: chaperone activity of hsp72. *Exerc Immunol Rev.* 11, 34–45.
- Pettersson J, Hindorf U, Persson P, Bengtsson T, Malmqvist U, Werkstrom V. (2008). Muscular exercise can cause highly pathological liver function tests in healthy men. *Br J Clin Pharmacol.* 65(2): 253–259.

Assessment Of Academic Anxiety Among Female Adolescents

Sonia Saini¹, Dalwinder Singh²

¹Research Scholar, Department of Physical Education, Panjab University, Chandigarh, INDIA
sonia_saini86@yahoo.com

²Associate Professor, Department of Physical Education, Panjab University, Chandigarh, INDIA
dalwinder_pu@yahoo.com

Abstract

The present study was conducted to examine academic anxiety among female successful, unsuccessful and non-athlete adolescents. Total three hundred (N=300) female adolescents which include one hundred (n=100) successful athletes, one hundred (n=100) unsuccessful athletes and one hundred (n=100) non-athlete adolescents were selected to act as subjects. The successful athletes were those who won medals in the inter-school tournaments whereas unsuccessful athletes were those who had just participated but failed to win medals in the inter-school tournaments and non-athletes were those who did not participate in any inter-school tournaments. Random sampling technique was applied to select the subjects studying at various Government schools of Chandigarh. Academic anxiety was measured by applying the Academic Anxiety Scale for Children constructed by Singh, A. K. and Gupta, A. Sen (2009). The One way Analysis of Variance (ANOVA) was applied to find out the significance of differences among female successful, unsuccessful and non-athlete adolescents. The level of significance was set at 0.05. Results showed statistically significant ($p < 0.05$) differences among female successful, unsuccessful and non-athlete adolescents with regard to the variable academic anxiety. Since the obtained F-value 7.285 was found statistically significant, therefore, Post-hoc test i.e. Least Significant Difference (LSD) was applied to see the degree and direction of differences among female successful, unsuccessful and non-athlete adolescents. The non-athlete female adolescents had exhibited significantly higher academic anxiety followed by unsuccessful and successful athlete adolescents.

Key words: Academic Anxiety, Successful, Unsuccessful, Non-Athlete, Female, Adolescents

Introduction

Anxiety is a common phenomenon of everyday life. It plays a crucial role in human life because all of us are victims of anxiety in different ways (Goodstein and Lanyon, 1975). Generally, anxiety can be either a trait anxiety or a state anxiety. A trait anxiety is a stable characteristic or trait of the person. A state anxiety is one which is aroused by some temporary condition of the environment such as examination, accident, punishment, etc. Academic anxiety is a kind of state anxiety. Thus, the academic anxiety has emerged as one of the most salient constructs in modern-day psychology and by far the most widely studied specific form of anxiety in the literature. Academic anxiety is a psychological condition in which a person experiences distress before, during or after a test or other assessment to such an extent that this anxiety causes poor performance or interferes with normal learning. It deserves its notice due to its prevalence amongst the students' populations of the world (Mandler and Sarason, 1952). Suinn (1968) described academic anxiety as an inability to think or remember a feeling of tension, and difficulty in reading and comprehending simple sentences or directions on an examination. Spielberger and Vagg (1995) viewed academic anxiety as a 'situation-specific form of trait anxiety', which is explained as a stable personality characteristic and 'state anxiety' is a transitory emotional state. Academic anxiety is believed to be the trait that predisposes individuals to react negatively to examinations and tests (Keogh and French, 2001). Academic anxiety is a normal response to the pressures of school. It can motivate students to study for tests or complete assignments. Sometimes, however, the anxiety can reach levels that hinder academic performance instead of improving it. Some students delay, others cannot concentrate on studies. Academic anxiety can adversely affect the performance on tests as well (Cathreen, 2009). Sarason (1959) had examined the research literature on test anxiety among school children and concluded that the performance of high test anxious students may be both facilitated and impaired by experimental conditions. Personal evaluation or threat leads to decrements of the performance of high test anxious students whereas reassurance facilitates their performance. Achievement oriented

instructions impair the performance of high test anxious subjects. Observing a successful model facilitates the performance of high test anxious subjects, while observing a fail model results in poorer performance. It shows that anxiety is considered to be an uneasiness of mind. The situation will get worse when it starts interrupting the quality of life. Therefore, the present study was designed to investigate academic anxiety among female successful, unsuccessful and non-athlete adolescents.

Methodology

Sample

For the present study, total three hundred (N=300) female adolescents which include hundred (n=100) successful athletes, hundred (n=100) unsuccessful athletes and hundred (n=100) non-athlete adolescents were selected to act as subjects. The successful athletes were those who win medals in the inter-school tournaments whereas unsuccessful athletes were those who had just participated but failed to win medals in the inter-school tournaments and non-athletes were those who did not participate in any inter-school tournaments. Random sampling technique was applied to select the subjects studying at various Government schools of Chandigarh.

Tool:

For measuring Academic Anxiety among female successful, unsuccessful and non-athlete adolescents, the Academic Anxiety Scale for Children constructed by Singh, A. K. and Gupta, A. Sen (2009) was administrated.

Statistical design:

The one way Analysis of Variance (ANOVA) was applied to find out the significant differences among female successful athletes, unsuccessful athletes and non-athletes adolescents. Post-hoc test i.e. Least Significant Difference (LSD) was applied to find out the direction and degree of differences where 'F' value was found significant. To test the hypothesis, the level of significance was set at 0.05.

Results and Discussion

The results with regard to variable academic anxiety among female successful, unsuccessful and non-athlete adolescents have been presented below:

Table: 1

Analysis of Variance (ANOVA) results with regard to the variable academic anxiety among female successful, unsuccessful and non-athlete adolescents

Variable	Source of variance	Sum of squares	df	Mean Square	F-value	Sig.
Academic Anxiety	Between group	79.487	2	39.743	7.285*	.001
	Within group	1620.300	297	5.456		
	Total	1699.787	299			

*Significant at 0.05

F_{0.05} (2,297)

It is evident from table-1 that results of Analysis of Variance (ANOVA) with regard to variable academic anxiety among female successful, unsuccessful and non-athlete adolescents were found statistically significant ($p < 0.05$). Since the obtained F-value 7.285 was found statistically significant, therefore, Post-hoc test i.e. Least Significant Difference (LSD) was applied to find out the degree and direction of differences between paired means among female successful, unsuccessful and non-athlete adolescents. The results of Post-hoc test have been presented in table-2.

Table: 2: Significance of difference between paired means among female successful, unsuccessful and non-athlete adolescents with regard to the variable Academic Anxiety

Group (A)	Group (B)	Mean Difference (A-B)	Sig.
SUCCESSFUL (Mean- 10.69)	UNSUCCESSFUL	.59000	.075
	NON-ATHLETE	1.26000	.000
UNSUCCESSFUL (Mean- 11.28)	SUCCESSFUL	.59000	.075
	NON-ATHLETE	.67000	.043
NON-ATHLETE (Mean- 11.95)	SUCCESSFUL	1.26000	.000
	UNSUCCESSFUL	.67000	.043

Table-2 showed insignificant difference between successful athletes and unsuccessful athletes. However, significant difference was noticed between successful athletes and non-athlete adolescents. It is further observed that the non-athlete adolescents had exhibited significantly higher academic anxiety than their counterpart successful athletes. Similarly, significant difference was also noticed between unsuccessful athletes and non-athlete adolescents. The non-athlete adolescents had demonstrated significantly higher academic anxiety than their counterpart unsuccessful athletes. The graphical representation of mean scores is exhibited in figure-1.

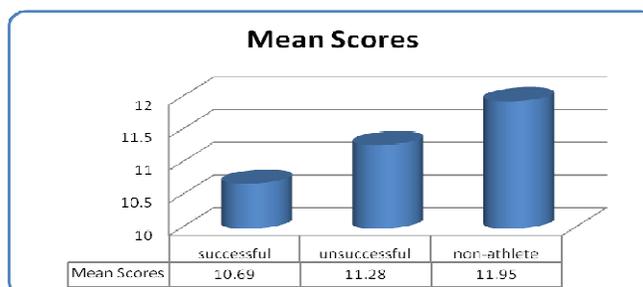


Figure-1 Graphical representation of mean scores with regard to the variable academic anxiety among female successful, unsuccessful and non-athlete adolescents

Discussion

It is noticed from the results presented in tables (1-2) that there is significant difference found among female successful, unsuccessful and non-athlete adolescents with regard to the variable Academic Anxiety as the obtained F-value 7.285 was found statistically significant. However, while comparing the mean scores of all the groups, it was observed that female successful athletes had exhibited controlled academic anxiety than their counterpart unsuccessful and non-athlete female adolescents. The outcome of the result might be due to the fact that female successful athletes were less occupied by mental tension and also able to manage/control their negative thoughts and emotions. Because it is believed sports participation provides ample opportunities for emotional outlet to its participants and enables them to regulate negative emotions associated with the environment as well as make them to do better on the task at hand. Sheikhi et al. (2012) revealed statistically significant differences with regard to anxiety between girl athlete students and non-athletes. The mean scores showed that girl athletes exhibited lower anxiety as compared to non-athletes. Similarly, De Moor et al. (2006) corroborated that male and female who were involved in various physical activities had average anxiety as compared their non-participant counterparts. They substantiated that regular exercise is cross-sectionally associated with lower neuroticism, anxiety and depression and higher extraversion and sensation. Schurr et al. (1977) had clearly reported that athletes were independent, more objective and less anxious than non-athletes. Thomas et al. (1994) expressed that there is a positive association between physical activities and cognitive abilities. They concluded that participation in physical activities leads to positive psychological outcomes as it improves learning ability, memory, lowering anxiety and enable an individual to perform his/her work efficiently with confidence and less self doubt.

Conclusion

It is concluded from the findings that significant differences were observed among female successful, unsuccessful and non-athlete adolescents with regard to the variable academic anxiety. It is further summarized that female non-athlete adolescents had exhibited significantly higher academic anxiety than female unsuccessful athletes. Similarly, the female unsuccessful athletes demonstrated higher academic anxiety than female successful athletes. Finally, the female successful athlete adolescents showed controlled academic anxiety.

Recommendations

Similar study can be conducted by using longitudinal design for comparing male and female subjects on all variables used in present study. Cross-cultural research can be conducted on all the variables used in the present study. Factors like daily routine, home environment, family background, and socio-economic status which could not be controlled in the present study may be controlled. Similar study may be undertaken with other variable namely, psychological, anthropometric, physiological etc in addition to the variables chosen in the present study. To arrive at more comprehensive results, the study may be repeated on a larger sample.

References

- Catherine, R. (2009). Understanding of academic anxiety. Center for learning and teaching. Retrieved From <http://www.how.com>.
- De Moor, M. H. M., Beem, A. L., Stubbe, J. H., Boomsma, D. I., & De Geus, E. J. C. (2006). Regular exercise, anxiety, depression and personality: A population-based study. *Preventive Medicine, 42*(4), 273-279.
- Goodstein, L. D., & Layon, R. I. (1975). *Adjustment, behavior and personality*. California: Addison Wesley Publishing Company.
- Keogh, E., & French, C. C. (2001). Test anxiety, evaluative stress and susceptibility to distraction from threat. *European Journal of Personality, 15*(2), 123-141.
- Mandeler, G., & Sarason, S. B. (1952). A study of anxiety and learning. *Journal Abnormal & Social Psychological, 47*, 166-173.
- Sarason, I. G. (1959). Intellectual and personality correlates of test anxiety. *Journal of Abnormal and Social Psychology, 59*, 297-275.
- Schurr, K. T., Ashley, M. A., & Joy, K. L. (1977). A multivariate analysis of male athlete characteristics: Sport type and success. *Multivariate experimental clinical Research, 3*, 53-68.
- Sheikhi, S., Peymanizad, H., & Yadolazadeh, A. (2012). Comparison of behavioural disorder of female athletes and non-athletes in Zahedan Secondary School. *European Journal of Experimental Biology, 2*(6), 2372-2377.
- Singh, A. K., & Gupta, A. S. (2009). *Academic anxiety scale for the children (AASC)*, Kacheri Ghat, Agra (India). National Psychological Corporation.
- Spielberger, C. D., & Vagg, P. R. (1995). Test anxiety: A transactional process model. In C. D. Spielberger, & P. R. Vagg (Eds.), *Test anxiety: Theory Assessment and Treatment* (3-14). Washington, DC: Taylor & Francis.
- Thomas, J. R., Landers, D. M., Salazar, W., & Entier, J. (1994). Exercise and cognitive functions. In Bouchard, C., Shephard, R. J., & Stephens, T. (Ed.) *Physical Activity, Fitness and Health: International Proceedings and Consensus Statement* (521-529). Champaign, IL : Human Kinetics.

Acknowledgement

The author would like to express her gratitude to all the heads/principals and physical education teachers of various institutions of Union Territory for their co-operation in the collection of data and also thankful to the students who act as subjects in the present study.

Effects Of Different Intensities Of Aerobic Running On The Resting State Blood Glucose, Platelet Account And Plasma Fibrinogen Among Type II Daibetics

**C. Kiran Chakravarthi, Ph.D. Research Scholar, Department of Physical Education
 Sri Krishnadevaraya University, Anantapur.
 Dr. M.V. Srinivasan, Incharge, MPEd Course, Department of Physical Education
 Sri Krishnadevaraya University, Anantapur.**

Introduction

Optimum health and quality of life may be linked to maintaining proper physical fitness and lifestyle. Life styles need to be changed to improve health and fitness through daily exercises. Aerobic exercise stimulates heart, lungs and all working group of muscles and produces beneficial changes in body and mind. Many physiological changes are determined by daily aerobic exercises. Aerobic exercise can lower the risk for type 2 diabetes. Exercise has positive benefits for those who have diabetes. It can lower blood sugar levels, improve insulin sensitivity, and strengthen the heart and vascular efficiency. Occurrence of degenerative diseases like Hypertension, Atherosclerosis etc is inversely related to the physical activity involvement. Decreasing physical activity trends across the globe has seen rapid increase in these types of diseases especially the cardiovascular diseases like Hypertension, Atherosclerosis, Coronary Heart Diseases and metabolic disorders like Diabetes Mellitus. The purpose of the study is to experiment, analyze and understand the effect of selected different intensities of aerobic running on resting state blood glucose, blood platelet count and plasma fibrinogen for the period of four months on the precipitating factors which are considered as degenerative diseases like macro vascular and micro vascular complications on the previously untrained adult men in the age group of thirty five to forty with type II diabetes. The study included 63.0% women and 47.3% nonwhite participants who were a mean (SD) age of 55.8 years (8.7 years) with a baseline HbA1c level of 7.7% (1.0%). Compared with the control group, the absolute mean change in HbA1c in the combination training exercise group was -0.34% (95% confidence interval [CI], -0.64% to -0.03% ; $P = .03$). The mean changes in HbA1c were not statistically significant in either the resistance training (-0.16% ; 95% CI, -0.46% to 0.15% ; $P = .32$) or the aerobic (-0.24% ; 95% CI, -0.55% to 0.07% ; $P = .14$) groups compared with the control group. Only the combination exercise group improved maximum oxygen consumption (mean, $1.0 \text{ mL/kg per min}$; 95% CI, $0.5-1.5$, $P < .05$) compared with the control group.

Methodology

A total of hundred type 2 diabetic individuals in the age group of thirty five to forty years, who volunteered for physical exercise programs as a treatment protocol to control their diabetes biomarkers, were taken for the study. Only the blood glucose levels were considered as a baseline control variable and only such individuals were included with post prondial blood glucose of 190 to 200 mg/dl. Other criterion variables were resting plasma fibrinogen and resting blood platelet level. The individuals were explained about the experimentation and the impact of the aerobic running and obtained written consent from all the subjects. The individuals were randomly assigned to five different groups. There were four activity groups and one control group. Those who were assigned to the control group were promised that they would be given appropriate exercise program to reduce their disease status after conclusion of the study and were asked to cooperate during the five months of experimentation by not doing any form of exercise though exercise is essential for diabetics. All individuals continued with their medication along with the aerobic running assigned to them. One group underwent low intensity aerobic running, second group underwent medium intensity aerobic running, third group underwent sub maximal aerobic running and fourth activity group underwent maximal aerobic running activity for five months. The experimentation period was for five months in which the first month was mostly like orientation to the individuals. To facilitate the individuals of the study to be very precise on their training intensity, all subjects were advised to possess the heart rate monitors.

Criterion variables for the experiment

The criterion variables selected for the experimentation were resting state Blood Glucose, Blood Platelet Count, and Plasma Fibrinogen. Effect of the selected constant intensity aerobic exercise and increasing anaerobic threshold levels was tested on these variables.

A. Resting State Blood Glucose

Blood glucose was collected from the subjects by using blood glucometers, with the help of qualified biochemists in the biochemical lab. A glucose meter (or glucometer) is a medical device for determining the approximate of glucose level in the blood. It is also known as home blood glucose monitoring (HBGM) by people with diabetes mellitus or hypoglycemia. A small drop of blood, obtained by pricking the skin with a lancet, is placed on a disposable test strip that the meter reads and uses to calculate the blood glucose level. The meter then displays the level in mg/dl or mmol/l.

Blood Sugar Levels Chart

Type of Person	Fasting Value		Post Prandial
	Min Value. mg.	Max Value mg.	Value 2 hours after consuming glucose
Normal	72 mg/dl	100mg/dl	Less than 140mg/dl
Early Diabetes	101mg/dl	126mg/dl	140 to 200mg/dl
Established Diabetes	More than 126mg/dl	-	More than 200 mg/dl

B. Blood Platelet Count

The platelets were counted using the RBC/Platelet ratio method as specified by the International Council for Standardization in Hematology (ICSH) and the International Society of Laboratory Hematology (ISLH) recommend the counting of specifically labeled platelets relative to the RBCs with a fluorescence flow cytometer, together with an accurate RBC count determined with a semi automated, single-channel aperture-impedance counter as a reference method for the enumeration of platelets. Fresh EDTA-anti coagulated venous blood specimens are measured within 4 hours of the draw. The specimen is prediluted (1:20) and the platelets labeled with two monoclonal antibodies specific to a cluster of differentiation common to all platelets. A final 1:1,000 dilution is made and at least 50,000 events with a minimum of 1,000 platelet events are counted with a flow cytometer to determine the RBC/platelet ratio. The platelet count is then calculated from this ratio and the RBC concentration of the original blood specimen.

C. Plasma Fibrinogen

Concentration of fibrinogen in plasma was determined quantitatively by 'Clauss clotting method'. This test method involves measuring the rate of fibrinogen to fibrin conversion in diluted sample under the influence of excess thrombin. Clot detection by the STA-compact involves an electromagnetic mechanical system. The oscillation of a steel ball within the cuvette with the thrombin and diluted plasma is monitored by the STA-Compact. When the oscillation of the steel ball is stopped by the clot formation, the sensor registers the time in seconds. The time is translated into fibrinogen concentration from a fibrinogen standard curve, stored on the STA-Compact. Resting plasma fibrinogen levels of the individuals of the study twenty four hours before the start of the experimentation and twenty four hours after the conclusion of the experimentation

Independent or experimental variable

Aerobic running of four intensities was assigned to four different groups basing on the Karvonen's target Heart Rate Reserve (HRR) percentage as the intensity for the aerobic running. Heart rate reserve (HRR) is the difference between resting heart rate (RHR) and maximum heart rate (MHR).

$$\text{HRR} = \text{MHR} - \text{HR rest.} \quad \text{MHR} = 220 - \text{age.}$$

Heart rate reserve is used to determine the target exercise intensity for aerobic running. The formula proposed by Karvonen is used to calculate the target heart rate of aerobic running and to determine the exercise heart rates or given percentage training intensity.

$$\text{Target Heart rate} = \text{percentage of target intensity} (\text{MHR} - \text{HR rest}) + \text{HR rest.}$$

For example: Target intensity of 70% of Heart rate reserve for a person with MHR of 201 and HR rest 50 = 70 % (201-50) = 50 = 155 beats per minute.

Target intensities were fixed as following intensities for four groups of experimentation.

Low intensity aerobic running group: 45 – 55 % heart rate reserve was kept as target intensity for low intensity aerobic running group. Medium intensity running group: above 55 – 65 % heart rate reserve was kept as target intensity for medium intensity aerobic running group. Sub maximal intensity running group: above 65 - 70 % heart rate reserve was kept as target intensity for sub maximal

intensity aerobic running group. Maximal intensity running group: Above 70 – up to 75 % heart rate reserve was kept as target intensity for sub maximal intensity aerobic running group. Hence, the target heart rates were fixed basing on every month ending resting heart rate and hence the target heart rates were set for four times in the five months of experimentation for each individual of the study. Each individual of the study did the target heart rate running for thirty to forty five minutes at least three times in a week. The individuals ran for five months independently but the supervisor monitored regularly the running programs of the individuals of the study. Since, the individuals resided in different areas of Anantapur and adjacent small towns, the supervisor has conducted regular visits to the individuals personally and advised about their running program and had clear unambiguous control over the individuals running program.

Measuring of variables and statistical procedure for hypotheses testing

The criterion variables were measured baseline i.e. one day before the commencement of orientation period and post training values of the criterion variables were measured one day after the conclusion of the five month experimentation period. ANCOVA was used to find out whether there was any significant effect of aerobic running of different intensities on the selected criterion variables viz resting blood glucose level, platelet count and plasma fibrinogen levels. Scheffe's Post hoc individual comparison test was also conducted to find out which particular experimental group showed significant difference in the selected criterion variables in comparison with the other activity groups and to test the hypothesis. 0.05 level of significance is used to test the statistical derivatives.

RESULTS

The selected different intensities of aerobic training caused significant change in the selected criterion variables. Medium and sub maximal intensity aerobic training caused more significant changes in selected criterion variables when compared to the other two selected intensities viz. low and maximal intensity aerobic running

Reference

- Barry A. Franklin and James R. Wappes : *Exercise for heart patients; optimal options: The physician and Sports Medicine*:26(10):oct.1998.
- Akbarbartoori M, Lean ME, Hankey CR. *The associations between current recommendation for physical activity and cardiovascular risks associated with obesity.* Eur J Clin Nutr. 2008 Jan;62(1):P.1-9.
- Berlin JA. and Colditz GA. *A meta-analysis of physical activity in the prevent of coronary heart disease: American Journal of Epidemiology*:1990:132(4):P.253-287.
- Simoes HG, Hiyane WC, Benford RE, et al. **Lactate threshold prediction by blood glucose and rating of perceived exertion in people with type 2 diabetes.** *Percept Mot Skills.* 2010;111:365–378
- Felig P, Wahren J, Hendler R, et al. **Plasma glucagon levels in exercising man.** *N Eng J Med.* 1972;287:184–185
- Kjaer M, Engfred K, Fernandes A, et al. **Regulation of hepatic glucose production during exercise in humans: role of sympathoadrenergic activity.** *Am J Physiol.* 1993;265:E275–E283
- Rose AJ, Richter EA. **Skeletal muscle glucose uptake during exercise: how is it regulated.** *Physiology.*2005;20:260–27
- Wasserman K. **The anaerobic threshold measurement in exercise testing.** *Clin Chest Med.* 1984;5:77–88
- Prud'homme D, Bouchard C, Leblance C, et al. **Reliability of assessments of ventilatory thresholds.** *J Sports Sci.*
- Simoes HG, Campbell CSG, Kokubun E, et al. **Blood glucose responses in humans mirror lactate responses for individual anaerobic threshold and for lactate minimum in track tests.** *Eur J Appl Physiol.* 1999;80:34–40
- Simoes HG, Kushnick MR, et al. **Blood glucose threshold and the metabolic responses to incremental exercise tests with and without prior lactic acidosis induction.** *Eur J Appl Physiol.* 2003;89:603–611
- Ribeiro LF, Malachias PC, Junior PB, et al. **Lactate and glucose minimum speeds and running performance.** *J Sci Med Sport.* 2004;7:123–127
- Rocha C, Canellas A, Monteiro D, et al. **Changes in individual glucose threshold during military training.** *Int J Sports Med.* 2010;31:482–485
- Sengoku Y, Nakamura K, Takeda T, et al. **Glucose response after a ten-week training in swimming.** *Int J Sports Med.*
- Junior PB, Neiva CM, Denadia BS. **Effect of an acute B-adrenergic blockage on the blood glucose response during lactate minimum test.** *J Sci Med Sport.* 2001;4:257–265
- Sotero RC, Pardon E, Landwehr R, et al. **Blood glucose minimum predicts maximal lactate steady state on running.** *Int J Sports Med.* 2009;30:643–646
- Wasserman K, Hansen JE, Sue DY, et al. **Principles of Exercise Testing and Interpretation.** 4th ed.. Baltimore: Lippincott Williams & Williams; 2004;
- Beaver WL, Wasserman K, Whipp BJ. **A new method for detecting anaerobic threshold by gas exchange.** *J Appl Physiol.*1986;60:2020–2027
- Bergmeyer HU. **Methods of Enzymatic Analysis.** New York: Academic Press; 1974;
- Felig P, Wahren J, Hendler R, et al. **Plasma glucagon levels in exercising man.** *N Eng J Med.* 1972;287:184–185
- Winder WW. **Regulation of hepatic glucose production during exercise.** *Exerc Sport Sci Rev.* 1985;13:1–31
- Wolfe RR, Nadel ER, Shaw JHF, Stephenson LA, Wolfe MH. **Role of changes in insulin and glucagon in glucose homeostasis in exercise.** *J Clin Invest.* 1986;77:900–90

Float Like A Butterfly

Syed Farooq Kamal, Lecturer in Physical Education
St.Francis Degree College for Women, Hyderabad

Introduction:

The Butterfly gained wide publicity in 1933 when Henry Myers, an American breaststroke during a swimming event. More than any other stroke, it demands exceptional upper body strength, back extension power, stroke coordination and suppleness. It is quite simply the most difficult stroke to master in swimming. Even for world champs. Remember the butterfly race in the Seoul. Olympics, when Matt Biondi lost it in the final stretch due to a small error in technique? And Biondi was the swimming heir to Mark Spitz, the king of the butterfly at the 1972 Munich Olympic Games! The characteristic double –S butterfly arm stroke imparts nearly three quarters of the forward thrust. The body is prone most of the time, minimizing drag. In many ways the body position resembles that of the crawl without the side roll. The arms trace the double –S in the air and in the water, and the thrust from water to air provides most of forward propulsion.

The legs deliver a quarter of the forward thrust. Early butterfly competitors used a leg movement similar to a frog's kick, but later athletes adopted a dolphin ("fishtail") lack that emphasised up-down leg movement.

Each arm cycle links with two dolphin kicks to provide maximum thrust, The first kick provides propulsion until the arms take over in the water. It begins with a downbeat, brings the hips closer to the surface just as the arms are about to enter the water.

The up beat streamlines the body and reduces drag. The second kick coincides with the end of arm-driven propulsion in the water, and it helps drive the shoulders forward and over the water. It depends more on leg movement, compared with the first, which relies on the entire lower limb. The body undulates rhythmically throughout the stroke, in a motion that starts at the chin and travels all the way to the toes. The time to inhale is when the head bobs over the water on the thrust of the second-kick. Exhale underwater throughout the stroke. Beginners will benefit from a few drills. Practise the double-S arm stroke standing in chest-deep water, Practise straightening your knees in the water in a coordinated fashion while sitting at the pool edge.

Rehearse a skipping motion with the arm stroke standing in chest deep water, straightening your knees as your arms; brush past your thighs. Lunge into the pool from a tanding position in water near the pool wall, and use the double-S arm stroke to break and modulate your fall.

Discussion:

Swimming is a fun activity, a path to inner fitness, and a gentle exercise that is beneficial to all age groups. The rhythmic nature is great for stress relief, and the exercise itself targets and tones typical age zones' like flabby upper arms, mid-section, and back. Swimming is not weight bearing, so it's great for joints and the injury-prone fitness fanatic. There are four competitive disciplines: freestyle, breaststroke, backstroke, and butterfly. Sidestroke is a popular, non-competitive variation of the breaststroke. Each stroke works out a different set of muscles, and so when swimming for-fitness I recommend you incorporate different strokes into your lapping to derive maximum benefit. For instance, the average adult may swim between 10 and 20 laps as their exercise routine, They would typically use only one stroke, like freestyle.

But to have a much better, workout, you could turn 20 freestyle laps into;

- 4 freestyle laps
- 2 laps of sidestroke and backstroke mixed
- 4 kicking laps
- 2 laps freestyle sprints
- 2 laps easy swimming (cool down)

My favourite stroke is freestyle, because it is efficient, rhythmic, and targets the right muscle groups for keeping an elegant figure.

Freestyle Works Out:

Triceps: An excellent way to tone up sagging upper arms without getting a bulky effect

Deltoids: Adds definition to the shoulders and prevents adults from acquiring a drooping frame over time

Lats (latissimus dorsi): A

superb exercise to bring back a youthful 'hour-glass' shape for women, and a muscular v-shaped upper body for men. This muscle group simply cannot look too defined.

Obliques: The constant rotation from arm strokes and breathing is one of the best exercises for your obliques (the muscles that cover the sides of your abdomen and which give shape and tight definition to your waist).

Breaststroke

This workf out the pectorals, but also rejies on good forearm and abdominal strength. It gives a very godd tipper body workout.

If you are prone to knee injuries, I would recommend switching to sideslroke instead. Breaststroke requires the swimmer to rotate their feet out, which can strain or aggravate the knee joint. However, the feet and Sips are kept in alignment with sidestroke, reducing the amount of lateral involvement from the knees.

Breathe right

Swimming is one of the few sports where you simply must / control your breathing. This Control, coupled with the constant use of your arms, makes for one of the best known ways to work out your cardiopul-monary system. It will help you build up a strong heart and lungs, in addition to helping to control common pulmonary disorders, like asthma.

The right time

During my years of swimming, early morning training was always the norm. While I don't recommend starting at 5 am necessarily (this is supposed to be fun after all), the early morning is beneficial for many reasons. it is a gentle form of exercise that gets the metabolism going, it is refreshing and misses the harmful effects of midday sun, you can only swim in the evenings, use the rhythmic, repetitive nature of the exercise to zone out and decompress. I encourage people to try out new strokes, or make up your own hybrids.

For instance, you could try backstroke with a breaststroke kick, or breaststroke with a butterfly kick, or even one-armed butterfly! We did all of these things in swimming training, and they are a great way to increase the variety in your daily routine,

Are you considering a water fitness program? More people than ever are exploring pool activity programs. Water fitness can improve strength, flexibility and cardiovascular health; decrease body fat; facilitate rehabilitation; improve functionality for daily living; and even enhance sports skills.

Tips to decide on your water fitness program

Check out the Facility : Start with the basics. Look for a clean, safe, well-maintained pool. The water temperature should be comfortable: 82 to 84 degrees Fahrenheit (28-29E Celsius); and there should be a lifeguard on duty— your instructor shouldn't have to do it all Check out the equipment, too.

You want to see a variety—for example, buoyancy belts and dumbbells, gloves, noodles and paddles. Look for Professionalism: Ask for instructors professionally trained in fitness, not just swimming or lifeguard skills? The staff should be certified in fitness and have additional training in water fitness, Know Your Limitations: In general, water fitness is so versatile and safe it is the ideal choice for people' with a variety of conditions, including pregnancy, orthopedic problems and arthritis. But don't attempt deep water fitness exercise.

Practice Basic Skills:

Training in the water relaxes the muscles and is function specific. Once in the pool, ensure your comfort and safety by learning the fundamentals—for instance, how to scull your balance and how to recover a stand, or vertical position, with correct posture. Your instructor should encourage you to go

at your own pace, and teach you how to progressively increase and decrease the intensity of each exercise. The pool is a liquid weight machine, says Sanders. The harder you press, the more intense your workout is, so you have great control of your exercise program.

Know Your Goals: This may be the most important key to having a satisfying water fitness experience, says Sanders. She suggests you look for classes that focus on some or all of the following, depending on the results you'd like to achieve:

Cardiovascular Health and Weight Management. To provide these benefits, you should focus primarily on working the legs, using the arms (with webbed gloves on the hands) for balance. Interval training is the ideal. You should be able to adjust your speed and effort as needed to create a progressive training program.

Muscular Endurance, To improve muscular endurance, you should work isolated muscle groups along with the muscles that stabilize the joints and body. Shallow-water jumping, buoyancy devices, an aquatic step, or surface area equipment such as giant sandals (called Sloggers) may be used to add overload. **Functional Fitness.** If your goal is functional fitness, you should target the activities of daily living. For example, aquatic step exercise can improve stair climbing. Your instructor should teach proper postural alignment.

Computer Literacy Among Physical Education Teachers In Puducherry

Dr. R. SAVARIRAJAN

**Director Of Physical Education, Arignar Anna Govt. Arts & Science College,
Karaikal**

Abstract

Computer-based and web-based applications are primary educational tools that are used in order to motivate students in today's schools. In the physical education field, educational applications related with the computer and the internet became more prevalent in order to present visual and interactive learning processes. On the other hand, some difficulties are encountered in the integration of computers to physical education and in the use of these tools by teachers. Physical education teachers have to develop their knowledge and skills in order to use computers as teaching tools and support and guide students to use these technologies for learning. The aim of this study is to find out how often physical education teachers use computers for educational purposes. Based on the findings of the research, suggestions towards effective use of computers in physical education classes are made.

Introduction

Technology has turned out to be a necessity more than a luxury in the schools. The schools are built according to the technological needs and equipped with the necessary network for internet access. Now computer hardware in many schools is completed and the developing process of the required educational software is still being carried out. The directors of the schools who are willing to improve the quality of the education served for the students are supplying more financial and human resources for the hardware, software and other technological facilities (Zhu, 2003). The cost of new computers are low enough for most of the schools to be covered. Computers and information technologies are rapidly developing and children are growing up with the technology. The researches on the effects of the technology on education have proved that under the ideal conditions educational technology contributes very much in all subjects to all students (Winn, 2002). The abilities on information technologies have turned out to be vital elements which effect individual economic success, political participation and social interaction (Ono and Zavodny, 2004). As far as the information technology becomes more widespread, the importance of computer and technology use increases and turns out to be an important element in human resources (Ono and Zavodny, 2004). Both the educators and the public accepts the necessity for the students to be competent in computer use. In order to benefit from technology in education, both the teachers and students should have enough knowledge about computers. However the discussions about the limits of computer use in educational activities are still continuing. In many schools computers are used only for internet access and game play. The suitability of computer applications with the curriculum and the applications in classroom is usually overlooked (Moursund, 1995). Physical education teachers can also teach a subject in their curriculum by first analyzing it technically in computer laboratory. By that way they can teach the biomechanics visually and then move on to the application of those techniques which will help for a more productive course.

The Purpose Of The Research

The purpose of this study is to find out computer -the most important technological device of today- using ability of teachers, their owning personal computers, the presence of computer laboratories in the schools and the possibilities of benefiting from the computer laboratories.

The Universe of the Research

The universe of this research includes all the physical education teachers who had participated to in-service training courses held by State Training Centre, Puducherry. The sample group of the research is chosen through the physical education teachers from 81 different schools who had participated to in-service training courses held in Karaikal and Puducherry.

The Survey Used in the Research

For the research, a survey of 9 questions measuring different abilities of computer use is developed. The teachers had to choose one of four alternatives in each question; No Experience, Little Experience, Some Experience and High Experience. In the analysis No Experience is graded with 1 point, Little Experience with 2, Some Experience with 3 and High Experience with 4 points. The survey has 3 parts. In the first part the presence of personal computers at home, the presence of computer laboratory at school, the possibilities of computer use and some demographical questions are asked. In the second part Windows abilities and in the third part Word abilities are questioned. There are 5 questions about Windows and 4 about Word.

Data of the Survey

The data in this research is derived from the application of the survey called "The Survey of Educational Technology Use" to the physical education teachers. The survey was applied to 192 physical education teachers from 81 different schools who had participated to in-service training courses held in Karaikal and Puducherry and 186 of these surveys were taken into evaluation. In the research validity is defined according to the specialist's view. On the other hand cronbach alfa = .9853 is found out as the reliability value.

Statistical Method Used in the Research

In the research both quantitative and qualitative methods are used. For each variable t-test is applied through SPSS statistical software.

Demographical Characteristics of the Sample Group

Table-1 Ownership of personal computer

1	67.7% (130)	yes
2	24.5% (47)	no

According to Table - 1 67.7 % of the teachers (130) has personal computers at home but 24.5 % (47) of them do not own computers.

Table-2 Presence of computers at schools

1	76% (146)	yes
2	17.7% (34)	no

According to Table - 2 76 % of the teachers (146) have computer laboratories in their schools but 17,7 % (34) of them do not have laboratories at their schools.

Table-3 Computer use of the families

1	67.7% (130)	yes
2	25.5% (49)	no

According to Table – 3 67.7 % of the teachers (130) have stated that their families use computers at home but 25.5 % of them (49).

Table-4 The use of computer laboratories by physical education teachers

1	57.3% (110)	yes
2	34.4% (66)	no

According to Table – 4 57.3% of the teachers (110) have stated that they can always benefit from the computer laboratories of their schools but 34.4 % of them (66).

1. The Ability to Use Windows Start Menu:

10.6 % of the physical education teachers (19) do not have any experience to use Windows start menu, 4.5 % of them (8) have little experience, 40.2 % of them (72) have experience and 44.7 % of them (80) have high experience.

2. The Ability to Use Windows Programs Menu:

12.2 % of the physical education teachers (22) do not have any experience to use Windows programs menu, 5.5 % of them (10) have little experience, 43.6 % of them (79) have experience and 38.7 % of them (70) have high experience.

3. The Ability to Use Windows Files Menu:

12.8 % of the physical education teachers (23) do not have any experience to use Windows files menu, 6.1 % of them (11) have little experience, 44.4 % of them (80) have experience and 36.7 % of them (66) have high experience.

4. The Ability to Use Windows Settings Menu:

14.8 % of the physical education teachers (27) do not have any experience to use Windows settings menu, 12.6 % of them (23) have little experience, 41.8 % of them (76) have experience and 30.8 % of them (56) have high experience.

5. The Ability to Use Windows Control Menu:

15.9 % of the physical education teachers (29) do not have any experience to use Windows control menu, 15.9 % of them (29) have little experience, 38.5 % of them (70) have experience and 29.7 % of them (54) have high experience.

6. The Ability to Use Word File Menu:

16.4 % of the physical education teachers (30) do not have any experience to use Word file menu, 15.3 % of them (28) have little experience, 35.5 % of them (65) have experience and 32.8 % of them (60) have high experience.

7. The Ability to Use Word Edit Menu:

27.1 % of the physical education teachers (49) do not have any experience to use Word edit menu, 22.1 % of them (40) have little experience, 28.7 % of them (52) have experience and 22.1 % of them (40) have high experience.

8. The Ability to Use Word Insert Menu:

30.0 % of the physical education teachers (54) do not have any experience to use Word insert menu, 23.9 % of them (43) have little experience, 25.0 % of them (45) have experience and 21.1 % of them (38) have high experience.

9. The Ability to Use Word View Menu:

39.1 % of the physical education teachers (70) do not have any experience to use Word view menu, 24.0 % of them (43) have little experience, 20.1 % of them (36) have experience and 16.8 % of them (30) have high experience.

t- test for Ownership of Computer at Home

The results according to t-test are as the following:

Word

The ability to use file menu 0.044, The ability to use edit menu 0.003, The ability to use insert menu 0.003 and The ability to use view menu 0.003

As a result of t-test; the teachers owning personal computers use Word program menus better than others who do not have personal computers at a level $p < 0.05$. Therefore it can easily be stated that teachers owning personal computers use Word better than the others.

t- test for the Presence of Computer Laboratory at School

According to this variable, there is no difference at a level of $p < 0.05$.

t-test for the Use of Computers by Family Members

The results according to t-test are as the following:

Word

The ability to use file menu 0.054, The ability to use insert menu 0.003 and ability to use view menu 0.024

As a result of t-test; the teachers whose families use computers have the ability to use Word program menus better than the rest at a level of $p < 0.05$.

Comparison Of The Averages

In order to measure the level of program usages of the teachers, the averages of all the subtitles of each program are compared with t-test analysis.

t-test Results for Ownership of Personal Computers at Home(Windows)

Computer	N	X	S	sd	t	p
Yes	130	2.9658	.96950	.08503	.210	.008
No	47	2.9338	.63307			

As a result of this analysis it is obvious that the teachers who have personal computers at home can use Windows programs more efficiently than the rest at a level of $p < 0.05$.

t-test Results for Presence of Computer Laboratory at Schools

There is no difference for this variable at a level of $p < 0.05$.

t-test Results for Use of Computers by Family Members(Windows)

Sex	N	X	S	sd	t	p
Yes	130	2.9514	.98128	.08606	.394	.024
No	49	2.8912	.69147			

As a result of this analysis it is found out that the teachers whose families use computers can use Windows programs more efficiently than the rest at a level of $p < 0.05$.

t-test Results for Benefiting from Computer Laboratories(Windows)

Sex	N	X	S	sd	t	p
Yes	110	2.9374	1.02462	.09769	.004	.002
No	66	2.9368	.7382			

As a result of this analysis it is found out that the teachers who benefit from computer laboratories at schools can use Windows more efficiently than the rest at a level of $p < 0.05$.

Conclusion

Three main question areas are defined for the research and analyzed statistically. As a result of the research the use of computer by the physical education teachers is examined. In the research first the relation between ownership of personal computers and ability in Windows is researched. As a result of the analysis it is found out that the teachers who have personal computers at home are more competent in using office programs when compared to the others. There is no relation between presence of computers at school and ability in computer skills. It is also found out that the teachers whose families are familiar with computers use 'Edit, Insert, View and Window' menus of "Word"; Edit, View programs more efficiently than the rest at a level of $p < 0.05$. Another result is that the teachers who benefit from computer laboratories at their schools can use 'Insert and View' more efficiently than the rest at a level of $p < 0.05$. Therefore it is possible to state that if the physical education teachers are given technological facilities and the chance to use them, they will take the advantage of using these facilities successfully and carry out new researches to share the results with their students. According to these findings some suggestions should be listed: Presenting CDs which include physical education and sports techniques should become a habitual part of classes. The analysis of physical education and sports techniques should first be taught through computer supported analysis and then performed practically. In order to reach actual information about sports, computer and internet use should be promoted. The students should be encouraged to receive and send their home works by e-mails.

References

- Arnez, B.W.; Lee, M. (1990). "Gender Differences in the Attitude, Interest and Participation of Secondary Students in Computer Use". Paper Presented at the Annual Meeting of American Educational Research Association. Boston.
- Azarns, R. (1991). Educational Computing - Principles And Applications. Educational Technology Publications. Bird, V. (1998). Enseñando Educación Física. Carolina, PR: Editorial Logo.
- Chen, M. (1986). "Gender and Computers : The Beneficial Effects of Experiences on Attitudes". Journal of Educational Computing Research. 2, 265-282.
- Cuban, L. (2001). Oversold and Underused : Computers in the Classrooms. Cambridge : Harvard University Press.
- Hall, M. E. (1999). "Principals Can Set an Example in Technology Usage". Thrust for Educational Leadership. 10552243. Sep/Oct99. 29 (1).
- Hunt, N.P.; Bohlin R.M. (1993). "Teacher Education Students' Attitudes Toward Using Computers". Journal of Research on Computing in Education. 25 (4), 487-497.
- Jonassen, D.; Carr, C.; Hsui-Ping, Y. (1998). "Computers as Mind Tools for Engaging Learners in Critical Thinking". TechTrends. 43 (2), 24-32.
- Knapper, C. (2001). "The Challenge of Educational Technology". International Journal for Academic Development. 6 (2), 93-95.
- Levine, T.; Donitsa-Schmidt, S. (1998). "Computer Use, Confidence, Attitudes and Knowledge : A Casual Analysis". Computers in Human Behavior. 14 (1), 125-146.
- Maor, D. (1999). "Teachers-as-learners: The Role of a Multimedia Professional Development Program in Changing Classroom Practice". Australian Science Teachers Journal. 45 (3). Issue 3.
- Marcinkiewicz, H.R. (1994). "Computers and Teachers : Factors Influencing Computer Use in the Classroom". Journal of Research on Computing in Education. 26 (2), 220-237.
- Mohsen, B. (2001). "Instructional Software To Meet National Standards". JOPERD. 71 (3), 19-22.
- Moursund, D. (1995). "Effective Practices (Part 2) : Productivity Tools". Learning and Leading With Technology. 23 (4), 5-6.
- Necessary, J. R.; Parish, T. S. (1996). "The Relationships Between Computer Usage and Computer-Related Attitudes and Behaviors". Education. 116 (3). 384-386.
- Ono, H.; Zavodny, M. (2004). "Gender Differences in Information Technology Usage : A U.S.-Japan Comparison". Federal Reserve Bank of Atlanta. Working Paper Series.
- Sheingold, K.; Hadley, M. (1993). "Commonalities and Distinctive Patterns in Teachers' Integration of Computers". American Journal of Education. 101, 261-315.
- Winn, W. (2002). "Current Trends in Educational Technology Research: The Study of Learning Environments". Educational Psychology Review. 14 (3), 331-350.
- Wood, S.L.; Lynn, S. (2000). "Teaching Elementary Physical Education". Web Gym. 11 (5), 28-30.
- Zhu, J. (2003). Application of Computer Technology in Public School Classrooms: Usage Dimensions and Influencing Factors. U.S.A.: The Pennsylvania State University. (Unpublished Doctorial Dissertation).

The comparison of Growth variation on Height, Weight and Hip measurement among Physical Education Students

Dr. S. Jayaraman, Athletics Coach, Pondicherry University, Pondicherry.

Abstract

The purpose of the study was to find out the comparison of Growth variation on height, weight and hip measurement among physical education students. It was hypothesised that there may be significant growth variation in adolescent boys and girls among physical education students in the age groups of 17 to 21 years. Three hundred and eighty three students were selected for the study out of which two hundred and twenty six students from first years and one hundred and fifty seven students from third years age ranged from 17 to 21 years. The following tests were conducted such as height, weight, hip measurement. In order to analyse the data "t"- ratio was used and find the level of significance.

Keywords: growth, development, measurement, height, weight, hip

Introduction

Many of our fondest and most vivid memories are probably associated with your birthdays. The day of birth is an important milestone of life. Most people continue to remember their birthday in some special way each year birthdays serve as pleasant and convenient reference points to make periods of transition or change in our lives. The actual day of birth marks the end of one phase of life called the pre natal period and beginning of a second period called the post natal period. The pre natal period begins at conception and ends of birth; the post natal period begins at birth continues until death. Although important periods in our lives such as childhood, adolescence, and one often remembered on the serious of individual and isolated events, they are in reality part of an ongoing and continuous process. In reviewing the many changes that occur during the cycle of life from conception to death, it is after convenient to isolate certain periods such as infancy or adulthood for study. It is important to remember, however that life is not a series of stop and start events or individual and isolated periods of time. Instead it is a biological process that is characterised by continuous modification and change. The average age range of adolescent varies, but generally the teenage years (13 to 19 are used). The period is marked by rapid and intense physical growth which ultimately results in sexual maturity. Many of the development changes occur during this period are controlled by the secretion of sex hormones, and one classified as secondary sex characteristics. Breast development is often the first sign of approaching puberty in girls beginning about age 10. Most girls begin to menstruate at 12 to 13 years of age which is about three years earlier than a hundred years ago. In boys the first sign of puberty is after enlargements of the testicles, which begins between 10 and 13 years of age. Both sexes show a spurt in height during adolescence. In girls, the spurt in height begins between the ages of 10 and 12 and is nearly complete by 14 and 15. In boys, the period of rapid growth begins between 12 and 13 and is generally complete by 16. Many developmental changes that began early in childhood are not completed until the early (or) middle years of childhood.

Methodology

Three hundred and eighty three students were selected out of which two hundred and twenty six students from first years and one hundred and fifty seven students from third years age ranged from 17 to 21 years. The subjects were divided in to two groups namely group I (I Yr Boys and III YR Boys) and group II (I yr Girls and III Yr Girls) respectively. The following tests were conducted to find out the growth variations among physical education students Such as height, Weight and hip measurement by using stadiometer, standard weighing machine and measuring tape.

Analysis of Data

'T' test was to find out the significant differences among the groups .The significant differences between group I and group II on selected criterion variables were analysed and presented below.

Table - I
Mean, Standard Deviation And "T"Ratio Of Height For I Year And Iii Year Boys And Girls

S.No	No. of subjects	Groups	Means	SD	"t"ratio	Level of significance
1.	190	I yr Boys	168	6.36	2.63	.01
2.	92	Iii yr Boys	170	5.92		
3.	65	I yr Girls	157	5.34	1.69	.1
4.	36	Iii yr Girls	155	5.98		

NS. Not Significant (The required table values were .01- 2.60, .1 – 1.66 respectively)

Fig. 1 The Mean Values Of I Yr And Iii Yr Girls On Height

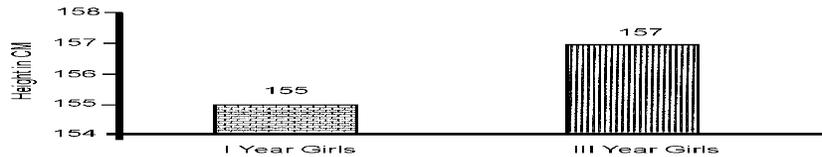


Fig. 2 The Mean Values Of I Yr And Iii Yr Boys On Height

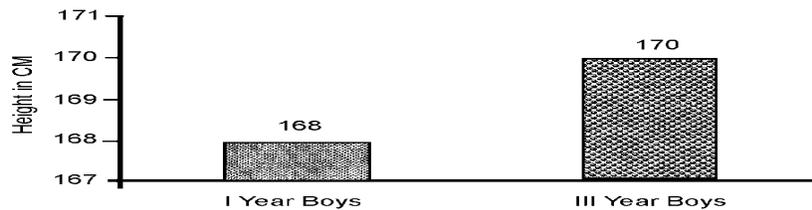


Table - 2
Mean, Standard Deviation And "T"Ratio Of Weight For I Year And Iii Year Boys And Girls

S.No	No of subjects	Groups	Means	SD	"t"ratio	Level of significance
1.	190	I yr Boys	59.06	6.94	1.09	N.S
2.	92	Iii yr Boys	60.07	7.54		
3.	65	I yr Girls	48.06	6.70	1.04	N.S
4.	36	Iii yr Girls	47.11	6.96		

N.S. Not Significant (The required table values were 1.65, .66 respectively)

Fig. 3 The Mean Values Of I Yr And Iii Yr Girls On Weight

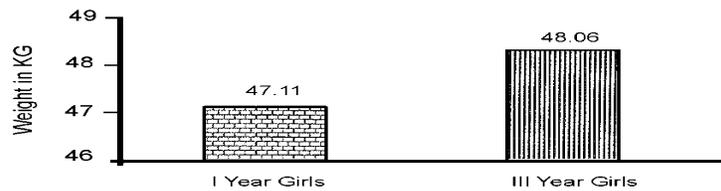


Fig. 4 The Mean Values Of I Yr And Iii Yr Boys On Weight



Table - 3
Mean, Standard Deviation And "T"Ratio Of Hip Measurement For I Year And Iii Year Boys And Girls

S.No	No Of Subjects	Groups	Means	SD	"T"Ratio	Level Of Significance
1.	190	I Yr Boys	68.25	5.80	3.28	0.1
2.	92	Iii Yr Boys	70.75	6.24		
3.	65	I Yr Girls	70.95	4.46	1.89	.1
4.	36	Iii Yr Girls	73.3	6.76		

N.S. Not Significant (The Required Table Values Were .01- 2.60, .1-1.66 Respectively)

Fig. 5 The Mean Values Of I Yr And Iii Yr Girls On Hip Measurement

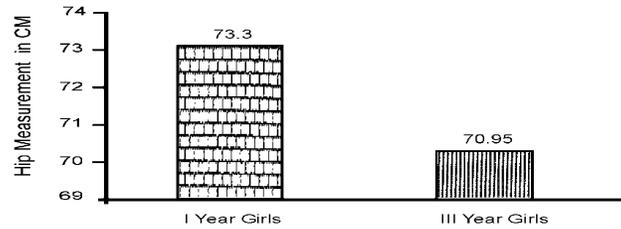
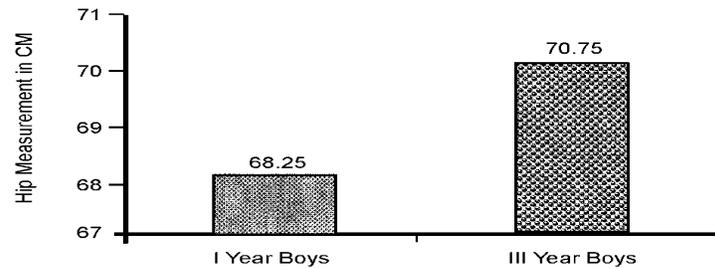


Fig. 6 The Mean Values Of I Yr And Iii Yr Boys On Hip Measurement



Conclusion

There was a significant difference between I Yr and III yr boys on height which may due to the growth factors. There was a significant difference between I Yr and III yr girls on height which may due to the growth factors. There was no significant difference between I Yr and III yr boys on weight due to the imbalances in nutritional status besides due to the training factors. There was no significant difference between I Yr and III yr girls on weight due to the imbalances in nutritional status besides due to the training factors. There was a significant difference between I Yr and III yr boys on hip measurement which may due to the growth factors. There was a significant difference between I Yr and III yr girls on hip measurement .

Bibliography

1. Amin M.R.Talukder M.Q. growth performance of Bangladeshi affluent school children (5-14 years) department of health, Ipgmr, Dhaka, Bangladesh, (pmid: 1879901, pubmed indexed for medicine).
2. Frederic martini, Fundamentals of Anatomy and Physiology, Prentice hall, Eagle Wood, Cliffs, New Jersey,
3. Rebeto E., et al Age variations in sibling correlations for height sitting height and weight, university of the Bosque country, Bilbao, Spain (PMID: 9395743 Published index for medicine).
4. Savara r.et al variation of growth in height and weight of children II after infancy, children's hospital, university of Helsinki, Finland (pmid: 2386041, published -indexed for medicine).
5. Thibodeau Gary, a. Patton Kevin , T. Structure and function of the body , Mosby, inc.St.Louis ,II th edition 2000 by Mosby, inc.st.louis.

Analysis Of Speed And Flexibility Among Andhra Pradesh State Level Basketball, Football And Volleyball Players

Dr. N. S.Dilip, Professor

Secretary Sports Board J.N.T.U.H.College of Engineering, Kukatpally Hyderabad.

Pulluri Srinivas, Research Scholar

Physical Director, SR Engineering College,Ananthasagar, Hasanparthy, Warangal

Abstract

Speed and flexibility are main fitness components, important for success in many sports, especially team sports, like football, basketball, volleyball. The aim of this study was to analyse speed and flexibility of Andhra Pradesh State level basketball, football and volleyball players. Randomly selected 30 basketball players, 30 football players and 30 volleyball players, who participated at state level competitions held at Hyderabad during the year 2012 and their mean age was 20.6 years with standard deviation of ± 1.4 years. The data collected on speed and flexibility were compared for the differences existed among the players using statistical tool ANOVA. The study proved that football players were fastest, followed by basketball and then volleyball players. The post hoc analysis proved that football and basketball players' were significantly better than volleyball players ($P < 0.05$). There was no significant difference among the players on flexibility. It was concluded that state level volleyball players can concentrate more to improve their speed for better performances.

Introduction

Speed is the ability to move quickly across the ground or move limbs rapidly to grab or throw. Speed is not just how fast someone can run, but is dependent on their acceleration, maximal speed of movement, and also speed maintenance. Thus, speed is one of the main fitness components, important for success in many sports many in team field sports, like football, basketball, volleyball etc. Flexibility is the static maximum range of motion (ROM) available about a joint and the joint structures can vary between individuals, and this must be recognised when assessing flexibility standards in athletes. Experimentally, this was shown by Toft et al (1989), who found a 36% decrease in passive tension of the plantar flexors after three weeks of regular calf stretches. The relationship between static range of motion (ROM) and passive tension has been further supported by McHugh et al (1998). Research into the effects of flexibility of stretch shortening cycle (SSC) movements has shown that increased flexibility is related to augmented force production during SSC movements. In contrast, running studies have shown that flexibility has little performance effect, which is odd because running is a kind of SSC movement. For example, De Vries (1966) showed that while pre stretching increased static ROM in sprinters, it had no effect on speed or energy cost during the 100-yard dash. It has been shown that stiffer leg muscles in endurance athletes may make them more economical in terms of oxygen consumption at sub-max speeds. The reason for these converse findings is probably related to the principle of specificity, which seems to underlie all sports training. Research by Iashvili (1983) found that active ROM was more highly correlated with sports performance. Due to varied sports specific training for football, basketball and volleyball players, that involved different types of stretch shortening cycle movements that increased flexibility and stiffer leg muscles depending of their nature of play. This research was intended to find out how for these sports trainings influenced the Andhra Pradesh State level football, basketball and volleyball players' speed and flexibility.

Methodology

To achieve the purpose of this study, the investigator randomly selected 30 basketball players, 30 football players and 30 volleyball players, who participated at state level competitions held at Hyderabad during the year 2012 and their mean age was 20.6 years with standard deviation of ± 1.4 years. Data were collected from the subjects, their speed through 50 M sprint and flexibility through sit and reach tests. The data were compared for the differences existed among the players using statistical tool ANOV and Scheffe's post hoc means where significant F value obtained..

Results

The descriptive statistics on speed, consisting, mean, standard deviation and range among basketball, football and volleyball players are presented in Table I.

Tab I: Descriptive Statistics, Mean (M), Standard Deviation (σ), and Range of Basketball, Football, and Volleyball Players on Speed and Flexibility

Variable	Player	M	σ	Range
SPEED	Basketball	8.01	0.69	6.93 – 9.8
	Football	7.87	0.78	6.36 – 9.72
	Volleyball	8.49	0.83	7.00 – 9.90
FLEXIBILITY	Basketball	13.60	2.13	9.00 – 18.00
	Football	12.97	1.61	11.00 – 16.00
	Volleyball	13.00	1.70	10.00 – 16.00

The results presented in Table I proved that there were differences in speed and flexibility of the basketball, football and volleyball players. To find out the statistical significance of the differences among the selected groups, ANOVA was employed and the results presented in table II.

Table II: Differences in Speed and Flexibility among Basketball, Football and Volleyball Players

Variables	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
SPEED	Between	6.38	2	3.19	5.40	0.05
	Within	51.43	87	0.59		
FLEXIBILITY	Between	7.62	2	3.81	1.14	NS
	Within	290.17	87	3.34		

The results presented in Table II proved that there was significant difference on speed among basketball, football and volleyball players and there was no significant difference among the groups on flexibility. Since significant F values were obtained on speed the results were further subjected to post hoc analysis using Scheffe's post hoc interval test and the results presented in Table III.

Table III: Multiple Comparisons of Paired Means on Speed among Basketball, Football and Volleyball Players

Basketball Players	Football Players	Volleyball Players	MD	C I
8.01	7.87		0.14	0.47
8.01		8.49	0.48*	0.47
	7.87	8.49	0.62*	0.47

* Significant

The results presented in Table III proved that paired mean comparisons between basketball and volleyball players; and football and volleyball players were significant. There was no significant difference between basketball and football players on speed.

Fig 1: Mean Values of Speed of Players Compared

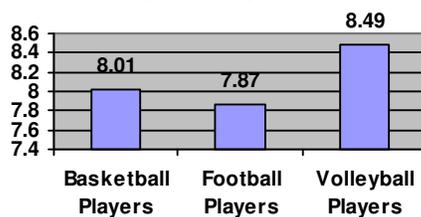
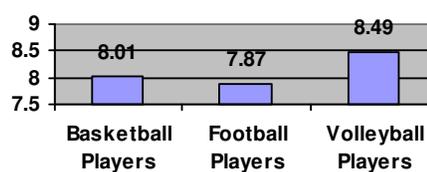


Fig II: Means values of Flexibility of Players Compared



Discussions

The results presented in this study gave way for consideration that the difference in speed among basketball, football and volleyball players as the obtained F value was significant $P < 0.05$. The paired mean comparisons proved basketball and football players' were faster than volleyball players. This may be due to the fact that football and basketball players involve themselves in running during their game situations than volleyball players. The study proved that there was no significant differences among football, basketball and volleyball players on flexibility as all these players were involved in active games which resulted in adequate stretch shortening cycles, which in turn provided them equal range of motion and improved flexibility. The findings of this study are in agreement with the findings of De Vries (1966) and Iashvili (1983).

Conclusions

The study proved that though there seem to be differences in speed among basketball, football and volleyball players there was no significant differences among these players on flexibility. It was concluded that the players can improve their speed for improved performance.

References

- De Vries, H.A. (1966), "Quantitative electromyographic investigation of the spasm theory of muscle pain", *Journal of Physical Medicine* 45 (3), 119-134.
- Iashvili (1983), *Soviet Sports Review* 18(1), cited in Alter (1996)
- McHugh, M.P.et.al. (1998), "The Role of mechanical and neural restraints to joint range of motion during passive stretch" *Medicine & Science in Sports & Exercise*, 30, 928-932.
- Toft E, Espersen G, Kalund S. et al (1989) "Passive tension of the ankle before and after stretching." **Am J Sports Med** 17:489–494.

Effect of Binocular Depth Perception upon Throwing Accuracy of Female Basketball Players

Prof. C.D. Agashe

HOD, SOS in Physical Education, Pt. Ravishankar Shukla University, Raipur, C.G.

Virendra Kumar Singh

Sports Officer, Shri Shankaracharya Mahavidyalaya, Sector-6, Bhilai Durg C.G.

Abstract

The aim of the present study is to find out the effect of binocular depth perception upon throwing accuracy of female basketball players. For present study, 100 female intercollegiate basketball players (Ave. age = 22.12 yrs.) were selected as sample. To assess throwing accuracy of selected female basketball players, Johnson Basketball Throw for Accuracy (Passing Test) was used. Depth perception of the selected subjects was recorded by a specially designed depth perception apparatus. Results reveal that throwing accuracy of female basketball players exhibiting superior binocular depth perception was found to be significantly better as compared to throwing or passing accuracy of female basketball players with average and inferior binocular depth perception. It was concluded that good binocular depth perception enables basketball players to throw or pass with precise accuracy.

Introduction

Performance of an athlete is dependent upon his skill and other allied factors. In this context it has been documented that visual skills have important role in sports performance. Visual skills is a complex phenomena and it is not just about normal vision but other visual proficiencies such as hand-eye coordination, depth perception, eye tracking, eye dominance, visual memory and sensitivity to contrast. Each sport has its individualistic demands of visual skills which is based on nature of that particular game. In basketball it is of utmost importance for a player to judge the distance between himself and other players as well as with basket. This is where depth perception comes to fore. Depth perception refers to the ability to see and understand the 3-D spatial relationship and relative distance between objects and oneself. Surprisingly researches on relationship of perceptual abilities with basketball skills are scanty although Miller and Barlett (1993), Liu (1999), Dongfeng et al. (2003), Quintana et al. (2007) etc. have studied perceptual abilities of basketball players. So far throwing accuracy, a basic skill in basketball, have not been ascertained in the light of female basketball players binocular depth perception, hence the present study was planned.

Hypothesis

It was hypothesized that throwing accuracy of female basketball players with superior binocular depth perception will be significantly better as compared to female basketball players with average and inferior binocular depth perception.

Methodology :-

The following methodological steps were taken in order to conduct the present study.

Sample :-

For present study, 100 female intercollegiate basketball players (Average age = 22.12 yrs.) were selected as sample. The selection of subjects was done from Inter-collegiate tournaments held in the State of Chhattisgarh India. The selection of sample was based on convenience sampling technique.

Tools:

Johnson Basketball Throw of Accuracy (Passing Test): To assess throwing accuracy of selected female basketball players, Johnson Basketball Throw for Accuracy (Passing Test) was used. This test is highly reliable and valid. The direction of scoring for this test is "higher the score better is the ability".

Depth Perception : Depth perception of the selected subjects was recorded by a specially designed depth perception apparatus. In this test the direction is scoring is "higher the deviation, lower the binocular depth perception".

Procedure:

Johnson basketball throw for accuracy (passing test) was administered to each subject as per their availability and convenience. Similarly depth perception of selected subjects was recorded.

To bifurcate cases into superior, average and inferior binocular depth perception categories, Q_1 and Q_3 statistical technique was used. Subjects whose depth perception scores lies below Q_1 was assigned to superior depth perception category, subjects whose scores lies above Q_3 was assigned to inferior depth perception category while scores on depth perception lying between Q_1 and Q_3 was assigned to average depth perception category. To find out the effect of binocular depth perception on throwing accuracy, 't' test was used. Results depicted in table no. 1.

Analysis Of Data

Table 1: Comparison of throwing accuracy between female basketball players on the basis of their binocular depth perception

Categories of Binocular Depth perception	Throwing Accuracy		t'
	Mean	S.D.	
Superior (N=26)	15.73	4.41	7.32**
Inferior (N=27)	7.74	3.49	
Superior (N=26)	15.73	4.41	5.42**
Average (N=47)	9.76	4.55	
Inferior (N=27)	7.74	3.49	1.99*
Average (N=47)	9.76	4.55	

* Significant at .05 level; ** Significant at .01 level

Entries reported in table 1 indicate that the throwing accuracy of female basketball players exhibiting superior binocular depth perception (M=15.73) was found to be significantly better as compared to female basketball players with inferior (M=7.74) and average binocular depth perception (M=9.76) respectively. It was also found that throwing accuracy of female female basketball players exhibiting average binocular depth perception was significantly better as compared to female basketball players with inferior binocular depth perception ($t=1.99$, $p<.05$).

Results

Female basketball players with superior binocular depth perception showed significantly better accuracy in throwing as compared to players with average and inferior level of binocular depth perception. Throwing accuracy of female basketball players exhibiting average binocular depth perception was found to be significantly better as compared to female basketball players with inferior binocular depth perception.

Discussion:

To be a consistently throwing accurately, a players need to judge the distance between the object and own position correctly. It means that a player must possess a good binocular depth perception to achieve this. Hence the results of the present study are in expected direction.

Conclusion

On the basis of results, it may be concluded that good binocular depth perception enables basketball players to throw or pass with precise accuracy.

References

- Miller, S. and Barlett, R.M. (1993). The effects of increased shooting distance in the basketball jump shot. J. Sports. Sci, 11(4) : 285-293.
- Liu, S. and Burton, A.W. (1999). Changes in basketball shooting patterns as a function of distance. Percept Mot. Skills, 89 : 831-45.
- Dongfeng, Steve chen, Chou Hung-Yu and Chi Li-Kang (2003). Male and female basketball player's goal orientation, perceived motivational climate, perceived ability and the source of sport confidence. The Sports Journal United States Sports Academy, Vol.,6. No. 3.
- Quintana, M.S.; Roman, I.R. and Molinuevo (2007). Perceptual visual skills in young highly skilled basketball players. Perceptual and motor skills: volume 104, issue , pp. 547-561

Biomechanical comparison of Genu Varum among Futsal players

Mahdi Amel Khabazan (PHD scholar), Department of Physical Education and Sport Sciences, Osmania University, Hyderabad, India, E mail: Dr_khabazan@yahoo.com

Prof. L. B. Laxmikanth Rathod Department of Physical Education and Sport Sciences, Osmania University, Hyderabad, India, E mail: Rathodlb@rediffmail.com

Amir Shahriar Aryamanesh Faculty member of Mashhad University of Medical sciences, Mashhad, Iran, E mail: Ariamanesha@mums.ac.ir

Prof. Mohamad Hosein Khabaz (PT) Faculty member of Iran Federation of sports medicine, Mashhad, Iran, E mail: pt.khabaz@yahoo.com

Abstract

Genu varum (GV) is a knee deformity in which the center of the knee joint is located lateral to the lower limb mechanical axis that may lead to walking problems and medial knee pain due to inappropriate patella movement in severe cases (Tabrizi A et al, 2013). The aim of this investigation was study about Comparison of Genu Varum among Futsal players. This angle is evaluated among twenty healthy Futsal players (40 knees) who play in Futsal club Elm o Adab which is a club in a Futsal premier league of Iran. Digital X ray was done as standing position for them and the Varum angle was measured with specific software (Marco). The International Knee Document Committee Subjective Knee Evaluation Form (IKDCSKEF) was used to score the self-assessment of each study participant. In order for data analysis, we performed descriptive statistics such as mean, standard deviation, frequency tables and in inferential statistics and t. test were used. The result showed that there was a significant difference between the Varum angle and IKDCSKEF among the players. It seems that considering the Varum angle as one of the normal landmarks can be an indicator of a healthy knee in athletes.

Keywords: Varum angle, Futsal players, IKDCSKEF

Introduction

Genu Varum (also called bow-leggedness, bandanas, bandy-leg, and tibia vara), is a physical deformity marked by (outward) bowing of the leg in relation to the thigh, giving the appearance of an archer's bow. Usually medical angulation of both femur and tibia is involved. Studies have shown a progressive genu varum increase between the childhood and adolescence periods. Variables such as age, weight, vitamin/hormone intake, the environment and soccer training may interfere with the knee alignment (Rezende et al, 2011). The problem may be unilateral, with a functional limb-length discrepancy, or bilateral. In physiologic genu varum the bone seems normal without any sign of bone dysplasia. The medial bowing of the lower limb is a gentle curve, taking place at the junction of the middle and the proximal thirds of the tibiae and the distal thirds of the femurs. The horizontal joint lines of both the knee and ankle are tilted medially (Spandar et al, 2010). For making this angle, a line has drawn from the center of femoral head bone to the center of the distal femoral epiphyses and connected to the second line that's drawn from the midpoint of the upper to lower tibia epiphyses (Staheli L.T, 2008). When Physiologic Valgus angle is more than 180 degrees outside, or when it is less than 180 degrees inside, the irregular form of Genu Varum appears (Yasin et al and Pour Ahmadi et al, 2013). The most common cause of genu varum is rickets or any condition that prevents bones from forming properly. Skeletal problems, infection and tumors can affect the growth of the leg, which can cause one leg to be bowed. Arthritis, if it affects the inside of the knee more than the outside can lead to bowed legs, as can a fracture that does not heal properly. Some professions, such as jockey and habitual bad can lead to bow-leggedness, as can physical trauma. With genu varum, the line of gravity runs farther medial to the knee than normal, putting increased stress on the medial compartment of the knee. So the amount of reaction force is 3.5 times in lateral side (Lewek et al, 2004).

This may cause abnormal weight bearing and may lead to instability in posture and disorder in strategy to control the condition in people with bowed knees in standing. A little changing in tibiofemoral angle in the frontal plane and standing foot angle can effect on muscular activity, torques and articular forces in the knee. Landing is a common sport activities that can cause large forcing 2 to

12 times the weight of the body (Wu HW et al, 2009). Genu varum effect on football player's performances (Hadadnejad et al, 2011). If Varum angle is too much among athletes especially in Futsal players they will be injured in the landing. Because in this position they have to flex their knees in order to decrease force landing and then move faster. Treating genu varum includes bracing and heel wedges that can play a role in at least delaying the need for a Total Knee Replacement (Wilson et al, 2011). Then we firstly decided to obtain the quantity of the Varum angle among Futsal players and compare with other Varum angle reported. Most investigations were reported the quantity of it by using goniometer and so they guide us to use digital software. It seems that the Varum angle is a good indicator of the health of the situation of the knee. The researchers want to know that whether knee angles such as Varum angle can benefit to evaluate the Futsal players in order to apply or reject them for coaches or managers of sport clubs?

Methodology

The method of this research is experimental research. Statistical population of present research includes all of the adult Futsal players in the premier league of Iran. According to aim of research, players of Elm o Adab Futsal club were voluntary selected after primary visiting by a physiotherapist, orthopedic surge and radiologist. Then healthy Futsal players were chosen. Regarding to the hypothesis of the research, tools of the present study were:

1-The direct digital X-Ray machine model symphony GMI (630MA, flat panel, 17*14 inch & telescopic tube) made from Italy were used. After taking x-rays, results are analyzed by a group of specialists and were sent to the researchers.

2-International Knee Documentation Committee Orthopedics Scores (IKDCSKEF) questionnaire was used. A common terminology and an evaluation form were created. This form is the standard form for use in all publications of results of treatment of knee ligament injuries. The most recent revision is freely available at the AOSSM web site as part of the IKDC Knee Forms (Collins et al, 2011).

3-Marco PACS software; Marco (Medicine And Revolutions) founded at early 21th century, with the vision of market leadership in PACS and medical computer aided network design field. Marco's objective is to provide digital imaging solutions for medicine in PACS and radiography criteria to facilitate communication way of specialist with their respective medical centers. Their objective ultimately provides benefit to the patients through high speed and exact of communicating information, while considerably saves costs of diagnostic services.

Procedure of the study:

Elm o Adab Futsal players were visited by proficient physiotherapist. After approving health of them, he introduced to orthopedic surge in order to send them to the digital X ray clinic. Futsal players who accepted to contribute to present research filled of three forms or questionnaires and signed them. They were sent to the digital radiology center. Standing X-rays were taken them and analyzed by proficient radiologist. Then the results were sent to the researchers. To have a more precise evaluation, qualitative questionnaire already prepared by IKDCSKEF was filled with Futsal players in a class with 22 Celsius degree and silence condition.

After collecting information and data by the above method, they were analyzed by SPSS version 19. In order to analysis the data, the different statistical method was used to make appropriate conclusions from the data. In the descriptive way used statistics such as average, Standard Deviation, variance and frequency table and in the deductive way used for Klmogroph Smirnoph and t. test.

Result

According to the aims and hypotheses, in Varum angle and IKDCSKEF among players, were observed a significant difference between Futsal players. Summary of the statistic and results have shown in tables 1 and 2

		Varum angle	IKDCSKEF
N	Valid	40	20
	Missing	0	20
	Mean	184.2550	97.0680
	Median	184.2500	97.7000
	Mode	184.25	96.55 ^a
	Std. Deviation	2.46779	4.48260
	Variance	6.090	20.094
	Minimum	173.84	79.31
	Maximum	188.49	100.00

Table1. The summary of the statistics.

On the table showed, there are a significant difference in Varum angle and IKDCSKEF.

One-Sample Test	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Varum angle	472.217	39	.000	184.25500	183.4658	185.0442
IKDCSKEF	96.841	19	.000	97.06800	94.9701	99.1659

Table 2. The result of t. test of Varum angle and IKDCSKEF among Futsal players.

Discussion

The aim of this investigation was studying about biomechanical evaluation of Varum angle that is one of the angles of the knee. Twenty healthy Futsal player (40 knees) that their knee, s health was approved by orthopedic surge, contributed voluntarily in this investigation and standing X ray were taken of them. The mean of the age, Varum angle and IKDCSKEF of them were $26M \pm 3.01$ SD, $184.25M \pm 2.46$ SD and $97.06M \pm 4.48$ SD respectively. Using of Marco software was easily and precisely in order to provide Varum angle than other tools such as goniometer. Considering Varvm criteria were presented by Yasin et al (2013), our samples have Varvm poorly ($M 184.255 \pm 2.46$ SD). Asadpour et al (2012) reported that there is no significant difference between athlete and non-athlete students in genu varum while we obtained significant difference in genu varum among Futsal players. Witvrouw et al (2009) studied the relationship between playing soccer and genu varum. Their results showed that intense soccer participation increases the degree of genu varum in males from the age of 16. Soccer players in the investigation of Rezende et al (2011) showed more remarkable genu varum (67.7% of the soccer practitioners) than the non-soccer players. Their findings support the hypothesis that soccer leads to greater genu varum and/or football naturally selects subjects with a certain degree of genu varum. Our results are similar to Witvrouw et al (2009) and Rezende et al (2011) about genu varum in subjects. We think that parental care in childhood, especially the first 2 years of birth and type of clothing (what they are used to diaper babies) that could be caused Varum in children. The results of studies carried out in Iran are very disturbing and families seem to be very careless of the problems of their children, while little attention to activity among children can reduce many postural disorders (Asadpour et al 2012). Effect of unsuitable physical exercises such as put constant stress on certain muscles, or sports that involve repeated kicking or jumping against hard surfaces can aggravate postural abnormalities. Especially in schools of Iran students mainly practice on hard surfaces, fundamental exercises are not seriously adhered to, and children are very interested in playing Futsal on hard surfaces that can lead to or aggravate postural abnormalities like genu varum. Considering the role of science-based exercises in preventing and reducing physical abnormalities and the detrimental effect of certain physical activities that aggravate postural deformities consciousness is required by parents, educators and coaches.

Hambly K and et al (2008) reported that the International Knee Documentation Committee Subjective Knee Form was the highest scoring instrument in all categories while it is similar to the results of our research.

Hambly K and et al (2010) also reported that Seventy-eight percent of the items from the IKDC were experienced by more than half of the patients. For patients 12 months or more after anterior cruciate ligament reconstruction, 94% of the IKDC items had a frequency-importance. Oliaei and et al (2008) were obtained scores IKDCSKEF, 94.3 for healthy people and 78.5 for patients. IKDCSKEF results were significantly lower in patients than control subjects. Their result was closer to our achievements among healthy people.

Conclusion

Biomechanically, in the normal alignment knee, articular reaction force passes equally through the lateral and medial compartment. Due to increasing articular reaction force about 2.5 – 3 times in waking and earth reaction force that passes in inside the knee from torque is caused. So, articular reaction force in medial compartment is larger than lateral compartment. Increasing in varum torque may dramatically increase in medial knee compartment osteoarthritis. Considering the Varum angleas one of the biomechanically landmarks or index, club's medical team, can provide and predict better advice to attract or reject the new players to the club administrators. Then after filling IKDCSKEF and checking the Varum angle can realize of the health of knee's athletes.

Acknowledgements

The researchers would like to thank the participants, members of the Mehregan physiotherapy clinic of Mashhad and managers and members of the Parisian Medical Imaging Centre of Mashhad especially Mr Piry.

References :

- Asadpour H, Gharekhani H, Karvani V (2012), A comparison of postural Abnormalities in Athlete and Non-Athlete Elementary Students, *International Journal of Sport Studies*. Vol; 2 (8),p: 406-408.
- Collins NJ, Misra D, Felson DT, Crossley KM, Roos EM, Measures of Knee Function, *American College of Rheumatology*; 2011, Vol; 63, No. S11, p; S208–S228.
- Hadadnezhad M, Letafatkar A (2011), The relationship between genu varum abnormality and lower extremity's performance and strength in teenage footballers. *J Rehabil Sci*, Vol; 7(2), p: 188-196.
- Hambly K , Griva K(2008), IKDC or KOOS? Which Measures Symptoms and Disabilities Most Important to Postoperative Articular Cartilage Repair Patients?, *Am J Sports Med*, Vol; 38 , p1395-1404.
- Hambly K , Griva K(2010), IKDC or KOOS? Which One Captures Symptoms and Disabilities Most Important to Patients Who Have Undergone Initial Anterior Cruciate Ligament Reconstruction? *Am J Sports Med*, Vol; 38 , p1395-1404.
- Lewek MD, Rudolph KS, Snyder-Mackler L (2004) Control of frontal plane knee laxity during gait in patients with medial compartment knee osteoarthritis. *Osteoarthritis Cartilage*, Vol; 12(9), p: 745-751.
- Olyaei G.R, Jamshidi A. A, Heydarian K, Talebian S, Functional outcome of lower limb following anterior cruciate ligament reconstruction; a prospective clinical study, *Tehran University Medical Journal*, Vol: 65 (2), p62-68.
- Pour Ahmadi M, Mohseni Far H (2013), Kinesiology of the musculokeletal system; A Physical Therapy Approach Knee, Ghalam Publication P.J.S, p 117-125.
- Rezende F.L.M, Santos M, Arujo T.L, Matsudo V.K.R (2011), Does soccer practice stress the degrees of genu varo? *Rev Bras Med Esporte*, Vol; 17(5), p: 329-333.
- Rostami Haji-Abadi M, Rahnama N (2010), The profile of body abnormalities of bodybuilders, *British Journal of Sports Medicine*, Vol; 44(1).
- Spandar R, Mortazavi S.M.J, Baghdadi T (2010), Angular Deformities of the Lower Limb in Children, *Asian Journal of Sports Medicine*, Vol ;1(1), P: 46-53.
- Staheli L.T (2008), *Fundamentals of pediatric orthopedics*. 4th Ed, Wolters Kluwer Health, Lippincott Williams and Wilkins, USA, p: 139- 140.
- Tabrizi A, soleimanpour J, Sadighi A, Jafari Zare A (2013) A Short Term Follow Up Comparison of Genu Varum Corrective Surgery Using Open and Closed Wedge High Tibial Osteotomy, *Malaysian Orthopaedic Journal*, Vol; 7(1),p:7-12.
- Wilson B, Rankin H, Barnes CL, (2011) Long-term results of an unloader brace in patients with unicompartmental knee osteoarthritis, *Orthopedics J*, Vol ;34(8):P;334-337. Web. 28 Jan 2013.
- Witvrouw E, Danneels L, Thijs Y, Cambier D, Bellemans J(2009), Does soccer participation lead to genu varum? *Knee Surgery, Sports Traumatology, Arthroscopy*, Vol;17(4),p: 422-427.
- Wu HW, Liang KH, Lin YH, Chen YH, Chuang H (2009), Biomechanics of ankle joint during landing in counter movement jump and straddle jump. *Bioengineering Conference, 2009 IEEE 35th Annual Northeast 2009*; 1-2.
- Yasin M, Ahmadi A ,Physiotherapy for Skelton and Muscular Injuries, Teimourzadeh Publications (persian); 2009, pp. 120-189.

Effect Of Low Intensity Continuous Training And Yoga Practices On Vital Capacity Of Mild Hypertension College Teachers

D. Kalidoss (Ph.D), Research Scholar, Dept., of Physical Education and Sports, Pondicherry University, Pondicherry.

Dr.J.Manohar Chendur Pandi, Physical Director.G.H.S.S.Kottaram,Kanyakumari Dist. Tamil Nadu.

Dr. D. Sultana, Professor, Dept., of Physical Education and Sports, Pondicherry University, Pondicherry.

Abstract

The purpose of the study was to find out the effect of low intensity continuous training and yoga practices on vital capacity of mild hypertension college teachers. For this study, forty five mild hypertension college teachers from DMI College of Engineering at Chennai. The subject's age ranged from 35 to 45 years. The subjects were divided into three groups one control and two experimental groups. The two experimental groups were subjected to a training programme for twelve weeks. Low intensity continuous training was administered to group I (n = 15), yoga practices was administered to group II (n = 15) and group III (n = 15) served as a control group. Test was conducted for vital capacity before and after twelve weeks training programme and data was collected and analyzed statistically by analysis of covariance to find out the significant level. Based on the result the study it was concluded that low intensity continuous training and yoga practices group significantly improved the vital capacity of mild hypertension college teachers.

Keywords: vital capacity, walking, yogasanas, pranayama.

Introduction

Continuous training is when low to mid-intensity exercises are performed for more than 20 minutes without resting intervals. It allows the body to work from its aerobic energy stores to improve overall fitness and endurance. It includes fat burning muscle building and increasing maximum aerobic potential. Continuous exercise is basically constant cardio. This particular exercise is a type of aerobic exercise that utilizes oxygen. Aerobic exercises maximize the amount of oxygen that runs through your blood. In addition, this exercise keeps you moving at a steady, constant pace. Continuous exercise is performed all at one time without any breaks in between. Continuous training exercises include running. More specifically, long distance running is a prime example of continuous training. Walking and jogging are other similar exercises that are in the category of continuous exercise. Swimming is also considered to be a continuous exercise if it is done in a constant manner. Aerobic dancing, cycling, cross-country skiing, running on a treadmill and rowing machine exercise are all continuous exercises. Aerobic exercise improves the efficiency with which your respiratory system can supply oxygen to your body. Your body needs a constant and generous amount of oxygen in order to function properly. In Sanskrit the word 'yoga' is used to signify any form of connection. Yoga is discipline to improve or develop one's inherent power in balanced manner. It offers the means to attain complete self-realization. Yoga can be defined as a means of uniting the individual spirit with the universal spirit of god, suppression of modification of the mind and the "union of the individual self with the universal self". Yoga can be a very beneficial therapy to lower high blood pressure naturally. A gentle, soothing practice of yoga stretches settles mind and body and reduces stress. Yoga postures tend to switch on the parasympathetic nervous system, responsible for rest and repair, and turn off the sympathetic nervous system, used for the fight-or-flight stress response. Increased parasympathetic activity has a beneficial effect on many systems in the body, and allows the nervous system to become more balanced, freeing up the body's inherent healing response. Vital capacity is the maximum amount of air a person can expel from the lungs after a maximum inspiration (Donald. 1978). It is equal to the inspiratory reserve volume plus the tidal volume minus expiratory reserve volume (Koulouris, et al. 1995). A normal adult has a vital capacity between 3 and 5 litres

Statement of the problem

The purpose of the study was to investigate the effect of low intensity continuous training and yoga practices on vital capacity of mild hypertension college teachers.

Methodology

The sample for the present study consists of forty five mild hypertension college teachers from DMI college of Engineering at Chennai. The subjects age ranged from 35 to 45 years and they were divided into three equal groups namely group I (Low intensity continuous training n = 15), Group II (yoga practices n = 15) and Group III (Control n = 15). Wet spirometer analyzed to find out vital capacity as physiological variable for this study. Group I, and II were giving training for a period of twelve weeks for 3 days per week in the morning session between 06 to 07 am. The training programme was administrated for forty five minutes per session. Control group to did not undergo any training other than their regular work. The pre and post test were taken before and after the training programme. Analysis of covariance was used to test the level of significance.

Training programme

Strolling (Slow walk)

Aerobic (Brisk walk)

Yogasanas

Pranayama

Result and statistical Techniques

The collected data from the three groups namely low intensity continuous training, yoga practices and control group on vital capacity were statistically examined by analysis of covariance and the level of significance was fixed as 0.05 level of confidence.

Table – I Analysis of Covariance for the data on vital capacity of experimental and control groups

Groups	Control group	Low intensity Continuous training group	Yoga practices group	Source of variance	Sum of square	df	Mean square	F Ratio	Significant
Pre-test mean	2895	2875	2813	B	54361.11	2	27180.56	0.29	0.75
SD	339.14	337.14	235.63	W	3978833.33	42	94734.127		
Post-test mean	2780	2993.3	2990	B	448111.11	2	224055.56	2.78	0.07
SD	299.46	326.70	214.80	W	3395783.33	42	80851.98		
Adjusted post-test mean	2780	2993	2990	B	671939.09	2	335969.55	47.05*	0.00
				W	292753.37	41	7140.33		

* Significant at 0.05 level of confidence

Required table value at 0.05 level of confidence for 2 and 42, 2 and 41 degrees of freedom – 3.21

Above table I reveal that the pre test means in vital capacity of the control group is 2895, low intensity continuous training group is 2875, and yoga practices group is 2813 the 'F' ratio is 0.29 which is insignificant at 0.05 level of confidence. The post test means of the control group is 2780, low intensity continuous training group is 2993.3 and yoga practices group is 2990 the 'F' ratio of post test means are 2.78. It shows that there is significance difference among the post test means at 0.05 level of confidence. The calculated 'F' ratio 47.05 is well above the table value. So it was significant at 0.05 level of confidence, there is significance difference among the three groups. Therefore the hypothesis has been accepted.

Table – II

Scheffe's post HOC test to measure ordered adjusted vital capacity between control and experimental groups.

Control Group	Low intensity continuous training group	Yoga practices group	Mean difference	C.I
2780	2993		213*	77.79
2780		2990	210*	
	2993	2990	3	

* Significant at 0.05 level of confidence

Table II scheffe's post hoc test showed that the mean difference between control group and low intensity continuous training group were 213, which is found to be significant at 0.05 level. The difference between the control group and yoga practices group were 210 which is significant. The difference between low intensity continuous training group and yoga practices group were 3 which is no significant at 0.05 level. Low intensity continuous training group and yoga practices group have influenced the vital capacity of the mild hypertension college teachers.

Discussion On Findings

The experimental groups were undergone low intensity continuous training and yoga practices which were assigned to them. From the analysis it is evident that there is significant change was noticed after twelve weeks of low intensity continuous training and yoga practices on vital capacity.

Conclusion

The low intensity continuous training and yoga practices will improve the vital capacity. After exercise body experiences immediate and more gradual effects. Essentially the body is becoming more conditioned and the entire cardiovascular system improves, therefore it does not need the extra residual volume. The minute start training, will notice more frequent muscle contraction, raised body temperature and pulse, and deeper breathing. Longer-term effects occur as the body adapts to regular exercise, including heart getting larger, bones becoming denser and the vital capacity of breath deepening.

So continuous training and yogic exercises should actively for respiratory motion, the lungs get exercise, make full use of lung capacity, vital capacity increased, to provide more blood Oxygen. The more energetic daily chest movements can become a normal breathing method to be effective. The mechanism of these exercises is increase respiratory muscle Strength, improve lung elasticity, make breathing depth increase, enhance efficiency and function and improve lung breathing for mild hypertension, so as to improve vital capacity. .

Reference

- Anantharaman, V., Yoga as a prophylactic Health Care, *Yoga Mamansa*, Vol.XXVIII. No 1 P. 53-57, 1989.
- Bharagava ,R., Gogate MG and Mascarenhas JF, " Automatic responses to breath holding and its variation following pranayam" *Indian J. Physical Pharmacol* , 32 :4, Oct- Dec 1998 , PP 257- 264
- Brikel, D.A., Edgren, L., Hatha yoga, Improved Vital capacity of college students *AlterationTheraphyHealth Medecine*, 6(6) : p. 55 -63
- Donald, K. Mathews. (1978). *Measurement in Physical Education*, Philadelphia: W.B. Saunders Co. 128
- Koulouris NG, Valta P, Lavoie A, et al. A simple method to detect expiratory flow limitation during spontaneous breathing. *Eur Respir J* 1995; 8:306 – 13
- Kronenberg R, Drage G. Attenuation of the ventilator and heart rate responses to hypoxia and hypercapnia with aging in normal man. *J Clin Invest* 1973; 52:1812– 9.
- Makwana. K and Khirwadkar .N., et .al., " Effect of short term yoga practice on Ventilatory function tests" . *Indian Journal of physiol.and pharmacol.*, 32, 1988, 202-208

Quantification Of Physical Responses To Varied Packages Of Yogic Practices Among Women College Students

Dr. M. SIVASANKAR REDDY, Deputy Director, Dept Of Physical Education, S.V.University,
B. SUMAN, Research Scholar, Dept Of Physical Education, S.V.University, Tirupati.
PENNA BASKARA, Lecturer In Physical Education, S.V.Oriental College, Tirupati.

Abstract

The purpose of the study was to quantify of physical responses to varied packages of yogic practices among Women College students. The physical variables are flexibility and speed. In order to achieve the purpose of the study 120 women students were randomly selected from Sri Padmavathi Womens Junior college, Tirupati. Their age was ranged between 16 and 20 years. The women students were equally divided in to three equal groups of 40 each as yoga package-I, yoga package-II and control group. The control group was not given any training. The experimental groups were undergone yogic practices for twelve weeks and six days in a week. The data were collected on selected dependent variables ie. Flexibility (sit and reach test) and speed (50 mts run) before and after training period. The collected data were statistically analyzed by using Analysis of covariance (ANCOVA) and Scheffe's post hoc test. To test the significance 0.05 level of confidence was fixed. Based on the results of the study it was concluded that the second package of yogic practices were significantly improve the flexibility and speed than that of first package and control group. First package of yogic practices were significantly improve the flexibility and speed than that of control group.

Key words: yogic practices, speed and flexibility.

Introduction

Yoga is universally benefiting all people of all ages the study of yoga is fascinating to those with a philosophical mind and is defined as the mind's activities which lead to the complete realization of the intrinsic of the Supreme Being. It is a practical holistic philosophy designed to bring about profound state as well as an integral subject, which takes into consideration man as whole. The aim of yoga is to devise ways and means of helping the better emotional and intellectual concentration.

The word yoga means 'unity' or 'oneness' and is derived from the Sanskrit word 'yujir' and 'yuj' which means 'to join'. This type of effort is possible only through the control over sense organs and through continued practice. "The withdrawal of the sense organs from the worldly objects and their control is Yoga". "Yoga is a timeless practice since over thousands of years dealing with physical, mental, and spiritual well being or human society as whole". 'Stilling the mind's movements in Yoga'. "Yoga is a systematic physical practice to improve awareness to develop will power and to realize self to join traditional consciousness (jeevathma) to super consciousness (paramathma). Yoga is the inhabitation of the modification of the mind. This means that it prevents the contents of the mind from taking different forms. "Yoga is training in the techniques of harmony and also a preparation for the total integration of human personality".

Methodology

The main object of the study was to examine out the physical to varied packages of yogic practices among Women College students. For the study 120 college women students from Sri Padmavathi Women's junior college Tirupathi, Andhra Pradesh, were randomly selected as subjects. The age of the subjects were ranged between 16 to 20 years. The selected subjects were divided into three equal groups of forty subjects each. All the students were tested with dependent variables ie. Flexibility (sit and reach test) and speed (50 mts Run), before and after yoga practice. The group I underwent first packages of yogic practices. It consists Suryanamaskara, Padmasana, Vajrasana, Navasana, Uttanapadasana, Matyasana, Bujangasana, Sarvangasana, Ardha shalabasana, Arthamastyendrasana, Dhanurasana, Pawana mukthasana, Nadisodana, Sitali, Silent meditation, Savasana. Group II underwent second package of yogic practices It consists Suryanamaskara, Padmahasthasana, Trikonasana, Virabhadrasana, Bandha, Padmasana, Halasana, Gomukhasana, Pachimothasana, Salabhasana, Kurmasana, Supta vajrasana, Maha Mudrasana, Nadisuddi, Sithakari, Mantra meditation, Savasana. The above yoga packages were trained for six days per week for twelve weeks. Group three was treated as control without any yoga package.

Results And Discussion

The Analysis of co-variance (ANCOVA) and Scheffe's post-hoc test on the data flexibility and speed of experimental and control groups have been analyzed and shown in the below tables.

Table - I
Computation Of Analysis Of Covariance Of Pre-Test, Post Test And Adjusted Post Test On Flexibility Of Three Different Groups

Test	Yoga package I	Yoga package II	Control Group III	Source o of Variance	Sum of Squares	df	Mean Squares	F Value
Pretest								
Mean	26.93	26.85	26.85	Between	0.15	2	0.07	0.05
S.D.	1.23	1.26	1.15	Within	176.98	117	1.51	
Post test								
Mean	30.85	35.43	26.93	Between	1447.82	2	723.91	456.22*
S.D.	1.35	1.14	1.23	Within	185.65	117	1.59	
Adjusted Post test								
Mean	30.86	35.42	26.92	Between	1447.65	2	723.82	459.25*
				Within	182.83	116	1.58	

* Significant at 0.05 level of confidence.

Table - II
Ordered Scheffe's Post Hock Test Mean Differences On Flexibility among Three Groups (Scores In Centimeters)

Yoga package I	Yoga package II	Control Group III	Mean Differences	Confidence Interval Value
12.74	13.36	-	0.62	0.078
12.74	-	11.77	0.97	0.078
-	13.36	11.77	1.59	0.078

Table - III
Computation Of Analysis Of Covariance Of Pre-Test, Post Test And Adjusted Post Test On Speed (50 Meters Run) Of Three Different Groups (Scores In Seconds)

Test	Yoga package I	Yoga package II	Control Group III	Source of Variance	Sum of Squares	df	Mean Squares	F Value
Pretest								
Mean	8.469	8.467	8.469	Between	0.0001	2.00	0.000032	0.06
S.D.	0.02	0.02	0.02	Within	0.06	117.00	0.0005	
Post test								
Mean	8.35	8.28	8.47	Between	0.74	2.00	0.37	393.62*
S.D.	0.02	0.04	0.02	Within	0.11	117.00	0.0094	
Adjusted Post test								
Mean	8.35	8.28	8.47	Between	0.74	2.00	0.37	389.47*
				Within	0.11	116.00	0.00095	

* Significant at 0.05 level of confidence.

Table - V
Ordered Scheffe's Post Hoc Test Mean Differences On Speed (50 Meters Run) Among Three Groups
(Scores In Seconds)

Yoga package I	Yoga package II	Control Group	Mean Differences	Confidence Interval Value
8.35	8.28	-	0.07	0.017
8.35	-	8.47	0.12	0.017
-	8.28	8.47	0.19	0.017

Discussions

Flexibility

The flexibility among women students was examined with the sit and reach test. No significant variation was detected in the flexibility of the women students selected for the yoga package group-I (26.85cm) and yoga package group-II (26.85cm) compared to control group (26.85cm) during the pre-test.

In post-test significant improvement was noticed in flexibility of the experimental group. Yoga package group-II showed highly significant improvement in the flexibility (35.43), followed by yoga package-I (30.85) with reference to control (26.93) during post-test. The post-test was adjusted then similar results were obtained yoga package group-II showed highly significant improvement in the flexibility (35.42cm), followed by yoga package-I (30.86cm) with reference control (26.92cm).

Flexibility is the quality that permits freedom of movement and it is one of the important physical components of the human body. Range of flexibility may influence on level of injuries to the human body. The regular practice of yoga has been shown to improve flexibility and muscle force in adults. Tran and Holly (2001) noticed that hatha yoga practice significantly improved the flexibility. They suggested that 15 minutes of dynamic warm up exercises, 50 minutes of asanas (yoga postures) and 10 minutes of supine relaxation in Savasana will improve the flexibility. Cowen *et al* (2005) reported favourable perceptions of yoga and less musculoskeletal pain because of improvements in trunk flexibility. Chen *et al* (2009) examined the effect of yoga exercise intervention on health related physical fitness in school going asthmatic children. The research found a positive association that the yoga practice group showed favourable outcomes in terms of flexibility compared to control. Rajakumar *et al* (2012) studied the influence of yoga practice on strength and flexibility in students and they noticed that significant improvement in strength and flexibility among the students. Ganesh Babu *et al* (2012) reported yoga practice significantly improved the flexibility than that of proprioceptive training among basketball players. Tracy *et al* (2012) studied on Bikram yoga training and physical fitness in healthy young adults. They noticed that substantially increased lower back/hamstring flexibility, increased shoulder flexibility. Tran MD, *et al*. (2001) showed that two Hatha yoga sessions per week for 8 weeks improved a variety of fitness parameters. After eight weeks, the average flexibility of the yoga group improved by 13-35% and the gains were significantly greater than the non-yoga group, especially in shoulder and trunk flexibility. Galantino *et al* demonstrated that 6 weeks of selected Hatha yoga training increased flexibility and balance significantly.

Improved flexibility is one of the first and most obvious benefits of yoga. With continued practice comes a gradual relaxation of the muscles and connective tissues surrounding the bones and joints; this is considered to be one reason that yoga is associated with reduced aches and pains. Yoga helps to build muscle mass and or maintain muscle strength, which protects from conditions such as arthritis, osteoporosis and back pain. During a yoga session, the joints are taken through their full range of motion, squeezing and soaking areas of cartilage not often used and bringing fresh nutrients, oxygen and blood to the area, which serves to prevent conditions like arthritis and chronic pain. Without proper sustenance, neglected areas of cartilage will eventually wear out and expose the underlying bone. Numerous studies have shown that asana, meditation or a combination of the two reduced pain in people with arthritis, Carpel Tunnel syndrome, back pain and other chronic conditions. Yoga also increases proprioception and improves balance.

Speed

The speed among the women students was examined with fifty meters run test. No significant difference was observed in the speed of the women students selected for a yoga package group-I (8.469 sec) and yoga package group-II (8.467sec) compared to control group (8.469sec) during the pre-test.

In post-test significant improvement was observed in speed of the experimental group. Yoga package group-II showed highly significant improvement in the speed (8.28sec), followed by yoga package-I (8.35sec) with reference control (8.47sec). The post-test was adjusted then same results were obtained yoga package group-II showed highly significant improvement in the speed (8.28sec), followed by yoga package-I (8.35sec) with reference control (8.47sec).

The definition of speed from a scientific standpoint is simply distance / time, but this is a rather simplistic view of speed. A more accurate definition of speed is this: speed is the ability of an athlete to move as fast as possible, through the optimal range of motion, in a deliberate and intentional manner, in a particular direction. Ross and Thomas (2010) reported that effects of yoga and exercise in both healthy and diseased populations, yoga is effective as or better than the exercise at improving the variety of health related outcome measures. Gopinath et al (2012) observed in his written report that yoga practice developed speed than that of proprioceptive training among basketball players. Vishav (2012) investigated the effects of yoga on physical fitness including agility, strength, power, cardiovascular endurance and speed. Results indicated that these variables improved significantly except for cardiovascular endurance.

In different yoga programs with various combinations of different components of yogic practices, with a regulated duration and frequency of specific yogic practices the physical performance improvement can be achieved. Different combinations of yogic practices may be incorporated in a physical fitness program based on the situation both in normal and diseased individuals. All practices should not be performed by everybody. The comparatively physically fit individuals may practice all the practices by increasing the frequency and duration of individual components. On the contrary, for sedentary and diseased individuals asanas with the lower or moderate intensity of exercise without any complicated postures (asanas) should be preferred. One has to be selective to choose specific yoga practices in case of sedentary and diseased persons to accrue the benefits of very wide range of physical physiological ones including the preventive, prophylactic and curative aspects for various diseases by practicing it with low level of energy cost/exercise intensity (less stress).

Conclusions

From the results of the study and discussion the following conclusions were drawn There is a significant difference flexibility and speed between all groups. The varied packages of yogic practices may significantly improve the flexibility and speed among women college students. The second package of yogic practices may significantly improve the flexibility and speed greater than that of first package of yoga practice and control group among women college students. The first package of yogic practices may significantly improve the improve the flexibility and speed greater than that of control group among women college students.

References

- Tran MD, Holly RG, Lashbrook J, Amsterdam EA. (2001) Effects of Hatha Yoga Practice on the Health-Related Aspects of Physical Fitness. *Journal of Prev Cardiol*. Autumn; 4(4):165-170.
- Chen TL, Mao HC, Lai CH, Licy, KGO CH (2009) The Effect of yoga exercise Intervention on health related physical fitness in school age asthmatic children. *Article in Chinese PP – 56(2) : 42-52.*
- Raja Kumar.V, Johnson.P (2012) Effect of selected yogic exercises on strength and flexibility of physical education students. *proceedings book of Emerging trends in physical education, sports sciences and their role in improving the performance of sportsmen*, ISBN :978-93-80487-14-4, p: 92-93.
- Ganesh Babu.T, Gopinath.P Effect of yogic practice and proprioceptive training on speed and flexibility among basketball players. *Proceefings of impact of physical education in developing wholesome personality among student community*. ISBN: 978-81-923573-0-0, p:55-59.
- Tracy BL, Hart CE. Bikram yoga and physical fitness in healthy young adults. *J Strength Cond Res*. 2012 May 15
- Ross A, Thomas S.(2010)The health benefits of yoga and exercise: a review of comparison studies. *J Altern Complement Med*. Jan;16(1):3-12.
- Vishav G. Effects of Hatha yoga training on the health related physical fitness. *Int J Sport Sci Engine*. 2012;5(3):169-173.\
- Sosmma john et.al.(2011) "Yoga practices weight training and iron yoga an strength, speed, flexibility and vital capacity among college softball players", *voice of sports research journal on physical education and sport*, University of Calicut.
- Hardayal Singh (1991), *Silence of sports Training*, New Delhi, PVS Publication, P.191.
- Shaver, Larry G (1982) *Essentials of Exercise Physiology*, Delhi, Surject Publication, PP. 6-10.
- Thirumalaswamy .R., (1988). "Statistics in physical Education", karigudi, senthil publication

Assessment Of Occupational Stress Among Physical Education Teachers Of Dakshina Kannada District

Ashok Kumar^a and Dr. S. Madialagan^b

^aResearch Scholar, Department of Physical Education and Sports Sciences, University of
Mysore, Mysore-570005, India

^bAssociate Professor, Department of Physical Education and Sports Sciences, University of
Mysore, Mysore-570005, India

Abstract

The study aimed to examine the levels of occupational stress experienced by physical education teachers of Dakshina Kannada district. The sample consisted of 288 physical education teacher respondents working in secondary schools of Dakshina Kannada District of Karnataka State. The respondents were responded to the Occupational Stress Index (Shrivastava and Singh, 1984). This Occupational Stress Index is used with some modifications. The data were analyzed with the help of programs called SPSS 17.0. The research findings point out that physical education teachers generally suffer from a moderate level of occupational stress in most of the components of occupational stress and total occupational stress. Only in role ambiguity and unprofitability physical education teachers had significantly low levels of stress. Lastly alleviating stress among physical education teachers has been discussed.

Key Words: Occupational stress, Physical education teachers

Introduction

The historical perspective of physical education is no more. Today, tremendous developments have taken place in this field at the global level. Today, physical education teachers are playing a number of diverse as well as specialized roles as teachers, officials, organizers and administrators. It is not easy to encourage and inspire the students to sports activities. "The activities and tasks performed by a teacher of physical education may be divided into five categories; namely planning, teaching, evaluating, administrative and various unclassified duties" (Freeman, 1988). He has the responsibility to help the students develop skills, master knowledge and acquire attitudes and social qualities that help a person become all that he/she is capable of. The responsibilities of physical education teachers have increased manifolds in modern scientific age. "From an idealistic point of view, a physical education teacher ought to have loyalty towards profession, alertness of body and mind, adjustability, initiative, fitness for work, discipline, enthusiasm, sincerity, self control, sociability, super motor capacity, sense of humour, honour, dignity, self confidence, impartiality, communicative skills, sportsman's spirit etc. He must be a model for his students and colleagues with regard to his character, conduct and behaviour" (Kamlesh, 2002). With the change in the concept of physical education, the role of the physical education teachers has gone beyond the playground and entered the classroom teaching. Modern physical education recognizes its responsibility for man's total development i.e. physical, mental, educational and intellectual. Due to these responsibilities the physical education teachers work is more stressful. To find out their stress level the researcher has planned and conducted a study of the secondary school physical education teachers.

Teaching in physical education is an exciting and challenging profession that combines classroom skills with emphasis on excellence in sports. The physical education teachers while playing a number of diverse as well as specialized roles as teachers, officials, organizers and administrators easily become prone to job stress. Job stress among physical education teachers working in schools has received the attention of researchers during the last few years. The stress in school teaching has not been a new topic all over the world including India. The results of the study would help to find out the degree/level of occupational stress among the physical education teachers working in various types of schools in Dakshina Kannada District of Karnataka State. The results would also help to understand the factors responsible for occupational stress among physical education teachers. The study might be useful in identifying the levels of stress of the teachers as related to the three variables. This would help them to understand various dimensions of adjustment and find out ways and means to be well adjusted persons. The study would help the administrators to create a congenial atmosphere in the institutions which would benefit both the sides.

Review of literature

Tam and Mong (2005) indicated job stress means people experience psychological state which is incongruence and misfit between worker's perceptions of the demands on them and their ability to cope with those demand. "In the case of teacher stress, it is used to describe 'a demand made upon the adaptive capacities of the mind and body... which if continued beyond the ability of these capacities to respond, leads to the physical and psychological exhaustion and possibly the ultimate collapse referred to by Seyle" (Fontana, 1989). Konukman, Agbuga and Erdogan (2010) found stress to be associated with role conflict. The study revealed that teaching and coaching are two different occupational roles, each having specific stress and burnout problems. These two different roles when performed together result into role conflict and thus job stress among Physical Education teachers who also coach.

Verma (1997) investigated the job stress and job satisfaction of physical education teachers working in govt., private and public schools of U.T. Chandigarh. He found significant difference between physical education teachers working in govt. and public schools in their job stress and job satisfaction. Physical education teachers working in govt. and private schools were also found to be significantly different in their job stress and job satisfaction. Sharma (2000) conducted a comparative study on 110 male college physical education teachers of Himachal Pradesh, Punjab and Union Territory Chandigarh in job stress, job satisfaction and adjustment variables. The study revealed that Physical Education teachers of Himachal Pradesh state experienced more job stress than their counterparts in Punjab state and Union Territory Chandigarh. However, no significant difference was observed in their academic & general environment, professional relationship in education teachers working in Punjab and Chandigarh were found better than teachers working in the colleges of Himachal Pradesh. Teachers of physical education working in Punjab and Chandigarh were found overall better adjusted than the teachers working in the state Himachal Pradesh. Rathod (2006) study on job-stress of physical education teachers indicated inclination towards 'moderate job stress'. The graduate only teachers, teachers working in local bodies schools, teachers working in girls only schools have expressed more job stress. The older aged physical education teachers have expressed more job stress. The teachers with lesser experience and highly experienced have expressed greater job stress.

Pal (2001) in his study attempted to examine the job stress, job satisfaction and adjustment among 140 physical education teachers (79 male and 61 female). Analysis of variance statistical procedure was used to compare the three categories of physical education teachers i.e. working in government, private and public schools. The study concluded that there was a significant difference among physical education teachers working in different types of schools in their job stress, job satisfaction and a number of adjustment variables. No significant difference was observed between male and female physical education teachers working in government and private schools whereas, this difference was significant in teachers working in public schools in four of the adjustment variables namely socio-psycho, professional, personal life and overall adjustment variables. He also found significant positive relationship of job stress with job satisfaction and three of adjustment variables. Similarly, significant positive relationship of job satisfaction was also observed with four of the adjustment variables. Capel (1997) questioned student physical education teachers following first and second teaching practices on their levels and sources of anxiety. Evaluation apprehension emerged as the stressor in both practices, although it declined in the second teaching practice. It was suggested that stress can be reduced by exposure and positive experiences of observation feedback. The main objective of the study is to study the find out the status/level of occupational stress among Physical Education teachers working in secondary schools of Dakshina Kannada District of Karnataka State, since not many studies have explored stress among physical education teachers.

Methods and material

Sample: The sample of the study comprised of 288 secondary teachers drawn from government, aided and private schools in the Dakshina Kannada District. In total 288 physical education teachers of secondary schools of Dakshina Kannada District have been responded.

Tool

Occupational Stress Index by Shrivastava and Singh (1984) was the base to administer to assess the level of stress among the physical education teachers. Basically the scale consists of 46 items, each related on the five points scale. As the scale is general in nature so the researchers have been modified the index in relating to the physical education. Two different patterns of scoring have adopted for two types of items. For true items, strongly disagree -1, disagree - 2, undecided - 3, agree - 3, strongly agree - 5 and false keyed items, the reverse components of the job life, which cause stress in one way or others, such as role overload, role ambiguity, role conflict, group and

political pressure, responsibility for persons, under participation, powerlessness, poor peer relations, intrinsic improvement, low status, strenuous working conditions, and un-profitability.

Procedure

The questionnaire was personally administered to the physical education teachers. The researcher has briefed about the purpose of conducting the study. The sufficient time was given for the respondents to carefully read, understand the questions before answering, rather than stereotyped answering.

Scoring and analysis

In the present study chi-square test has been employed to test the significance of the different means of subclasses of occupational stress of physical education teachers.

Results and discussion

Table 1 presents mean scores on each sub-scale of occupational stress index along with results of chi-square test.

1. Role overload: On the whole we find that 67.7% of the selected sample falls under moderate levels of stress, 27.8% of the sample selected experienced low levels of stress and only 4.5% of the sample experienced high levels of stress. Further, chi-square test revealed a significant ($X^2=176.52$; $P=.000$) difference between these three categories of stress, highlighting that majority of the sample had moderate levels of role overload.

2. Role ambiguity: In role ambiguity, it was observed that majority of the sample experienced lower levels of stress (50.7%), which was closely followed by moderate levels of stress and very few of the selected sample shown high levels of role ambiguity (5.9%). Between these groups of frequencies, chi-square test revealed a significant difference ($X^2=99.81$; $P=.000$) having low and moderate levels of frequencies high.

3. Role conflict: Chi-square test revealed significant difference among low, moderate and high levels of role conflict with X^2 value of 141.44 and P value of .000. From the table it is clear that majority of them experienced moderate levels of stress (56.6%), followed by 42% of them experienced low levels of stress and remaining 1.4% of them experienced high levels of role conflict which was found to be statistically significant.

4. Unreasonable group and political pressure: On the whole we find that 79.27% of the selected sample falls under moderate levels of stress, 15.3% of the sample selected experienced low levels of stress and only 5.6% of the sample experienced high levels of stress. Further, chi-square test revealed a significant ($X^2=276.33$; $P=.000$) difference between these three categories of stress, highlighting that majority of the sample had moderate levels of Unreasonable group & Political Pressure.

5. Responsibility for persons: In responsibility for persons, it was observed that majority of the sample experienced moderate levels of stress (55.6%), which was followed by low levels of stress (26.4%) and few of the selected sample shown high levels (18.1%) of role ambiguity. Between these groups of frequencies, chi-square test revealed a significant difference ($X^2=67.00$; $P=.000$) having low and moderate levels of frequencies high.

6. Under participation: On the whole we find that 61.5% of the selected sample falls under moderate levels of stress, 29.58% of the sample selected experienced low levels of stress and only 9% of the sample experienced high levels of stress. Further, chi-square test revealed a significant ($X^2=176.52$; $P=.000$) difference between these three categories of stress, highlighting that majority of the sample had moderate levels of under participation.

7. Powerlessness: In powerlessness component, it was observed that majority of the sample experienced moderate levels of stress (69.4%), which was followed by high levels of stress (16.0%) and few of the selected sample shown low levels of role ambiguity (14.6%). Between these groups of frequencies, chi-square test revealed a significant difference ($X^2=176.52$; $P=.000$) having moderate and high levels of frequencies high

8. Poor peer relations: Chi-square test revealed significant difference among low, moderate and high levels of frequencies on poor peer relations with X^2 value of 105.44 and P value of .000. From the table it is clear that majority of them experienced moderate levels of stress (59.4%), followed by 37.2% of them experienced high levels of stress and remaining 6.9% of them experienced low levels of poor peer relations which was found to be statistically significant.

9. Intrinsic impoverishment: On the whole we find that 56.6% of the selected sample falls under moderate levels of stress, 29.9% of the sample selected experienced high levels of stress and remaining 26.4% of the sample experienced low levels of stress. Further, chi-square test revealed a

significant ($X^2=73.94$; $P=.000$) difference between these three categories of stress, highlighting that majority of the sample had moderate levels of intrinsic impoverishment.

10. Low status: In low status, it was observed that majority of the sample experienced moderate levels of stress (59.4%), which was followed by high levels of stress (29.4%) and remaining sample has shown low levels (10.8%) of low status. Between these groups of frequencies, chi-square test revealed a significant difference ($X^2=103.65$; $P=.000$) having moderate and high levels of frequencies high.

11. Strenuous working condition: Chi-square test revealed significant difference among low, moderate and high levels of frequencies on strenuous working conditions component with X^2 value of 93.08 and P value of .000. From the table it is clear that majority of them experienced moderate levels of stress (59%), followed by 27.1% of them experienced low levels of stress and remaining 13.9% of them experienced high levels of strenuous working conditions which was found to be statistically significant.

12. Unprofitability: In unprofitability component, it was observed that majority of the sample experienced low levels of stress (55.2%), which was followed by moderate levels of stress (44.4%) and few of the selected sample shown low levels of unprofitability (0.3%). Between these groups of frequencies, chi-square test revealed a significant difference ($X^2=146.02$; $P=.000$) having low and moderate levels of frequencies.

When total occupational stress scores were verified, it was observed that majority of the sample experienced moderate levels of stress (59.4%), followed by 29.9% of the sample experienced high levels of stress and remaining 10.8% of the sample expressed low amount of stress. Between these groups of frequencies, chi-square test revealed a significant difference ($X^2=103.65$; $P=.000$) having moderate and high levels of frequencies high

Discussion and conclusion

Main findings of the present study are:

In total occupational stress, majority of the physical education teachers experienced moderate levels of stress, followed by high levels of stress and very few of them experienced lower levels of stress.

In subcomponents of occupational stress- Role overload, Role conflict, Unreasonable group & Political Pressure, Responsibility for persons, Under participation, Powerlessness, Poor peer relations, Intrinsic impoverishment, low status, and strenuous working conditions, majority of the respondents expressed moderate levels of stress.

Only in 2 components of occupational stress-role ambiguity and unprofitability, physical education teachers experienced lower levels of stress.

Al-Mohammadi and Capel (2006) conducted their study with a view to identify the causes of stress among physical education teachers in Qatar and also to explain any differences in stress according to: gender, nationality, type of school and experience. Results showed that there were different causes of stress for different groups of teachers which could be related to different backgrounds and experiences and different roles and responsibilities in society as a result of different cultural and social expectations and environmental factors. In India, the major reasons for experiencing stress among physical education teachers could be remuneration, low status and under participation. Even today, physical education teachers are paid less when compared to teachers who teach other subjects in the class rooms. Many a times the appointments are purely temporary, which adds to existing burden. Further, the physical education teachers are given additional responsibilities in their institutions, since they are 'free' during working hours. Infact, the workload will be more for them when compared to other teachers, as they have to come early and leave late from their respective institutes. Again these physical education teachers significantly experience low status in their institute as well as outside the institute compared to other teachers. The physical education teachers job is usually considered as second grade job compared to academic teachers. Due to these there will be lesser job satisfaction among physical education teachers, which further increases their stress.

According to Singh (2010) occupational stress among physical education teachers has become quite inevitable these days due to manifold increase in job complexities and challenges. The expectations of the society towards physical education teachers are very high in the sense that they are looked upon as the only leaders who can protect and save general fitness of the sedentary people in the machine age. With the change in the concept of the subject, a physical education teacher has to concentrate upon success factors rather than think about failures in order to achieve proper results. However, the status of physical education teacher has deteriorated over the past few decades due to more than one reason.

To reduce stress among physical education teachers few of the activities could be planned. Relaxation exercises like JPMR (Jacobson's Muscular Relaxation Therapy) or JAPMR (Jacobson's Advanced Muscular Relaxation Therapy) could be practiced by the teachers. Yoga, meditation,

undergoing stress management programmes are the other alternatives to reduce the stress in a effective way. Lastly educationists and policy makers should plan appropriate and effective measures to reduce the stress by adopting user friendly approaches to improve the life style of physical education teachers, where one can expect best output from these physical education teachers.

Table 1: Frequency and percent of teachers falling under different categories of stress levels in various components of occupational stress index

Variable	F/ %	Levels			Chi-square/ P value
		Low	Moderate	High	
Role overload	F	80	195	13	X ² =176.52; P=.000
	%	27.8	67.7	4.5	
Role ambiguity	F	146	125	17	X ² =99.81; P=.000
	%	50.7	43.4	5.9	
Role conflict	F	121	163	4	X ² =141.44; P=.000
	%	42.0	56.6	1.4	
Unreasonable group & Political Pressure	F	44	228	16	X ² =276.33; P=.000
	%	15.3	79.2	5.6	
Responsibility for persons	F	76	160	52	X ² =67.00; P=.000
	%	26.4	55.6	18.1	
Under participation	F	85	177	26	X ² =176.52; P=.000
	%	29.5	61.5	9	
Powerlessness	F	42	200	46	X ² =169.08; P=.000
	%	14.6	69.4	16	
Poor peer relations	F	20	161	107	X ² =105.44; P=.000
	%	6.9	55.9	37.2	
Intrinsic impoverishment	F	76	163	49	X ² =73.94; P=.000
	%	26.4	56.6	17	
Low status	F	31	171	86	X ² =103.65; P=.000
	%	10.8	59.4	29.9	
Strenuous working conditions	F	78	170	40	X ² =93.08; P=.000
	%	27.1	59	13.9	
Unprofitability	F	159	128	1	X ² =146.02; P=.000
	%	55.2	44.4	0.3	
Total occupational stress	F	31	171	86	X ² =103.65; P=.000
	%	10.8	59.4	29.9	

Acknowledgements

The authors gratefully acknowledge Prof. M. Chandrakumar, Sri. Thirumalai Gopalan of the Department of Physical Education and Sports Sciences, University of Mysore and Dr. Lancy D'Souza, Associate Professor in Psychology, Maharaja's College, University of Mysore for their Support.

References

- Al-Mohammadi A. & Capel, S. (2006). Stress in physical education teachers in Qatar. *Social Psychology of Education*, 10 (1), 55-75.
- Capel, S. A. (1997). Changes in students' anxieties and concerns after their first and second teaching practices. *Educational Research*, 39 (4), 211- 228.
- Fontana, D. (1989). *Managing Stress*. London, Routledge.
- Freeman, W.H. (1988). *Physical education and sports in a changing society*. Delhi, Surjeet Publications, 212 - 220.
- Kamlesh, M. L. (2002). *Foundations of physical education*. New Delhi, Metropolitan Book Co. Pvt. Ltd., 183 - 185.
- Konukman, F., Agbuga, B. & Erdogan, S. (2010). Teacher-coach role conflict in school-based physical education in U.S.A. *Biomedical Human Kinetics*, 2 (2), 19-24.
- Pal, V. (2001). *A study of job stress, job satisfaction and adjustment of physical education teachers as related to their job placement*. (Unpublished doctoral dissertation, Panjab University, Chandigarh, 2001).
- Rathod, L.B.L. (2006). *Job satisfaction and job stress of physical education teachers of secondary schools in Andhra Pradesh*. (Unpublished doctoral dissertation, Osmania University, Hyderabad, 2006).
- Sharma, M. L. (2000). *"A comparative study of job stress, job satisfaction and adjustment of college physical education teachers of Himachal Pradesh, Punjab and Union Territory Chandigarh"*. (Unpublished doctoral dissertation, Panjab University, Chandigarh, 2000).
- Singh, R. (2010). *Job stress, job satisfaction and adjustment Among physical education teachers of Haryana schools*. (Unpublished doctoral dissertation, Punjabi University, Patiala, 2010).
- Srivastava, A.K. & Singh, A.P. (1984). *Occupational stress index*. Varanasi, Manovaigyanic Parikshan Sansthan.
- Tam, T.S.K. & Mong, L.P.K. Job stress, perceived inequity and burnout among school social workers in Hong Kong. *International social work*, July 2005, 48, 467- 483.
- Verma, R. (1997). *A study of job stress and job satisfaction of physical education teachers in U.T. schools*. (Unpublished M.A. dissertation, Panjab University, Chandigarh, 1997).

Indigenous Dances: Evolution towards Wellness and Therapeutic Dance Education

Ma. Rosita Ampoyas - Hernani
Cebu Normal University, Philippines

Abstract

T'boli, Manobo, and Maguindanawon dances of Mindanao, are eminent folkdances because of their distinctive patterns that reflect the tribal lifestyle, costumes and traditions. Indigenous dances have purposes and intentions; the tribes would dance to appease the gods, heal the sick, drive out evil spirit and to celebrate meaningful community life. This study focuses on the indigenous dance healing components otherwise known as therapeutic elements. To fully cover the dances' different vignettes, four research techniques are utilized: Interview with tribal members or dance performers, dance researchers, and choreographers; Review and analysis of the dance literatures; Analysis of the dance basic movement, props, costumes; and the researcher's reflection. This study concluded that indigenous dances have healing properties that can be utilized as therapeutic elements for individual and group activities. Further, this research deduces the applicability of its healing properties as part of dance education which aims are to promote wellness and wellbeing, and amelioration of maladies. The researcher recommends preservation by promotion of these dances not only to dance professionals but also to other enthusiasts

Key words: dance education, healing, free movement, wellness, Indigenous movement/dance, therapeutic element

Introduction

The Philippines, is a trove of indigenous dances that that are treasured by ethnic groups over 7,100 islands of which most of them live in Luzon and Mindanao.

Indigenous dances are best understood in terms of intentions which are fundamentally humankind's expressions of harmony with nature, peace with other human beings, faith in the unseen and the transcendental potential of each person. Thus indigenous dances are media of humankind's wisdom in dealing with adversity; tribal members do not just dance to be entertained but also to socialize and heal. When preserve, these folk dances provide a cultural wealth and heritage that would enrich dance education's aesthetics and avenues for physical and psychological wellness

In other countries, particularly in the field of psychology, dance has been utilized as therapeutic modality in the hospital, rehabilitation, and clinical outpatient settings. These western therapeutic movement regimens are mostly coming from the ancient dance rituals of their lands, which are very much like the indigenous Philippine dances.

In the Philippine dance education setting, dance has only been treated as a mere form of self-expression; its other components are not treated as academic thus healing is not acknowledged in dance and body movement.

The purpose of this study is to observe and analyzed selected indigenous dances of Mindanao particularly on its therapeutic components.

Statement of the Problem

This paper analyzes the healing components of selected Mindanao indigenous dances. More concisely, using narrative- descriptive analysis. The study intended to carry out the following

objectives:

Identify and describe the nature of dance of indigenous dances and their healing modalities on how can be used in the therapeutic dance education.

Determine how the existing literature of dance and dance properties such as props and instruments, and body movements facilitate the holistic and therapeutic value of indigenous dance.

Explore if indigenous dances can benefit an individual physically, socially, emotionally, spiritually, and holistically.

Develop healing modality that is solely Filipino as a tool for therapeutic dance education.

Dance is the oldest form of arts. The history of dance is as old as the history of humankind. Cave drawings creative by the primitive humankind tens of thousand years ago indicate the presence of dance in his early culture. Abijan, et.al.(1997) states throughout the world, since the time of

immemorial, people have been dancing man's earliest manifestations of his striving towards civilizations. The Greeks believed that dance is gift from God. Hence they danced with the great interest in religious rites. Native American ceremonial dances represent forms of prayer and are performed with the guidance of the tribe's Medicine Man to ensure plenty of crops, game, fish, fruit, etc. for the coming year. Native American Kiowa people of the Southern plains danced at the summer solstice after the priest of the tribe has had an inspiration in a dream. It is an example of a people's preservation of culture and history and purification ritual of protection, healing, and self-renewal. Indian Corn Dance of South Dakota represents planting corn: making the furrow, blessing the seed while sowing the corn, covering the seeds with earth and putting a magic circle around the corn for protection and to bless the harvest (Rueppel, 2002).

Philippine dance encompasses all the dance forms that have been used by the Filipinos through centuries to express themselves and can be classified as folk, ritual, occupational or aesthetic in nature (Tiongson 1989). Additionally, Filipinos are culturally rich people. The inner urge to revive the past and thus preserved Philippines culture has become very widespread and evident among Filipinos (Aquino 1962).

Shannon (1992), states the simplest village folk dances are the primogenitor of primitive therapeutic dance tradition, which is also the ancestor of dance/movement therapy. Dance therapy is said to have its roots in primitive healing dance as it has been practiced throughout history. Colocci (1983) defined dance therapy as it began in the primitive societies which they used dance to express fears, exorcise demons and to try to cure illness. Dance therapy is a very new treatment for mental, emotional problems and even physical diseases. American Dance Therapy Association or ADTA (1966) defines dance therapy as a type of psychotherapy that uses movement to further the social, cognitive, emotional, and physical development of the individual. ADTA further explained that dance therapy is a psychotherapeutic use of movement as a process, which furthers the emotional, cognitive and physical integration of the individual. Accordingly, dance therapy had been applied to persons with severe emotional disorders, individuals with eating disorders, adult survivors of violence, sexually and physically abused children; and dysfunctional families; children with autism, geriatric clients, and substance dependents. Thus, works in various clinical settings and deals with all kinds of people and problems and considered as one of the alternative medicines that promotes health and healing (American Cancer Society, 2006).

Research Methodology

Data gathering was conducted in Lake Sebu, South Cotabato where the T'boli tribe is based. Further research was initiated in a national seminar-workshop for Mindanao Indigenous dances held in Cebu City, Philippines having three performer-respondents represented indigenous dances namely, (a) Helubong Dance Troupe as T'boli tribal dances; (b) B'dadali Dance Troupe for Manobo Dances and (c) Kutawato Dance Bureau for Maguindanao dances.

Research Procedures

The researcher used three methods in obtaining the data. In vivo observation, interview and active participation with tribal dancers. Interview through checklist and guide questionnaire for the 3 invited dance troupe who also brought with them their tribe's dance props and accessories and instruments. After each dance workshop, a random interview was conducted among the participants soliciting their perception and experience regarding the dance. The selected participant-respondents were taken from the pool of attendees of the two day seminar-workshop which was attended by dance enthusiasts, dance instructors, physical education instructors, graduate students and health professionals.

In the 3rd phase of data gathering procedure, the researcher analyzed the data obtained through video documentation, interview output and the questionnaire.

Treatment of Data

The researcher, aside from the tools mentioned in the previous section also utilized a journal to get a finer self report analysis of the different healing potentials of the dance derived from the observation/interview guide.

The observation/interview guide which is the main tool utilized during the investigation is consists of five main items designated to give the researcher an idea of the events of human life usually expressed in dance: nature of dance, body movements, props, instruments and costumes. The mentioned items are further enumerated into specific dance elements that can be easily identified by using a check mark. Each of the major items in the interview guide or the checklist contains specific detail in order to come-up with thematic analysis.

Discussion

Rudolf Laban states that “life is movement and movement is life”. Movements signify the language of soul and an expression of our human nature. Indigenous dances portray the sum total of these expressions collated as one historical and cultural background of humankind. In another angle, Indigenous dances are media by which culture, as collective physiological, cognitive, emotional, and socio-cultural aspects are archived and transmitted to one generation to the other. In fact, the tribal dances understudies are the community’s treasure. Tribal members perceive each dance not as a performance but expressions of life perform through movement, ornaments and music. One dance researcher even suggested that there are dances that can not be perform anywhere because of its sacred elements. In the Maguidanaw tribe for instance, prohibitions are set for certain dances because it would induce hysteria to outsiders. All dance researchers agree that their respective tribal representations have their respective healing ritual dance that are transmitted from one generation to another and ameliorative elements are imbued within the movement, thus only those who would participate could fully experience. Promoting the therapeutic ability of indigenous dance is but a confirmation and a reminder that therapeutic elements are inherent in each dance.

Dance nature would mean the underlying characteristics of a dance, the movement story of a particular communal activity. Tribal community’s celebration signifies how the tribe lives. Classification, on the other hand, considers the function of a dance in the tribal community.

Since indigenous dances depict how the tribe exists and the person in the community lives, a dance could be said to be a window of the person’s life. Hence, dances have distinct movements that particular body parts are used to communicate particular events. The T’boli Madal Be-hegalung which means to dance with the guitar for example, the title readily reflects its own character as a dance that would usually be performed in social gatherings. Observably, the nature of dance reveals that dancing with the guitar is not merely for entertainment but also to celebrate life as portrayed by the performer. Additionally, the dance represents human potential towards creativity and self-expression. In *Manobo Tangunggo* which means to dance, with this the nature of dance implies to move body rhythmically and to express one’s emotion and to celebrate life’s experiences. *Kapaggani* of *Maguindano* which means celebration of good harvest signifies signify life’s abundance, thanksgiving and appreciation of nature for giving the bountiful harvest. All of these dances have common intention, which is to draw-out life stories and experiences. Notably, these dances are not intended by the tribe to heal but looking deeply at it, each entire dance movement is an artful piece that would sooth the senses. And aside from this, these social dances convey a basic pattern and posture that are similar to other indigenous dances especially the African and Tribal Asian dances.

In therapeutic dance education, humankind’s expression plays a vital role in understanding movements. Understanding the dance nature, its classification and required instruments would lead to movement comprehension. Choreography depends on the movement depicted not the music being played. Hence, dance is known as expressive art because of this explanation. The indigenous nature and classification of each dance make it different from other dances because, it would tell a story, a person’s life’s experience ritualize that anyone in the tribe could identify, and for years has been harnessed to perfection. Accordingly, one would know that it’s indigenous because of the basic movements that are crafted to emulate the emotion, psychological and spiritual dimensions of the person. Again, movement and posture distinguished indigenous dances from other types of dances. Halprin(2000) best explains the researchers observations about movement patterns and postures when she said that “life experience deepens, personal art expression expands, and as personal art expression expands, life experience deepen”. True enough, we cannot not move because movement is the person. Movement is what we are, not something we do (Condrad,1998). Dance or movement for that matter, facilitates awareness of the person and not only what the person does.

Meaning of life through dance properties

Accessories help depict the meaning of dance and obviously differ in every event and from one tribe to another. Basic components like props, musical instruments and costumes enhance the person’s movement and emotional expression. The musical accompaniment of the T’boli, like the T’nungggong, small drum made of deer skin, D’ bakan drums, agong, kulintang of Maguindanaw are often used by each tribe. Theoretically, drums are one of the most powerful musical instruments because of its vibrating sound that may be manipulated to coincide with the heart beat and pulse rate. Drums also produce altered states of consciousness that can influence relaxation. In the supra natural sense, these altered states or enhanced relaxation, are used for divinity purposes like to connect with the unknown to aid in healing or to predict events. In addition, theory of sound therapy states; “everything in the universe is in a constant state of vibration, including the human body, even the smallest change in frequency can affect the internal organs”. As to the effects in the body, modern sound therapists believe the natural resonance or “note” that is “right” for each part of the human

body, and for each individual, so by directing specific sounds waves to specific areas they can affect the frequency at which that part is vibrating and thereby restore it to balance and therefore health (Rueppel, 2002)".

What makes Mindanao tribal dances attractive is the manipulation of props throughout each movement. *T'boli- malong* usually used in all dances except by male performers. *T'boli* women, has many ways of using *malong* for it become part of their daily lives, It also signifies the role of woman in the tribal communities. That every woman has to work and help the family for living or become productive. Like for instance, *malong* are used by *t'boli* women to cuddle the baby by putting the baby inside, and *malong* and wrapped or tied in the mother's shoulder or back. *Malong* For *Maguindano* dances, *Nigo kapilan* and *tudong talam*—known as food covers but maybe uses for other purposes. In Manobo dances, *lobban*, a Manobo basket and a handkerchief are commonly used props that can be also be used for varied purpose. Therefore, props are one element that could best explain the core of human nature through dance.

Manipulation of props is way to stimulate thoughts and sensation to unlock repressed emotions. A musical accompaniment such as drums and sticks, serves as a foundation in the therapeutic dance education to go back to basic rhythms or pulse rhythm so that man would fully grasp the meaning that life in the universe is a constant state of vibration which affects the body. Therefore, as the body moves rhythmically, while being enhanced props and costumes, the ameliorative components are also augmented by it.

Indigenous movements as therapeutic tool for wellness.

Dance/movement therapy has a different philosophical stance. It sees dance as naturally therapeutic due to its physical, emotional, and spiritual components. Indigenous dances can benefit a individual or even a group.

Indigenous movements, as therapeutic tools, enhance the social aspect of a person by letting them feel and shared a sense of community while dancing. It lets the individual become aware of the environment; at the same time develop greater confidence in one's abilities and creativity (Imasa et. Al 1998). Per observation, indigenous dances, either perform in a group or perform alone or with a partner, could develop a sense of belongingness, appreciation, purpose, leading to belief in self and emancipation (Gabrielle 2002).

Indigenous movements and dances help a person grow psychologically; in the sense movements helps attain emotional and mental state of a person. This is beautifully captured by Jensen (1999) as quoted by Gabriel (2010) who states:

Exercising the trunk, especially the abdominal wall and back, helps keep the intestine in its proper place and provides structures with good tone for the intestine to work against. Most primitive cultures have dance movements that exercise the trunk, back, and abdominal muscles. Modern Westerners, on the contrary, dance with their legs, and they do this almost to the exclusion of using the trunk, upper extremities, and neck. (p.54)

In therapeutic dance education, movements, props and musical accompaniments stimulate the mind and body. As the mind influences the emotion, sensation and the body movement would move in harmony to the person's story where healing would take place. Physically, in dancing, the person would acquire strength, flexibility, endurance and sense of well-being. Dance reduces tension in the body that allows the muscles to relax and become susceptible to any body movement.

As observe, most of the basic steps of the indigenous dances are "trunk slightly bent forward moving upward and downward". This body movement is known as the earth-centered pose, because the performer tries to balance between control and relaxation and at the same center his weight in correspondence with gravity.

The more one is centered, in line with the gravitational pull, the more relax the person would be. This centeredness can be observed in African, Native American and Asian primitive dances. The footwork is almost the same, such as chasing, walking, creeping, mincing steps and whirling (to make a fast full turn and towards any direction.) which means, not just the trunk of the body that are physically exercised but also the lower extremities that allow all the muscles to relax and makes the system of the body work normally (Hanna,1998).

Therapeutic Dance Education Modality

(based on Indigenous movement)

"Akong Kinabuhi: Akong Sayaw"

Step 1.The use of autobiography as assessment tool. Students will be asked to write their autobiography or life story starting from infancy to the present. Step 2. Basic Movement/Indigenous movement. During the orientation, basic movements will be introduced to facilitate body movements that would describe certain feelings and thoughts.

Step 3. Orientation about the workshop. Researcher will imbibe confidentiality to establish trust and rapport among participants and to the teacher-researcher.

Step 4. Grounding or Self Awareness Exercises. This will be conducted as the gist of the workshop. Grounding is made to connect the students with the environment; especially to the physical surrounding. Warm-up or stretching is introduced in this phase.

Step 6. Breathing and Relaxation technique. Proper breathing technique and posture exercises are introduced to lighten them up and feel comfortable with the activity.

7. Story Dancing. Participants are asked to interpret their lives through dancing and from the basic movements that have just been taught to them. Musical accompaniments such as drums- *t'nonggong*- small *t'boli* drum and sticks will be used in order to create the rhythm.

Step 8. Relaxation Technique. Other known as cool down in principles of exercises, after expressing and journey within themselves, Step 9. Grounding and self awareness- Sitting position would be the most comfortable way of regaining back the awareness or bringing them back to the present or reality.

Step 10. Breathing and stretching exercises. The students perform stretching and breathing exercises to regain back their energy.

Post activity assessment

Step 11. Post-activity Questionnaire. After the workshop, participants will be given a post-activity questionnaire that is designed to solicit their experiences of the activity.

Conclusion

Indigenous dances of Mindanao do not only have tribal, cultural and aesthetic properties, these dances also are educational and therapeutic which gives holistic benefit to a person. The nature of dance, its classification, costumes, props and instruments and basic movements are the elements that would facilitate the attainment of full awareness of feelings, sensation and body movements, which is the process of creativity, a pathway towards integration of mind and body.

Recommendation

Tribal dances or movements must be introduced to the community and school to expand consciousness not just as a cultural heritage but to engender positive reception of healing benefits through the use of therapeutic dance education. Teachers and dance professionals, medical and health allied should encourage to join seminar-workshops in therapeutic dance education, to achieved better understanding, how healing would takes place using indigenous movement/ dances. Further, this research deduces the applicability of its healing properties as part of dance education that aims are to promote wellness and wellbeing, and amelioration of maladies. The researcher recommends preservation by promotion of these dances not only to dance professionals but also to other enthusiasts.

Bibliography

- Chaiklin, S, Wingrower, H(2009) *The art and science of dance/movement therapy; Life is Dance*, imprint of Taylor & Francis Group
- Boylan, Kristi Meisenbach, *The Seven Sacred Rites of Menarche*, Santa Monica, CA, Santa Monica Press, 2001
- Halpern, Anna, *Dance as a Healing Art: Returning to Health with Movement and Imagery*, Mendocino, CA, Life Rhythm Books, 2000
- Hammerschlag, M.D., Carl A., *The Dancing Healers, A Doctor's Journey of Healing with Native Americans*, New York, NY, Harper Collins, 1988
- Bassin, Alexander (1976). Reality Therapy and Introductions in W. Glasser *The Reality Therapy Reader*. Harper ad Row Publishers.

Comparative Analysis of Different Forms of Marching

Mondal Indranil

Assistant Professor, Dept. of Physical Education, UCTC. W B. India

Mondal Shubhobrota

Assistant Teacher, Bakulia N N Girls High School, W.B. India

Bhowmick Sudarsan

Professor, Dept. of Physical Education, Kalyani University, Kalyani, W.B. India

Abstract

Introduction: Marching is a variation of normal walking used by police and military people. Again the style of marching differs from regiment to regiment. Purpose of the present study was to analyze the action of normal walking, marching of West Bengal police and marching of Delhi police.

Methods: Fifteen male subjects were selected for this study. Five of them were West Bengal police, five were Delhi police people and the rest five were normal people. Action of different types of walking of the subjects was analyzed using video-graphic technique. The selected mechanical parameters were velocity of Cg and movement amplitude of arm and leg. Recorded movements were analyzed for selected mechanical parameters using movement analysis software.

Results and Discussion: Mean velocity of Marching was 1.35 m/s, Delhi Police Marching 1.42 m/s and Normal Walking 1.33 m/s. Mean Movement Amplitude of Leg for Marching was 44.90, for Delhi Police Marching 51.20 and for Normal Walking was 41.40. The mean Movement Amplitude of Arm for Marching was 164.40, for Delhi Police Marching 189.30 and for Normal Walking was 61.40.

Conclusion: The velocities of the main body of all three types of walking were almost same. Similar result has been seen for Stride Length also. Regarding Arm Amplitude the mean value for Normal Walking was seen to be significantly lower than the mean values of both of the Marching groups.

Keywords: Kinegram, walking, Marching and biomechanical analysis.

Introduction

Walking is a fundamental movement in our daily life. In walking leg movements are the main but the movements of the arms are also very important. Many studies already have been conducted to analyze the gait pattern of human beings, where the arm movements have also been studied. General conclusions drawn in most of these studies emphasize the characteristics and contribution of arm swing to the leg movements as well as the movements of the whole body. By nature arm swing movements are just opposite in direction of the leg movements. The main purpose of arm movements, as has been concluded, is to help the body to maintain balance during walking.

Walking has many forms- normal walking, race walking, marching etc. Marching is a variation of normal walking used by police and military people. Again the style of marching differs from regiment to regiment. Purpose of the present study was to analyze the action of normal walking, marching of West Bengal police and marching of Delhi police. With the change of the style of marching, the movements of the arms alter very much than the leg movement. Present study was planned to study and analyze the nature of some selected kinematic parameters of arm movements in the three different forms of walking as mentioned above in relation to the leg movements and total body movement, and to compare them.

Methodology

A total of fifteen male police personnel were selected as subject for the present study. Out of them five were the subject for marching group, another five were for the delhi police marching group and the last five were for normal walking group. The subjects of marching group were the west Bengal police and the subjects for delhi police marching group were delhi police personnel and another five police person were considered as the subjects for normal walking group. The selected kinematic parameters for this study were velocity of the main body, amplitude of leg movements and arm amplitude during three different forms of walking. The movements of three different forms of walking of the subjects were recorded by a digital camera by following the basic principles of scientific filming. Later on, the recorded movements were projected by an improvised projector capable of projecting in freeze frame condition. Silicon coach trail version was used for analysis.

The kinegrams of the movements of different forms of walking of the subjects were drawn. With the help of the knowledge of camera frequency and the linear distance measuring unit, the (position-time) information for the points of interests were obtained. From these basic information the displacement time (s-t) information and velocity-time (v-t) information were derived by graphical differentiation method.

The data regarding selected kinematic parameters were analyzed using standard statistical procedures. The mean was calculated as the measure of central tendency and the standard deviation was calculated as the measure of variability. Significance of difference among mean values was tested by Analysis of variance and exact location of the difference was identified by suitable post hoc test.

Results And Discussion

Mean and standard deviation of selected parameters for three different forms of walking have been presented in table-1. It is seen from the table values that the Velocity of the main body was almost same of the different forms of walking.

Table-1 Mean and SD of the selected Kinematic parameters

Sl. No	Kinematic parameters	Mean and SD of		
		Normal Walking	Marching	Delhi Police Marching
1.	Main body velocity (m/s)	1.328 ± 0.037	1.354 ± 0.025	1.418 ± 0.039
2.	Leg Amplitude(degree)	41.44 ± 1.359	44.9 ± 1.727	51.18 ± 1.448
3.	Arm amplitude (degree)	61.38 ± 2.112	164.38 ± 2.424	189.32 ± 2.613

In leg amplitude DP marching was maximum with the mean value of 51.3⁰ and the minimum was 41.5 in case of normal walking. But in case of arm amplitude the mean value was 193.2⁰ for DP marching group, 161.1⁰ for marching and 62.3⁰ for normal walking group. In order to the significance of difference among mean values of different selected kinematic parameters, Analysis of variance technique was used. The results have been presented in Table-2.

Table-2 ANOVA for mean values of selected kinematic parameters

Sl. No.	Kinematic parameters	F- value	Remarks
1.	Main body velocity	9.14	Significant at 0.01 level
2.	Leg Amplitude	52.77	"
3.	Arm amplitude	4020.69	"

It is seen from the table values that there were statistically significant differences among the mean values of all the selected kinematic parameters. In order to find out the exact location of the difference among mean values, t-values for pair means were calculated. Table-3 represents the results. It is clearly seen from the table that the loco motor velocity of the main body was significantly greater for DP marching than normal walking and marching. But the difference between normal walking and marching was not statistically significant.

Table – 3 Results of t –test for pair means of three different forms of walking

VELOCITY OF THE MAIN BODY	M ₁ vs M ₂	Non significant	M ₁ = Mean of Normal Walking Group.	HSD = absolute (unsigned) difference between any two sample means required for significant at the designated level. HSD [.05] for the .05 level; HSD [.01] for the .01 level;
	M ₁ vs M ₃	P < .01		
	M ₂ vs M ₃	P < .05		
LEG AMPLITUDE	M ₁ vs M ₂	P < .01	M ₂ = Mean of Marching Group.	
	M ₁ vs M ₃	P < .01		
	M ₂ vs M ₃	P < .01		
ARM AMPLITUDE	M ₁ vs M ₂	P < .01	M ₃ = Mean of Delhi Police Marching Group.	
	M ₁ vs M ₃	P < .01		
	M ₂ vs M ₃	P < .01		

In case of leg amplitude all the differences between groups were significant at 0.01 level. It was significantly greater for DP marching than other two forms.

Regarding arm amplitude the mean value for DP marching was seen to be significantly greater than both – normal walking and race walking. This parameter for marching was also significantly greater than normal walking.

As per mechanics, the arm movements are compensatory movements of leg movements during walking. The results of the study show that the velocity is almost same for all three type of walking. So, the very high value of arm amplitude for DP marching and marching proves the unnatural characteristics of the form of walking. Basically, DP marching and marching- both are deviations from the normal walking. In marching there is a deliberate attempt to decrease the velocity of the main body. The main emphasis here is to develop correct form of movement only. The DP marching much more difficult and mechanically disadvantageous technique of marching.

References

- 1) Early, C.T. and McMahon, T.A. "Energetics of Walking and Running : Insights from Simulated Reduced Gravity Experiments". J. Appl. Physiol. Dec. 1992, 73(6), pp. 2709-12.
- 2) Gunderson, and Others. "Bilateral Analysis of the Knee and Ankle during Gait : An Examination of the Relationship between Lateral Dominance and Symmetry". Phy. Ther. Aug. 1989, 69(8), pp. 640-50.
- 3) Harris, G.F. and Wertsch, J.J. "Procedures for Gait Analysis". Arch Phys Med Rehabil. Feb. 1994, 75(2), pp.216-25.
- 4) Knutzen, K.M. and Price, A. "Lower Extremity Static and Dynamic Relationships with Rear Foot Motion in Gait". J. Am Podiatr Med Assoc, Apr 1994, 84(4), pp. 171-80.
- 5) Kuster, M. and Others. "Strees on the Femoropateller Joint in Downhill Walking – a Biomechanical Study". Z Unfallchir Versicherungsmed, 1993, 86(3),pp.178-83.
- 6) Laassek, E.M. and Others. "Patterns of Relations between Lower Limb Angle Excursions during Normal Gait". J. Biomed Eng., Jul. 1992, 14(4), pp.313-20.
- 7) Murray, M.P. and Others. "Kinematic and Electromyographic Patterns of Olympic Race Walkers". Am. J. Sports Med. Mar-Apr 1993, 11(2), pp.68-74.
- 8) Mondal, I. "Development of An Improvised Motion Analyzr for Measurement of Kinematic Parameters of Motor Skill". Unpublished Master Thesis, Kalyani University, 1994.
- 9) O'Malley, M. and De Paor, D.L. "Kinematic Analysis of Human Walking Gait Using Digital Image Processing". Med Biol Eng Comput, Jul 1993, 31(4), pp. 392-8.

Bio-Magnetism And Body Food –Transformation Into Seven Minerals

**Mr. Nagarjunasangem MPEd. Acharya Nagarjuna University, Guntur A.P INDIA
R.Thirupathireddy, Srinivas.P (PhD Research scholars) Kakatiya University. warangal**

Abstract

Disease ageing and death are the three factors that everyone has to meet in his life. Kayakalpa exercise is rejuvenating the life –force the Life Force particles. Kayakalpa is not a medicine; it is an exercise. The exercise provides healthy body and makes it fit and agile. Kayakalpa helps longevity.

The Aim Of Kayakalpa Exercise:

Longevity of life. Slows down ageing and maintaining youthfulness. To lead a disease free healthy life. All these aims can be fulfilled. Siddhas who found out the ways achieving these goals wrote everything in form of poems which were not understood by many. Hence kayakalpa was a mystery all these days.

Kayakalpa –An Explanation:

There are the five factors which design the functioning of the human body. 1. Physical body, 2. Sexual vital fluid, 3. Life force particles, 4. Bio magnetism and 5. Mind. Physical body is made up of millions of cells. The food we eat gets transformed into seven minerals and the 7th is the sexual vital fluid. Independently functioning, self rotating and whirling forward life force particles are held by sexual vital fluid. From each life force particle, dust particles spread out in the form of bio magnetic waves. The extension of the life-force through senses and brain as bio-magnetism is called mind.

Bio-Magnetism And Body:

Billions of life energy particles keep whirling all over the body. In each life-energy particle, millions and millions of formative dust particles, functions energizing the life energy particle. The self rotating and whirling life energy particles churn out the formative dust particles in the form of bio-magnetic waves. Thus churned out formative dust particles form a field –‘Bio-magnetic’ field which is the basic force for the functioning of the body and the soul. Formative dust particles are magnetic in nature. They are self rotating and spread over the body as Bio-magnetic waves. Human body is made up of millions of cells. These cells are held together by polar attraction created by bio-magnetism. When the supply of bio-magnetism is reduced cells begin to disintegrate this point mind also becomes weak and loses its balance. Body remains intact with them cells remaining intact.

Sexual Vital Fluid:

The movement of free electron in a circuit through a wire is called electric current. Just like that the life force particles which whirl around in a circular movement all over the body is called life. In a battery the electron counts are related to the acid level and quality. The same way the counts of life force particle and quality of bio-magnetism are decided by the quantity and quality of the sexual vital fluid. Therefore in order to have a healthy body and mind the sexual vital fluid should be sufficiently available both in quality and quantity. Insufficiency in quantity and quality of the sexual vital fluid will result in the depletion of life force particles which in turn will result in weakening of the bio-magnetic force. In turn this will affect the body and mind.

Food-Transformation Into Seven Minerals:

The food one eats through metabolism gets converted into seven essential minerals. They are juice, blood, flesh, fat, bone, bone marrow, and sexual vital fluid. The food intake gets digested and all mineral became a juicy substance. It is absorbed by the small intestine. The juice along with some acid became blood. A part of blood became flesh. Fat gets separated from fat and became bone. Calcium gets separated from fat and becomes bone. After becoming bone the rest of the juice became bone marrow. Bone marrow is the origin of the sexual vital fluid. This is the most important of all minerals. Sexual vital fluid is the source which produces life force particles and these life-force particles liberate dust particles as bio-magnetism. This life-force particle circulates throughout the physical body and energizes all the cells and tissues.

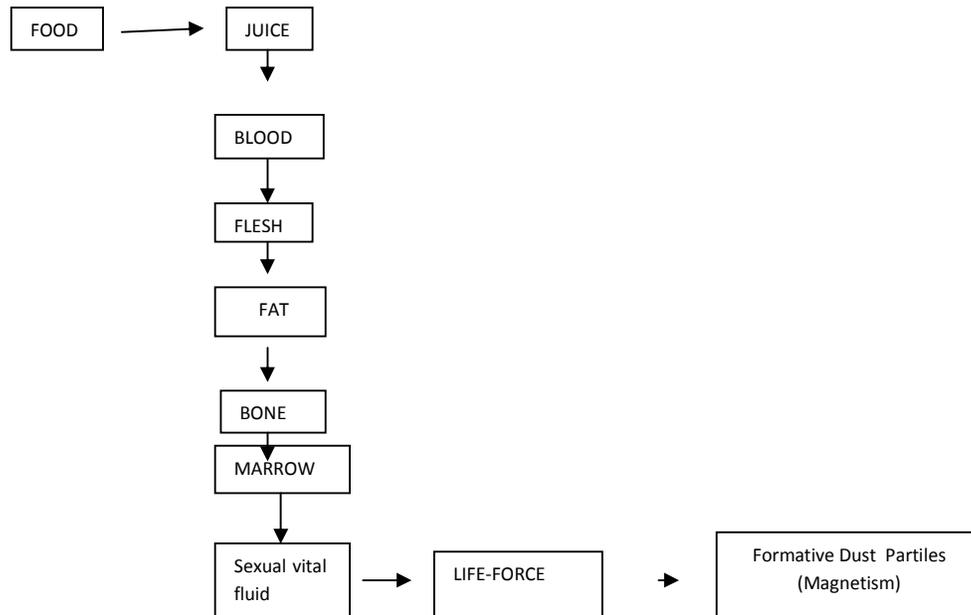
Reasons For Hunger:

The depletion of life force particles within a few hours is felt as hunger. We eat food metabolism continues. Sexual vital fluid is refurbished with life-force particles and formative dust particles. Bio-magnetic waves get recharged and the functions of body and mind continue.

Circular Movement Of Life-Force:

Like blood which starts from heart with force and returns exhausted the life-force starts from the genetic centre with full capacity and after refurbishing al the cells comes back to the genetic centre with less force. Once it gets a dip in the sexual vital fluid the particles get rejuvenated and continue the function. So it becomes imperative that these life-force particles and dust particles need to be produced sufficiently to make the functioning of the body and mind more effectively and children who from the next generations also will be hale and healthy. For food transformation into seven minerals.

Food Transformation Into Seven Mineral



Some reasons or other if there is some disturbance in the metabolism health hazards set in. Brain function gets affected. And the outcome will more disastrous to the mankind.

The Importance Of Sexual Vital Fluid:

The birth and death of human being depend on the sexual vital fluid. It holds the life. Death occurs after the enormous wastage of the fluid."Body structure and health of the mind is due tom the quality and quantity of the fluid

Consolidation:

Bio-magnetic force is spent during body and mind functions. Earth rotation causes withering of cells and life-force particles. The loss of life force particles causes hunger. We eat food. Food gets converted into seven minerals, life-force particles and formative dust particles get recharged from the sexual vital fluid.Get rejuvenated and refurbished by soaking themselves in the sexual vital fluid.

References:

Vethathiri Maharishi institute for spiritual and intuitional education. Temple of consciousness, Arutperumjothi nagar,ALIYAR-642 101,Pollchi
The World community service centre. 156, Gandhiji road, Erode- 638 001.

Comparative Study On Fitness And Achievement Motivatioon Among Hill And Plain University Level Players

**Jyan Chandra Gurung, Research scholar, Kalyani University
(jyanchandragurung@yahoo.co.in)**

Abstract

The purpose of was to find out the difference between hill and plain university level player's fitness level and achievement motivation. The researcher had taken Twenty five (n=25) university level players from Darjeeling and twenty five (n=25) university level players from Kalyani had been selected randomly as the subject for the study. The subject's age ranges from 22 to 25 years. Researcher had measured age, weight, height as personal data and conducted fitness items including : chin ups for measuring strength endurance, sit and reach for measuring flexibility, shuttle run for measuring agility, standing broad jump for measuring explosive strength, 50 mt. dash for measuring speed and 12 minute run and walk for measuring endurance and Deo-mohan Achievement Motivation scale for measuring achievement motivation level. In chin ups it is observed that hill players are slightly better with 't' value of 1.62, which is not significant. In sit and reach it is observed that hill players are slightly better with 't' value of 2.54 which was significant at 0.5 level. In shuttle run, plain players were superior to hill university level players with 't' value of 3.03 which is significant at 0.1 level. In standing broad jump, hill players are superior to that of plains with 't' value of 5.62 which is significant at 0.1 level. In 50 mt. dash, hill players are slightly better than plains university level players with 't' value of 2.07 which is not significant at any level. In 12 minute run and walk, plain players are slightly superior than that of hills with 't' value of .62 which is not significant at any level. It is found that Plain players are slightly better than Hill university level players and to find out whether the difference was significant or not researcher has gone through 't' ratio and found the 't' value 1.62 which was statistically insignificant.

Introduction:

To know practically is always better than verbal speculation so being from hilly region, researcher is very interested to know about the fact. The researcher has tried to find out whether hill or plain students are better in case of physical fitness and psychological strength. In previous years, fitness was commonly defined as the capacity to carry out the day's activities without undue fatigue. However, as automation increased leisure time, changes in lifestyles following the industrial revolution rendered this definition insufficient. In current contexts, physical fitness is considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypokinetic diseases, and to meet emergency situations. Various features of 20th century civilization – television, spectator game, auto mobile, labour saving gadgets and urban overcrowding have conspired to create a generation of inactive children. This situation has no historical homologue and seems to contradict the very nature of any young mammal. It is an uncharted life style and may carry serious hazards for both the physical and intellectual development of growing child (Shephard, 1982). In current contexts, Physical fitness is considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypokinetic diseases, and to meet emergency situations. From early periods to present time physical fitness is the major subject of concern. Everyone should keep a particular fitness level to smoothly run their daily life. American association of health physical education Recreation and dance adopted a new approach, physical fitness has now been dichotomized into two areas, and they are: health related fitness and performance related fitness. According to watson, Achievement motivation is the degree to which a player is willing to approach competition situation. However in competitive situation the desire for suppressing others or achieving more than others is intensified too much which in turn may give birth to a stronger drive or motive to achieve something or everything that is essential for beating others in the race and consequently feeling a sense of pride and pleasure in one's achievement. The type of motivation produced by such motive for achievement has been named as achievement motivation

Purpose Of Study:

The purpose of study was to find out the difference in physical fitness which includes chin ups for measuring strength endurance, sit and reach for measuring flexibility, shuttle run for measuring agility, standing broad jump for measuring explosive strength, 50 mt. dash for measuring speed and 12 minute run and walk for measuring endurance and Deo-mohan Achievement Motivation scale for measuring achievement motivation level among plain and hill university level players.

Statement Of Problems:

Through various research studies it had been known that plain people were superior than hill people but lives in hills were more strenuous or hard working than that of plain. The life of hills people is much complex like they had to climb up and down the hills so confusion arise. The comparison of Achievement motivation between hill and plain is also unknown to us. So, researcher had selected the problem "comparative study on fitness and achievement motivation among plain and hill university level players".

The Subjects:

Twenty five university level players from Darjeeling and twenty five university level players from Kalyani had been selected randomly as the subject for the study. The subject's age ranges from 22 to 25 years.

Criterion Measures:

Researcher had measured age, weight, height as personal data and conducted fitness items including the following items: Chin ups, Sit and reach, 10x10 yard shuttle run, Standing jump, 50 mt. dash and 12 minutes run and walk Deo-mohan Achievement Motivation scale for achievement motivation

Results And Discussion

Table No: 1
Mean, S.D, Range And 'T' Value Of Age, Height & Weight Of Hill And Plain University Level Players

Personal Data	Groups	Mean	S.D	Range
Age	Hill	23.53	1.06	22-25
	Plain	23.46	1.12	22-25
Height	Hill	165.00	2.22	163-170
	Plain	168.33	4.87	163-178
Weight	Hill	55.73	1.57	54-59
	Plain	59.40	5.43	54-69

From above table it is indicated that age range was same for hill and plain university level players. Height and weight had slight difference. Height for hill players ranged from 163-170cm and 163-178 cm for plain players. Similarly weight for hill ranged from 54-59 and for plain player's weight ranged from 54-69 kgs.

Table No: 2
Mean, S.D, Sed, And 'T' Value Of Physical Fitness Components As A Whole For Hill And Plain University Level Players

Variabls	Groups	Mean	S.D	Sed	'T' Ratio
Chin Ups	Hill	15.53	2.27	1.06	1.62
	Plain	13.8	3.02		
Sit And Reach	Hill	17.66	2.38	1.11	** 2.54
	Plain	14.83	3.59		
Shuttle Run	Hill	9.05	.49	.16	* 3.03
	Plain	8.87	.38		
Standing Broad Jump	Hill	2.69	.19	.07	* 5.62
	Plain	2.28	.20		
50 Meter Dash	Hill	6.68	.58	.24	2.07
	Plain	7.18	.73		
12 Minute Run & Walk	Hill	2656.66	264.99	80.82	.62
	Plain	2707	166.76		

From table no. 2 it was observed that the mean and S.D of chin ups, sit and reach, shuttle run, standing broad jump, 50 mt. dash and 12 minute run and walk of Hill University level male players are 15.53 (2.27), 17.66 (2.38), 9.05 (.49), 2.69 (.19), 6.68 (.58), 2656.66 (264.99) and mean and S.D

of Plain university level male players are 13.8 (3.02), 14.83 (3.59), 8.87 (.38), 2.28 (.20), 7.18 (.73), 2707 (1.66.76) respectively with SED and 't' value of (1.06) 1.62, (1.11) 2.54, (.16) 3.03, (.07) 5.62, (.24) 2.07 and (80.82) .62 in which 't' ratio of shuttle run and standing broad jump shows significant difference at .01 level and sit and reach shows significant difference at .05 level. Thus this results show that hill university level players are superior in sit and reach at .05 levels and are superior than plain university level players in standing broad jump at .01 level. The plain university level players are superior to hill university level players in shuttle run at .01 levels.

Table No: 3: Mean, S.D, Sed And 'T' Value Of Achievement Motivation Scale For Plain And Hill University Level Players.

Variables	Groups	Mean	S.D	Sed	'T' Ratio
Achievement Motivation Scale	Hill	200.13	11.33	1.06	1.62
	Plain	203.2	15.52		

From the above table it is found that Plain players are slightly better than Hill university level players and to find out whether the difference was significant or not researcher has gone through 't' ratio and found the 't' value 1.62 which was statistically insignificant.

Conclusion

From the above findings, following conclusions can be drawn:

In strength endurance hill players are slightly better with 't' value of 1.62, which is not significant.

In flexibility of players, hill players are better with 't' value of 2.54 which was significant at 0.5 level.

In agility test, plain players were superior to hill university level players with 't' value of 3.03 which was significant at 0.1 level. In explosive strength, hill players are superior to that of plains with 't' value of 5.62 which was significant at 0.1 level.

In speed test, hill players are slightly better than plains university level players with 't' value of 2.07 which was not significant at any level. In endurance test, plain players are slightly superior to that of hills with 't' value of .62 which is not significant at any level.

Lastly, In achievement motivation test, plain university level players was better than hill university level players with 't' value of 1.62 which was not significant at any level.

Reference

- Henery E. Garrett (2007). *Statistics in psychology and education*. New Delhi: 12th edition, Paragon International Publisher
- Ajmer Singh et al. (2003). *Essential in Physical Education*. New Delhi: Kalyani Publishers.
- Barrow H.M. and M.C.Gee R.M (1979). *A practical to Measurement in Physical Education*. Philadelphia: Lea and Febiger.
- Johnson and Nelson (1935) *Practical Measurements for Evaluation in Physical Education*. Burges Publishers.
- Michael M.J., Tim O., Arthur S., & Carter J.E (2001) *International Standards for Anthropometric Assessment*. Cataloguing-in-Publishers.

Asparagus Recemosus: Its Therapeutic Potential And Acceptance In Sports Medicine

Baljit Singh Sekhon* & Balaji M. Potbhare**

*Dy. Director Sports, Nagaland University (Central), Lumami, Nagaland 798627 e-mail: directorsportsnu@yahoo.com

**Research Officer (Ayurveda), AYUSH (Herbal Ayurveda Research Centre), Nagaland University, Lumami, (India)

Abstract:

All the cultures of the world have rich heritage of traditional medicine, some of them have acquired international acceptance and others are practiced at community level. Globally traditional medicine is being examined and revealed by extensive activity of research. *Ayurveda* which is also known as traditional system of Indian medicine is a classical system of medicine originating from the Vedas founded around 3000 years ago in India and currently recognized and practiced in India and many subcontinent countries. The treatment in the *Ayurveda* system is holistic and individualized having two components- preventive and curative. The preventive aspect of *Ayurveda* is called *Swastha-vritta* and includes personal hygiene, regular daily and seasonal regimen, appropriate social behaviour and *Rasayana* therapy which include rejuvenative foods/ drugs etc. The main objective of this critical study is to explore the therapeutic potential of *Asparagus Racemosus* and its use in sport medicine as adaptogenic, antioxidant and anti inflammatory agent. Comprehensive study of *Ayurvedic* literature related to *Asparagus Racemosus* and its importance in sport medicine is carried out with an intention to draw some conclusions. Critical analysis and interpretation of the collected data from primary as well as secondary sources has done.

Keywords: *Asparagus racemosus*, *Rasayana*, Rejuvenation, Sport Medicine, *Ayurvedic* Medicine

Introduction

Ayurveda is an ancient and traditional system of medicine originated in India which has long history. *Ayurvedic* literature is mainly available in three *Samhitas* namely *Charak*, *Sushrut*, & *Astangnagrah*. A lot of medicinal plants, traditionally used for thousands of years, are present in a group of herbal preparations of the Indian traditional health care system (*Ayurveda*) named *Rasayana* proposed for their interesting antioxidant activities (Scartezzini 2000). *Rasayana* is one of the eight clinical specialities of classical *Ayurveda* which have been practical as an important speciality aiming at rejuvenation. "*Rasa*" in *Pali* language means taste, juice and "*Ayana*" means *path*. *Rasayana* therapy nourishes body, immunity system and helps to keep the body in best of health. Human immunity, strength depends on the quality and quantity of *ojas*. The main aim of *Ayurvedic Rasayana* therapy (rejuvenation) is to restore spirit, vitality, and enhance *ojas* to attain longevity.

The Vernacular names of *Asparagus Racemosus*

Asparagus Racemosus wild (liliaceave) also known as *Shatavari* (in Hindi) which is having more branches, spines under category of shrub growing all parts of India. In India, *Asparagus Racemosus*, a traditional herbal medicine called by different names in various local languages such as in Marathi – *Satmuli*; Gujarati – *Semukha*; Bengali – *satmuli*; Telugu – *Challan gadda*; Tamil – *Sadawari*; and in Kannada – *Majjigegade*. It has different names in various languages in the globe like in English – Indian *Asparagus* Hundred Roots, Pharsi – *Gujardasti*, Arabic – *Sakakulmisari*, and in Chinese – *Tian men dong*.¹

Chemical Constituents of *Asparagus Racemosus*

The chemical ingredients present in the *roots* of plant are steroidal saponins (*Shatavarins* I-IV). Isoflavones, Asparagamine, Racemosol, Polysaccharides, mucilage, vitamins A, B1, B2, C, E, Mg, P, Ca, Fe, and folic acid present in roots. Other primary chemical constituents of *Asparagus* are essential oils, asparagine, arginine, tyrosine, flavonoids (kaempferol, quercetin, and rutin), resin, and tannin (Chawla 2011).

Nutrients in *Asparagus Racemosus* (1 cup raw (134 grams) ²

Nutrient	Amount	DV (%)	Nutrient Density
Vitamin K	55.74 mcg	69.7	46.8
Vitamin A	1013.04 IU	20.3	13.6
Folate	69.68 mcg	17.4	11.7
Iron	2.87 mg	15.9	10.7
Vitamin B1	0.19 mg	12.7	8.5
Vitamin C	7.50 mg	12.5	8.4
Copper	0.25 mg	12.5	8.4
Tryptophan	0.04 g	12.5	8.4
Vitamin B2	0.19 mg	11.2	7.5
Fiber	2.74 g	11.0	7.4
Manganese	0.21 mg	10.5	7.1
Molybdenum	6.70 mcg	8.9	6.0
Potassium	270.68 mg	7.7	5.2
Vitamin E	1.51 mg	7.5	5.1
Phosphorus	69.68 mg	7.0	4.7
Vitamin B3	1.31 mg	6.5	4.4
vitamin B6	0.12 mg	6.0	4.0
protein	2.95 g	5.9	4.0
choline	21.44 mg	5.0	3.4
zinc	0.72 mg	4.8	3.2
magnesium	18.76 mg	4.7	3.2
selenium	3.08 mcg	4.4	3.0
vitamin B5	0.37 mg	3.7	2.5
calcium	32.16 mg	3.2	2.2

Review of properties of *Asparagus racemosus* according to *Ayurveda* :

<i>Rasa</i> (taste)	<i>Guna</i> (Quality)	<i>Veerya</i> (Potency)	<i>Vipalea</i> (Active Prompts)
<i>Madhar</i> (sweet)	<i>Snigdha Seet</i> (cold)	<i>Seet</i> (old)	<i>Madhara</i> (sweet)
<i>Tikta</i> (bitterness)			

Asparagus Racemosus Plant

Asparagus Racemosus Wild (Liliaceae) known as Shatavari is much traditional spinous under shrubs growing wild in tropical and sub tropical parts of India. The name "Shatavari" translates to a woman who possess 100 husbands referring to the Shatavari rejuvenation effect in female reproductive organs. It has been mentioned in Ayurvedic texts like the Charak Samhita and Susruta Samhiti and Astang Sungraha. In the Kashyap Samhita it is stated that Shatavari promotes maternal health and noted its meticulous use as a galactagogue (enhances breast milk secretion in lactating mothers). *Asparagus Racemosus* is much branched spinous under strouts with tuberous, shoot root stock bearing numerous fushiform, succulent roots. *Asparagus* is a personal *Asparagus* have been noted out of which only 20 are edible.

Historical Background and cultural heritage of *Asparagus racemosus*

Egyptian and European cultures used to cultivate various species of *Asparagus Racemosus* about 3000 BC and it became popular in France during 18th century during the rule of Louis XIV. Presently, China is the world's largest producers and exporters of *Asparagus*. *Asparagus racemosus* is a species of *Asparagus* with a long history of use in India and other parts of Asia as a botanical medicine. In *Ayurveda*, *Asparagus Racemosus* (*Shatavari*) have been used for thousands of years of rejuvenating drug and supports reproductive health by tonning and nourishing the female reproductive organs. *Shatavari* has been mentioned in *Ayurvedic* texts like the *Charak Samhita* and *Susruta Samhita*, and *Astanga Samgraha*.

Material & Method

Comprehensive study of *Ayurvedic* literature which is mainly available in three *samhitas* namely *charak*, *sushrut*, and *astangsangrah* was analysed with an intention to draw some conclusions on *Asparagus Racemosus* and its importance and acceptance in sports medicine. In the present paper therapeutic potential of *Asparagus Racemosus* and its use in sports medicine has been critically analysed from its historical, etymological, morphological, photochemical, pharmacological and therapeutical aspects. The present study is critical analysis of research findings, observations, discovered applications and controlled studies on the therapeutic potential of *Asparagus Racemosus*.

Result

Rationality of Acceptance of *Asparagus Racemosus* in the sport medicine.

Ayurveda, the traditional health care system of India is being re-valued by conducting research on different types of medicinal plants and their therapeutic potential. *Asparagus, officinails*, the species of *Asparagus* surrounds saponins in its roots portion and shoots. This include *asparanin A*, *Sarsasapogenin*, *protodioscin*, and small amount of the diosgenin. Saponins in food shown to have anti-inflammatory and anti-cancer properties, and their intake has also been associated with improved blood pressure, improved blood sugar regulation, and better control of blood fat levels. Recent research has shown that *Asparagus* also contains a valuable amount of unique carb, inulin which is rich source for certain types of bacteria (like *Bifidobacteria* and *Lactobacilli*) that are associated with better nutrient absorption, lower risk of allergy and colon cancer. Other anti-inflammatory nutrients in *Asparagus* include the flavonoids quercetin, rutin, kaempferol and isorhamnetin. *Asparagus* also provides a wide variety of antioxidant nutrients, including vitamin C, beta-carotene, vitamin E and the minerals zinc, manganese, selenium, and antioxidant glutathione (GHS), body's best studied antioxidants (it consists of three amino acids – glutamic acid, glycine and cysteine). Anti-inflammatory and antioxidant nutrients from *Asparagus* are some of the best risk reducers available for common chronic health problems.²

In Ayurveda, the roots of *Asparagus Racemosus* is widely used to stimulate the immune system, as a galactagogue and as a treatment of some medical conditions like nervous disorders, inflammation, liver diseases and certain infectious diseases. The herb is helpful in the treatment of neurodegenerative disorders and in alcohol abstinence-induced withdrawal symptoms. *Asparagus Racemosus* also has been used extensively as an adaptogen to increase the non-specific resistance of organisms against a variety of stresses.³ *Asparagus* is a very good source of energy-producing vitamin B2, and B3 as well as phosphorus; heart-healthy potassium, vitamin B6 and dietary fiber; antioxidant-promoting vitamin E and manganese; and muscle-building protein. *Asparagus* is an excellent source of anti-inflammatory vitamin K, heart-healthy folate, vitamin B1, vitamin C, and vitamin A (in the form of beta-carotene) and bone-building copper. *Asparagus* extract has significant antidepressant activity and this effect is probably mediated through the serotonergic and the noradrenergic systems and augmentation of antioxidant defences. The results of various studies indicate that the potent therapeutic phyto-components present in *Asparagus Racemosus* root i.e. phytosterols, saponins, polyphenols, flavonoids and ascorbic acid, could be responsible for increased bile acid production, elimination of excess cholesterol and elevation of hepatic antioxidant status in hypercholesteremic conditions.

Rege et.al. (1999) in their study found that one week oral intake of 540mg/kg/day *Asparagus racemosus* has provided significantly protection against ethanol induced gastric mucosal damage. In the same study it is observed that for anti-stress activity against cold stress induced (4°C) at the dosage of 100mg/ kg p.o. for 15 days showed that *Asparagus racemosus* extracts significantly (P<0.001) reduced stress induced leakage. *Asparagus racemosus* extracts significantly (P<0.001) decreased plasma cortisol levels and stress induced suppression of peritoneal macrophages function was also found to be decreased.

Velavan et. al. (2007) in their study on restorative effect of *Asparagus racemosus* on age related oxidative damage in heart lysosomes of aged rats showed a significant (P<0.001) decrease cathepsin D, acid phosphatase and significant (P<0.001) increase in H+ATPase activity in heart lysosomes. The antioxidant nature of *Asparagus racemosus* is responsible for strengthening of heart lysosomal membrane by its membrane stabilizing action through its ability to decrease the levels of lipofuscin, lipid peroxidation and protein carbonyl which is used as a marker for oxidative damage.

Discussion And Observations

Asparagus Racemosus is useful as an anodyne, aphrodisiac and galactagogue.

The roots of *Asparagus Racemosus* are useful in nervous disorders, dyspepsia, tumors, scalding of urine, throat infections, tuberculosis, cough bronchitis and general debility.

It helps with nervousness, pain, and restless sleep and is useful for treating anorexia, and insomnia.

Asparagus is considered as a rejuvenating female tonic for overall health and vitality and paste of fresh leaves is used to apply on the burning sensation of the skin in smallpox and *bullae*.

The fresh juice of the roots, mixed with honey, helps in reducing the burning sensation pain in *tumors*, due to *pitta*.

Asparagus proves to be an effective demulcent for the dry and inflamed membranes of the lungs, stomach, kidneys and sexual organs and is also an extremely nutritious tonic for women from menarche to menopause.

The herb works as a rejuvenative to improve eyesight, when consumed for a prolonged duration and it curbs the intensity of the bronchospasms and decreases the frequency of paroxysms.⁴

Asparagus Racemosus maintains healthy hormonal balance and treats PMS symptoms by relieving pain and controlling blood loss during menstruation.

Asparagus Racemosus is useful as antiseptic, galactogenic, mucilaginous, antidiarrhoeal, refrigerant, diuretic, antispasmodic, nutritive tonic, demulcent, galactagogue, aphrodisiac, antispasmodic, stomachic and antirheumatic.⁵

Conclusion

On the basis of various research findings, observations and applications present study concluded that *Asparagus Racemosus* is an amazing plant for use in sports medicine. The use of *Asparagus Racemosus* as an ergogenic aid and curative medicine for injuries is now a day's is recommended to be re-valued by sports medicine experts. It is concluded that it has adaptogenic, diuretic, anti-tissue, anti-oxidant, immunological, digestive, antioxidant, hormonal, galactogenic properties, toxicity and protective effect of this plant on human body. This plant acts as an adaptation, anti-oxidant, immune modulator, antispasmodic, and antidiarrhoeal in human body. The plant *Asparagus Racemosus* described contains adaptogenic, antioxidant and anti-inflammatory properties that can justify its use in sport medicine.

References

- Albanese D, Russo L, Cinquanta L et al. (2007). Physical and chemical changes in minimally processed green *Asparagus* during cold-storage. Food Chemistry Volume 101, Issue 1, Pages 274-280.
- Chawla, Amit. (2011). *Asparagus Racemosus* (Willd): Biological Activities & its Active Principles, Indo-Global Journal of Pharmaceutical Sciences, 2011, Vol 1., Issue 2; Page No. 113-120
- Chopra, R.N.(1986). Glossary of Indian Medical Plants (including the supplement). Council of Scientific and Industrial Research, New Delhi.
- Kanwar AS and Bhutani KK. (2010). Effects of Chlorophytum arundinaceum, *Asparagus adscendens* and *Asparagus Racemosus* on pro-inflammatory cytokine and corticosterone levels produced by stress. Phytother Res.24(10):1562-6.
- Kapoor, L.D., (1990). Handbook of *Ayurvedic* Medicinal Plants. CRC, Press, Boca Raton.
- Kaushalyan. A (2009). Pali-Hindi Kosh, New Delhi, Rajkamal Publication. PP.269.
- Kirtikar, K.R., Basu, B.D., (1993). In: Blatter, E., Caius, J.F., Mhaskar, K.S. (Eds.), Indian Medicinal Plants, vol. III. Lalit Mohan Basu, Allahabad, India.
- Mathews JN, Flatt PR, and Abdel-Wahab YH. (2006). *Asparagus adscendens* (Shweta musali) stimulates insulin secretion, insulin action and inhibits starch digestion. The British Journal of Nutrition. Cambridge: Vol. 95, Iss. 3; p. 576-581.
- Rege, Nirmala N., Thatte, Urmila M., Dahankar (1999). Adaptogenic properties of Six Rasayana herbs used in *Ayurvedic* Medicine, Phytotherapy Research, Vol: 13, PP: 275-291.
- Richards, R.T., Sharma, H.M., (1991). Free radicals in health and disease. Indian Journal of Clinical Practice, Vol: 2 (7), PP: 15-26.
- Satpute, Ashok. D. (1989). *Ayurveda's* Contribution to Sports Medicine, Ancient Science of Life, Vol: VIII, Nos.: 3 & 4, PP 230-234.
- Scartezzini, Paolo; Speroni, Ester (2000). Review of some plants of Indian traditional medicine with antioxidant activity, Bologna, Journal of Ethno-pharmacology Vol: 71, PP: 23-43.
- Singh, G. K., Garabadu D, Muruganandam AV, Krishnamurthy S. (2009). Antidepressant activity of *Asparagus Racemosus* in rodent models, Pharmacology Division, Department of Pharmaceutics, Institute of Technology, Banaras Hindu University, Varanasi, India . Available at - <http://www.Asparagusextract.net/>
- Singh, R.H. (1998). The Holistic Principles of *Ayurvedic* medicine, Delhi, Chaukhamba Sanskrit Pratishthan.
- Velanan, Sivanandham. et.al. (2007). Restorative effect of *Asparagus racemosus* on age related oxidative damage in heart lysosomes of aged rats, International Journal of Pharmacology, Vol.3 (1), PP: 48-54.
- Wang L, Wang X, Yuan X, Zhao B. (2011). Simultaneous analysis of diosgenin and sarsasapogenin in *Asparagus officinalis* byproduct by thin-layer chromatography. Phytochem Anal. 22(1):14-7. doi: 10.1002/pca.1244.
- Web References:
<http://www.gits4u.com/agri/agri5shatavri.htm>
<http://www.whfoods.com/genpage.php?tname=foodspice&dbid=12>
<http://www.Asparagusextract.net/>
<http://www.iloveindia.com/indian-herbs/Asparagus-racemosus.html>
<http://loss-of-weight-allegiance.com/?p=3726#&pan>

A Study On Motor Fitness In Respect Of Body Fat Percentage Of Middle-Aged Women In North Bengal

Dr. Swapna Ray Barma, Assistant Professor,
 Govt. College of Physical Education for Women, Dinhata, West Bengal, India

Abstract:-

The aim of this study was to compare the motor fitness in respect of percentage of body fat on a sample of 225 sedentary, 225 labourer and 25 ex-athlete women within the range between (35-44) years were randomly selected from three communities and three districts of North Bengal, West Bengal. In respect of motor fitness the cardio-respiratory endurance by 1-mile walk/run, muscular strength endurance by sit-ups, flexibility by sit and reach test have been measured. All the tests were taken by standard means and methods. For result discussion the Mean and SD of different parameters were computed and to find out statistical significance of the differences among means with the ANOVA and t-test. On the basis of findings, regarding percentage of body fat GN- Sed group was higher followed by EA and SC-Sed groups. Under the all parameters of motor fitness the three Lab-groups were significantly higher than their matched Sed-groups. Hence the study concluded that excess fat is detrimental to physical performance and work capacity.

Key Words: - Percentage of Body Fat, Cardio-respiratory endurance, Muscular strength endurance, Flexibility

Introduction

The term motor fitness was developed to describe a broad concept than physical fitness. This extensive term means the ability to perform basic motor. Physical fitness may be conceived as the capacity to perform one's daily tasks without fatigue; motor fitness, also termed motor ability, refers to a person's performance abilities as affected by the factors of speed, agility, balance, coordination, and power (Devis, 2000; Gallahue, 2006). However, this performance level changes with respect to an individual's age, sex, activity level and socio-economic status. The totally fit person possesses physical well-being but also qualities such as good human relations, maturity and high ethical standards (Singh et al., 2009). Generally, it is achieved through exercise, correct nutrition and enough rest (Wikipedia, 2011).

In the cross sectional study made by Rikli and Busch (1986) on age matched sedentary-active and young- old women, the researchers found deterioration of motor performance in the variables like balance, flexibility and grip strength with age. In the same study they found smaller or no significant differences between the older active and young active subjects.

Huang et al, (1998) examined the association between physical fitness, physical activity and the prevalence of functional limitation. They were concluded that the data support a protective effect of physical fitness and physical activity on functional limitation among older adults and extend that protective effect to middle – aged men and women.

Shahana et al. (2010) determining the effect of a 12-week aerobic exercise programmed on health-related physical fitness components, which are cardio respiratory endurance, flexibility, abdominal strength endurance and body fat in middle-aged women. They were concluded that the improved cardio-respiratory endurance, flexibility, muscular strength endurance and decreased skin fold thickness (body fat %) among the experimental group of middle-aged women after 12 weeks of aerobic training.

Measurement of performance in respect to fatness and leanness of the human body has been the interest to exercise physiologists and physical educators for many years. Excess fat is detrimental to physical performance and work capacity (Tyagi, 2001). Research on physical performance capacity of obese person found that excess fat hindered performance of jumping, agility, endurance etc. activities. Excess body fat is also related to injury, non-adherence to training and overall reduced athletic performance. Again, the average percent of body fat differs from activity to activity. Some people might perform better at a higher or lower body fat percentage than others of the same age and sex. An increasing volume of research is trying to focus on establishment of optimum body fat levels for effective participation in various activities.

These findings support daily physical activities and exercises to maintain or improve motor fitness could be useful for health status of middle – aged and elderly people. The present study helps to determine the motor fitness of different communities along with their percentage of body fat.

Methodology

The purpose of the present study was to compare the motor fitness in respect of percentage of body fat in middle-aged women of the three different communities of North Bengal. This study stratified random sampling technique (Using Pseudo Number Method) is followed. 225 sedentary women, 225 labourer women and 25 ex-athlete women (only mean calculated) within the range between 35-44 years were selected from three districts namely Cooch Behar, Jalpaiguri and Darjeeling of North Bengal, India. According to the design of the study there were four sub-groups namely General (GN), Scheduled Caste (SC), Scheduled Tribe (ST) and Ex-athlete (EA). The first three groups (GN, SC and ST) there were again two sub-groups i.e. Sedentary and Labourer. For estimation of body fat a simple procedure was used by measurement of girths (Mc Ardle et al. 1996). In respect of motor fitness for estimation of cardio-respiratory endurance by 1-mile walk/run, muscular strength endurance by knee bent sit-up and flexibility by sit and reach test have been considered. All the tests were taken by proper methods and materials. For result discussion the Mean and SD of different parameters were computed and to find out statistical significance of the differences among means with the ANOVA and t-test.

Results and Discussions

The mean B.F. % of all labourer sub-groups is almost same and also lower than the all other groups. But in other sub-groups the mean B.F. % of GN- Sed group was higher followed by E.A. and SC- Sed groups were presented in table no.1.

The motor fitness of ex-athlete on selected activities was superior to all other groups. However, the labourer group was better than the sedentary group. The SC–Sed and SC-Lab groups were taken the less time among the other Sed and Lab groups in 1-mile walk/run. In the mean sit-up score the GN-Sed and GN-Lab groups were lower among the all sedentary and labourer groups respectively. Beside these, the exceptional result was found in sit and reach test where the mean score of SC-Sed was higher than all other Sed-groups.

It appears from the mean score of all parameters that they are not equal. Therefore, statistical treatment of the data was essential to ascertain the degree of difference among the means.

Table No.1: Mean and SD of all the parameters of the study

Parameters		GN-Sed	SC-Sed	ST-Sed	GN-Lab	SC-Lab	ST-Lab	EA
B.F.%	Mean	31.88	29.62	29.50	22.00	21.97	21.24	30.78
	S.D.	±3.97	±3.61	±4.06	±2.61	±1.89	±2.01	±3.89
CRE	Mean	1157.27	1116.49	1166.96	903.43	880.66	887.36	655.83
	S.D.	±163.27	±153.13	±192.43	±115.37	±103.97	±111.39	±161.63
MSE	Mean	3.43	4.29	4.27	8.64	10.35	10.07	14.44
	S.D.	±5.27	±5.47	±5.15	±5.05	±5.56	±5.14	±10.99
Flexibility	Mean	10.20	12.95	10.48	16.01	18.20	15.38	16.31
	S.D.	±3.98	±4.68	±4.73	±4.07	±4.52	±5.09	±6.23

No.2 represents the B.F. % score among the three Sed- groups are not equal as obtained P- value and F- value were 0.0002 and 8.92 respectively. Similarly, the B.F. % score among the three Lab-groups are not same. Since, F-ratio was high enough to be significant at 5% level.

The mean scores of 1-mile walk/run in three Sed-groups and three Lab-groups were statistically not different and obtained F-value was 1.85 and 0.85 respectively. In Sed and Lab group's Anova result the F-value was not significant. It means variation among the each group is negligible.

Same results have been seen in sit-up scores. However, the sit and reach score is concerned of sedentary group was not equal, their differences are statistically significant. Similarly in the labourer groups the mean values of three sub- groups are not equal and the differences are significant as may be evident from F- value, higher than critical level.

The sit and reach score is concerned of sedentary group was not equal, their differences are statistically significant. Similarly in the labourer groups the mean values of three sub- groups are not equal and the differences are significant as may be evident from F- value, higher than critical level.

Table No-2: Anova of all the parameters of the study

Parameters	F-value		P-value	
	Sed-Group	Lab-Group	Sed-Group	Lab-Group
B.F.%	8.92	2.89	0.0002	0.06
CRE	1.85	0.85	0.16	0.43
MSE	2.09	2.28	0.13	0.10
Flexibility	8.53	7.84	0.0002	0.0005

Statistics: F-value= 3.04 is significant at 0.05 level

The t-test scores clearly revealed that the fat percentage of GN-Sed group was significantly higher than both SC-Sed and ST-Sed groups. The difference between SC and ST- Sed groups was negligible and not significant. When all Sed- groups were matched against their corresponding Lab-groups, it was observed that the GN-Sed group was significantly higher than GN-Lab group. Similarly, both SC and ST-Sed groups were significantly higher than SC and ST-Lab groups respectively were presented in table no.3. For CRE the mean score of 1-mile walk /run in the Sed-groups out of three pairs (t-test) only SC-Sed and ST-Sed was significantly different. In Lab groups' intra-group variation was negligible. However, when three Sed-groups were matched with corresponding Lab-group all the three matched pairs appeared significantly different. Further it appears that Lab-group took less time in covering 1-mile distance than Sed sub-group subjects. Table No.3 represents the result for MSE the means sit-up of paired t-test revealed that in the sedentary and labourer groups separately none of the matched pair was significant. Whereas intra-group difference the Sed-group was compared with matched Lab-group i.e. Sed-GN Vs Lab-GN and similar, three pairs were found significantly different. For sit and reach test the result of the paired t- test that the mean differences of two-pairs (GN –Sed & SC-Sed and SC-Sed & ST- Sed) in sedentary group were significant. In labourer groups only one pair i.e. (SC- Lab & ST- Lab) was significantly different. When Sed three sub-groups were matched against corresponding Lab three sub-groups, all the 3-paired merely were significantly different and respective Lab-groups had higher score.

Table No.3: t-test: All the groups together for all parameters of the study

Para- meters	Statistics	GN- Sed Vs. SC- Sed	GN- Sed Vs. ST- Sed	SC-Sed Vs. ST-Sed	GN-Sed Vs. GN-Lab	SC- Sed Vs. Sc- Lab	ST-Sed Vs. ST-Lab	GN- Lab Vs. SC- Lab	GN-Lab Vs. ST- Lab	SC- Lab Vs. ST- Lab
B.F.%	t- stat	3.54	3.45	-0.18	17.16	16.61	16.57	0.07	2.02	-2.31
	P(T>=t) one tail	0.0003*	0.0004*	0.43	8.34*	5.58*	6.57*	0.47	0.02*	0.01*
CRE	t- stat	1.54	-0.40	1.75	1.19E+ 01	11.32	11.22	1.21	0.87	0.35
	P(T>=t) one tail	0.06	0.35	0.04	3.72*	4.17*	6.36*	0.12	0.20	0.36
MSE	t- stat	-1.92	-0.94	-1.16	-5.86	-5.68	-7.16	-1.82	-1.63	-0.37
	P(T>=t) one tail	0.03	0.18	0.13	6.10*	1.27*	2.49*	0.04	0.05	0.36
Flexi- bility	t- stat	-3.77	-0.43	-3.20	-8.69	-7.36	-5.91	-2.97	0.90	-3.76
	P(T>=t) one tail	0.0002*	0.34	0.001*	3.17*	1.04*	4.93*	0.002*	0.19	0.0002*

Statistics: t-stat=1.98 is significant at 0.05 level

*Significant at 0.05 level

In the present study, the physical performance as well as motor fitness of ex-athlete women were higher than all others groups. Wimberley et al. (2001) reported that B.F. % of sedentary and active middle-aged (30-50s) women are 28.8 ± 6.8 and 18.9 ± 4.9 respectively. Stan forth et al. (2004) observed that the B.F. % of black and white adult (17 to 65 years) women is 36.1 and 29.9 respectively. In the study the sedentary women were selected from the urban area and their socio-economic status and life style were better than the labourer groups. Perhaps the difference was due to this reason. However, data of the present study were in close proximity with that of other leading researchers. A statistically significant interaction was found between the treatment and group factors ([F. sub. 1.38] =7.08; $P < 0.05$) for cardiovascular endurance. Moreover, mean comparison indicated that the mean time needed to run the 1- mile was significantly reduced only in the experimental group (Derri et al., 2004). AL- Shamli (2010) found the rural students secured better in cardiovascular endurance than urban students (7.63 ± 1.30 , 8.03 ± 1.77 respectively).

Liu et al., (2003) observed in Cohen's disease subjects compared with controls for sit-up test (-25.1%; $p < 0.001$). Osawa et al., (2011) reported the student and staff (21-29yrs.) of Keio University, Helsinki performed the number of sit-ups to be thereof 18.1 ± 4.5 . Jurimae et al., (1998) and Kamyabnia et al., (2010) found the dynamic sit-up was higher in control subjects than the obese women.

Sekendiz et al. (2006) found the flexibility score was 23.9 ± 7.5 of exercise group and 20.7 ± 8.3 of control group of the 30 ± 6.6 mean aged women. The findings of the present study are closely similar to the findings of the leading researchers.

Conclusions

The percentage of body fat for GN- Sed group was higher followed by E.A. and SC- Sed groups. The lowest mean body fat percentage group was GN- Lab. In Sed -groups the cardio respiratory endurance score was not significant, but the difference between SC and ST Sed- groups was significant. In Lab- group intra- group's variation was negligible. However, three Lab- groups were significantly higher than their matched Sed- groups respectively. Under the muscular strength endurance the sit-up score of three Sed- groups were statistically not significant. Similarly three Lab-groups difference are not significant. Three Lab- groups were significantly higher than their matched Sed- group. The flexibility score is concerned Sed-groups were not equal, their differences are statistically significant. Similarly, in Lab-groups the differences are also significant. When three Sed-groups were matched against corresponding Lab-groups, the all differences were statistically significant. All Lab-groups had higher score than respectively Sed- groups.

Recommendations

Considering the various aspects the author recommended that the present study has been confined within the 35-44 years age group. Further study may be conducted taking subjects below 35 years and above 44 years and also the athlete of various team and individual games.

References

- Al- Shamli (2010). Physical activity and physiological fitness status of 10th grade male students in Al- Dhahirah Region, Sultanate of Oman, *Current Research Journal of Social Science*; 2(2): 99-109.
- Davis, B. et al. (2000) Training for physical fitness. In: DAVIS, B. et al. *Physical Education and the study of sport*. Spain: Harcourt Publishers, p.121-122
- Derri, V.; Aggeloussis, N. and Petraki, C. (2004). Health - related fitness and nutritional practices: can they be enhanced in upper elementary school student? *Education, Sports and Fitness*; 61(1):126-137.
- Gallahue, D.L and Ozmun, J.C. *Understanding Motor Development. Infants, Children, Adolescents, Adults*. 6th ed. McGraw-Hill, New York, NY, USA, 2006.
- Huang, Y. et al. (1998). Physical fitness, Physical activity and functional limitation in adults aged 40 and older *Med Sci Sports Exerc*; 30(9): 1430-5.
- Kamyabnia, M. et al. (2010), Comparison of physical fitness and obese female university students. *Annals of Biological Research*, 2 (3):126-133.
- Liu, Y. et al. (2003) "Physiological benefits of 24-style Taijiquan exercise in middle- aged women, *Journal of Physiological Anthropology and Applied Human Science*; 22(5): 219-225.
- Mc Ardle, W.D. et al. (1996) *Exercise physiology: Exercise, Nutrition and Human performance*, Lea and Fibiger: Baltimore (4th Ed).
- Osawa, Y. Oguma, Y. and Onishe, S. (2011), Effects of Whole- body vibration training on bone free lean body mass and muscle strength in young adults. *Journal of Sports Science and Medicine*; 10:97-104.
- Rikhi, R.R and Busch, S. (1986). Motor performance of women as a function of age and physical activity level. *Journal of Gerontology*, 41(5): 645-649.
- Sekendiz, B. et al. (2006), Effects and Pilates exercise on trunk strength, education and flexibility in sedentary adult females, *Journal of Body work and Movement Therapies*, 11:318.
- Shahana, A. Nair. U.S. and Hasrani, S.S (2010), Effect of aerobic exercise programme on health-related physical fitness components of middle-aged women, *Br J Sports Med*;44.
- Singh, A. et al. (2009). *Essentials of Physical Education*, Kalyani Publication, Ludhiana, New Delhi (3rd ed)
- Stan forth, P.R. et al. (2004). Generalized abdominal visceral fat prediction models for black and white adults aged 17-65 yrs.: The Heritage Family Study. *International J. of Obesity*, 28:925-932.
- Wimberly, M.G. et al. (2001), Effects of habitual physical activity on the resting metabolic rates and body composition of women aged 35 to 50 years. *J Am Diet Assoc*. 100:1181-1188.
- Wikipedia Foundation, Tnc.2011

Acknowledgements

I acknowledge with sincere gratitude to Prof. A.K. Banerjee, Vice Chancellor of Kalyani University for his mentorship as a guide of this research work. I am also indebted to all ex-athlete, sedentary and labourer women for their constant support and co-operation.

A Comparative Study Among Urban And Rural Kabaddi Players Respect To Anxiety

**Dr. Quadri Syed Javeed, Head, Department of Psychology,
M.S.S. Art's Commerce and Science College, Jalna – 431203 (M.S.) India.
Dr. Katare B J,
Principal, M.S.S. Art's Commerce and Science College, Ambad (M.S.) India.**

Abstract

The objective of present study was to investigate that the anxiety among urban and rural kabaddi players. Total 100 kabaddi players were involved in that study. 50 subjects were urban kabaddi players and 50 subjects' rural kabaddi players. The age range of subjects were 18 to 16 years ($M = 22.94$, $SD = 3.48$). Hypothesis there will be significant difference between urban and rural kabaddi players with respect to anxiety. Anxiety scale was constructed and standardized by A. K. P. Sinha and L. N. K. Sinha. Result: rural interuniversity kabaddi players had significantly high anxiety than the urban kabaddi players.

Key Words: Anxiety, kabaddi players.

Introduction:

Hanton (2004) considers cognitive who are able to control their competitive anxiety through anxiety as a constituent of cognitive preparation and mental skills (such as imagination, feeling control), have believes that the emergence of negative thoughts and good motivation and self-confidence, but amateur athletes anxiety about performance, competition environment and with high anxiety experience weak performance in competition results in athletes are of important indications competitions. In their investigations concerning the of cognitive anxiety. Somatic anxiety appears in the form effects of competitive anxiety on performance and of pale skin, an increase in heartbeat and turmoil that motivation of football players reported that elite football makes athletes to show negative reactions. Eventually, players due to familiarity with competitive anxiety control self-confidence is the rate of athletes' ability to have strategies posses optimum motivation and selfexcellent performance and suitable behaviors. The relation between anxiety and performance has been the subject of many thorough researches (Craft, Magyar, Becker & Feltz, 2003; Parfitt & Pates, 1999; Martens, Vealey & Burton, 1990). Cognitive anxiety is characterised by negative concerns and worries about performance, inability to concentrate, and disrupted attention (Krane, 1994). Somatic anxiety consists of an individual's perceptions, which are characterised by indications such as sweaty palms, butterflies, and shakiness (Martens, Burton, Vealey, Bump & Smith, 1990). Research has also been done on the gender differences concerning state anxiety levels. Self-confidence tends to decrease in females on the day a competitive event is to occur. Male young athletes typically display lower levels of anxiety and higher self-confidence than female athletes (Scanlan & Passer, 1979; Wark & Witting, 1979). Krane and Williams (1994) found no gender differences for cognitive anxiety. They also demonstrated that the more experienced college player would show lower levels of cognitive and somatic anxiety than the less experienced player. As far as handball is concerned, Roguli, Nazor, Srhoj and Bozin (2006) supported that it is a sport, which includes complex and accurate motor skills, and they suggested that psychological factors play an even more decisive role in a competition, differentiating between successful and less successful teams.

Objective of the study: To investigate the anxiety among urban and rural kabaddi players.

Hypothesis: There will be significant difference between urban and rural kabaddi players with respect to anxiety

Method

Sample:

Total 100 kabaddi players were involved in that study. 50 subjects were urban kabaddi players and 50 subjects' rural kabaddi players. The age range of subjects were 18 to 16 years ($M = 22.94$, $SD = 3.48$).

Tool:

Sinha's Comprehensive Anxiety Test (SCAT-SS):

This scale was constructed and standardized by A. K. P. Sinha and L. N. K. Sinha. It consists of 90 sentences and each item provides two alternatives. The inventory can be scored accurately by hand and no scoring key or stencil is provided so far. For any response indicated as 'YES' the testee should be awarded the score of one, and zero for 'NO'. The sum of the entire positive or yes responses would be the total anxiety score of the individual. The coefficient of reliability was determined by using the two methods. First the test-retest method (N=100) was employed to determine the temporal stability of the test. The product moment correlation between the test and retest scores was 0.85. Second method is the internal consistency reliability was ascertained by adopting odd-even procedure (N=100). Using the Spearman-Brown formula, the reliability coefficient of the test was found to be 0.92.

Procedures of data collection

For data collection first permission has been taken from respective sources than the despondence has been selected for data collection. Personal data sheet (PDS) has been given to collect the preliminary information with respect to subject's related variables then standardized test administered to the subjects. Before that rapport was established with subjects. And they have been told that their responses were kept confidential and the information is used for research purpose only.

Variable

Independent variable- Area of Residence a) Urban b) Rural
 Dependent variable- 1) Anxiety

Data Analysis and Discussion

Table No. 01

Urban and Rural kabaddi players have shows Mean, S.D. and "t" Value dimension of `Anxiety.

Residence	MEAN	S.D	SE	N	df	"t"
Urban	30.58	6.48	.91	50	98	6.79**
Rural	38.94	5.80	.82	50		

Mean of urban kabaddi players was 30.58 and second mean of rural kabaddi players was 38.94. And the difference between the two mean is highly significant 't' (98) = 6.79, $P < 0.01$. It was found that the rural interuniversity kabaddi players had significantly high anxiety than the urban kabaddi players. Opposite result found that Bappa Maske (2012) competition Anxiety of urban Kabaddi players is slightly greater than that of rural players.

References

- Craft, L.L., Magyar, T.M., Becker, B.J., & Feltz, D. L. (2003). The relation between the competitive state anxiety inventory-II and sport performance: A meta-analysis. *Journal of Sport and Exercise Psychology*, 25, 44-65.
- Hanton, S. and D. Connaughton, 2002. Perceived control of anxiety and its relationship to self-confidence and performance. *Res. Quarterly for Exercise and Sport*, 73: 87-97.
- Jones, G., & Swain, A. (1992). Intensity and direction of competitive state anxiety and relationships with competitiveness. *Perceptual and Motor Skills*, 74, 464-472.
- Krane, V., & Williams, J.M. (1994). Cognitive anxiety, somatic anxiety and confidence in track and field athletes: the impact of gender, competitive level and characteristics. *International Journal of Sport Psychology*, 25, 203-217.
- Martens, R., Vealey, R.S. & Burton, D. (1990). *Competitive anxiety in sport* (pp.117-173). Champaign, IL: Human Kinetics.
- Mellalleu, S.D., Neil, R., & Hanton, S. (2006). Self-confidence as a mediator of the relationship between competitive anxiety intensity and interpretation. *Res Q Exercise Sport*, 77(2), 263-270.
- Parfitt, G., & Pates, J. (1999). The effects of cognitive and somatic anxiety and self-confidence on components of performance during competition. *Journal Sports Science*, 17(5), 351-356.
- Parfitt, G., Hardy, L., & Pates, J. (1995). Somatic anxiety and physiological arousal: Their effects upon a high anaerobic, low memory demand task. *International Journal of Sport Psychology*, 26, 196-213.
- Wark, K.A., & Witting, A.F. (1979). Sex role and sport competition anxiety. *Journal of Sport Psychology*, 1, 248-250.
- Wilson, G.S., & Raglin, J.S. (1997). Optimal and predicted anxiety in 9-12 year old track and field athletes. *Scandinavian Journal of Medicine and Science in Sports*, 2, 148-152.
- Woodman, T., & Hardy L. (2003). The relative impact of cognitive anxiety and self-confidence upon sport performance: A meta-analysis. *Journal Sports Sciences*, 21(6), 443-457.

A Study On Pre-Competitive And Post-Competitive Anxiety And Aggression Of National Level Yoga Performers

Dr. Kuntal Thakur

**Assistant Teacher, Bgca Vidyamandir, Howrah, West Bengal, India, Cell Phone:
 +919477373487**

Dr. Sandip Sankar Ghosh

**Assistant Professor, State Institute Of Physical Education For Women, Hastings House,
 Alipore, Kolkata-700027, West Bengal, India, Cell Phone: +919432486653 Email. -
 Sandipsankarmal@Gmail.Com**

Abstract

The purpose of the present study was to find out the difference between pre and post competitive anxiety and aggression in national level male and female yogic practitioners. Total sixty (N=60) national level yogic performers i.e. thirty male performers (Gr. M) and thirty female performers (Gr. F) were randomly selected from National level School Yogasanas Competition, held at Delhi, 2012. Data were collected from performers using a Sports Competitive Anxiety Test (SCAT) and Sports aggression Inventory (SAI) and SCAT consists of fifteen items which include 5 spurious items, 8 positive items and 2 negative items and SAI consists of 25 items which include 13 yes keyed and rest of no keyed. The t-test was used to compare the mean of the anxiety and aggression between pre and post competition. The level significance was set at $p < 0.05$. The result of the study reveals that :-
 i) Pre-competitive anxiety and aggression of national level for both male and female yogic performers was higher than post competitive anxiety and aggression. ii) Significant improvement was observed between pre and post competitive anxiety and aggression of both national level male and female yogic performers. iii) Female yogic performers were significantly higher level of anxiety than male yogic performers. iv) No significant difference was observed among male and female national level yogic performers in aggression.

Key words: Anxiety, Aggression, Yogasana.

Introduction

Psychological set up of the sportsman takes a leading role on top level performance in any competitions. Psychological factors determine the competitive behaviour, mental processes and preparation before competition. Sports psychology is a specialized area of psychology that seeks to understand the mental factors that affect individual and team performance in sports. In other word sport psychology is the scientific study of the behaviours of sport persons. It deals with increasing performance by managing emotions and minimizing the psychological factors that causes injury and deteriorate performance. Some of the most important skills taught are goal setting, relaxation, visualization, self-talk, awareness and control, concentration, using rituals, attribution training, and periodization. It has been recognized for many years that psychological factors, in particular anxiety, play an important role in competition (Lizuka, C.A et al., 2005). In sport psychology, anxiety refers to an unpleasant emotion which is characterized by vague but persistent feelings of apprehension and dread (E. Cashmore, 2002). Pre-competitive anxiety has been defined as the tendency to perceive pre-competitive situation as threatening and to respond to these situation with feeling of apprehension or tension. Anxiety consists of two subcomponents, namely cognitive and somatic anxiety, which influence performance before and during competition (Weinberg and Gould, 1999; Lazarus, 1991; Anshel, 2003; Martens et al., 1990; Jarvis, 2002). Meanwhile, cognitive is the mental component, which is characterized by negative expectations about success or self-evaluation, negative self-talk, worry about performance, images of failure, inability to concentrate, and disrupted attention (Martens et al., 1990; Jarvis, 2002). The somatic is the physiological element which is related to autonomic arousals, and negative symptoms such as feelings of nervousness, high blood pressure, dry throat, muscular tension, rapid heart rate, sweaty palms, and butterflies in the stomach (Martens et al., 1990; Jarvis, 2002). One approach is that increases in competition anxiety, and particularly cognitive symptoms, always have a detrimental effect on performance. At the same time as providing challenge and stimulation, sport also provides considerable uncertainty. At the precise moment the Olympic archer releases an arrow, or the rugby fly-half kicks for goal, the outcome is unknown.

Aggression refers to any behaviour that is holistic, destructive or violent. Generally, aggressive behaviour has the potential to inflict injury or damage to the target person or object. Example of aggressive behaviour include physical assault, throwing objects, property destruction, self-harming behaviours and verbal threats. Aggression can have mental aspects as well.

The frustration Aggression theory (Dollard, Doob, Millar, Mowrer, & Sears, 1939) states that aggression occurs because frustration arises due to a goal blockage. However this theory states that every time a player becomes frustrated this will always cause aggression. This theory does not take other intrinsic or extrinsic factors. On the other hand the general aggression model (Anderson & Bushman, 2002) argues that situational and personal factors play a role in causing a person to behave aggressively. Therefore, a player's personality will play a large role in determining whether they are aggressive or not in certain situations. This model also takes into account socially learnt cues and therefore then he will not use aggression.

It can be seen that aggression comes from a variety of sources and it is important to understand where these sources stem from. Therefore sport stressors allow us to understand what causes an athlete to become frustrated which can lead to aggression and decline in performance.

In player's career they will come across a number of high pressured situations where they will have to deal with many stressors. Woodman and Hardy (2001) investigated organisational stress in elite athletes and they found that there were four main stress issues, which were personal, team, leadership and environmental. Within team issues a large factor that caused stress was tension among athletes. Fletcher and Hanton (2003) conducted a study looking at organisational stress and they found that the coach athlete tension was a large contributing factor. Therefore strict coaching and negative feedback can affect performance in many ways.

In modern time, school yogasanas competition is one of the most popular competitions in India. Yogasanas is a part of physical education. It is well known that yoga reduces stress, anxiety and aggression. But in the time of competition these psychological components may increase and affect performance. Now the question is that can anxiety be controlled through yoga at the time of competition? Thus, investigators intended to find out the state of pre-competitive and post-competitive anxiety among male and female yogic performers. The purpose of this study was to examine the pre and post competitive anxiety in national level yogic practitioners. Investigators also intended to compare between male and female yogic practitioners in sports competitive anxiety state.

Methodology

Sample: Total sixty (N=60) national level yogic practitioners i.e. thirty male performers (Gr. M) and thirty female performers (Gr. F) were randomly selected from National level School Yogasanas Competition, held at Delhi, 2012. They came in different state in India. Age limit of the subjects was from 17 years to 19 years.

Procedures: The Sports Competitive Anxiety Test (Martens, 1977) and Sports Aggression Inventory (Shrivastava and Shukla, 1988) was administered to all the subjects of both groups before each competition. The data was collected 60 minutes before start of each competition after asking them to sit for 3 minutes to cool down and the post competitive test was conducted to collect data on 30 minutes after finish of competition after asking them to sit for 3 minutes cool down.

Tools:

Sports Competitive Anxiety Test was developed by Rainar Martens (1977). This test consists of 15 items which include 5 spurious items, 8 positive items and 2 negative items. The SCAT reliability ranged from 0.57 to 0.93 with a mean of 0.77 for all the samples combined. The validity of this test reported by various researchers is satisfactorily high. For each item scores were either '0' or '2'. Maximum score may be '30' or minimum score may be '0'.

Aggression was assessed by Sports aggression Inventory constructed and standardized by Prof. Anand Kumar Shrivastava and Prem Shankar Shukla (1988). Sports Aggression Inventory consists of 25 questions in which 13 items are keyed 'Yes' that are 1, 4, 5, 6, 9, 12, 14, 16, 18, 21, 22, 24 & 25 and the statements which are keyed 'No' that are 2, 3, 7, 8, 10, 11, 13, 15, 17, 19, 20, 23. Score of 12-13 as average on aggression and those score higher than 12-13 will be considered as high on aggression and those score lower than 12-13 will be considered as low on aggression. For each item score was either '1' or '0'. The maximum score may be '25' and minimum score may be '0'.

Statistics: In the present study for the sake of analysis of data; mean and standard deviation of the raw scores of anxiety and aggression were calculated separately for pre & post competition for both groups and statistical t-test was used to compare the mean. The level of significance was set at $p < 0.05$ level of confidence. For statistical calculations Excel Spread Sheet of windows version 7 was used.

Results And Discussion

Table-1, indicates the mean values, standard deviation and t-value of Pre & Post competitive anxiety score and pre & post competitive aggression of national level male and female yogic performers. The mean value of male subjects in Pre & Post competitive anxiety were 21.9 and 19.6 respectively and the t-value between pre & post competitive anxiety of the male yogic practitioners was 4.09 which were significant at 0.05 level of confidence. The mean values of Pre & Post competitive anxiety score of national level female yogic performers were 26.1 and 22.37 respectively. The t-value was 3.67 which were significant at 0.05 level of confidence. Thus it indicated that there had a significant difference between anxiety scores of Pre competitive and Post competition situation of both national level male and female yogic practitioners. On the other hand, The mean value of male subjects in Pre & Post competitive aggression were 13.76 and 8.66 respectively and the t-value between pre & post competitive aggression of the male yogic practitioners was 9.95 which were significant at 0.05 level of confidence. The mean values of Pre & Post competitive aggression score of national level female yogic performers were 15.33 and 10.4 respectively. The t-value was 8.38 which were significant at 0.05 level of confidence. Thus it indicated that there had a significant difference between aggression scores of Pre competition and Post competition situation of both national level male and female yogic practitioners.

Table-1, Mean, SD, t-value of Pre-competitive and Post-competitive Anxiety and Aggression of National Level Male and Female Yogic Practitioners

VARIABLES	TYPE OF TEST	GR. M (N=30)			GR. F(N=30)		
		MEAN	SD	t	MEAN	SD	t
ANXIETY	PRE-TEST	21.9	1.75	4.09	26.1	1.18	3.67
	POST-TEST	19.6	1.61		22.37	1.16	
AGRESSION	PRE-TEST	13.76	1.83	9.95	15.33	1.32	8.38
	POST TEST	8.66	1.32		10.4	1.57	

Significant at .05 level of confidence

Fig.1; showed that the post performance competitive anxiety of male yogic performers had improved significantly from the pre competitive situation. On the other hand, the post competitive anxiety of female yogic performers had also improved significantly from pre competitive anxiety. For both of the groups, pre competitive anxiety was higher than post competitive anxiety. Findings of present study supported by Sprange (1981) compared competitive trait anxiety levels of participants in title league and neighbourhood baseball. He found that there was significant difference in the Pre competitive and Post competitive anxiety of national baseball players. Boutin (1983) examined the level and performances in NAIA inter-college basketball games. The subjects included 5 teams and 53 players. The study revealed that the pre competitive level of anxiety in inter-college basketball players was high and post competitive anxiety in inter-college basketball players was low. The findings supported by Evans (1983), he examined the acute response of female basketball players and anxiety to competitions. The results of the study were that Pre competitive level of anxiety in inter college basketball female players was high and Post competitive anxiety in inter college basketball female player was low. In male inter college volleyball players the pre competitive level of anxiety was higher than Post competitive anxiety and findings supported by Singh (1986), he examined pre test and post test anxiety and found out that the pre competitive level of anxiety in inter college male athletic players is high and Post competitive anxiety in inter college male athletic player is low.

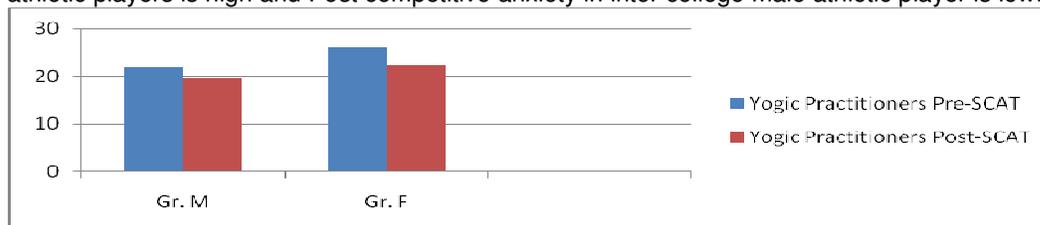


Fig.-1, Comparison of Means between Pre-SCAT and Post-SCAT among National level Yogic Practitioners.

Fig.2; showed that the post performance competitive aggression of male yogic performers had improved significantly from the pre competitive situation. On the other hand, the post competitive aggression of female yogic performers had also improved significantly from pre competitive anxiety. For both of the groups, pre competitive anxiety was higher than post competitive anxiety.

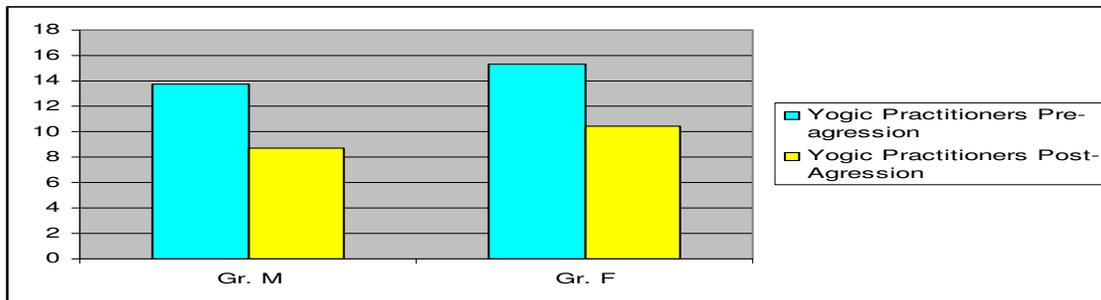


Fig.-2, Comparison of Means between Pre-competitive Aggression and Post-competitive Aggression among National level Yogic Practitioners.

Table-2, represent the mean values of the mean difference; standard deviation and t-value between Gr. M and Gr. F in competitive anxiety of yoga performers. The mean values of the mean difference of competitive anxiety of Gr. M and Gr. F yoga performers were 2.3 and 3.73 respectively. The t-values between Gr. M and Gr. F were 4.19 in anxiety measures and significant at 0.05 levels of confidence. Table-2, also represent that the mean values of the mean difference; standard deviation and t-value between Gr. M and Gr. F in competitive aggression of yoga performers. The mean values of the mean difference of competitive aggression of Gr. M and Gr. F yoga performers were 5.07 and 4.93 respectively. The t-values between Gr. M and Gr. F were 0.32 in aggression measures and significant at 0.05 levels of confidence. Required t-value for significant difference was 2.04.

Table-2, Comparison of mean difference of pre and post competitive anxiety and Aggression among Gr. M and Gr. F.

GROUPED COMPARED	ANXIETY			AGRESSION		
	MEAN	SD	t	MEAN	SD	t
Gr. M & Gr. F	2.3	0.47	4.19	5.07	1.04	0.32
	3.73	0.64		4.93	1.14	

Significant at .05 level of confidence

Fig. 2, represents the mean value of the mean difference of sports competitive anxiety between pre and post performance of two groups. From the findings of the present study, it can be stated that male yoga performers group was better competitive anxiety level than female yoga performers. This finding is in agreement with others. According to Montgomery and Morris (1994) and Lewinsohn, Gotlib, Lewinsohn, Seeley and Allen (1998), female athletes generally exhibit higher anxiety than males because of the mental structure and biological factors and their roles in the society. For example, the society can accept if females show fear, nervousness, and worry but not the males (Montgomery and Morris, 1994). On the other hand, the mean values of the mean difference of sports competitive aggression between pre and post yoga performance of two groups. From the findings of the present study, it can be stated that male yoga performers group was better competitive aggression than female yoga performers according to mean values but no significant difference was observed among male and female yoga performers in aggression. The findings about gender differences are in line with those of the studies by Eagly (1987), Biswas (1989) and Rutter, Giller & Hagell, (1998). So it can be stated that boys were found more aggressive than girls.

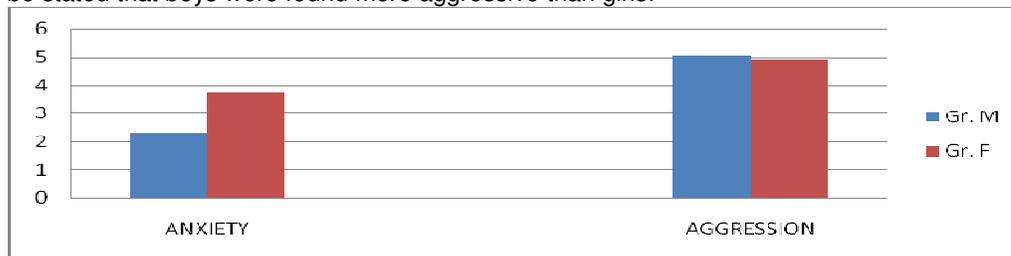


Fig. 3, Comparison of mean-difference of Anxiety and aggression among Gr. M and Gr. F.

Pre competitive level of anxiety in male national level yoga performers was higher than post competitive anxiety and the findings are in supportive of previous reports. Yoga reduces stress, anxiety and aggression but in time of competition these psychological components may be increase. So investigators intended to find out the state of pre-competitive and post-competitive anxiety among male and female yogic performers and results also revealed that the national level male yogic performers were low anxiety than national level female yogic performers. Anxiety is one of the most

commonly measured construct in sports psychology. Anxiety can be considered the emotional impact or cognitive dimension of arousal. Anxiety has been viewed as feeling of nervousness and tension associated with activation or arousal of the organism. Anticipatory or imaginative process causes it. Competitive sport can make even the world's most successful athlete feel nervous. Many factors such as expectations, perfectionism, fear of failure, lack of confidence, induce feelings of anxiety in athletes (Moran, 2004). On the other hand, Pre-competitive aggression in male and female yoga performers was higher than post competitive aggression and No significant difference was observed among male and female sports competitive aggression. Mitra Ghosh S (2013) found that adolescent boys was higher aggression than adolescent girls. Mahesh (2012) also studied on related variables and results corroborates with the present study.

Conclusion:

Within the limitations of the present study, the following conclusions are enumerated:

Pre-competitive anxiety of national level for both male and female yogic performers was higher than post competitive anxiety levels. Significant improvement was observed between pre and post competitive anxiety of both national level male and female yogic performers.

Pre-competitive aggression of national level for both male and female yogic performers was higher than post competitive aggression levels. Significant improvement was observed between pre and post competitive aggression of both national level male and female yogic performers.

Female yogic performers were significantly higher level of anxiety than male yogic performers.

No significant difference was observed in aggression among national level male and female yogic performers.

References:

- Amu, Mei Siu Chan. "Relationship [Between Pre-competition Anxieties and Situational Factors of University Badminton Players]" (An Project Submitted in Hong Kong Baptist University, Hong Kong), March, 2005. p.1.
- Bekiaris, Alexandra ; Patsiaouras, Asterios ; Kokaridas, Dimitrios ; Sakellariou, Kimon. "Verbal aggressiveness and state anxiety of volleyball players and coaches" University of Thessaly, Department of Physical Education and Sports Science, Karyes Trikala, Greece. Psychological reports 99 :2 (Oct, 2006) : 630.
- Bridges, Ashley & Knight, Brandon. "The Role of Cognitive and Somatic Anxiety in Athletic Performance" Independent Study, Hanover College, 2005. p.1.
- Humara, Miguel. "The Relationship Between Anxiety and Performance: A Cognitive-Behavioral Perspective" On line Journal of Sport Psychology 1:2(September, 1999):.9-10.
- Kais, K. and Raudsepp, L.: " Intensity and Direction of Competitive State Anxiety, Self-Confidence and Athletic Performance" Kinesiology 37 :1 (2005) 13.
- Matheson, I . and Mathes, S. (1991). Influence of Performance Setting, Experience and Difficulty of Routine on Precompetition Anxiety and Self-Confidence of High School Female Gymnasts. Perceptual and Motor Skills. 72, 1099-1105.
- Martens, Rainer. Sport Competition Anxiety Test (Champaign, Illinois : Human Kinetics Publishers, 1982), pp. 89-97.
- Mitra Ghosh S. A Comparative Study on Aggression between Boys and Girls Adolescent. 2:3 (July, 2013), 76-82.
- Wilson, G.S. & Raglin, J. S. "Optimal and predicted anxiety in 9–12-year-old track and field athletes" Scandinavian Journal of Medicine & Science in Sports . 7: 4 (Jan , 2007) : 253 – 255
- Evans, v. Personality characteristics of success and unsuccessful black basketball players. International Journal of Sports Psychology. 1983, 14(2): 105-115.
- Jarvis, M. Sport Psychology. New York: Routledge, 2002.
- Lizuka, at al. Anxiety and Performance in Young Table Tennis Players. Sports Science Research. 2005, 26(3) : 73-75.
- Lewinsohn, P. M., Gotlib, I. H., Lewinsohn, M., Seeley, J. R. and Allen, N. B. Gender differences in anxiety disorders and anxiety symptoms in adolescent. Journal of Abnormal Psychology. 1998, 107(1): 109-117.
- SSCI email for contribution: editor@SSCI.org.uk International Journal of Sports Science and Engineering, 5 (2011) 4, pp 237-241 SSCI email for subscription: publishing@WAU.org.uk
- Leunes, A. and Nation, J.R. Sport Psychology. CA, USA: Wadsworth, 2002.
- Lazarus, R.S. Emotion and Adaptation. New York: Oxford University Press, 1991.
- Krane, V. and Williams, J. Cognitive anxiety, somatic anxiety, and confidence in track and field athletics: The impact of gender, competitive level and task characteristics. International Journal of Sport Psychology. 1994, 25: 203-217.
- Montgomery, B. and Morris, L. Living with Anxiety. Singapore: Heinemann Asia, 1994.
- Mahoney, M.J. and Meyers, A.W. Anxiety and athletic performance: Traditional and cognitive-development perspectives. In Dieter Hackfort and Charles D. Spielberger (Eds.), Anxiety in sports. New York: Hemisphere. 1989, pp.77-94.
- Martens, V., Burton, R., & Robin S. D. Competitive anxiety in sport. Champaign, IL: Human Kinetics, 1990.
- Sprague, L.K comparison of competitive trait anxiety levels of 9-12 years old participants in little league and neighborhood basketball. International journal of sports psychology. 1981, 12(2): 154.
- Sonstroem, R. J Intra-individual pregame state anxiety and basketball performance. A reexamination of the inverted U-curve. Journal of sports psychology. 1982, 4: 227.
- Singh, A. J Competitive trait anxiety of the top level Indian athletes and Hockey players. Proceedings second national conference of the sports psychology association of India. Patiala, NIS. 1986.
- Shrivastava, A. K. & Shukla, P. S. Manual for Sports Aggression Inventory. Kumar Publication, 1988, Pp-1-2.
- [24] Mahesh, S. K. Comparison of aggression between team game players and individual game players. International Journal of Behavioral Social and Movement Science. 1:2, (April, 2012), 113-116.

A Study of Reaction time among Male and Female Interuniversity Kabaddi Players

Dr. Katare B J, Principal,
 M.S.S. Art's Commerce and Science College, Ambad (M.S.) India.
 Dr. Quadri Syed Javeed, Head, Department of Psychology,
 M.S.S. Art's Commerce and Science College, Jalna – 431203 (M.S.) India.

Abstract

The aim of present study was to search the reaction time among male and female interuniversity kabaddi players. Total 80 samples were involved in that study. 40 subjects were male interuniversity kabaddi players and 40 subjects' male interuniversity kabaddi players. The age range of subjects where 18 to 30 years ($M = 24.98$, $SD = 4.87$). Hypothesis was there will be significant difference between male and female interuniversity kabaddi players with respect to reaction time. Reaction time apparatus is used this study. Conclusion: male interuniversity kabaddi players had significantly faster reaction times than the female interuniversity kabaddi players.

Key Words: reaction time, kabaddi players.

Introduction:

The present study has to investigate the differences between male and female interuniversity kabaddi player's respect to Auditory Reaction Time and Visual Reaction Time. Some researchers have reported gender differences At the risk of being politically incorrect, in almost every age group, males have faster reaction times than females, and female disadvantage is not reduced by practice (Noble *et al.*, 1964; Welford, 1980; Adam *et al.*, 1999; Dane and Erzurumluoglu, 2003; Der and Deary, 2006). The last study is remarkable because it included over 7400 subjects. Bellis (1933) reported that mean time to press a key in response to a light was 220 msec for males and 260 msec for females; for sound the difference was 190 msec (males) to 200 msec (females). In comparison, Engel (1972) reported a reaction time to sound of 227 msec (male) to 242 msec (female). However, things may be changing--Silverman (2006) reported evidence that the male advantage in visual reaction time is getting smaller (especially outside the US), possibly because more women are participating in driving and fast-action sports. Spierer *et al.* (2010) reported that when male soccer players were compared with female lacrosse players, males were able to respond faster to both visual and auditory stimuli. They said that the male advantage was greatest when using visual stimuli. Botwinick and Thompson (1966) found that almost all of the male-female difference was accounted for by the lag between the presentation of the stimulus and the beginning of muscle contraction. Muscle contraction times were the same for males and females. In a surprising finding, Szinnai *et al.* (2005) found that gradual dehydration (loss of 2.6% of body weight over a 7-day period) caused females to have lengthened choice reaction time, but males to have *shortened* choice reaction times.

Aim of the study:

To find out the auditory reaction time among male and female interuniversity kabaddi players.

To find out the visual reaction time among male and female interuniversity kabaddi players.

Hypothesis:

There will be significant difference between male and female interuniversity kabaddi players with respect to auditory reaction time. There will be significant difference between male and female interuniversity kabaddi players with respect to visual reaction time.

Method

Sample: Total 80 samples are involved in that study. 40 subjects were male interuniversity kabaddi players and 40 subjects' male interuniversity kabaddi players. The age range of subjects where 18 to 30 years ($M = 24.98$, $SD = 4.87$).

Tool:

Reaction Time Apparatus was used in present study. To Measure the disjunctive RT of the male and female interuniversity kabaddi players a specially designed instrument called as electronic chronoscope which measure both Visual and Auditory RT was used. It consists of four different types of sound for Authority RT. It is very sophisticated apparatus which measures RT up to 1/1000 of sounds; time taken by the subject in giving response to the stimulus is recorded with a digital timer in mile-second.

Procedures of data collection

The data were collected during the matches for measuring RT first of all they were given instruction in a group of 4 – 6 players about the use of electronic chronoscope apparatus. Then each one was called made to sit comfortably before the apparatus, before the start of the Experiment, the following instruction are given. Here I am measuring your quick responses to light and sounds you find that there are four seconds of different colors and four sounds of different types. I will switch on one the light and you are to switch off the same light with the four finger of your right hand as fast as you can. You cannot use all the fingers. Similarly, I shall give you a sound and you are to press the button of the same sound. Will give you many trials, both lights as well as for songs and on each trial. I will give you ready signal. Before final experiment work, first of all a few practice trials were given in order to make them acquainted with the working of the apparatus and also to make them adopted with the different types of sounds. When it was ensured that the subject had understand the what procedure take trials for both Visual and Auditory the time as recorded on the digital timer was noted down for each trials, the average of then trials was considered as the reaction time among male and female interuniversity kabaddi players.

Variable

Independent variable- Gender a) Male b) Female

Dependent variable- 1) Reaction Time

Auditory and Visual

Data Analysis and Discussion

Table No. 01

Male and female interuniversity kabaddi players have shows Mean, S.D. and "t" Value dimension of auditory reaction time.

Gender	MEAN	S.D	SE	N	df	"t"
Male	.872	74.15	11.72	40	78	16.84**
Female	.614	62.30	9.85	40		

Mean of Male interuniversity kabaddi players is .872 and second mean of female interuniversity kabaddi players is .614. And the difference between the two mean is highly significant 't' (78) = 16.84, $P < 0.01$ It is clear that male and female interuniversity kabaddi players Subjects Differ Significantly From each other from the mean scores and it was found that the male interuniversity kabaddi players had significantly faster reaction times (Auditory) than the female interuniversity kabaddi players.

Table No. 02

Male and female interuniversity kabaddi players have shows Mean, S.D. and "t" Value dimension of visual reaction time.

Gender	MEAN	S.D	SE	N	df	"t"
Male	.748	81.06	11.72	40	78	13.55**
Female	.509	76.59	9.85	40		

Mean of Male interuniversity kabaddi players is .748 and second mean of female interuniversity kabaddi players is .509. And the difference between the two mean is highly significant 't' (78) = 13.55, $P < 0.01$). It is clear that male and female interuniversity kabaddi players Subjects Differ Significantly From each other from the mean scores and it was found that the male interuniversity kabaddi players had significantly faster reaction times (visual) than the female interuniversity kabaddi players.

Gender differences in reaction time have been demonstrated in several studies (Dane and Erzurumluoglu, 2003; Der and Deary, 2006; Riccio *et al.*, 2001). Males have faster reaction times than females and female disadvantage is not reduced by practice (Noble *et al.*, 1964; Welford, 1980; Adam *et al.*, 1999; Dane and Erzurumluoglu, 2003; Blough and Slavin, 1987). Women had slower simple reaction times than men (Der and Deary, 2006), whereas other research suggests that while male were faster than female at aiming at a target, the female were more accurate (Barral and Debu, 2004).

References

- Barral, J. and B. Debu, 2004. Aiming in adults: Sex and laterality effects. *Laterality*, 9: 299-312.
- Blough, P.M. and L.K. Slavin, 1987. Reaction time assessments of gender differences in visual-spatial performance. *Percep. Psychophys.*, 41: 276-281. DOI: 10.3758/BF03208225
- Dane, S. and A. Erzurumluoglu, 2003. Sex and handedness differences in eye-hand visual reaction times in handball players. *Int. J. Neurosci.*, 113: 923-929. DOI: 10.1080/00207450390220367
- Der, G. and I.J. Deary, 2006. Age and sex differences in reaction time in adulthood: Results from the United Kingdom health and lifestyle survey. *Psychol. Aging*, 21: 62-73. DOI: 10.1037/0882-7974.21.1.62
- Jausovec, N. and K. Jausovec, 2009. Gender related differences in visual and auditory processing of verbal and figural tasks. *Brain Res.*, 1300: 135-145. DOI: 10.1016/j.brainres.2009.08.093
- Johnson, W. and T.J. Bouchard, 2007. Sex differences in mental abilities: G masks the dimensions on which they lie. *Intelligence*, 35: 23-39. DOI: 10.1016/j.intell.2006.03.012

Comparison Of Tribal And Non-Tribal Students In The Selected Physical, Physiological And Psychological Variables

G. APPALA NAIDU
 M.A, M.P.Ed, M.PHIL.
 Research scholar & Physical Director,
 Govt Jr. College, Devarapalli, Vsp

Dr R. C. REDDY Ph.D
 Sr. Faculty, MPEd. & Research Program
 Dept. of Physical Education,
 Andhra University, Visakhapatnam

Introduction

Carolus Linnaeus¹ classified the human race into four subdivisions. They are Asians, American Indians, Europeans, and Africans. (Technically, some would group the first two Linnaean subdivisions together, thus yielding three major races, often termed, mongoloids, caucasoids, and negroids.) Such high-level classifications do not rule out making finer, hierarchical subdivisions within these major groups. A race is what zoologists term a variety or subdivision of a species. Each race (or variety) is characterized by a more or less distinct combination of inherited morphological, behavioral, physiological traits. In flowers, insects, and non-human mammals, zoologists consistently and routinely study the process of racial differentiation.

recognizable adaptations (such as skin color) that are advantageous in their specific environments. But differentiation also occurs under less extreme circumstances. Zoologists and evolutionists refer to such differentiated populations as races. (Within the formal taxonomic nomenclature of biology, races are termed subspecies). Zoologists have identified two or more races (subspecies) in most mammalian species.²

Statement of the Problem

The purpose of the present study was to compare tribal and non-tribal students in the selected physical (speed, explosive power, muscular endurance and agility), physiological (Vo₂max and hemoglobin) and psychological (achievement motivation and anxiety) variables.

Significance of the Study

Athletes often seem to fit a blueprint for their sport and numerous research findings appear to confirm what common sense suggests. The human body comes in a huge array of different shapes and sizes, but should ones natural body type dictate the sport he choose or the way he train? Whether it's nature or nurture that really counts. In a particular sport or event within a sport, the participants will often share a similar body shape. For example, male sprinters tend to be relatively tall and be proportionately muscled, whilst female gymnasts tend to be relatively slight with very low body fat and shot-putters relatively round with more body fat and large muscles. These sports' body shapes quite closely reflect the three derivative 'somatotypes' (body type classifications). The sprinter fits the typical mesomorph body type, the gymnast the ectomorph, and the shot-putter the endomorph. .

Methodology

The purpose of the study was to find out differences in physical, physiological and psychological factors between tribal and non-tribal students of Srikakulam, Vizianagaram and Visakhapatnam districts of Andhra Pradesh state. Fifty students were selected from each category at random from the various Govt. Degree Colleges, Govt. Junior Colleges and APTWR Junior Colleges of Srikakulam, Vizianagaram and Visakhapatnam districts. The students belong to the sects of kotiyam, koonda, valmiki, bhagatha, kondadora, gadhaba, mugadora, vukadoralu and paidula were considered as tribal students. The fathers and fore-fathers of these students lived in hills and forests of the respective districts.

Statistical Technique

The data collected from the tribal and non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts, on speed, explosive power, muscular endurance, agility, maximal oxygen uptake, hemoglobin level in blood, achievement motivation and anxiety were statistically analyzed to find out the significant difference if any, by applying two way ANOVA.

Whenever the obtained F-ratio was found to be significant for interaction simple effect was applied as post-hoc test and Scheffé's test was applied when the f ratio among the districts was found to be significant. In all the cases .05 level of confidence was fixed to test the hypothesis.

Conclusions

The conclusions of the study are

1. Tribal students were significantly better than the non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts in speed. There were insignificant differences among tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts and among non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts.
2. In power tribal students were significantly better than the non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts. There were insignificant differences among tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts except between Srikakulam and Visakhapattanam in favor of srikakulam . There were insignificant differences among non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts.
3. Tribal students were significantly better than the non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts in muscular endurance. There were insignificant differences among tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts and among non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts.
4. In agility significant differences existed between tribal students and non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts. There were insignificant differences among tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts except between Srikakulam and Visakhapattanam in favour of srikakulam and among non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts.
5. In VO₂ max tribal students were significantly better than the non-tribal students of Vizianagaram and Visakhapattanam districts and insignificant difference existed in Srikakulam district in favor of tribal students. There were insignificant differences among tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts and among non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts.
6. In hemoglobin significant differences existed between tribal students and non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts There were insignificant differences among tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts and among non-tribal students of Srikakulam, Vizianagaram and Visakhapattanam districts.

Recommendations

The results of the study necessitate suggesting the following recommendations.

1. The results of the study showed significant difference between tribal and non-tribal students in favour of tribal students, this would help to the physical educationists and coaches in selection of the teams in which physical parameters play a dominant role.
2. It is recommended that similar study may be conducted with different age groups.
3. Similar study may be conducted with different criterion variables.
4. Similar study may be conducted with different geographical locations.

Effect Of Medicine Ball Exercise On Shooting Ability Among Netball And Basketball Players

Mahesh Chanda, Osmania University, Hyderabad
Prof.P.Venkat Reddy, Dean, Faculty of Education, OU

Introduction

Today games and sports have become an important part of human culture. According to Stern (1976) 'Play is a voluntary self contained activity. 'Sportsman spirit is a natural and universal phenomenon. It is an essential part of the adolescent's personality. It helps the individual in molding his personality towards appropriate future life. Sports reduce emotional as well as mental tension. It aims the mind and provides better physique to an individual

Basketball: Invented by Canadian, James Naismith in 1891, who was living in the United States, basketball is definitely an athletically challenging sport, as it exercises all of the muscles in the body.

Netball: It is development, derived from early versions of basketball, began in England in the 1890s. By As of 2011, the INF comprises more than 60 national teams organized into five global regions. In 1995, netball became an International Olympic Committee recognized sport.

Medicine Ball: The earliest documented use of the medicine ball dates back to almost 3,000 years ago, when Persian wrestlers trained with bladders that were filled with sand. A medicine ball refers to a weighted ball that can be used for doing a wide range of exercises to improve fitness, strength and coordination as well as help sportsmen recover from injuries.

Statement of problem:

The purpose of the study was to analysis the Shooting skills between Netball and Basketball Players of Nalgonda Dist. The results of the study may throw some light effect on the Shooting skills among the Netball and Basketball Players of Nalgonda Such abilities may further help Physical Education teachers and coaches in assessment of Individual abilities.

Significance of the study:

This study aims to know the Shooting efficiency of the Players of the two games i.e.; Netball and Basketball. The results of this study might give an idea to the Physical Education teachers and the **Coaches.**

Limitations:

Owing to financial limitation, the investigator had confined himself to the libraries in nalgonda. The test was administered to a very limited number of subjects, due to short span of time at the disposal of the investigator coupled with financial limitations. All the subject are beginners in Netball. The subject for this study is between the age group of 18 to 25 years of District players.

Delimitations:

Only twenty subjects are selected at random and divided into two equal groups of 10 each. The study was conducted on both boys and girls students of nalgonda district only.

Hypothesis:

It was hypothesized that the Medicine Ball exercises may improve the shooting skills among the Basketball and Netball players.

Review of related literature

Holland (1965) included variables such a speed, agility, upper arm strength, power, ball handling ability, reaction time, shooting ability, passing ability, height, weight, age and previous experience in order to predict basketball playing ability in high schools. The criterion was rating of the basketball playing ability of each squad member by his coach. The most important variables experienced were ball handling ability, passing ability and shooting ability.

Ellen (1969) carried out a study of relationship of height and weight to the performance of college women in selected Basketball skill test. A 3 item basketball test (push pass, half minute shoot, and bounce and shoot) was administered to 100 college women who participated in the intramural basketball tournament. Four groups of 15 each were selected to represent the extremes in height and weight.

Height had a statistically significant relationship with weight and the combined test with the bounce and shoot test when weight was held constant. Comparison of means between heavy and light group, however showed that the only significant difference was between height and weight.

Methodology

Basketball and Netball players who consistently obliges for conducting the shooting efficiency tests like:

Bounce and shoot

Half minute shooting

Throwing ball for the Accuracy

Shadow shooting with medicine ball of weight 1kg and 2kg.

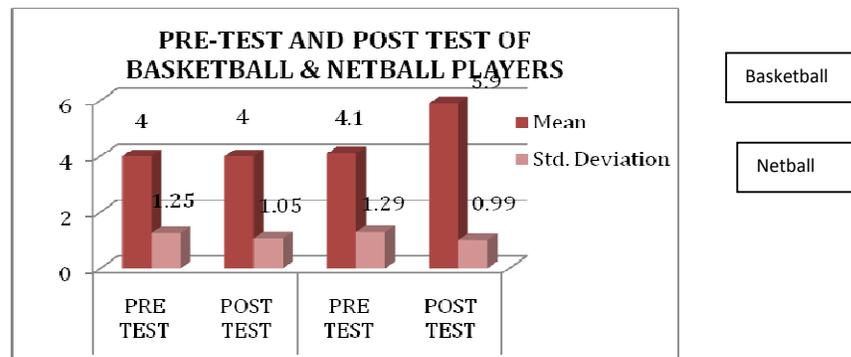
Overhead throws with medicine ball of weight 1kg and 2kg.

Ten basketball and ten Netball players who have been participated in the District Meet have been chosen for the study. The Investigator carried out various Ball for improvement of strength and Agility Exercises for quickness in movements. These exercises were carried out on experimental group to improve the ability of players in execution of shooting in Netball and basketball. A Pre-Test was conducted on two groups basketball and Netball players in which they were made to execute Netball shooting, every players was randomly selected and was assigned to attempt Running This was the initial performance of the players. After the pre test the groups was given six weeks of training with the same basketball and Netball and after six weeks a Post-test was administered on both group, every players was randomly selected and was assigned to attempt Shots and a total number of 10 shots were given to one subject, as soon as the subject completes his ten shoots number of shots converted were recorded and in basketball he was made to shoot beyond the 3 pointer line a total number of 10 shots were given to the subject only the converted shots were be counted. This was the final performance of the players.

Analysis and Interpretation of the data

For the purpose of analyzing the data, the T-ratio was used. Since each group contained twenty subjects, the calculations were done by the method of ungrouped data. Mean, Standard Deviation & Standard error of the mean were used to analyze the results. The scores of the Pre-test of both groups were neatly recorded and the results of Post-test were recorded separately. The scores of Pre-Test of both groups were converted into Mean, Standard Deviation, Standard Error and t-ratio and comparison was made both group and was tested for significance

The calculated t-value is compared with the table t-value at '42' degrees of freedom at 0.05 level of confidence, which was given by Clarke and Clarke. The computation of Mean, Standard Deviation, Standard error of the Mean and t-value of Pre-Test and Post-Test are presented in tables 1.0 and 1.1 respectively.



Conclusions

The results from the study are very encouraging and demonstrate the benefits medicine ball and agility exercises training can have an improvement of shooting ability in basketball and Netball players. To find out whether there is any significant difference in shooting between the pre-test and post-tests 'ratio' was tabulated. The calculated value of t-ratio shows that there is a significant change in the shooting skills among the basketball and Netball players. In addition, our results support that improvements in agility and strength in wrists and hands can occur in as little as 6 weeks of training which can be useful during the last preparatory phase before in-season competition for basketball and Netball players.

A Comparative Analysis Of Body Mass Index And Vital Capacity Among All India Inter-University Female Handball Players

Nandalal Singh Thingnam¹, Reeta²

¹Assistant Professor, Department of Physical Education, Panjab University, Chandigarh
Email Id: nandalal_th@yahoo.co.in

²Research Scholar, Department of Physical Education, Panjab University, Chandigarh

Abstract

The main purpose of the study was to compare the BMI and vital capacity among all India Inter-University female handball players. To attain the objectives of the study total Forty-eight (N=48) Inter-University female handball players were selected purposively as the subjects of the study. Subjects of this study were selected from the best four quarter finalist teams; they were (Panjab University Chandigarh (12), University of Delhi, Delhi (12), Mahatma Gandhi University, A.P., (12) and Calicut University, Kerala, (12), handball players). The age of the subjects ranged between 18-25 years. To determine the significance difference on BMI and vital capacity, F test (ANOVA) was used. The level of significance was set at 0.05 level of confidence. Statistical calculation on gathered data showed that there was no significant difference found on BMI and vital capacity among all India Inter-University female handball players at 0.05 level of confidence.

Keywords: BMI, Vital Capacity, Handball, Inter-University.

Introduction

“When health is absent, wisdom cannot reveal itself, art cannot manifest, strength cannot fight, wealth becomes useless, and intelligence cannot be applied”. Herophilus Obese people are at increased risk of respiratory symptoms, such as breathlessness, particularly during exercise, even if they have no obvious respiratory illness. Obesity has a clear potential to have a direct effect on respiratory well-being, since it increases oxygen consumption and carbon dioxide production, while at the same time it stiffens the respiratory system and increases the mechanical work needed for breathing. Obesity is becoming a serious public health issue, especially in developed countries. A growing body of evidence indicates that obesity is associated with a wide range of health conditions, including respiratory diseases such as chronic obstructive pulmonary Disease (COPD) and asthma. Numerous studies have examined the association between body mass index (BMI; in kg/m²) or weight change and pulmonary function testing variables, and the associations vary in different subpopulations. The most consistently reported effect of obesity on lung function is a reduction in the functional residual capacity (FRC). This effect reflects a shift in the balance of inflationary and deflationary pressures on the lung due to the mass load of adipose tissue around the rib cage and abdomen and in the visceral cavity. There is an exponential relationship between BMI and FRC, with a reduction in FRC detectable even in overweight individuals. In obesity, the reduction in FRC may become so marked that the FRC approaches residual volume (RV). However, the effects of obesity on the extremes of lung volumes, at total lung capacity (TLC) and RV are modest. Many studies report an association between increasing body weight and decreasing TLC. However, the changes are small, and TLC is usually maintained above the lower limit of normal, even in severe obesity. The RV is usually well preserved and the RV-to-TLC ratio remains normal or slightly increased. In the presence of a modest reduction in TLC and a well-preserved RV, the reduction in FRC is manifested by an increase in inspiratory capacity and a very marked decrease in the expiratory reserve volume (ERV). The reasons for the reduction in TLC are not known, but it is probably due to a mechanical effect of the adipose tissue, since TLC is increased by weight loss in both mild and morbidly obese subjects.

Method & Procedure

The main purpose of the study was to compare the BMI and vital capacity among all India Inter-University female handball players. To attain the objectives of the study total forty-eight (48) Inter-University female handball players were selected purposively as the subjects of the study. Subjects of this study were selected from the best four quarter finalist teams i.e., 12 players from Panjab University Chandigarh, 12 players from Delhi University, Delhi, 12 players from Mahatma Gandhi University, A.P. and 12 players from Calicut University, Kerala. The age of the subjects ranged between 18-25 years.

The comparison among all India Inter-University female handball players on body mass and vital capacity was statistically analyzed using 'F' test. In order to investigate the existence of significant difference on body mass index and vital capacity among all India Inter-University female handball players, analysis of variance statistical technique was used. The level of significance was set at 0.05 level of confidence.

Result And Discussion

The comparison on body mass index and vital capacity among all India Inter-university female handball players is presented in table 1.

Table: 1
Comparison Of Body Mass Index And Vital Capacity Among All India Inter-University Female Handball Players

	Sources of variations	Sum of squares	df	Mean square	F
Body Mass Index	Between groups	3.693	3	1.231	.833
	Within groups	187.418	44	4.259	
	Total	191.110	47		
Vital Capacity	Between groups	17216.667	3	5738.88	.154
	Within groups	137150	44	3117.045	
	Total	154366.66	47		

**Significant at 0.05 level of confidence*

$F_{.05}(3, 44) = 2.71$

Table 1 clearly indicates that there were no significant differences found among all India Inter-University female handball players on the variable of body mass index and vital capacity since the 'F' obtained at .05 level was .833 and .154, whereas, the value needed to be significant was 2.71 for 3 and 47 degree of freedom at 0.05. Mean scores of Body Mass Index among all India inter-university female handball players are graphically depicted in figure 1.

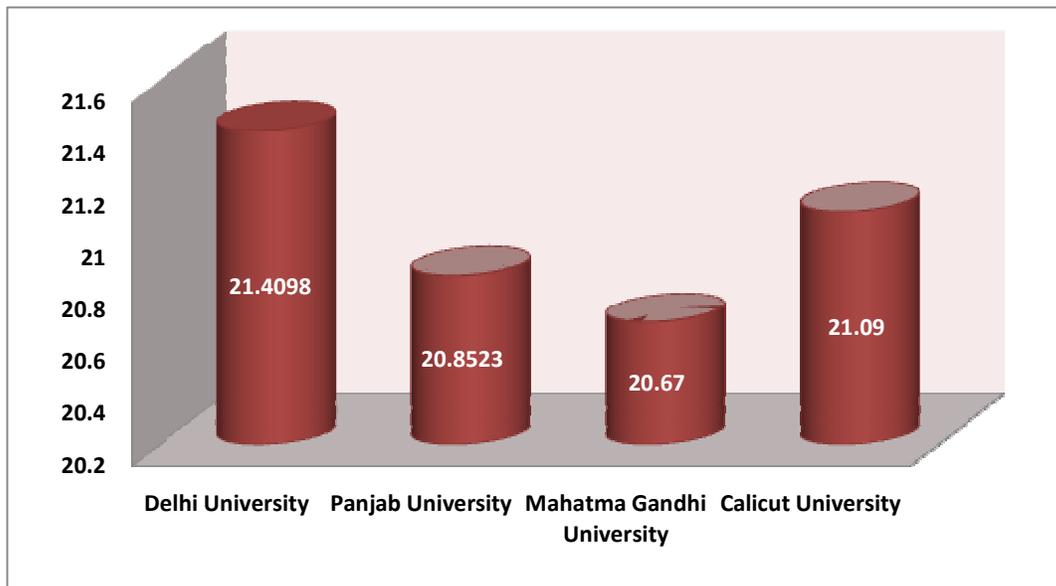


Fig: 1

The Graphical Representation of Mean Scores of Body Mass Index among All India Inter-University Female Handball Players

Mean scores of Vital Capacity among all India Inter-University female handball players are graphically depicted in figure 2.

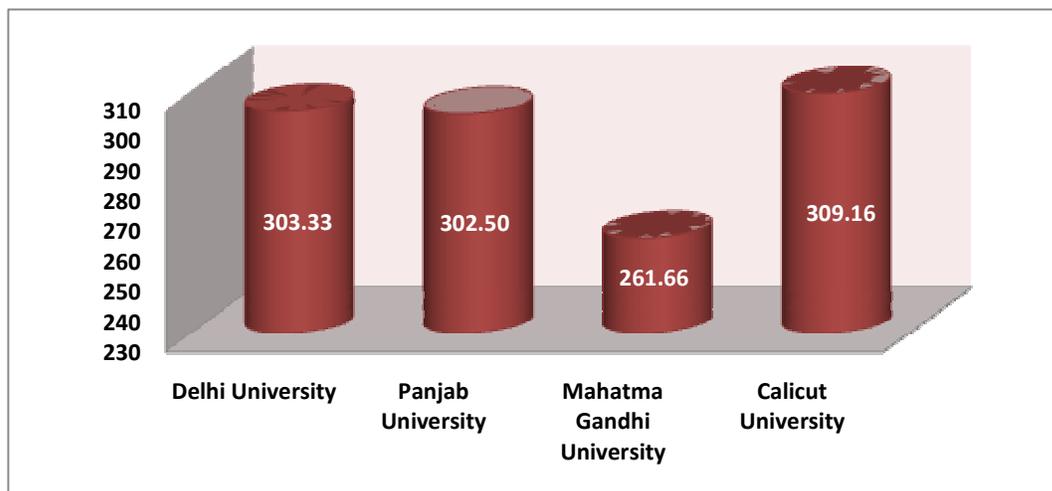


Fig: 2

The Graphical Representation of Mean Scores of Vital Capacity among All India Inter-University Female Handball Players. The probable reason could be that at All India Inter-University level when the players participated are bound to have high level of motor fitness and it is mainly the psychologically makeup of the players that is responsible for obtaining success at the elite level of competitions. Henceforth, the vital capacity and body mass index among All India Inter-University Female Handball players could not be differentiated.

Conclusion

On the basis of the obtained results from the present analysis it may be concluded that no significant difference was observed among all India inter-university female handball players on the variable of body mass index and vital capacity.

References

- Canoy, D., Luben, R., Welch, A., Bingham, S., Wareham, N., Day, N., Khaw, K. T. (2004). Abdominal Obesity and Respiratory Function in Men and Women in the EPIC-Norfolk Study, United Kingdom. *American Journal of Epidemiology*, 159, 1140–1149.
- Chen, Y., Rennie, D., Cormier, Y. F., Dosman, J. A. (2007). Waist Circumference is Associated with Pulmonary Function in Normal-Weight, Overweight, and Obese Subjects. *American Journal of Clinical Nutrition*, 85, 35–39.
- Ceylan, E., Comekci, A., Akkoclu, A., Ceylan, C., Ergor, G. & Yesil, S. (2009). The Effect of Body Fat Distribution on Pulmonary Function Tests in the Overweight and Obese. *Southern Medical Journal*, 102 (1), 30-35.
- Collins, L. C., Hoberty, P. D., Walker, J. F., Fletcher, E. C., Peiris, A. N. (1995). The Effect of Body Fat Distribution on Pulmonary Function Tests. *Chest*, 107, 1298–1302.
- Farida, M., Abdelaziz, E. A., Kamel, B. & Fahmy, A. (2009). Impact of Obesity and Body Fat Distribution on Pulmonary Function of Egyptian Children. *Egyptian Journal of Bronchology*, 3 (1), 49-58.
- Marcon, A., Corsico, A., Cazzoletti, L., Bugiani, M., Accordini, S., Almar, E., Marco, R. D. (2009). Body Mass Index, Weight Gain and other Determinants of Lung Function Decline in Adult Asthma. *The Journal of Allergy and Clinical Immunology*, 123 (5), 1069-1074.
- Palao, J. M., Gutierrez, D. & Frideres, J. E. (2008). Height, Weight, Body Mass Index and Age in Beach Volleyball Players in Relation to Level and Position. *The Journal of Sports Medicine and Physical Fitness*, 48 (4), 466-471.
- Vaughan, P., Oey, I., Nakas, A., Martin, A., Edwards, J. & Waller, D. (2007). A Perspective Analysis of the Inter-relationship between Lung Volume Reduction Surgery and Body Mass Index. *Europe Journal of Cardio-Thoracic Surgery*, 32 (6), 839-42.
- Watson, R. A., Pride, N. B. (2005). Postural Changes in Lung Volumes and Respiratory Resistance in Subjects with Obesity. *Journal of Applied Physiology*, 98, 5

Effect of varied Aerobic Exercises on select health related Physical Fitness Variables among obese engineering college students

Dr. N.S. Dilip, Professor
Department of Physical Education JNTUH, Hyderabad, Kukatpally
Mr. Bh Arun Kumar
Sr. Asst Professor, GMR Institute of Technology, Rajam

Abstract:

All exercise burns calories for they involve movements and energy is required for every movement made. Many exercises can be called aerobic and are performed at moderate levels of intensity for extended periods. The aim of this study was to find out the effect of varied aerobic exercises, namely, step aerobics and floor aerobic exercises on selected health related physical fitness variables among obese engineering college students. Sixty men who were more than 30 kg/m² were selected and divided into three groups, step aerobic, floor aerobic and control group consisting of 20 each. The groups were given respective treatments. Pre and post test scores on cardiovascular endurance, flexibility and body mass index were measured and statistically analyzed. The results proved that floor aerobic exercises significantly improved cardiovascular endurance and flexibility and reduced body mass index ($P < 0.05$). Comparing between the treatment groups, step aerobic exercises were significantly better than floor aerobic exercises in reducing body mass index ($P < 0.05$). The effects of varied aerobic exercises were determined based on the data obtained. It was concluded that the benefits of aerobic exercises to obese men in reduction of their fat, improvement in the health related fitness were proved among other fact that intensity of exercise was linked with the reduction of fat.

Key Words: Step Aerobics, Floor Aerobics, Cardiovascular Endurance, Flexibility, Body Mass Index.

Introduction:

The World Health Organization (WHO) estimates that 1.9 million deaths worldwide are attributable to physical inactivity and at least 2.6 million deaths are a result of being overweight or obese. In addition to this, the WHO estimates that physical inactivity causes 10% to 16% of cases each of breast cancer, colon, and rectal cancers as well as type 2 diabetes, and 22% of coronary heart disease and the burden of these and other chronic diseases has rapidly increased in recent decades. Obesity is one of the leading preventable causes of death worldwide. Excessive body weight is associated with various diseases, particularly cardiovascular diseases, diabetes mellitus type 2, obstructive sleep apnea, certain types of cancer, and osteoarthritis. As a result, obesity has been found to reduce life expectancy. Exercising our muscles burns both fat and glucose (carbohydrates in the blood) in different proportions and depends on how an individual exercises muscle can burn fat in a larger proportion to glucose. It means to burn fat directly we should exercise at a lower level of effort and for longer duration. However some people just don't have the time to exercise for longer periods. The only way to burn fat quickly is to increase the metabolism through anaerobic exercise so we burn the fat indirectly. Fitness experts taught people worldwide exactly how to use certain exercises to burn fat fast. All exercise burns calories for they involve movements and energy is required for every movement made. The calorie burning ability of each exercise depends on the speed and/or force at which the exercise is performed. This proves the calorie burning potential of an exercise can be increased depending on an individual's motivation for that movement. Many types of exercise are aerobic, and by definition are performed at moderate levels of intensity for extended period. To obtain the best results, an aerobic exercise session should involve a warming up period, followed by at least 20 minutes of moderate to intense exercise involving large muscle groups, and a cooling down period at the end. Cadmus L, (2010) evaluated the effectiveness of a community-based aquatic exercise program for improved quality of life moderated by BMI ($P < 0.05$) such that benefits were observed among obese participants. Viskić, et.al. (2007) analyzed the impact of special programmed physical education including dance, aerobics and rhythmic gymnastics on the development of motor and functional abilities and found experimental program to significantly influence the development of coordination/agility and specific rhythm coordination, functional aerobic ability, repetitive and explosive strength and flexibility, along with significant reduction of overweight and adipose tissue. Tsourlou, et.al. (2006) examined the effectiveness of a 24-week aquatic training (AT) program, which included both aerobic and resistance components, on muscle strength (isometric and dynamic), flexibility. Life style of students of engineering colleges deprive them of their time for physical activity

either in the morning or in the evening. Normally they spend more than 4 hours a day in transportation to and from college. This resulted in either minimal physical activity or no physical activity and there was no possibility of burning the excess fat accumulated in the body. Because of these life patterns, an approximate estimation revealed that more than 50% of the engineering students enrolled in first year became over weight or obese in the next year and about 70% of the students became overweight or obese at the time of their completion of the degree course. In view of the theoretical foundations laid through previous researches, suitable aerobic exercises would provide engineering college students better health and this study is devoted to find out the effect of varied aerobic exercises on selected health related physical fitness variables, namely, cardiovascular endurance, flexibility and body mass index.

Methodology:

Sixty obese men, whose body mass index was 30 kg/m² were selected from different engineering colleges in Andhra Pradesh. The subjects (N=60) were randomly assigned to three equal groups of twenty male adults each. The groups were assigned as Experimental Group I – (step aerobic exercises), Experimental Group II (floor aerobic exercises) and Controlled Group respectively. Pre tests were conducted for all the 60 subjects on selected health related physical fitness, cardiovascular endurance, flexibility and body mass index. After the experimental period of twelve weeks, post test were conducted and the scores were recorded. ANCOVA was employed to test the statistical significance of the effect of varied aerobic exercises.

Results:

Table I: Effect of Varied Aerobic Exercise on Selected Health Related Physical Fitness Variables

	STEP AEROBICS GROUP	FLOOR AEROBICS GROUP	CONTROL	SOURCE OF VARIANCE	SUM OF SQUARES	Df	MEAN SQUARES	OBTAINED F RATIO
EFFECTS ON CARDIOVASCULAR ENDURANCE								
Pre Test Mean	1789.00	1819.75	1882.50	Between	90835.83	2	45417.92	2.91
				Within	889778.75	57	15610.15	
Post Test Mean	2303.50	2347.00	1883.75	Between	2617885.83	2	1308942.92	79.91*
				Within	933668.75	57	16380.15	
Adjusted Post Test Mean	2318.13	2350.77	1865.35	Between	2711072.31	2	1355536.15	92.27*
				Within	822652.64	56	14690.23	
EFFECTS ON FLEXIBILITY								
Pre Test Mean	23.85	23.30	23.70	Between	3.23	2	1.62	0.95
				Within	96.95	57	1.70	
Post Test Mean	25.90	26.05	25.05	Between	11.63	2	5.82	3.87*
				Within	85.70	57	1.50	
Adjusted Post Test Mean	25.78	26.22	25.01	Between	14.83	2	7.41	7.02*
				Within	59.19	56	1.06	
EFFECTS ON BODY MASS INDEX								
Pre Test Mean	39.35	39.63	39.45	Between	0.82	2	0.41	2.23
				Within	10.42	57	0.18	
Post Test Mean	36.55	37.45	38.65	Between	44.35	2	22.17	188.74*
				Within	6.70	57	0.12	
Adjusted Post Test Mean	36.63	37.35	38.67	Between	42.58	2	21.29	441.92*
				Within	2.70	56	0.05	

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16

The results presented in Table I proved that there were significant influence on selected health related physical fitness variables, cardiovascular endurance, flexibility and body mass index as the obtained F values 92.27, 7.02 and 441.92 respectively were greater than the required table F value of 3.16 to be significant at 0.05 level. Since significant results were obtained, the data was further subjected to statistical treatment using Scheffe's confidence interval.

Table II: Multiple Comparisons of Paired Means on Health Related Physical Fitness Variables.

VARIABLES	MEANS			Mean Difference	Required . C I
	Step Aerobics Exercise Group	Floor Aerobic Exercise Group.	Control Group		
CARDIOVASCULAR ENDURANCE	2318.13	2350.77		32.64	95.44
	2318.13		1865.35	452.78*	95.44
		2350.77	1865.35	485.41*	95.44
FLEXIBILITY	25.78	26.22		-0.44	0.81
	25.78		25.01	0.77	0.81
		26.22	25.01	1.21*	0.81
BODY MASS INDEX	36.63	37.35		0.72*	0.17
	36.63		38.67	2.04*	0.17
		37.35	38.67	1.32*	0.17

* Significant at 0.05 level.

Analysis:

Obesity increases the risk of many physical and mental conditions. Complications are either directly caused by obesity or indirectly related through mechanisms sharing a common cause such as a poor diet or a sedentary lifestyle. The Government, Parents, Students, Educational Authorities and Philanthropists who put enormous efforts, time, labour, management, finance and place cannot allow hindering the functioning of the trained skilled force produced because of the obesity of the engineering graduates. The results of the study proved that step aerobic exercise significantly improved health related physical fitness variables, cardiovascular endurance and reduced body mass index, while floor aerobic significantly improved health related physical fitness variables, cardiovascular endurance, flexibility and body mass index. The comparisons between the treatment groups proved that step aerobic exercises were significantly better than floor aerobic exercises in reducing body mass index and there was no significant difference on cardiovascular endurance and flexibility. The results that step aerobic exercises were better than aerobic exercises may be due to the increased intensity of exercises. Thus the findings of this study are in agreement with the findings of Viskić, et.al. (2007), Kim (2007) and Tsourlou, et.al. (2006) that endurance and flexibility would be improved due to aerobic exercises. The findings were further in agreement with the findings of Cadmus L, (2010), and Gappmaier. et.al. (2006) that the body mass index of obese can be altered by intensity of exercise and the findings that step aerobic exercises which is more intense has reduced more body mass index than floor aerobics.

Conclusion:

The benefits of aerobic exercises to obese men in the reduction of their fat, improvement in the health related fitness were proved among other facts that the intensity of exercise is directly linked to the reduction of fat.

References:

- Dobbins M, et.al. (2013), "School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18.", **Cochrane Database Syst Rev.** Feb 28;2
- Haslam DW, James WP (2005). "Obesity". **Lancet** 366 (9492): 1197-209
- Kolata, Gina (2002). **Why Some People Won't Be Fit Despite Exercise**. The New York Times.
- .Cadmus L, et.al. (2010), "Community-Based Aquatic Exercise and Quality of Life in Persons with Osteoarthritis", **Medicine & Science in Sports & Exercise**, 42: 8-15
- Kim Y, et.al. (2009), "Telephone intervention promoting weight-related health behaviors.", **Prev Med**.
- Tsourlou T, Benik A, Dipla K, Zafeiridis A, Kellis S. (2006) "The effects of a twenty-four-week aquatic training program on muscular strength performance in healthy elderly women". **J Strength Cond Res**. Nov;20(4):811-8
- 4.Viskić et.al. (2007) "The impact of dance-aerobics training on the morpho-motor status in female high-schoolers", **Coll Antropol**. 31(1):259-66.

Vascular Efficiency Among Adolescents

Jaipal¹ and Dr. Ashok Kumar Sharma²

¹Physical Education Teacher, Jawahar Navodaya Vidyalaya, Sonapat. Haryana
 Email:jaipalomparksh@gmail.com

²Assistant Professor, Department of Physical Education, CDLU, Sirsa, Haryana.
 Email: ashokcdlu@yahoo.in

Abstract

The purpose of the present investigation was to determine the impact of alternate low and high intensity resistance training on cardiovascular efficiency among adolescents. To achieve this thirty physically active and interested students (N = 30) were selected as subjects and their age group ranged between 15 and 18 years. The subjects were categorized into two groups randomly. Group I alternate intensity resistance training group (AIRT), group II control group (CG) and both group had fifteen (N = 15) subjects. Both experimental groups underwent their respective experimental treatment for eight weeks, 3 days a week and a session on each day. Control group was not exposed to any specific training programme apart from their curriculum. Cardiovascular efficiency was selected as dependent variable for this study. The collected data was analysed using t-test, to test significant difference between mean. The result of the study revealed that alternate low and high intensity resistance training (AIRT) produced significant improvement on cardiovascular efficiency (p 0.05) as compared to control group (CG).

Keywords: Alternate low and high intensity resistance, cardiovascular efficiency.

Introduction

Youth sports have become more popular and in many ways, more competitive. Many young athletes and parents are seeking way to achieve a competitive edge. The physical education scientists have been trying to develop new methods of training and techniques to attain higher level of performance in sports. Physical fitness is one of the most important factors that determine the performance level of an individual. Resistance training is an anaerobic form of exercise. It is caused to enhance the ability of the body to perform at very high force or power outputs for a very short period of time (Baechle, 1994). Progressive resistance training is a muscle training programme in which the amount of resistance is systematically increased as the muscles gain in strength (Jensen & Fisher, 1979). The adaptation changes and health implications of resistance exercise are very dynamic and variable to each individual. It is nothing but weight training. In strength training load refers to the mass or amount of weights utilized for specific exercises. It is an anaerobic form of exercises (Teng *et al.*, 2008). Resistance training is performing with weights, either free weight, the weight on a gymnasium machine or own body weight. It will help to improve the strength, power and size of muscle (Bloomfield, 1994). The percentage of one repetition maximum (1RM) method was used in this training programme. In resistance training, gradually increasing the intensity (weights) is known as the progressive method. In the present investigation for the progressive resistance training group, progression was achieved by increasing the intensity by 5% every week. In the alternate low and high intensity resistance, the intensity is first decreased and then increased during alternative weeks for recovery and overload respectively. In this study, for the alternate low and high intensity resistance training group, the intensity was first decreased by 5% from 65% of 1RM during the first week and then increased by 10% in the second week. This progression was maintained throughout the experimental period. Cardio-vascular efficiency is a common term used in strength and conditioning and is often considered an essential element of many sports and activities. A boxer dodging a punch, a ballet dancer completing a pirouette, or a wrestler finishing a take-down could all be considered examples of Cardio-vascular efficiency. However, individuals involved in the development and improvement of sports performance often regard Cardio-vascular efficiency as a locomotor skill whereby an athlete changes direction. This type of movement is frequently observed in most field and court sports such as soccer, basketball, football, and lacrosse. In this light Cardio-vascular efficiency is commonly defined as the ability of heart and lungs to take in and to transport adequate amounts of oxygen to the working muscles for activities that involve large muscles massed, to be performed over long periods of time. (Clarke and Clarke 1987).

Methodology and Procedure:

The purpose of the study was to analyze the impact of Alternate low and high intensity resistance training on Cardio-vascular efficiency of adolescents. To achieve this, Thirty (N = 30) interested students of schools and colleges from Sirsa District, Haryana, were randomly selected as subjects and their age ranged between 15 to 18 years. The subjects are categorized into two groups randomly: Group I alternate intensity resistance training group (AIRT), group II control group (CG) and each group had fifteen (N = 15) subjects. Cardio-vascular efficiency was selected as variable for this study. The Cardio-vascular efficiency was measured by using Harward step test (Lucien Brauwa, 1943). Control group was not exposed to any special training apart from their regular activities. In alternate intensity training, the intensity was decreased and increased in alternative weeks. The training groups underwent their respective training for 8 weeks, 3 days per week and a session on each day. Before the commencement of the experimentation, the investigator recorded 1RM for the group taking each subject separately. After that the group performed the following exercises 1. Bench press 2. Half squat 3. Push press 4. Heel raises 5. Arm curl 6. Leg curl 7. Leg press 8. Military press 9. Sit ups 10. Medicine ball exercises. The intensity ranged from 60% to 95% of 1RM. These exercises were performed for 90 minutes in a day. Data were collected one day before and after the experiment.

Table - I
Percentage of Intensity, Repetitions and Sets of Training for Experimental Group

Groups	Component	Training Weeks							
		I	II	III	IV	V	VI	VII	VIII
Alternate low & high intensity resistance training	Intensity	65	60	75	70	85	80	95	90
	Repetitions	10 to 12	12 to 14	10 to 12	8 to 10	6 to 8	4 to 6	4 to 6	6 to 8
	Sets	2	2	2	2	3	3	3	3

Data Analysis

Mean and standard deviation were calculated for Cardio-vascular efficiency of training group, and the data were analyzed by using t-test and find out the significant difference between the means. All analysis was carried out using SPSS version (Field, 2000) and statistical significance was set to priority at $p < 0.05$.

Results and Discussion:

Cardio-vascular Efficiency

Table - II
To find out significant difference between Experimental Group and Control Group at pre-test level

Pre-test					
Group	N	Mean	S.D.	SED	t' Value
AIRT	15	83.18	0.40	.15	1.249
CG	15	82.99	0.55		

*Significant, $p < 0.05$. (df=28)

The mean, SD and t-test were applied on cardio-vascular efficiency of the pre mean scores of alternate low and high intensity resistance training and control groups have been analysed and presented in Table - I. The above table indicates that the pre test mean of AIRT group and control group is 83.18 and 82.99 respectively. The pre test SD of AIRT group and control group is .4033 and .55 respectively. The obtained 't' value for pre test mean on cardio-vascular efficiency was .55, which was less than table value of 1.96 at 0.05 level of confidence; hence there was no significance difference in cardio-vascular efficiency between experimental and control groups at initial level and it was presented in Table I.

Table - III
To find out significant difference between Experimental Group and Control Group at pre-test level

Post-test					
Group	N	Mean	S.D.	SED	t' Value
AIRT	15	96.14	4.52	1.347	9.326
CG	15	83.58	3.98		

*Significant, $p < 0.05$. (df=28)

The mean, SD and t-test were applied on cardio-vascular efficiency of the post mean scores of alternate low and high intensity resistance training and control groups have been analysed and presented in Table - II. The above table indicates that the post test mean of AIRT group and control group is 96.14 and 83.58 respectively. The post test SD of AIRT group and control group is 4.52 and 3.98 respectively. The obtained 't' value for post test mean on cardio-vascular efficiency was 9.326, which was more than table value of 1.96 at 0.05 level of confidence; hence there exist difference in cardio-vascular efficiency between experimental and control groups. Since, two groups were compared, whenever obtained 't' ratio for post test was found to be significant and it was presented in Table II.

Conclusion

Resisted exercise helps to develop or maintain physical fitness and overall health. It is evident from a number of the adaptations that occur with resistance training that there are several health-related benefits. Resistance training has been shown to increase factors associated with cardiovascular endurance. From the results, the different modes of resistance training can be improved cardiovascular endurance during the age between 15 and 18 years of boys. Any practical application requires careful implementation and individual experimentation. The result of the study indicated that there was significant improvement on cardiovascular endurance due to eight weeks of alternate low and high intensity resistance training. From the results, we recommend that resistance training is one of the methods to improve cardiovascular endurance.

References

- Baechele Thomas, R. (1994). *Essentials of Strength Training and Condition*. Champaign: Human Kinetics.
- Boomfield, J., Ackland, T & Elliott, B. (1994). *Applied Anatomy and Biomechanics in Sports*, London: Blackwell Scientific Publications, p. 255.
- Craig, B.W. (2004). What is the scientific basis of speed and agility?, *Strength and Conditioning* 26(3), 13-14.
- Drabik, J. (1996) *Children & Sports Training: How Your Future Champions Should Exercise to be Healthy, Fit, and Happy*. Island Pond: Stadion Publishing Co.
- Ellis, L., P. Gastin, S. Lawrence, B. Savage, A. Buckeridge, A. Stapff, D. Tumilty, A. Quinn, S. Woolford, and W. Young. (2000) *Protocols for the Physiological Assessment of Team Sports Players*. In: *Physiological Tests for Elite Athletes*. C.J. Gore, ed. Champaign: Human Kinetics, pp. 128-144.
- Field, A. (2000). *Discovering Statistics Using SPSS for Windows*, London: Sage Publications.
- Jensen Clyne, R and A. Garth Fisher (1979). *Scientific basic of athletic conditioning*, Philadelphia: Lea and Febger.
- Kansal K. Devinder (1996) *Test and measurement in sports and physical education*, DVS Publication Kalkaji, New Delhi-110019.

An Assessment On The Sports Achievement Motivation And Anxiety Level Of Active And Inactive Men

Dr. Susanta Jana¹ & Mr. Kalidas Karak²

¹ A. T., Bathanberia Srinibash Vidyamandir (H. S.), Purba Medinipur, W. B.

²Ph.D Scholar & Lecturer, S.B.S.S Mahavidyalaya, Goaltore , Paschim Medinipur, W.B
 Pin-721128, Phone No-09734347515, E-mail-karak.kalidas03@yahoo.com

Abstract

The purpose of the study was to compare the Sports achievement Motivation and Anxiety level between Active and Inactive men. Total 100 subjects were taken for the study. They are Active and Inactive Groups. Fifty (50) Active and Fifty (50) Inactive men (age, 18-25yrs) were randomly selected for the study. To measure Sports achievement Motivation between Active and Inactive men, a questionnaire developed by Kamlesh (1990) was employed. Spielberger's Anxiety Inventory questionnaire was employed for measuring level of Anxiety. For statistical analysis and Interpretation of data 't' test was conducted. It was observed that there was significant difference in Sports achievement Motivation and Anxiety level between Active and Inactive men.

Key words:-Sports Achievement Motivation, Anxiety, Active and Inactive Men.

Introduction:-

Sports Achievement Motivation has been discovered as a strong psychological factor in the display behavior of a person. Achievement Motivation of an individual has been found to be rewarding in competitive sports. It is a force that engages a sports person in task which are challenging and hard to attain. The nature of sports and physical activities are generally achievement oriented. Personal success in team and individual events can be evaluated against standards. One of the reasons of variability in behavior of an individual is sports achievement situation is that sports person perceive situation in different ways, because they have different needs for sports excellence.

Anxiety is one of the important psychological factors for determining athlete's performance. Performance is a byproduct of biological, psychological, sociological and physical makeup of an individual. In games and sports not only physiological factors but also psychological factors play an important role in determining the performance level of an individual. However, great important is assigned to psychological parameters in competitive sports (Schilling & Hayashi, 2001). Many experts advocated that individuals are affected not merely by their physical and techno-tactical ability but also by their psychological makeup.

Methodology:-

Fifty (50) Active and Fifty (50) Inactive men (age 18-25 years) were randomly selected from Vidyasagar University, Paschim Medinipur, West Bengal. Active men were those students who used to take part in physical activities regularly and participate in inter college matches and tournaments. On the other hand Inactive men were those who never used to go in any physical activities.

To measure Sports achievement Motivation between Active and Inactive men, a questionnaire (SAMT) developed by Kamlesh (1990) was employed. The Questionnaire consists of twenty incomplete statements which can be computed by choosing either of two proposed parts against each statement was used. Spielberger's Anxiety Inventory questionnaire was employed for measuring level of Anxiety. The Bengali version of (Anxiety Inventory) was prepared by Spielberger himself in 1986. The score range from 20 to 80. The higher the score, the greater is the level of Anxiety. For statistical analysis and Interpretation of data 't' test was conducted.

Results And Discussion:-

For statistical analysis and Interpretation of data t test was conducted. The results are presented in tabular form as given here under.

Table – 1: Mean, SD of Achievement Motivation and Comparison of t-test Between Means of Active and Inactive men.

Group	Mean	SD	MD	t-value
Active men	13.25	1.95	4.86	29.45*
Inactive men	8.39	1.13		

* Significant at 0.05 level.

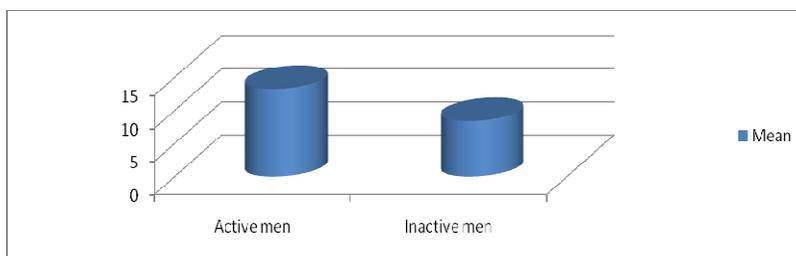


Fig. 1: Graphs Showing Achievement Motivation of Active and Inactive men.

Table-1 gives information regarding Achievement Motivation of Active and Inactive men. Table shows that there were significant differences in Achievement Motivation of Active and Inactive men. The Mean of Achievement Motivation of Active and Inactive men were 13.25 and 8.39 respectively. 't' test was applied and t-value (29.45) appeared significant. Graphical representation (Fig. 1) also indicates similar trend of this study.

Table – 2: Mean, SD of Anxiety and Comparison of t-test Between Means of Active and Inactive men.

Group	Mean	SD	MD	t-value
Active men	25.14	3.02	4.54	23.95*
Inactive men	29.68	3.20		

* Significant at 0.05 level

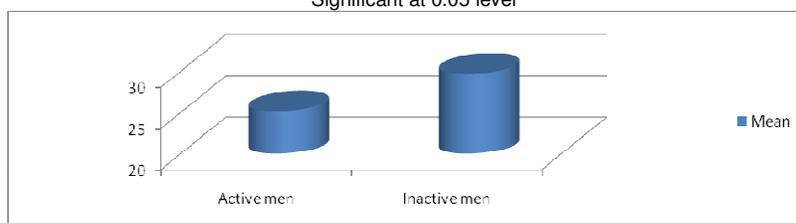


Fig. 2: Graphs Showing anxiety of Active and Inactive men.

Table-2 gives information regarding anxiety level of Active and Inactive men. Table shows that there were significant differences in anxiety level of Active and Inactive men. The Mean of anxiety of Active and Inactive men were 25.14 and 29.68 respectively. 't' test was applied and t-value (23.95) appeared significant. Graphical representation (Fig. 2) also indicates similar trend of this study.

Conclusion:-

Based on the result of the present study and within the limitation, the following conclusions may be drawn.

Active men have higher Achievement Motivation than the Inactive men.

Active men have lower level Anxiety as compare to Inactive men.

References:-

- Spielberger, C. D. (1988). Manual for the State-Trait Anger Expression Inventory (STAX1). Odessa, FL: Psychological Assessment Resources.
- Spielberger, C. D.; Gorsuch, R. L. and Lushane, R. E. (1970). The State-Trait Anxiety Inventory Manual; Consulting Psychologists Press : Paolo Alto, CA.
- Taimini, I. K. (1996). The Science of yoga: Adyar, Madras. The Theosophical Publishing House. ISBN81 – 7059 – 212-7. Eight reprint edition.
- Kamlesh, M.L. (1990); Manual of Sports Achievement Motivation Test. NIS Scientific Journal, Vol. 13(3) ,p. 28-39 July 1990.
- Schilling, T.A. and Hayashi, C.T.(2001) Achievement Motivation among high school Basketball and Cross country athletes: A personal investment perspective. Journal of Applied Sports Psychology, 13(1), 103-128.
- Abrahamsen F. E. G. C., Pensaard AM, 2006, Oct. 16(5) : 358 – 63. An examination of the factorial structure of the Norwegian version of the sport anxiety scale. Norwegian School of Sport Sciences (a Specialized University), Oslo, Norway, frank.abrahamsen@nih.no
- Grossband JR, Smith RE, Smoll FL, Cumming SP, 2009 Mar ; 22(2); 153–66. Competitive anxiety in young athletes : differentiating somatic anxiety, worry, and connection disruption. Department of Psychology, University of Washington, Seattle, WA, USA, joelg13@u.washington.edu
- Boeien, PA, Vrinssen I, van Tulder F. 2010 Mar; 198(3): 194 – 200. Intolerance of uncertainty in adolescents : correlations with worry, social anxiety, and depression. Clinical and Health Psychology, Utrecht University, Utrecht. The Netherlands P. A. Boelen@uu.nl.
- Christakou, A., Zervas, Y. Stavrou NA, Psychountaki M. 2011 Jan; 16(1) : 94-114. Development and validation of the Causes of Re-injury Worry Questionnaire. Department of Physical Education and Sports Sciences. University of Athens. Dafne, Greece, achristakou@hol.gr

Effect Of Exercise On Motor Creativity Of Different Age Group Of Children

Dr. Saugata Sarkar, Assistant Teacher, Raniganj KC High School, Kamaldanga, Malda, West Bengal, India. Res. Dharmotola more, Po & PS: Gazole, Malda, West Bengal, India, PIN-732124. Cell 09434367657/09635377179 , Email-sougata.babul@gmail.com

Abstract

Creative motor response is highly required for effective result in sports. This quality is best developed at the childhood stage. So the purpose of the present study was set to find the effect of exercise on motor creativity of different age group of children. For this purpose, 180 male students of age 6years, 7years and 8years from different primary schools were selected. Each age group (6 years, 7 years and 8 years) consists of 60 subjects (30 experimental and 30 control). The treatment of exercise considering of warming up exercises, developmental exercises and recreational games was scheduled for a period of ten weeks. Central tendency was judged by calculating mean and variability was assessed by standard deviation. T-test was used to find out the statistical significances of each age groups pre and post mean differences. It is concluded that exercise has a positive effect to improve motor creativity of children.

Key words: Exercise, motor creativity and children.

Introduction

Neuro-muscular complexity of human being made him superior over the other animals in the world. This was possible due to constant change of behavior. The modification of behavior largely depends on activity and movements of the body parts or the body as a whole. Therefore; growth, maturity, opportunity for motor activity etc. are very important factors causing behavioral changes. Wyrick (1968) defined the term as the combination of perceptions into new motor patterns. These perceptions could be a solution to a given problem or an idea which is expressed through movement. Another similar definition for motor creativity describes it as a children's effort to produce movements that represent answers to motor stimuli or solutions to motor problems (Zachopoulou, 2007).

Movement during early childhood is considered one of the most basic tools of children for expression, action, learning and non verbal communication (Gruber, 1986). Thomas and Burke (1981) suggest a distinction between verbal and non verbal expression of creativity. Since movement programs are a domain where most tasks are nonverbal, it should be considered ideal for practicing creative thinking. All these arguments support the influence movement education can have on creativity. Therefore, the present researcher nurtured in his mind a research problem relating to this issue. Thus the purpose of the present study was to find out the effectiveness of exercise to improve motor creativity of children.

Methodology

Subjects and design: For the present study the population was the school going children. 180 (One hundred eighty) male students of age six, seven and eight years from two general primary schools in the district of Jalpaiguri of West Bengal were selected for the study. Subjects were chosen randomly on the basis of their birth certificate. Subjects were assigned at random to one experimental group (N=90) and one control group (N=90), total 180. Each age group (6 years, 7 years and 8 years) consists of 60 subjects (30 experimental and 30 control). **Criterion of Motor creativity test:** Motor creativity indicates the divergent movement ability of the subjects. For determining the motor creativity of the subjects a motor creativity test battery was used. This test was designed by M.C Ghosh (1991). **Exercise protocol:** Three experimental groups were treated with the following exercise program. For first two weeks the duration of the program was thirty minutes. For next three weeks the total duration of the exercise schedule was for forty minutes. Subsequently the duration of the exercise program was further increased to fifty minutes for third phase of schedule for three weeks. Finally the exercise program was increased to one hour for last two weeks. The treatment of chronic exercise considering of warming up exercises, developmental exercises and recreational games was scheduled for a period of ten weeks. The treatment was carried out at every Monday, Wednesday, Friday for age group of six years and eight years and Tuesday, Thursday and Saturday for seven years during the afternoon season. Three experimental groups were under gone to exercise program under the researcher. Pre test and post test of data were collected. **Statistical procedure:** The data collected in the study was subjected to statistical analysis with appropriate use of SPSS package.

Central tendency was judged by calculating mean and variability was assessed by standard deviation. T-test was used to find out the statistical significances of each age groups pre and post mean differences.

Result

Motor creativity of experimental groups: The data of motor creativity test of experimental groups were collected before and after the ten weeks exercise program. The data of all the groups of pre test and post test of experimental group is presented in table-1.

Table-1: Comparison of motor creativity scores between pre and post tests of experimental groups

Performance	Group	Pre/Post	N	Mean	Sd	't'	Significance	
Motor Creativity	6years	Pre	30	88.72	8.28	3.74	0.0004	S
		Post	30	96.57	7.84			
	7years	Pre	30	91.73	10.32	4.35	0.0001	S
		Post	30	102.77	9.29			
	8years	Pre	30	95.07	11.49	3.63	0.0006	S
		Post	30	105.10	9.89			

Table value of t for df 58 is 2.01 at 0.05 level of significance. ≤ 0.05 indicates significant at 5% level. NS= Not Significant, S=significant.

The table-1 clearly indicates that all the age groups of experimental performed better in post tests respectively than their pre tests scores. Result also shows that the calculated 't' values of all groups were statistically significant. Observing the post tests data of motor creativity of experimental groups it may be said that the participating in exercise program may influence the motor creativity of 6years, 7years and 8years of children positively.

Motor creativity of control groups: The data of motor creativity of control group were collected twice (pre test and post test). The control groups were not given any treatment. They were allowed to participate in their regular classes. The differences of pre test and post tests result is shown in tabular form.

Table-2: Comparison of motor creativity scores between pre and post tests of control groups

Performance	Group	Pre/Post	N	Mean	Sd	't'	Significance	
Motor creativity	6years	Pre	30	87.80	8.38	0.68	0.5007	NS
		Post	30	89.3	8.76			
	7years	Pre	30	91.27	7.52	1.30	0.2000	NS
		Post	30	93.80	7.61			
	8years	Pre	30	99.23	10.06	1.14	0.2606	NS
		Post	30	102.20	10.17			

Table value of t for df 58 is 2.01 at 0.05 level of significance. ≤ 0.05 indicates significant at 5% level. NS= Not Significant, S=significant.

Table-2 shows that the mean value and sd of pre test of motor creativity of the age group of 6years was 87.80 and 8.38. But the post test mean value and sd was 89.3 and 8.76. The calculated 't' value was 0.68 which was not greater than the table value. So the pre test and post test mean value of this group was statistically insignificant. Accordingly the pre test mean value and sd of 7years of age group was 91.27 and 7.52 and the post test mean value and sd was 93.80 and 7.61. The calculated 't' value was 1.30 which was not also greater for being statistically significant. The table also shows that the pre test mean and sd of 8years of age group was 99.23 and 10.06 and post test mean value and sd was 102.20 and 10.17. It is also seen that there was mean difference between the pre test and post test but the calculated 't' value was 1.14 which was not statistically significant. So this can be said that non participation in chronic exercise program had insignificant improvement of motor creativity of 6, 7 and 8years of control group.

Discussion

The result of the present study reveals the fact that the motor creativity can also be improved by regular, planned and systematic exercise of the children. All the age groups of experimental group showed positive improvement of motor creativity by participation in exercise program. Berger (1968), Flaming (1973), Gokhar (1974), Dharmangadan (1981), Rastogi (1982), Pearlmen (1983), Truhon (1983), Rogers (1985), Wilson (1985), were of the view that motor creativity may be enhanced by regular participation in chronic exercise. So this may also be said that if the children are nourished carefully their motor creativity is improved significantly.

Conclusion

It is concluded from the result that the effect of exercise is positive in relation to motor creativity of children. Regular systematic and planned exercise improves the creative motor response of different age group of children.

Reference

- Berger, R.A. and Layne,R.A. (1968) "Strength and Motor Ability as Factors in Attitude Toward Physical Education. Research Quarterly. Vol. 40, No.3, pp.635-637.
- Gokhar, S. (1974) "Creativity in Relation to Age and Sex". Journal of Education and Psychology. Vol.32, p.122.
- M.C Ghosh (1991). "A study on Creativity, Motor Creativity and Motor Ability of adolescent school boys and girls." Kalyani Univeersity. An un published Ph.D thesis, University of Kalyani
- Rastogi, M.and Mathawat.S.S.(1982). "Effect of Creativity on Mental Health". Psychological Studies, Vol.27, No.2, pp.74-76.
- Truhon, S.A.(1988). "Playfullness, Play and Creativity: A Path Analysis Model". Journal of Genetic Psychology. Vol.143, No.1, pp.19-28.
- Wilson Robert Timothy. (1985) The Effect of Creative Movement and Contact Impraisation Experiences of self – Awareness. Dissertation Abstract International. No. 46, December, 1556 A.
- Wood, D. (1988). How children think and learn, Basil Blackwell, New York.
- Wyrick Warren. (1967). Comparison of Motor Creativity with Verbal Creativity. Motor Ability and Intelligence. Completed Research in Health, Physical Education and Recreation. No.9, 119.

Circuit Training And Sports Performance

Dr.Srinivas.S.Kolkur and Dr.Sangeeta.S.Bamman

Guest Lecturer Department of physical education GulbargaUniversity,Gulbarga

Guest Lecturer Department of education Gulbarga University, Gulbarga

Abstract

Sports training are a systematic process extending over a long period. Circuit training is a form of conditioning combining resistance training and high-intensity aerobics. It is designed to be easy to follow and target strength building as well as muscular endurance. An exercise "circuit" is one completion of all prescribed exercises in the program. When one circuit is complete, one begins the first exercise again for another circuit. Traditionally the time between exercises in circuit training is short, often with rapid movement to the next exercise. Proper training induces specific and identifiable physiological effects on variables like, vital capacity, pulse rate, breath holding, blood pressure, cardio respiratory endurance etc. A physically fit person tends to have lower pulse rate and blood pressure level after a given amount of work than does an untrained person. Regular exercise reduces the body's ability to utilize oxygen which helps to fuel body functions. Aim of the study is the effect of circuit training on sports performance. The present study will conduct on 400 sports personality, the age of the subject were ranging from 21 to 25 years. The data will collect through structure of experimental method the researcher will prepare the tools and training methods as per the requirements of data for study. The appropriate Statistical techniques will be using for the quantitative and qualitative analysis of the data. It was concluded that sports training play a vital role in field of sports. Physiological exercises and circuit training will improve sports performance. Therefore, directly and indirectly it aims at improving the personality of sports person. Resting pulse rate, Vital capacity, Blood Pressure, Fat Measurement these components of circuit training were important not only for sports personality but also a common man.

Introduction

Circuit training is a form of conditioning combining resistance training and high-intensity aerobics. It is designed to be easy to follow and target strength building as well as muscular endurance. An exercise "circuit" is one completion of all prescribed exercises in the program. When one circuit is complete, one begins the first exercise again for another circuit. Traditionally, the time between exercises in circuit training is short, often with rapid movement to the next exercise. Circuit training is an excellent way to improve mobility, strength and stamina. The circuit training comprises of 6 to 10 strength exercises that are completed one exercise after another. Each exercise is performed for a specified number of repetitions or for a set time before moving on to the next exercise. The exercises within each circuit are separated by a short rest period, and each circuit is separated by a longer rest period. The total number of circuits performed during a training session may vary from two to six depending on your training level (beginner, intermediate, or advanced), your period of training (preparation or competition) and your training objective.

Objectives of the study: To study the effect of circuit training on sports performance.

Hypothesis of the study :There is a significant effect of circuit training on sports performance.

Sample Design

The present study conduct on 400 sports personality, the age of the subject were ranging from 21 to 25 years. The data will collect through structure of experimental method the researcher prepared the tools and training methods for this study. The 400 sports players were divided randomly basis as mentioned Pulse Rate, Blood Pressure, Vital Capacity, fat test and circuit training, experimental method oriented were as conducted the pre and post test and collected the data.

Step-By-Step Guide to Designing a Circuit Training Program

Circuit training has been traditionally been used as an effective way to develop both strength and cardiovascular fitness simultaneously. Circuit classes are popular in gyms and with non-athletes because of the variety they offer over continuous exercise such as running and cycling.

However, circuit training is not a form of exercise perse, but relates to how an exercise session is structured (3). A circuit session consists of a series of exercises or stations performed in succession with minimal rest intervals in between. This article outlines how to design an effective circuit training program for either general fitness or to improve sport-specific performance. You will also find sample programs, routines and workouts for different performance outcomes.

Analysis of the Data

The above scores were subjected to SPSS consisting of calculation of Mean, Standard Deviation and 't' Values of the scores by using the following formulas.

Table-1
Means and t-values of sports players in pre and post circuit training(General fitness)

Conditions	Mean scores	SD	t-value
Pre training	12.51	1.21	9.19**
Post training	10.12	1.43	

**Significant at 0.01 level

Table-1 gives the mean scores of circuit training in two conditions. It can be observed that the mean scores in pre training are 12.51 while the mean score in post-training is 10.12. This shows that the sports players have taken more time to complete the given task in before training while less time was taken in post training condition. The t-value of 9.19 is significant at 0.01 level which states that there is a significant difference in the circuit training between the two conditions. The post training has facilitated the higher performance of the sports players. This clearly indicates that the sports players sports performance improved after training.

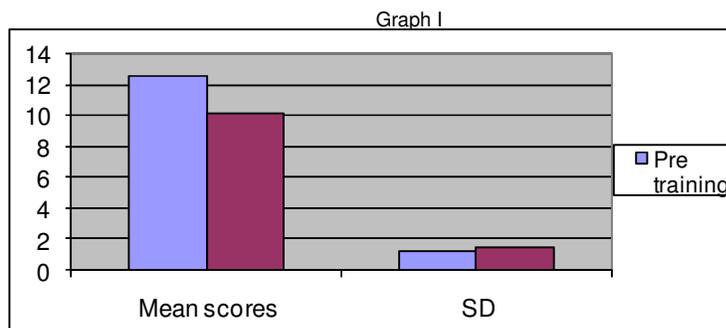


Table 2
Means and t-values of sports players in pre and post circuit training(Short-Term Strength Endurance)

Conditions	Mean scores	SD	t-value
Pre training	38.5	14.21	7.22**
Post training	51.5	11.08	

**Significant at 0.01 level

Table-2 gives the mean scores of circuit training in two conditions. It can be observed that the mean scores in pre training 38.5 are while the mean score in post-training is 51.5 This shows that the sports players have taken more time to complete the given task in before training while less time was taken in post training condition. The t-value of 7.22 is significant at 0.01 level which states that there is a significant difference in the circuit training between the two conditions. The post training has facilitated the higher performance of the sports players. This clearly indicates that the sports players sports performance improved after training.

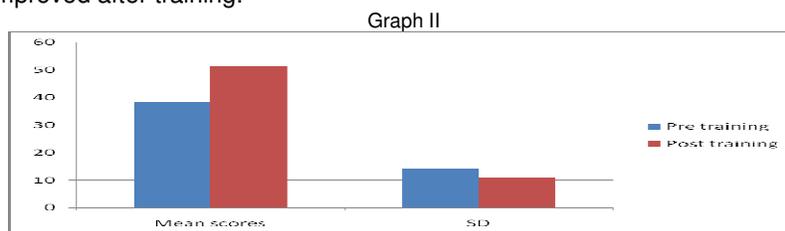
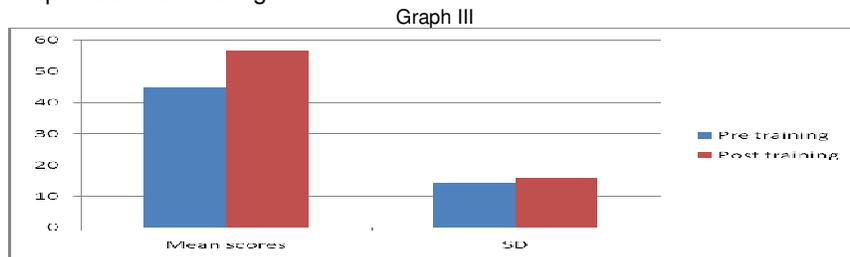


Table 3
Means and t-values of sports players in pre and post circuit training(Long-Term Strength Endurance)

Conditions	Mean scores	SD	t-value
Pre training	44.7	14.36	3.92**
Post training	56.7	15.77	

**Significant at 0.01 level

Table-1 gives the mean scores of circuit training in two conditions. It can be observed that the mean scores in pre training are 44.7 while the mean score in post-training is 14.36 this shows that the sports players have taken more time to complete the given task in before training while less time was taken in post training condition. The t-value of 3.92 is significant at 0.01 level which states that there is a significant difference in the circuit training between the two conditions. The post training has facilitated the higher performance of the sports players. This clearly indicates that the sports players sports performance improved after training.



Conclusion

Circuit training is a form of conditioning combining resistance training and high-intensity aerobics. It is designed to be easy to follow and target strength building as well as muscular endurance. An exercise "circuit" is one completion of all prescribed exercises in the program. When one circuit is complete, one begins the first exercise again for another circuit. Traditionally, the time between exercises in circuit training is short, often with rapid movement to the next exercise. Hence there is a significant difference in sports performance before and after training: trained sample sports players have significantly higher performance in post test than the untrained.

References

- Clayen R. Jenson and Cynthia C. Hirst Measurement in physical Education and Athletics (New York: MacMillan Publishing Co., Inc., 1980), p. 106
- J.V.G.A Dunin and M.M. Rehman, "Percentage of Fat corresponding to the Total Value of skinfolds". British journal of Nutrition, vol. XXI, (1967).
- M.L.Kamlesh, Physical Education Facts and Foundations, (Faridabad P.B.Publications, 1988) pp.5-6
- D.Crow Laster (1964) "Human Development and Learning" (New Delhi eurusia publishing House private limited) p-12
- I.M.Tarmer, The physique of Olympic Athletes (London; George Allen and Unwin Ltd, 1965) p.13.
- John T Powell, "Development of Olympic Athletes" Olympic Review, No. 193 (November 1983):752.
- Frank Vitale, Individualized Fitness Programme [Englewood Cliffs, NJ Prentice-Hall Inc., 1973] pp.1-2
- Gordon Jackson, Fitness and Exercise. [London: Salamander Book Limited, 1985] p.8
- Donald K. Mathews, Measurement in Physical Education [4th Ed.] [Philadelphia: W. B. Saunders Company, 1968], p.1

The effects of repetition of virtual sport experience on football sport attitude and attitude confidence

Farshad Tojari, Abdolreza Amirtash and Nazila Pourabdolah Farshbafi³
 Department of Physical Education and Sport Science, Central Tehran Branch,
 Islamic Azad University, Iran

Abstract

This research examined the possibility that repeated video gaming have influences on both attitude and attitude confidence of football sport. For this study, 180 undergraduate and graduate students were recruited with a convenient sampling method. The hypotheses based on repeated exposure effect were tested using a single factor design with four conditions: single, three, and seven exposure conditions by playing football video game (PES2012) and a direct experience condition that watch a prerecorded specific football competition event. The results of the study provided evidence that repeated video gaming affects attitudes toward the football sport. In addition, the results indicated that brand attitudes based on repeated video gaming are similar to those based on direct experience. According to the results greater repetitive exposure to a specific sport in sport video game would lead to less confident toward the sport.

Key words: Virtual Sport, Attitude, Attitude Confidence

Introduction

Given that virtual experience generated from sport video gaming is closely similar to consumption experience in actual sport contexts, repetitive sport video gaming is expected to result in favorable attitudes toward a specific sport that are easily accessible from memory, held with strong confidence, and are therefore predictive of subsequent behavior (Kim, 2010). In the media-saturated climate of the modern age, marketers and advertisers have been searching for a unique and effective medium to communicate with consumers about their products and services. With the strategic idea of advertising-as-entertainment, entertainment marketers and advertisers have begun to consider videogames as a popular component of advertising and promotional strategy, by incorporating brands within interactive games (Chaney et al., 2004, Ferrazzi et al., 2003 and Nelson et al., 2002). With this goal of media strategies in mind, many sport organizations (e.g., NFL, NBA) are dedicated to developing videogames in order to create a more interactive and integrated communication tool for reaching existing sport fans, new fans and younger generations (Arrington, 2003). Direct experience (DE) involves the interaction of a product with the consumers' full sensory capacity, whereas indirect experience (IE) is generated without actual product contact or use (Li et al., 2002 and Li et al., 2003).

As technological advances in media enable multi-sensory interactions with products in the e-commerce environment, many researchers have recently conceptualized the new type of consumer experience as virtual experience (VE). They also emphasize the similarity between VE and DE with respect to interactivity and vividness (Ki-Young et al., 2012, Lee et al., 2005 and Kim et al., 2008).

As VE generated from a mediated environment is closely similar to DE, the attitudinal effects of VEs have attracted a considerable amount of attention in the fields of marketing and communication. Generally, attitude constructs have served as independent variables in studies examining media effectiveness (Lee et al, 2007). Considering the similarity between virtual and direct experience in terms of creating the sense of being in an environment, virtual experience allows consumers to assess product performance and reduce consumers' perceived risk prior to actual consumption, resulting in a high level of attitude confidence in making a brand choice (Kim, 2010 and Klein et al., 2003). Furthermore, through sport video gaming, repeated exposure to sport and sport brands is expected to result in attitudes toward a specific sport that is more easily and rapidly accessible from memory, held with more confidence, and are therefore more predictive of subsequent behavior than a single exposure to sport brands (Kim, 2010). Repeated exposure to brands embedded in a SVG may also influence other non-evaluative dimensions of attitudes. Particularly, repeated exposure may increase attitude confidence. One reason for increased confidence might be that repeated exposure to a sport itself in SVGs allows individuals to process more information about the sport.

This confidence reflects a consumer's certainty in judgments regarding which brand to choose (Larouche et al., 1996). Many studies of decision-making have found that attitude confidence is positively correlated with the amount of and the credibility of information increases (Kim, 2010 and Larouche et al., 1996). Gupta and Lord (2000), Kim (2010), Ki Yung Li (2012) who also found that preference for objects is increased by simply repeating exposure to the object. This finding opposes with that of Anand & Sternthal (1990), Vakratsas & Ambler (1999). Another potential reason is that the attitudinal decision repeatedly made about a brand may increase the perception of consumers' confidence in their brand attitudes. Confidence in judgments increases as a function of how often the decision is made. Furthermore, repeated exposure may increase cognitive activity related to given objects. In line with the above reasoning, it is hypothesized that brand attitudes formed as a result of more repetitive exposure are more confident than brand attitudes formed in response to single or less exposure (Kim, 2010).

In this research two hypotheses based on kim (2010) research with different media and game examined: first that increased exposure to a specific sport while playing video games would lead to a consumer's favorable attitude toward the sport and second, Greater repetitive exposure to a specific sport in a SVG will lead to more confident attitude toward the sport.

Materials And Methods

Participants

College students of Islamic Azad University, Central Tehran branch as the target population for this study were selected. There are main reasons for focusing on college students rather than the general public as the population of interest in the proposed study, such users are a significant target market in both the video game industry and the sport industry. To determine the appropriate sample size in this study, the G*Power 3.0 program developed by Faul and his colleagues (2007) was used. According to a priori power analysis, when choosing an alpha level at 0.05 and a medium effect size ($f=0.25$), a total sample size of approximately 180 participants, or 45 persons per group, are needed to reach a power of 0.80. The four groups were selected randomly based on availability and accessibility to the researcher. 3 groups, one, three and seven exposure conditions of playing football video game (PES2012), and fourth group, direct experience group, that watch a prerecorded specific football competition event for 20 minutes. Following the subject's exposure to either the video game or the televised event they were asked to complete a questionnaires designed to measure attitude and attitude confidence. It is important to note that all subjects of the video game experimental groups played the same competition. Similarly, the television experimental group watched the same competition represented in the video game experimental setting.

Measures

For the purpose of the study, the PES2012 Game for virtual sport experience was selected as a test material. Previous research showed that levels of repetition created greater variance due to greater exposure (Kim, 2010 and Griffith et al., 2004). Accordingly, subjects were exposed to the PES2012 video game one, three, or seven times. Sport attitude was measured using an established four-item, a seven-point semantic differential scale anchored by very unfavorable/very favorable, very good/ very bad, very unsatisfactory/very satisfactory, and like extremely/dislike extremely. Previous studies have shown that the scale has high internal consistency. Individual item scores were summed to represent sport attitude. Accordingly, attitude confidence was measured using the three items, a seven point semantic differential scale ranging from not confident (1) to confident (7); uncertain (1) to certain (7); not sure (1) to pretty sure (7). In this study, individual item scores were summed to create an individual attitude confidence score (Berger 1992). The reliability of attitude and attitude confidence questionnaires was also confirmed by Cronbach's alpha coefficients of 0.932 and 0.939, respectively.

Methods

Descriptive statistics were used for describing and categorizing raw data and for measuring Mean, frequency, SD and table drawing. To test hypothesis Analysis of variance (ANOVA) was utilized to test mean differences of a dependent variable across the experimental groups. For analyzing data the SPSS software was applied and 95% of confidence level was considered.

Results And Discussion

The results showed that a total of 180 College students of Islamic Azad University, Central Tehran branch participated in the study consisted of students studying in different fields. All subjects were between 18 and 47 years of age ($M=25.25$; $SD=4.76$). The gender distribution of respondents was 40.6% female and 59.4% male, with 79.4% of the respondents indicating that they were single. The brief demographic profile of subjects is presented in Table 1.

Table 1. Demographics Characteristics of Experimental Groups

	Total (%)	1 Time Exposure	3 Time Exposure	7 Time Exposure	Direct Experience
N	180(100)	45(25)	45(25)	45(25)	45(25)
Age					
<20	19(10.6)	2(4.4)	1(2.2)	9(20)	7(15.6)
20-24	69(38.3)	18(40)	15(33.3)	20(44.4)	16(35.6)
24-29	63(35)	18(40)	19(42.4)	11(24.4)	15(33.3)
29-35	20(11.10)	6(13.3)	6(13.3)	3(6.7)	5(11.1)
35<	9(5)	1(2.2)	4(8.9)	2(4.4)	2(4.4)

Note: (): Percentages may not add to 100 % due to rounding.

The first hypothesis predicted that increased exposure to a specific sport while playing video games would lead to a consumer's favorable attitude toward the sport. Although subjects were randomly assigned into each of the four treatment groups, there was a possibility that the differences of the results in the treatment groups were attributed to initial differences in the sample. The results of discrepancy test among the sets of post-formed attitude mean scores (see Table 2) indicated that the means of the exposure conditions did not differ significantly ($F(3, 176) = 1.109, P = 0.347$ and $Eta = 0.136$). In order to adjust the post-attitude scores on the pre-formed attitude scores, ANOVA was conducted. The independent variable was the four exposure conditions (single, three, seven exposures, and direct experience), and the dependent variable was the post-brand attitude scores. The mean score for either direct experience, one, three and seven exposure group was no significantly different. A plot of the means of post-attitude scores across conditions is given in Fig. 1.

Table 2. ANOVA for post attitudes

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	111.600	3	37.200	1.109	0.347
Within Groups	5904.978	176	33.551		
Total	6016.578	176			

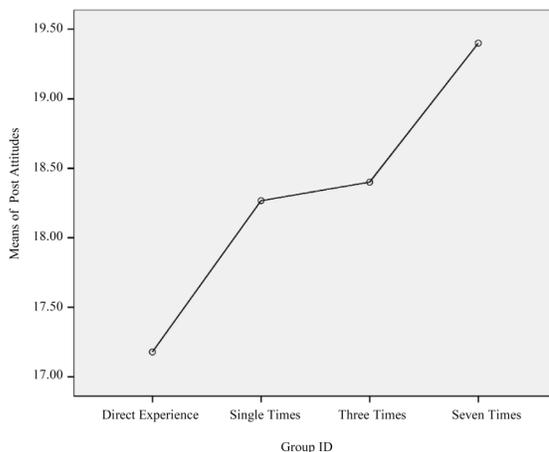


Figure 1. Post-attitude scores across conditions

The second hypothesis suggested that greater repetitive exposure to a specific sport embedded in a SVG will lead to more confident attitude toward the sport. ANOVA was performed to compare the effectiveness of four different exposure conditions. The independent variable was four exposure conditions (single, 3, 7 exposures, and direct experience), and the dependent variable was brand confidence scores (Table 3). The results of discrepancy test among the sets of attitude confidence mean scores indicated that the means of the exposure conditions did differ significantly ($F(3, 176) = 3.237, P = 0.024$ and $Eta = 0.229$). According to the results greater repetitive exposure to a specific sport in SVG wouldn't lead to more confident toward the sport. A plot of the means of attitude confidence scores across conditions is given in Figure 2.

Table 3. ANOVA for attitudes confidence

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	140.978	3	46.993	3.237	0.024
Within Groups	2554.933	176	14.517		
Total	2695.911	176			

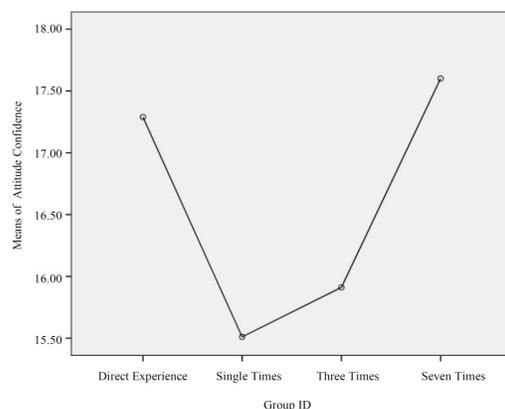


Figure 2. Attitude confidence scores across conditions

Conclusion

This study has explored the effects of repeated exposure to a sport in a video game on attitudes and attitude confidence. Subjects showed favorable attitudes toward a specific sport in the game. The results of first hypothesis showed that increased exposure to a sport embedded in videogames result in favorable attitudes toward the brand. Thus, this finding is consistent with that of Gupta and Lord (2000), Kim (2010), Ki Yung Li (2012) who also found that preference for objects is increased by simply repeating exposure to the object. The finding opposes with that of Anand & Sternthal (1990), Vakratsas & Ambler (1999). The results of second hypothesis showed that greater repetitive exposure to a specific sport embedded in a SVG Would lead to less confident attitude toward the sport. Thus, this finding contrasts with Kim (2010) and Laroche, Kim, & Zhou, 1996. So the repetitive exposure to sport and advertising in SVGs will heighten consumer's awareness and attitudes toward the sports.

Acknowledgment

The authors wish to thanks Islamic Azad University (Central Tehran Branch) and Novin Pendar Co. for supporting this research.

References

- Anand, P. & Sternthal, B. (1990). Ease of Message Processing as a moderator of repetition effects in advertising. *Journal of Marketing Research*, 27 (August), 345-353.
- Arrington, D. (2003). From gamers to fans?: Video-game enthusiasts of today could morph into real-life devotees of professional leagues tomorrow. *The San Diego Union-Tribune*, p. C1.
- Berger, I. E. (1992). The Nature of Attitude Accessibility and Attitude Confidence: A Triangulated Experiment. *Journal of Consumer Research*, 16 (December), 269-279.
- Chaney, I. M., Lin, K.-H., & Chaney, J. (2004). The Effect of Billboards within the Gaming Environment. *Journal of Interactive Advertising*, 4(3).
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191.
- Ferrazzi, K., Chen, J., & Li, Z. (2003). Playing Games with Customers. *Harvard Business Review*, 81(4), 21.
- Griffith, D. & Chen, Q. (2004). The Influence of Virtual Direct Experience (VDE) on On-Line Ad Message Effectiveness, *Journal of Advertising*, 33(1), 55-68.
- Gupta, P. B., Lord, K. R. (1998). Product placement in movies: The effect of prominence and mode on audience recall, *Journal of Current Issues and Research in Advertising*, 20(1), 47-59.
- Ki-Young, Lee (2012). Consumer processing of virtual experience in e-commerce: A test of an integrated framework. *Computers in Human Behavior*, 28(6), 2134-2142.
- Kim, Y. (2010). The Effects of Virtual Sport Experience on Brand Attitude and Attitude Strength, *Ph.D. Thesis*, University of Minnesota.
- Kim, Y., Walsh, P., & Ross, S.D. (2008). An examination of the psychological and consumptive behaviors of sport video gamers. *Sport Marketing Quarterly*.
- Klein, L. R. (2003). Creating Virtual Product Experiences: The Role of Telepresence. *Journal of Interactive Marketing*, 17(1), 41-55.
- Laroche, M., Kim, C., & Zhou, L. (1996). Brand familiarity and confidence as determinants of purchase intention: an empirical test in a multiple brand context. *Journal of Business Research*, 37, 115-120.
- Lee, K. & Li, H. (2005). Alternative Measures of the Effectiveness of 3-D Advertising. *Paper presented at the American Academy of Advertising Conference*, (March 31-April 3), Houston, TX.
- Lee, M., & Fabor, R. (2007). Effects of product placement in online games on brand memory: A perspective of limited-capacity model of attention. *Journal of Advertising*, 36(4), 75-90.
- Li, H., Daugherty, T., & Biocca, F. (2002). Impact of 3-D Advertising on Product Knowledge, Brand Attitude, and Purchase Intention: The Mediating Role of Presence. *Journal of Advertising*, 31(3), 43-57.
- Li, H., Daugherty, T., & Biocca, F. (2003). The Role of Virtual Experience in Consumer Learning. Nelson, M. R. (2002). Recall of brand placements in computer/video games. *Journal of Advertising Research*, 42(2), 80-92.
- Vakratsas, D. & Ambler, T. (1999). How advertising works: what do we really know. *Journal of Marketing*, 63(January), 26-43.

The Effects Of Pre-Season Training Package On The Selected Physical Fitness Variables Of Handball Players

P.Buvanendiran. Secretary, Jaffna District Handball Association, Sri Lanka

Abstract

For this study, thirty men handball players were selected as subjects. They were selected from St. Johns College Jaffna, Sri Lanka. The age of the subjects ranged from 16 to 19 years. The study was formulated as a true random group design. The subjects (n=30) were randomly assigned to two equal group of fifteen (men) Handball players each namely, specific pre-season training (ST, Group I), Traditional training (TT, Group II). The subjects were tested in order to find out physical fitness variables namely speed, agility, flexibility, explosive power. Both the two experimental groups participated in specific pre-season training, traditional training for a period of twelve weeks except Sundays of each week. The data was collected before and after the training period and the pre test, post test and adjusted post test were analyzed by Analysis of Covariance (ANCOVA). The level of significance for the study was chosen as 0.05. It was concluded that effect of specific pre-season training group and traditional training group showed a statistically positive sign over the course of the training period on the selected physical fitness variables such as speed, agility, flexibility, explosive power of handball players. It was also concluded that the effect of specific pre-season training group showed a significant improvement in speed, agility, flexibility, explosive power than the traditional training group.

Key words: Handball, Pre-season training, Explosive power, Flexibility, Agility, Speed

Introduction

Handball is one of the most popular team based sports played and watched throughout the world. It is played by both males and females of all ages and fitness levels. For optimal performance during play at an elite level a variety of areas must be addressed. These include the high skill level, flexibility, muscular strength, speed, agility, and importantly the specific use of different physiological, body composition and psychomotor variables. (Manoj Singh Rana, 2012).

To play the game effectively, a player can use various drills and skills. Thus it is very important for a player to determine in advance which shoot his opponent player will use and where the ball will enter into his opponent goal post. He should always remain prepared and be very alert on the court. He can use sprints, jumps, landing, twists, turns, stretches, shooting action, and blocking action. To shoot the ball powerfully or softly, a player requires strength, endurance, speed, agility, flexibility and presence of mind. The sheer pleasure of the variety of movement has added an appeal for the player. The game involves a challenge. To put the opponent player under pressure, a player has to practice various skills and drills. It is a very good source of enjoyment, but later courts become field of battles on which players attempt to find every chance of scoring more goals than the opponent. Thus, the basic aim of every player to shoot the ball in such a way that the opponent finds it difficult to return it, and by this, score more goals. (Priyanka Narang,2001). The general purpose of pre-season training is to prepare sportsmen and women for the demands of the upcoming season. Training will include strength and conditioning, general fitness and sport specific training sessions. It helps players focus, improves their physical fitness and reduces the chance of injury as training and competition progresses. Pre-season training allows player to condition their fitness levels and prepare them for the vigorous demands of their role in the team, while reducing the risk of injury early into the actual season.

Handball needs technical ability which is the proper execution of a variety of skills such as shooting, dribbling, passing, blocking, and faking, mainly defensive and offensive skills and so on. It also demands tactical ability and judgment in selecting the appropriate stroke for a certain situation, and mental strength which can sustain the player until the end of the match. Therefore, it is vital to not only be able to ascertain the tactical and shooting habits of the opponent but also one's own such patterns and habits as well in order to modify and utilize such things in the match.(Sung-Ja Kim,2009).

Methodology

For this study, thirty men handball players were selected as subjects. They were selected from St. Johns College Jaffna, Sri Lanka. The age of the subjects ranged from 16 to 19 years. The study was formulated as a true random group design. The subjects (n=30) were randomly assigned to two equal group of fifteen (men) Handball players each namely, specific pre-season training (ST, Group I), Traditional training (TT, Group II). The subjects were tested in order to find out physical fitness variables namely speed, agility, flexibility, explosive power. The data was collected before and after the training period and the pre test, post test and adjusted post test were analyzed by analysis of covariance (ANCOVA). The level of significance for the study was chosen as 0.05.

Tools and techniques

Physical Fitness Variables

1. Sit and reach test was used to find out the flexibility.
2. Vertical jump test was used to find out the explosive power.

50 mts run test was used to find out the speed.

Semo agility test was used to find out the agility.

Statistical Technique

The following statistical procedures were employed to estimate the effects of Pre-season training package on the selected physical fitness variables of handball players.

Analysis of Covariance (ANCOVA) was applied to determine the significance of mean difference between the groups namely specific pre-season training and traditional training. In all cases, the criterion for statistical significance was set at 0.05 level of confidence ($P < 0.05$).

TABLE-1
Computation Of Analysis of Covariance Of Specific Pre-Season Training Group And Traditional Training Group On Speed

	ST Group	TT Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	7.29	7.27	BG	0.002	1	0.002	0.03
			WG	2.33	28	0.08	
Post-Test Means	6.73	7.04	BW	0.69	1	0.69	5.35*
			WG	3.59	28	0.13	
Adjusted Post-Test Means	6.73	7.04	BW	0.75	1	0.75	9.44*
			WG	2.15	27	0.08	

*Significant at 0.05 level of confidence

Results On Speed

An examination of table – 1 indicates that the results of ANCOVA for Pre-test scores of the specific Pre-season training group, and traditional training group. The obtained F-ratio for the pre-test is 0.03 ($P > 0.05$) indicating that the random sampling is successful and the table F-ratio is 4.19. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 1 and 28. The adjusted post-test means of specific pre- season training group and traditional training group are 6.73 and 7.04 respectively. The obtained F-ratio for the adjusted post-test means is 9.44 ($P < 0.05$) and the table F-ratio is 4.21. Hence the adjusted post-test mean speed F-ratio is significant at 0.05 level of confidence for the degree of freedom 1 and 27.

TABLE-II
Computation Of Analysis Of Covariance Of Specific Pre-Season Training Group And Traditional Training Group On Agility

	ST Group	TT Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	13.22	13.24	BG	0.006	1	0.006	0.07
			WG	2.12	28	0.08	
Post –Test Means	12.50	12.96	BW	1.57	1	1.60	6.50*
			WG	6.75	28	0.24	
Adjusted Post-Test Means	12.52	12.95	BG	1.35	1	1.35	9.93*
			WG	3.66	27	0.14	

*Significant at 0.05 level of confidence

Results On Agility: An examination of table- II indicates that the results of ANCOVA for present scores of the specific pre- season training group, and traditional training group. The obtained F-ratio for the pre-test is 0.07 ($P > 0.05$) indicating that the random sampling is successful and the table F-ratio is 4.19. Hence the post- test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 1 and 28. The obtained F-ratio for the post is 5.60 ($P < 0.05$) and the table F-ratio is 4.19. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree freedom 1 and 28. The adjusted post- test means of specific pre-season training group and traditional training group are 12.52 and 12.95 respectively. The obtained F-ratio for the adjusted post-test means is 9.93 ($P < 0.05$) and the table F-ratio is 4.21. Hence the adjusted post-test mean agility F-ratio is significant at 0.05 level of confidence for the degree of freedom 1 and 27.

TABLE-III
Computation Of Analysis Of Covariance Of Specific Pre-Season Training Group and Traditional Training Group On Flexibility

	ST Group	TT Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	16.47	16.00	BG	1.63	1	1.63	0.30
			WG	151.73	28	5.42	
Post-Test Means	19.20	17.67	BG	17.63	1	17.63	4.52*
			WG	195.73	28	6.99	
Adjusted Post-Test Means	18.97	17.90	BG	8.45	1	8.45	5.15*
			WG	44.27	27	1.64	

*Significance at 0.05 level of confidence

Results On Flexibility: An examination of table –III indicates that the results of ANCOVA for present scores of the specific pre-season training group, and traditional training group. The obtained F-ratio for the pre-test is 0.30 ($P > 0.05$) indicating that the random sampling is successful and the table F-ratio is 4.19. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 1 and 28. The obtained F-ratio for the post- test is 4.52 ($P < 0.05$) and the table F-ratio is 4.19. Hence the post test means of specific pre-season training group and traditional training group are 18.97 and 17.90 respectively. The obtained F-ratio for the adjusted post-test mean flexibility F-ratio is significant at 0.05 level of confidence for the degree of freedom 1 and 27.

TABLE-IV
Computation Of Analysis Of Covariance Of Specific Pre-Season Training Group and Traditional Training Group On Explosive Power

	ST Group	TT Group	Source Of Variance	Sum Of Squares	df	Mean Squares	F-ratio
Pre-Test Means	15.13	15.27	BW	0.13	1	0.13	0.04
			WG	92.67	28	3.31	
Post-Test Means	19.33	17.13	BG	36.30	1	36.30	11.16*
			WG	91.07	28	3.25	
Adjusted Post-Test Means	19.39	17.07	BG	40.18	1	40.18	52.63*
			WG	20.61	27	0.76	

*Significant at 0.05 level of confidence

Results On Explosive Power: An examination of table – IV indicates that the results of ANCOVA for pre-test scores of the specific pre-season training group, and traditional training group. The obtained F-ratio for the pre-test is 0.04 ($P > 0.05$) indicating that the random sampling is successful and the table F-ratio is 4.19. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 1 and 28. The obtained F-ratio for the post-test is 11.16 ($P < 0.05$) and the table F-ratio is 4.19. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree of freedom 1 and 28. The adjusted post-test means of specific pre-season training group and traditional training group are 19.39 and 17.07 respectively. The obtained F- ratio for the adjusted post-test means is 52.63 ($P < 0.05$) and the table F-ratio is 4.21. Hence the adjusted post- test mean explosive power F-ratio is significant at 0.05 level of confidence for the degree of freedom 1 and 27.

Discussion On Findings

The result on speed, agility, flexibility and explosive power showed that there is a significant effect due to the influence of specific pre-season training (ST) and traditional training (TT). Further it showed that the mean value of pre-season training (ST) is more on the speed, agility, flexibility, and explosive power than traditional training. The results of the study are supported by the following authors. Walker, TB et. al. (2011) indicated that physical agility training is more effective than traditional linear running in enhancing general physical fitness. Physical agility training significantly increases the physical and cognitive performance, such as physical agility, memory and vigilance.

Walklate BM et. al. (2009) suggested that supplementing regular training with sessions of short duration sprint training significantly increases in repeated-agility sprint performance of national level handball players.

Jeyaraman (2011) concluded that the agility, mid-thigh girth, explosive strength, height, length, leg explosive power, wrist girth and hand length were predominant factors among university handball players.

Loturcol, et al. (2012) suggested that male professional soccer players can achieve improvements in strength and power-related abilities as a result of 6 weeks of power-oriented training during the pre-season.

Kim, E, et al (2011) suggested that the percent improvements were similar for the TRT and SRT groups, but only the TRT group reached statistical significance for the strength improvements, and both groups were equally effective for improving flexibility.

Conclusions

Based on the findings the following conclusions were derived

It was concluded that the effect of specific pre-season training group showed a significant improvement in speed, agility, flexibility, explosive power than the traditional training group.

It was concluded that effect of specific pre-season training group and traditional training group showed a statistically positive sign over the course of the training period on the selected physical fitness variables such as speed, agility, flexibility, explosive power of handball players.

Rererences

- Jeong. (2011). Quantification of the physiological loading of one week of "pre-season" and one week of "in-season" training in professional soccer players. *Journal of sports science*, 29(11):1161-6.
- Argus.(2010). Effects of a short-term pre-season training programme on the body composition and anaerobic performance of professional rugby union players, 28(6):679-86.
- Barrow Harold, M., & McGee Rosemary.(1989). *Practical measurement in physical education and sports*. Philadelphia: Lea and Febiger
- Carl Foster. (1995). Effects of specific versus cross-training on running performance. *European Journal of applied physiology and occupational physiology*, Volume 70, Issue 4,pp.367-372.
- Bill Form. (2001) *High-performance sports conditioning*, Champaign, Illinois: Human Kinetics.
- Daniel, D. Arnheim.(1985). *Modern principles of Athletic Training*. USA: Mosby.

Motivational And Emotional Factors In Traditional Sports

Y. Surender

Physical Director, University college of Physical Education, KU.Warangal.(A.P)

K. Jithendernath, Physical Director, A.P. S.W.R .J.R.C .Parkal.

G. Gopichand, B.P.Ed.,

Abstract

Physical activities and sports play an important role in the development of an individual. The aim of physical education is to strive for optimum development of an individual in all spheres of life. The urge to compete, excel and achieve is a universal phenomenon, common to all human beings. The understanding of what motivates an individual to take part in sports is the first step towards effective performance. There are many physical physiological and psychological factors that contribute to effective and successful performance like, motives, incentives, drives, stature, environment, level of ability, personality, emotions, motivation etc. The motivations with emotion are important factors affecting performance in sport. Emotions often influence motivation hence both are linked and considered together in sport performance. Selection and preference of an individual for specific sport activity, duration of training, the effort etc., all depend upon the motivation.

Introduction:

Human activity is governed by various motives, incentives, and drives, both physiological and psychological in nature. The motivation and emotion are important factors effecting performance in sport. Emotions often influence motivation hence both are linked and considered together in sport performance. The urge and ability to achieve in sport is due to motivational states of the individual. Motivation is responsible for selection and preference of individual for specific sport activity, duration of training effort and adequacy of sport performance. The word motivation is derived from a Latin word 'movere' meaning 'to change', 'to move'. It means that he is driven or moved by an inner urge or force to achieve the goal. The Pleasure Aspect of Sport brings pleasure due to hedonistic aspect, emotional overtones and outward focus of attention in sport activities. Hedonistic aspect of sport in individual brings physical movement and sensuous thrill leading to pleasure. Emotional overtones of sports life removes boredom of daily routines and adds depths of feeling in colour life. Outward focus of attention in sport brings not only well mental health but also emotional satisfaction

The achievement Aspect of Sport: The achievement aspect of sport includes excelling versus winning, enjoyment, learning and inspiration levels. The urge to do one's best, to surpass one's self or someone else is part of constant urge for self improvement. Educational, recreative and mental health value of sport brings enjoyment. Frequent achievement in sport leads to better learning. Similarly level of aspiration is fulfilled by sport achievement and past experience, it is a highly significant indicator of future performance.

The Psychological Aspect of Sport Morale: As an individual aspect, morale is a mental and emotional condition of zeal, hope, enthusiasm in work toward preconceived goals. As a group characteristic, it is a feeling of team unity, shared feelings and a common cause. In sports, morale grows from people enduring, suffering and battling together for a considerable period of time, in an attempt to win. There is team work, group solidarity with individual integration.

Sport as an Outlet for Aggression: Individual accumulates aggressions through occasional or frequent frustrations of daily life and sport acts as one of the outlet. The cathartic theory mention that sports expression ends to decrease or allay aggressive tendencies, Circular theory present heightened instigation to aggression following as aggressive act.

Sport as Competition: Striving for recognition and dominance starts very early in life, competition and rivalry satisfy basic needs in the individual and in the race. The field of sports yields not only harmless ways to express competitive urges but expression under rules of conduct permitting many desirable outcomes. Success gained by competition foster further attempts, improve self-confidence and self-respect.

Sport as Means for Lessening Inferiority Feelings:

Success in sport, consequent approval and admiration bring greater group acceptance reducing inferiority feeling in person. Feeling of inferiority drive the individual to strive earnestly for successive in various kinds of sports, particularly because the sports are fun in themselves, and because the self is often forgotten in the excitement of the contest. The individual gains a feeling of security within his social group.

The Reward Aspect of Sport The reward aspect of sport includes motives for participation in sports, incentives for sportsmanship like behavior, monetary rewards and other incentives including discipline. A part of the great desire for sports comes from excess physical energy and its joyous self expression and brings pleasure. Development of sportsmanship in children is not reported frequently in children to such a great extent as athlete reaches higher grades researcher has reported it's lacking due to overemphasis on winning as the major objective. Discipline in a sport learning situation means guidance in behavior most conducive to learning and to successful performance. Discipline facilitates learning and performance.

The Paradox of Emotional Appeal: Man, through the ages, has used sport as a form of vigorous, emotionally toned, physical self expression. Emotions are sometimes disagreeable and upsetting to the individual. Great fear or great anger is not pleasant, and many cause actions with unpleasant side effects. Actually, man risks many hazards and danger merely for the thrill of performing in such circumstances as evident in amusement centers in commercial parks and playgrounds designs exposing a bit of fear. A degree of danger and perhaps some fear add attractions to many of our sports. Much of the controversy over competitive sports for youngsters comes from adults who fear that the children may be harmed or endangered which otherwise act as an arsenal of augmented strength.

Sport and Emotional Stimuli: Generally, strong emotional stress has a handicapping effect on both learning and performance of motor skills by the beginner. The beginner tends to learn better with lower level of the stress and his performance under the additional stress is not likely to be adjusted and adapted for improvement. At the higher levels of skill performance, when the skills become relatively automatic, increased emotional stimulus tends to improve performance. Added with intense motivation, additional energy and other adoptions, performance at very high emotional arousal converts to superior one. The type of personality one possess, also effect his degree of sensitivity to emotional stimuli and stress tolerance. In training children and adolescents, the amount of stress to which they are subjected should be tempered to their stage of learning. However, athlete must learn to tolerate and perform under stress for superior performance, moreover overprotection from stress also retard learning and development. Emotionally stimulating factors in competitive sports, getting set for contest, momentum during contest, emotions of the spectator at times are helpful in sport performance. Exercise and health psychology for personal well being, counseling and clinical approaches in case of personal problems and maladaptive behavior in individuals, identifying process mechanism for skill development, performance enhancement techniques, group situations leading to productivity, psychometric tests for specific purpose, youth sport programmes and the enrichment of experiences are important themes of Modern Sport Psychology.

Conclusion:

Excellence in sports cannot be achieved over-night. High level of sport skills is attained only after years of motivated practice. It is the result of untold hours spent in the sport fields. It is a well known fact that only a highly motivated athlete persists in his athletic end. It is the persistence that often determines victory or defeat. Successful athletes, with high levels of motivation seem to be able to deal with stress and arousal in a manner which allows them to optimize performance over a wide range of situation. Emotions often influence motivation hence both are linked and considered together in sport performance.

References:

- Anderson, C.A., & Deuser, W.E. (1996) *Examining an affective aggression framework*, Personality and Social Psychology Bulletin, 22:366-376.
- Beck, R.C.(2000), *Motivation: Theories and Principles*, NJ: Prentice-Hall.
- Jain, R (2005) *Sport Psychology*, New Delhi: Khel Sahitya Kendra.
- Mahmud, J (2004) *Introduction to Psychology*, New Delhi: A.P. H. Publishing Cor.
- Wagner, H.L. (1999) *the Psychology of Human Motivation*, London: Routledge.

Effect Of Plyometric Training Isotonic Training And Combination Of Isotonic And Plyometric Training On Speed And Muscular Endurance

Mr. M.N. Gnaneshwar* And Dr. R. Gopinath**

***Ph.D., Scholar, and **Professor, Department of Physical Education and Sports Sciences, Annamalai University.**

Abstract

The purpose of the present study was to find the effect of plyometric training, isotonic and combination of isotonic and plyometric training on, speed and muscular endurance. For this purpose, forty male students studying in the studying Bachelor of Physical Education in the Department of Physical Education and Sports Sciences, Annamalai University, Annamalainagar, Tamilnadu, in the age group of 18 – 23 years were selected as subjects. They were divided into four equal groups, each group consisted of ten subjects, in which group – I underwent plyometric training, group – II underwent isotonic training group, group – III underwent combined plyometric and isotonic training and group – IV acted as control group. The training period for this study was three days in a week for twelve weeks. Prior and after the training period the subjects were tested on speed and muscular endurance. The selected criterion variables, such as, speed and muscular endurance, were tested by administering, 50 meters dash and sit-ups test. The statistical toll used for this study is analysis of covariance (ANCOVA). Whenever the F ratio was significant, the Scheffé S was applied as post-hoc test. From the result of the study, it was concluded that all the training groups have improved speed, and muscular endurance.

Introduction

Athletic performance has dramatically progressed over the past few years. Performance levels, unimaginable before, are now common and the number of athletes capable of outstanding results is increasing. A broader base of knowledge about athletes now exists, which is reflected in training methodology. Sports training is a scientifically based and pedagogically organized process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition. Plyometrics is a type of exercise training designed to produce fast, powerful movements, and improve the functions of the nervous system, generally for the purpose of improving performance in sports. Plyometrics has been shown across the literature to be beneficial to a variety of athletes. Benefits range from injury prevention, power development and sprint performance amongst others. While plyometrics assists in rapid force development (power), weight training assists in maximal force output (strength). Power refers to the combined factors of speed and strength. Isotonic exercise is a form of exercise which involves controlled contraction and extension of muscles and mobilization of the joints around those muscles. For isotonic exercise to be isotonic, the tension involved must remain constant throughout the exercise, rather than fluctuating. Eicher (1975) is of the opinion that speed is the product of two factors stride length and frequency. Increasing either factor automatically increase a runner's sprinting speed. Clarke stated that endurance is basic in measuring organic capacity believing that if one is able to run or swim more than the normal distance without undue fatigue he is in good physical conditions.

Methods: In this study it was to find out the effect of plyometric, isotonic and combined plyometric and isotonic trainings on speed and muscular endurance. To achieve the purpose, forty male students studying Bachelor of Physical Education in the Department of Physical Education and Sports Sciences, Annamalai University, Annamalainagar, Tamilnadu, in the age group of 18 – 23 years were selected as subjects. They were divided into four equal groups of ten each, in which, group – I underwent plyometric training, group – II underwent isotonic training, group – III underwent combined plyometric and isotonic training and group – IV acted as control group who did not participate any special training apart from the regular activities. For every training programme there would be a change in various structure and systems in human body. So, the researcher consulted with the experts then selected the following criterion variables: 1. speed and 2. muscular endurance. The selected criterion variables such as, speed and muscular endurance, were tested by administering, 50 meters dash and sit-ups test.

Analysis of the Data

Analysis of covariance was used to determine the differences, if any, among the adjusted post test means on selected criterion variables separately. Whenever the 'F' ratio for adjusted posttest mean was found to be significant, the Scheffé S test was applied as post-hoc test. The level of significance was fixed at .05 level of confidence to test the 'F' ratio obtained by analysis of covariance.

Table – I Analysis of Covariance and 'F' ratio for Speed and Muscular Endurance of Plyometric Training Isotonic Training and Combination of Plyometric and Isotonic Training and Control Groups

Variable Name	Group Name	Plyometric Training Group	Isotonic Training Group	Plyometric and Isotonic Training Group	Control Group	'F' Ratio
Speed (in seconds)	Pre-test Mean \pm S.D	7.267 \pm 0.0447	7.256 \pm 0.0425	7.283 \pm 0.226	7.296 \pm 0.038	2.148
	Post-test Mean \pm S.D.	7.238 \pm 0.0391	7.257 \pm 0.0392	7.258 \pm 0.0419	7.307 \pm 0.037	5.454*
	Adj. Post-test Mean	7.245	7.273	7.252	7.290	6.895*
Muscular Endurance (in Nos./min)	Pre-test Mean \pm S.D	32.70 \pm 2.003	34.00 \pm 1.886	32.00 \pm 1.633	32.70 \pm 2.163	1.869
	Post-test Mean \pm S.D.	35.10 \pm 2.025	36.40 \pm 1.776	36.40 \pm 1.647	31.40 \pm 1.647	17.635
	Adj. Post-test Mean	35.212	35.539	37.037	31.512	49.564*

* Significant at .05 level of confidence. (The table value required for significant at .05 level with df 3 and 36 and 3 and 35 are 2.85 and 2.87 respectively).

Table - II Scheffé S Test for the Difference Between the Adjusted Post-Test Means on Speed and Muscular Endurance

Adjusted Post-test Mean of Speed					
Plyometric Training Group	Isotonic Training Group	Plyometric and Isotonic Training Group	Control Group	Mean Difference	Confidence Interval at 0.05 level
7.245	7.273			0.028	0.032143
7.245		7.252		0.007	0.032143
7.245			7.290	0.045*	0.032143
	7.273	7.252		0.021	0.032143
	7.273		7.290	0.017	0.032143
		7.252	7.290	0.038*	0.032143
Adjusted Post-test Mean of Muscular Endurance					
Plyometric Training Group	Isotonic Training Group	Plyometric and Isotonic Training Group	Control Group	Mean Difference	Confidence Interval at 0.05 level
35.212	35.539			0.327	1.3763
35.212		37.037		1.825*	1.3763
35.212			31.512	3.70*	1.3763
	35.539	37.037		1.507*	1.3763
	35.539		31.512	4.027*	1.3763
		37.037	31.512	5.525*	1.3763

* Significant at .05 level of confidence.

Results

Table – I showed that there was a significant difference among plyometric training, isotonic and combined plyometric and isotonic training groups on speed, and muscular endurance. Table – II shows that the Scheffé S test on speed for the difference between adjusted post-test mean of plyometric training group and control group (0.045) and combination plyometric and isotonic training group and control group (0.038) which were significant at .05 level of confidence. But there was no significant difference between plyometric training group and isotonic training group (0.028), plyometric training group and combination plyometric and isotonic training group (0.007), isotonic training group and combination of plyometric and isotonic training group (0.021) and isotonic training group and control group (0.017) on speed. Table – II shows that the Scheffé S test on muscular endurance for the difference between adjusted post-test mean difference of plyometric training group and combination plyometric and isotonic training group (1.825), plyometric training group and control group (3.70), isotonic training group and combination of plyometric and isotonic training group (1.507), plyometric training group and control group (4.027) and combination of plyometric and isotonic training group (5.525) were significant at .05 level of confidence. But there was no significant difference between plyometric training group and isotonic training group (0.327) on muscular endurance after the respective training programmes.

Conclusions

It was concluded from the results of the study, speed was improved for only plyometric training group and combination of plyometric and isotonic training group.

It was also concluded that the muscular endurance has improved significantly after the respective training programmes.

When compared with the control group, all the training groups has significantly improved in speed and muscular endurance, whereas, isotonic training did not improve the speed when compared with the control group.

Reference:

Tudor O. Bompá, *Periodization: Theory and Methodology of Training*, (4th ed.), (Champaign, Illinois: Human Kinetics Publishers, 1999), p.3.

Hardayal Singh, *Science Sports Training*, p.14.

Edward G. Mcfarland, *Getting Strong Through Resistance Training*, Internet Resource, [www. Google.Com](http://www.Google.Com).
www.monkeybargym.com

Harold M. Barrow and Rosemary McGee, *A Practical Approach to Measurement in Physical Education*, 3rd Ed. (Philadelphia: Lea and Febiger, 1977), p. 144.

H. Harrison Clarke, *Application of measurement and Physical Education*, (New Jersey: Prentice Hall Inc., 1967), p. 184.

“Capital Budgeting” – A Case Study

Rallabandi Swarna Kumari

Introduction

The Indian economy meeting the crucial power needs of the country. To win the competitive edge, every organization is much construction on the financial aspect of development. A finance manager's job begins even before a business actually comes into action and continues till the very end.

The activities of finance manager include procurement of funds from various resources, determining where to invest, the extent of investment and analysis of over all performance of the organization. The area of finance, I have chosen the project work on Capital Budgeting because it is the most crucial financial decision of the firm. It relates to the selection of an asset or investment proposal or course of action whose benefits are likely to be available in future over the lifetime of the project.

Capital budgeting decision involves critical analysis of risk/return.

The benefits from the investment proposal deferred in to the future with an immediate cash flow/commitment.

Capital Budgeting decision refers to assets that are in operations and yield a return over a period of time, usually exceeding one year. It is a long-term investment decision involving huge capital expenditures. The main characteristics of a capital expenditure are that the expenditure is incurred at one point of time whereas benefits of the expenditure are realized at different points of time in future.

Methodology:

1. The capital budgeting mechanism is studied in detail
2. The various factors of capital budgeting management are studied in detail

The technical analysis in respect to Internal Rate of Return (IRR), Net Present Value (NPV) and discounted cash flow techniques have been studied. The commercial analysis relating to lease Vs buying, rentals Vs buying analysis have been studied. Capital budgeting is the process of making investment decision and capital expenditure. Capital budgeting is employed to evaluate expenditure decisions which involve current outlay that are likely to produce benefits over a period of time usually longer than one year. Capital expenditure involves a non-flexible, long-term commitment of funds thus capital expenditure decisions are also called as long-term investment decisions.

Features:

It involves exchange of current funds for the benefits to be achieved in future. Future benefits are expected to be realized over a series of years. They generally involve huge funds. They are irreversible decision. They have long term and significant effect of profitability of the concern.

There is relatively high degree of risk.

Importance: Capital budgeting decisions are of paramount in financial decision-making. Capital budgeting decisions affect the profitability of the firm. They also have a bearing on the competitive position of the enterprise. Capital budgeting decision determines the future destiny of the company.

An opportune investment decision can yield spectacular returns where as an ill-advised and incorrect investment decisions can endanger the very survival even of the large sized firms.

A capital expenditure decisions has its effect over a long time span and inevitably affects the company's future cost structure

Capital investment decisions are not easily reversible, without much financial loss to the firm. Capital investment involves cost and the majority of the firms have scarce capital resources

Capital investment decisions are of national importance because it determines employment, economic activities and economic growth

Techniques Of Capital Budgeting:

Traditional Or Non Discount Techniques:

Pay back period "payout" method

Improvement in traditional pay back period method

Rate of return method or accounting method

The Adjusted Methods Or Discounted Methods: Net Present Value method (NPV)

Internal Rate Of Return method (IRR) Profitability Index or benefit cost ratio method

Introduction To New Unapproved Schemes

In BHEL a number of new projects are going on, Out of which 2 projects were selected for the study. Some of the essential aspects of the projects are Depreciation Rate, Corporate Income Tax Rate and the Discounting Factor. The company works under 3 shifts of depreciation, namely I, II and III and the percentages are 8%, 12% and 16% respectively. The Corporate Income Tax Rate is 35% and the Discounting Factor is 15%, which is normally followed by the corporate houses. The following table gives the abstract for these projects of the company.

1. Augmentation of Capacity of Steam Turbines						
Year	1	2	3	4	5	Total
.Cash flows	1046.00	4520.00	4520.00	4520.00	4520.00	19126.00
Less: dep@ 16%	250.24	250.24	250.24	250.24	250.24	1251.20
PBT	795.76	4269.76	4269.76	4269.76	4269.76	17874.80
Less: tax @ 35%	278.52	1494.42	1494.42	1494.42	1494.42	6256.18
PAT	517.24	2775.34	2775.34	2775.34	2775.34	11618.62
Add: dep	250.24	250.24	250.24	250.24	250.24	1251.20
CFAT	767.48	3025.58	3025.58	3025.58	3025.58	12869.82
CCFAT	767.484	3793.068	6818.652	9844.236	12869.82	"

Calculation of payback period:

The pay back period lies between 1 and 2 years. The exact period is,

$$PBP = 1 + [(1564 - 767.484) / (3793.068 - 767.484)] = 1 + .26 = 1.26 \text{ Years}$$

Calculation of ARR:

$$ARR = \text{Average PAT} / \text{Average Investment} = (11618.62 / 5) / (1564 / 2)$$

$$= 2323.724 / 782 = 2.9715 = 297.15\%$$

Calculation of PI: Profitability Index = 8180.23714 / 1564 = 5.23

Year	Cash flows	PV @ 15%	PV of cash flows
0	(1564.00)	1.00	(1564.00)
1	767.484	0.870	667.377
2	3025.584	0.756	2287.776
3	3025.584	0.658	1989.371
4	3025.584	0.572	1729.887
5	3025.584	0.497	1504.250
		Total	8178.662
		NPV	6614.062

Calculation of PayBack Period: Despite NPV's conceptual superiority, IRR is preferable because IRR is intuitively more appealing as it is percentage measure. The MIRR overcomes the shortcomings of the regular IRR. IRR can be calculated as follows:

PVC - terminal value (TV) / (1 + MIRR)

$$(1 + \text{MIRR})^n = \text{TV} / \text{PVC}$$

Present Value of cash (PVC) = cash outlay (1 + r)⁰

Terminal value (TV) = cash inflow (1 + R)ⁿ

PVC = Rs. 1564 lacks

$$TV = 767.484(1.15)^4 + 3025.5(1.15)^3 + 3025.5844(1.15)^2 + 3025.5844(1.15) + 3025.5844$$

$$TV = 1342.3342 + 4601.5357 + 4001.3354 + 3479.4221 + 3025.5844$$

$$TV = 16450.2118$$

$$+ \text{MIRR}^5 = 16450.2118 / 1564, \text{!} (1 + \text{MIRR})^5 = 10.51804, \text{!} (1 + \text{MIRR}) = (10.51804)^{1/5}$$

$$\text{MIRR} = 1.6009 - 1 = 0.60 = 60\%$$

2.Facilities of Manufacturing Special Tools(Estimated Budget is RS.221 lacks)

Year	1	2	3	4	5	Total
Cash flows	20.00	45.00	60.00	35.00.	42.00	202.00
Less: dep @ 8%	17.68	17.68	17.68	17.68	17.68	88.40
PBT	2.32	27.32	42.32	17.32	24.32 .	113.60
Less: tax @ 35%	0.81	9.56	14.81	6.06	8.51	39.76
PAT	1.51	17.76	27.51	11.26	15.81	7~.84
Add: dep	17.68	17.68	17.68	17.68	17.68	88.40
CFAT	-,19.19	35.44	45.19	28.94	33.49	162.24
CCFAT	19.19	54.63	99.81	128.75	162.24	

As the above cumulative cash flows are less than the initial investment of RS.221 lacks therefore the cash flows are not recoverable in the project duration. For this project, the discounted payback period is not existed. Calculation of ARR: $ARR = \text{Avg PAT} / \text{Avg Investment} = (73.84/5) / (221/2)$

$= 14.768/110.5 = 0.1336 = 13.36\%$ The ARR is less than the required rate of return (13.36% <15%)

Calculation Of Npv In (Lakhs)

Year	Cash flows	PV @ 15%	PV of cash flows
0	(221.00)	1.00	(221.00)
1	19.188	0.870	16.685
2	35.438	0.756	26.796
3	45.188	0.658	29.712
4	28.938	0.572	16.545
5	33.488	0.497	16.649
		Total	106.388
		NPV	(114.61)

As the total cash inflows, are less than the out flows. The NPV is also negative. In this situation, the company earning or internal rate of returns also negative. Even if calculate IRR it will become an interactive and complicated process. It can better solved by the MIRR method. Despite NPV's conceptual superiority, IRR is preferable because IRR is intuitively more appealing as it is percentage measure. The MIRR overcomes the shortcomings of the regular IRR. IRR can be calculated as follows: $PVO - \text{terminal value (TV)} / (1 + \text{MIRR})^n, (1 + \text{MIRR})^n = \text{TV}/\text{PVC}$

Present Value of cash (PVC) = cash outlay $(1 + H)^{-1}$

Terminal value (TV) = cash inflow $(1 + H)^{n-1}$; $\text{PVC} = 221 (1) = \text{RS.221 Lacks}$

$\text{TV} = 19.188(1.15)^4 + 35.438(1.15)^3 + 45.118(1.15)^2 + 28.938(1.15) + 33.488$

$\text{TV} = 33.55995 + 53.89677 + 59.76113 + 33.2787 + 33.488 = 213.98453$

$(1 + \text{MIRR})^5 = 213.98453/221 = 0.96826$

$(1 + \text{MIRR}) = -(0.96826)^{1/5} = -0.0064 = 0.64\%$

Calculation of PI: $= 106.41446/221 = 0.4815$ times

Conclusions

The ARR of all the projects except the facilities of manufacturing special tools (2) if->more than the companies 1st project is recoverable the investment in its project duration.

The 2nd project is not recoverable in its project life.

Except the 1st project, 2nd having positive NPV. The 1st and 2nd projects IRR is be higher than 50%.

The 2nd project is having a negative MIRR;

The 1st project profitability is more than 1 but again the 2nd project fails and earns a profit of RS.0.4815 at per rupee of investment.

Analysis Of Self Confidence Among South Zone Senior National Hockey Players

**Swamy Kumar. P. Ph.D. Research Scholar, Department Of Physical Education and Sports,
Pondicherry University.**

**Dr. G. Vasanthi. Associate Professor, Department Of Physical Education and Sports,
Pondicherry University,**

Abstract

The purpose of this study was to analyse the self confidence among the Hockey players who participated in the national Hockey tournament held at Pune, Maharashtra from 28th May to 10th June 2013. To achieve the purpose of this study, 5 teams from the south zone were selected and their age was not taken into consideration since they belonged to the senior category. The players from Karnataka, Tamilnadu, Andhra Pradesh, Kerala, and Puducherry were assessed on self confidence by providing Agnihotri's Self Confidence questioner, Analysis of variance was used for computing the data. The result revealed that there is a significant difference on self confidence among the five teams

Key words: self confidence, Field Hockey Players.

Introduction

Self confidence is a composite of a person's thought and feelings, fear and fantasies, his view of what he is, what he has been, what he might become, and his attitude towards his self concept. It is an attribute of perceived ability to tackle situations successfully without learning on others and to have a positive self evaluation. In general terms, self confidence refers to an individual perceived ability to act off effectively in a situation to overcome abstracts and to get things go all right. A self confidence person perceives himself to be socially competent, emotionally mature, intellectually adequate, successful, satisfied, decisive, optimistic, independent, self reliant, self assured, forward moving, fairly assertive and having leadership qualities. Self confidence and self image will be improved by an improved physical appearance. To show any real improvement, one must first believe in his own abilities and feel that he has something to contribute to the program, and only then he can have a positive view point on himself and his improvement. Vealey (1986, p. 222) defines 'sport confidence' as "the belief or degree of certainty individuals possess about their ability to be successful in sport." Self-confidence is well-known factor that may enhance or improves sports skills. Most sporting programs consist of mental practice which has been found to help the basic development of players at lower skill levels. It has been found that factor self-confidence is one that Athletes and Coaches consider as relevant for good performance. Self-confidence is one of the most frequently cited psychological factors considered by many to be a key factor for a successful performance, that is social cognitive theory and individual's degree of self-confidence influences performance.

Methodology

To achieve the purpose of this study 5 teams i.e. 90 field Hockey players were selected from the third Hockey India Senior National Hockey tournament which was held at Pune, Maharashtra from 28th May – 10th June 2013 and they come under the senior category. Criterion Measures Self-confidence was assessed by the total scores in Agnihotri's Self Confidence Inventory (ASCI) developed by Dr. Rekha Agnihotry. Agnihotri's Self Confidence Inventory (ASCI) consists of 56 questions which includes items for the assessment of self confidence. The scoring is, the lower the score higher would be the level of Self-Confidence and vice-versa.

Table I: Analysis Of Variance On Self Confidence Of South Zone Senior National Hockey Players.

Sources of variance	Sum of Squares	Df	Mean Square	F
Between Groups	419.511	4	104.878	4.470*
Within Groups	1994.278	85	23.462	
Total	2413.789	89		

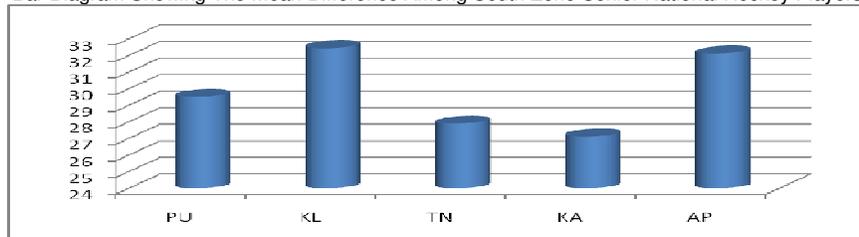
Required 'f' value at 0.05 level of confidence is 2.48 for 85 degrees of freedom

Table reveals that the obtained F value 4.47 is significantly greater than the table value 2.48. The data was further analyzed by Sheffes post-hoc to see the significant level between the paired mean differences among the 5 teams.

TABLE II
Scheffe's Post- Hoc Analysis Of Self Confidance Among South Zone Senior National Hockey Players.

PUDUCHERRY	KERALA	TAMILNADU	KARNATAKA	ANDHRA PRADESH	MEAN DIFFERENCE	C.I
29.50	32.44	–	–	–	2.94	5.05
29.50	–	27.88	–	–	1.61	5.05
29.50	–	–	27.11	–	2.38	5.05
29.50	–	–	–	32.11	2.61	5.05
–	32.44	27.88	–	–	4.55	5.05
–	32.44	–	27.11	–	5.33*	5.05
–	32.44	–	–	32.11	.33	5.05
–	–	27.88	27.11	–	.77	5.05
–	–	27.88	–	32.11	4.22	5.05
–	–	–	27.11	32.11	5.00	5.05

Bar Diagram Showing The Mean Difference Among South Zone Senior National Hockey Players.



Discussion on Findings

After the collection of data, appropriate statistical analysis has been done in order to present the discussion of findings. From the table I it is analyzed that the obtained F value 4.47 is more than the table value 2.48, therefore there is significant difference among the five teams, From table II it is seen that the mean difference between Karnataka team and Kerala team is 5.33, which is greater than the C.I value and it reveals that there is a significant difference between these two teams. The rest of all the teams is found to be insignificant since the obtained mean difference values are less than the C.I value. Hence based on the obtained mean scores it is concluded that the self confidence of Karnataka hockey players is found better than the Tamilnadu, Puducherry, Andhra Pradesh and Kerala teams.

Reference

- Basavanne. (1996) Manual for self confidence Inventory: INC: Saga Publication, p.3.
- M. P. Reddy et al., (1988) "The Analysis of Self Confidence and Achievement Motivation of National Volleyball Players" *Modern Trends in Sports Psychology in India Proceeding of the XI National Conference of Sports Psychology*. 6-8 March, pp.83 - 87.
- Tripathi Arvind Kumar et al., (2013). "Comparative Study of Self –Confidence between Hockey Players and Athletes". *Research Journal of Physical Education Sciences*. March ,Vol.1(1), 21-22.
- Ozan Bozkurt. (2012). "Comparison of football players sport confidence and self-efficacy beliefs according to their league level in Turkey". *Nigde University Journal of Physical Education And Sport Sciences Vol 6, No 3*.
- Rekha Agnihotry, (1987), "Manual for Agnihotri's Self Confidence Inventory (ASCI)" (Psychological Corporation, Agra, p.2-3.

Life skills through physical education & sports in life livelihood for school children

Dr.B.Sunil Kumar,Assoicate Professor, Dept. of Physical Education,OU
Dr.V.Satyanarayana,I/c.Director,Dept. of Physical Education,OU
Srinivas Nallella,Ph.d Scholar, Department of Physical Education, Osmania University.

Introduction:

Physical education and school sport is a crucial part of a well-rounded primary school education. The main goal of physical education for young children is to give them the skills and knowledge necessary to keep their bodies healthy as they age group. Movement is an essential part of how children learn. In order to keep children engaged and motivated, the physical education activities must be fun and highly inter active. However, creating an enriching environment can be challenging for schools and teachers. Physical education gives students skills, knowledge, processes and attitudes required to develop a better quality of life. Physical education and sports encourages them to accept themselves as they grow and to promote on their own worth. Physical education does not concern only sports but has an ideological background whose aims in shaping moral thinking as a way of living. A basic goal of physical education is the cultivation of the moral education in all aspects.

Objective of the study:

The study is to determine the physical education and sports on life skills to life livelihood, the aim of physical education is the optimum development of physical, socially, and mentally integrated and adjusted individuals.

Significance of the study:

The purpose of the physical education and sports is to improve healthy life styles and to provide students with a competitive, individual and life time activities that will promote healthy life styles. Physical education and sports is an essential part of the education system and makes significant contributions towards the achievement of desirable education.

The Importance of life skills in life livelihood

Optimum development	Physical growth & development	Intellectual development
Emotional development	Social adjustment	Personal adjustment
Character development	Physical fitness	Mental development
Neuro-muscular development	Healthy instinctive expression	Cultural development
Leadership qualities	Health and safety habits	Democratic values
Develops healthy attitudes and promotes sportsmanship	Constructive use of leisure time	Expression and creativity
Citizenship qualities	Economic valve	Mental relaxation
National integration	International understanding	

Optimum development – Physical education considers the child as a united whole of mental, social, moral and physical qualities and provides for the optimum development of all these through the physical activities.

Physical growth and development- physical activity is necessary as it is conducive to the development of the organic system and functioning of the human body. It enhances his ability to resist fatigue, improves his performance and makes him more active and healthier.

Intellectual development- physical activities must be learned; hence there is a need for thinking on the part of the intellectual mechanism, with a resulting acquisition of knowledge. Physical activities are essential for the development of a child's scientific insight, intelligence and superior type of reflective thinking.

Emotion development – physical education provides opportunities to control emotions. The give and take of games and sports offer scope for both emotional release and the controlling of the emotions.

Social adjustment – physical activities provide opportunity of interaction between participants and others in varied situations enabling them to learn social qualities like sportsmanship, cooperation, honesty, friendship, fellowship, courtesy, self discipline, and respect for authority which promote social adjustment of an individual.

Personal adjustment – physical education gives a full and worth –while experience to the individual which help him to realize fullest self-expression and highest satisfaction from the results of his action, and thereby facilitates his personal adjustment in life.

Character development – group effort, loyalty to the team and strong ties are much in evidence in play and physical activities. They provide a valuable contribution to the development of good moral character.

Physical fitness- physical education through exercise and knowledge about one's body and its requirements contribute immensely to physical fitness. Regular exercise improves our physical efficiency, sense of well – being and appearance.

Mental development – the learning of skills, game, rules, techniques and strategies, and judgement making equip an individual to interpret new situations effectively. Physical education programmes also make an individual aware regarding the importance of sanitation, health and hygiene, prevention of disease, balance diet and health habits hereby improving his mental development.

Neuro-muscular development- through physical activities an individual learns to coordinate the muscular and nervous systems. Neuro- muscular coordination develops well only if various types of skills and exercises are done repeatedly for a long period of time. For doing a thing accurately or learning a skill, a good neuromuscular control is indispensable. It provides quick and efficient movement, and graceful carriage.

Healthy instinctive expression- play is an instinctive drive and offers many opportunities for the wholesome expression of original tendencies. The dynamic quality of play can be utilized for the satisfaction of the basic urges of the child.

Cultural development- sports and physical activities play an important role in the cultures of all peoples. During such activity, individuals from different cultures mingle with each other and come to know about other's customs, traditions and ways of life, thereby promoting cultural development.

Leadership qualities – self confidence, intelligence, loyalty, honesty, dedication and resourcefulness are some of the qualities of a good leader. Opportunities of cultivating these character traits are available in game situations and play-ground is a good laboratory for developing these characteristics. Health and safety habits- physical education instructs the individuals in habits of health and safety, and the sports and games are played under conditions conducive to learning safely and health practices.

Democratic values- organization and administration of physical education is based an democratic principles of give and take, and respect for authority. By providing chance to participate in planning and operation of programmes, physical education inculcates democratic ideals and values in the students.

Develops healthy attitudes and promotes sportsmanship- physical education teaches the art of winning and losing gracefully, the spirit of being far to others, and observance of the rules, and maintenance of friendly attitude will lead to the development of positive attitude and promotion of sportsmanship.

Constructive use of leisure time- physical education contributes to the constructive use of leisure tie. Through skills and physical activities an individual learns to utilize his surplus energies properly and allow him to make best of his free hours.

Expression and creativity- physical education allows for expression and creativity by utilizing the body as a means of expressing one's feelings and creating new and innovative patterns of movement and ideas.

Citizenship qualities- physical education help in developing the traits of good citizenship like obedience of law, fair play, sportsmanship, clean living, respect for others and patriotism which are essential to democratic living.

Economic valve- nowadays physical education is fast emerging as lucrative profession, it offers numerous business opportunities, and opportunities of self employment as well as employment in various agencies at various levels. Concept of sponsorship fast entering in sports arena has provided a new and meaningful dimension to it.

Mental relaxation – physical activities such as yoga, aerobics, fitness programmes, recreational activities, sports and games help in relieving and reducing mental tensions caused by modern life style by diverting the attention and also by proving an out let to frustrations.

National integration- in India where there is so much of diversity with regard to religion, caste, creed, language etc. physical education plays a very important role in bringing about unity and in promoting national integration.

International understanding – physical education provides a platform to act across the barriers of national boundaries. International events afford an opportunity of personal interaction between the

sports persons of different countries and bring them together and closer to share their experience thus promoting peace, goodwill, friendship and universal brotherhood.

Life skills and Physical Education & Sports

Methods and Discussions

Planning, Co-ordination, Anticipation, Leadership, Confidence, Motivation And Personality development. The World Health Organization (1999) has suggested that life skills are important for healthy development and preparing adolescents for the future. Sport psychologists have argued that life skills can be taught in combination with athletic skills in sport contexts (Danish & Nellen, 1997). From this perspective, life skills have been defined as the skills that are required to deal with the demands and challenges of everyday life (Hodge & Danish, 1999). They can be physical, behavioural, or cognitive, and may be transferable to other life domains (Papacharisis, Goudas, Danish, & Theodorakis, 2005). Furthermore, sports are being viewed on a global level as a vehicle for promoting healthy development (Sport for Development and Peace International Working Group, 2006).

Quality physical education programs enhance the physical growth and development of children and youths. It should help young people to keep physically fit and many forms of physical activity during the school years. Physical education, recreation and play are a fun way to learn values and lessons. They teach team work, respect and coping skills necessary to make sure that children develop into caring individuals in the future. Sport learning programs are creating environments that are safe and promote stable relationships among the children. They are helping to build strong communities and contributing to a peaceful society.

Discussions:

The life skills program is a process, which prepares young people to meet the challenges of adolescence and adulthood through a coordinated, progressive series of activities, which help them to become relationship oriented. It requires creating opportunities and providing support. Opportunities for young people to get their developmental needs- Love, respect, and power. Support that recognizes and respects the whole person inside each youth, this will provide tools to assist youth to learn how to build relationships and understand their self worth. The goal of the present study is to discuss the important concepts and theories in the sphere of social systems knowledge applied to the human services field. Various programs are designed to help the young people in their personal and professional promotion, eliminating risk-taking behavioral patterns and victimization, achieving positive life outcomes and social stability. This seeks to establish theoretical framework for describing the high school adolescents' context as a social system. Organizing sports in primary schools have many of the same psychological and physical benefits as physical education. Taking part in sports can foster a positive self-image, teaching children how to work as part of a team, and develop healthy exercise habits. School sports leads to social competence, which is the ability to get along with others, including peers, family members, and teachers. School sports can also make children feel more worthy and successful.

Conclusion:

The aim of the physical education and sports is to help students become skilled sports participants. Physical education develops skills and fitness specific to particular sports among the students. With the help of the physical education students experience the social and personal values by playing sports. Physical education has the potential to revolutionize how sports are taught within schools. Many physical educators have successfully undertaken the task of designing and implementing a physical education and sports program. Physical education and sports teaches essential values and life skills which includes self confidence, team work, communication, discipline and fair play. Physical education and sports also has psychological importance such as reducing depression and enhances concentration. Physical education and sports typically improves a child's ability to learn, increase concentration and overall achievement. Play, physical education and recreational activities have a positive impact on child's education. Children learn in a better way when they are having fun and being active. Within schools, physical education and sports is an integral component of quality education. Skills and values learned through sports are especially beneficial for girls, given that they have fewer opportunities than boys for social interaction outside the home so they are given the chance to be leaders and improve their self esteem through sports. As girls begin to participate in sports, they access to new opportunities allowing them to become more engaged in schools and community life. Physical education offers an enjoyable and exciting environment in which to learn how to handle success and failure. It has proven successful in increasing engagement, enjoyment, efforts, record keeping, festivity and culminating events. There is increasing recognition of importance of living an active, healthy life and need to make responsible decisions. Physical education learning programs are creating environments that are safe and promote stable relationships among the children. They are helping to build strong communities and contributing to a peaceful society.

Life Styles for Health, Reproductive Health promotion and STI/STD Management of Rural Adolescent Girls

**D.Unmisha, IV B.Tech ,Electrical and Electronic Engineering,
 Sree Vidyanikethan Engineering College, Rangampet, Tirupathi.
 DrM.Najeebullah
 ,Deputy Director of Physical Education and Sports,MANUU, Hyderabad 32**

Introduction

Health services research conducted in a realistic conventional setting can improve translation of practices. Accommodating life styles for health, reproductive health (RH)And STI /STD management among young rural girls .Life styles programs are a service for Adolescent girls aimed to improve Health and Reproductive Health (RH) related issue.. Develop innovative concepts close to health, RH & STI/STD management the total impact on the target group. Although, there is an extensive research and knowledge about life styles practice for Health, RH promotion and STI/STD management among urban adolescent girls, a little is known to their rural counterparts in India Yet, Health providers and social workers are called upon to respond to this situation for research investigations in this area particularly rural adolescent girls.

Yoga: Yoga claim that by concentration of the mind every truth in the universe becomes evident to the mind both external and internal truth. The true purpose of yoga is to facilitate the development of the self awareness not as self enclosure, but as a door way to an expanded awareness of the surrounding universe of truth of very life.

Meditation:

Meditation is the focusing of the mind on some object. If the mind acquires concentration on one object, it can be so concentrated on any object what so ever.

Health:

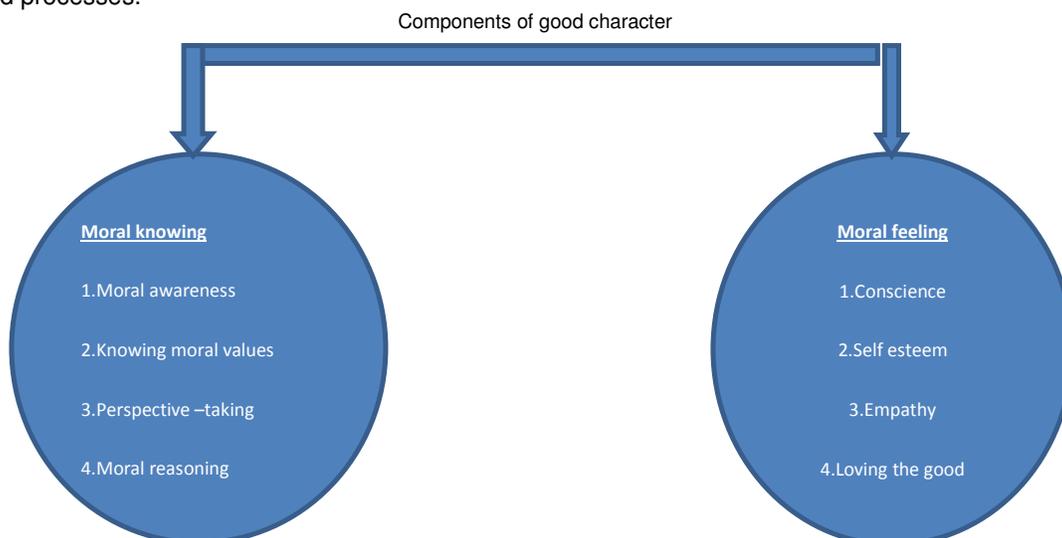
Health is the one's level of adaptation to the stress of one's life style: it is an essential component in the concept of 'wellness'.

Components of Health

Strength	Muscular Endurance	Carculo respiratory endurance	Flexibility	Freedom from Obesity
----------	-----------------------	----------------------------------	-------------	----------------------------

Reproductive Health

Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes.



Objectives of the study The objectives of this research are to report on focus group life styles accommodation, learning styles preferences, recognize and understand the factors that contribute RH status promotion. Through selected life styles programs meditation, physical exercise, character building and STI/STD control.

Materials and Methods This research describes a unique service model of life styles program implemented on rural adolescent girls as focus group with 120 subjects for 3 months.

Selection of Variables

Independent Variables

Life styles programs- Meditation, physical exercise, character based sex education and character building.

Dependent Variables

Physical Health, Reproductive health, Character rating and STI/STD control.

Methods

The selected life styles program activities starts with slow running (10-15 mins) followed by physical exercises and meditation in the morning, Character based sex education and character building in character traits.

Character based sex education:

Premature sexual activity consequences towards young people's grave threat- physical health, emotional well being and character development.

Consequences of adolescent sexual activity- pregnancy, abortions (millions of teen abortions around the world every year). STD, long term health consequences, loss of fertility, emotional hurt development of disrespect, irresponsible behaviour patterns and unethical to good character.

Education on sexual domain- moral dimensions of sexual conduct to apply core ethical values such as respect, responsibility and self control.

To avoid premature sexual activity, young girls need to an understanding the physical and emotional dangers of sexual activity-a vision of the benefits of the saving sex for the committed love relationship of marriage life.

Focus on condoms reduces the physical risks of premature sexual activity include-pregnancy, disease and negative psychological consequences of temporary sexual relationship.

Enlightening the dangers to unmarried adolescent girls to avoid HIV, STI/STD to refrain from sexual activity until adulthood to establish mutually faithful monogamous relationship.

Tests Adopted

Modified push up test for strength endurance

1.5mile run test for cardio-vascular fitness

Character assessment scale for character rating.

Results

Table 1 Strength endurance test results

No. of subjects Performed	No. of push-ups	performance level
38	25-30	Advanced intermediate
64	13-24	Intermediate
12	07-12	Advanced beginner
06	00-06	Beginner

Table 2 Cardio-vascular fitness test

No. of subjects	Time recorded	Percentile
21	12:17	95 th
43	13:19	90 th
24	14:00	85 th
19	14:34	80 th
07	15:03	75 th
04	15:26	70 th
02	15:50	65 th

Table 3 Character rating results

Character trait	Pre intervention Score	Post intervention
Honesty	10	24
Respect	12	28
Courage	10	26
Self discipline	12	29
Justice	13	29
Responsibility	10	27
Kindness	13	28
Humility	12	24

A score of 25-30 exemplify particular given character. A score of 20-24 indicates doing well, but need to improve your character. A score of 10-19 suggests need to improve your character.

Good character takes self control and determination, but it is never out of reach. With the pioneering systematic and scientific life styles accommodation and learning styles preferences health, RH status was increased and awareness and knowledge of consequences of STI/STD was found to be increased with character based sex education and character building among focus group.

Conclusions

The life styles programs implemented as learning style preferences concludes that a conventional approach will give highly significant results on rural adolescent girls health, RH promotion and character building perspectives.

References

- Cooper H.Kenneth;The New Aerobics;M.Evans and company;Inc,Newyork 1970.
- Cots,Dan America's Youth;ACrisis of Charater; Imprimis;Monthly Publication of Hills dale College; September 1991;Vol 20;No 9
- Imrie carey.M; Life style work shop,Human kinethics publishers Inc;Champaign; Illinois.
- Robert Coombs; Marital Status and Personal Well_being:A Literature Review; Family Relations 40;1991.
- Werner W.K.Hoeger,Sharon.A Hoger;Fitness and Wellness;Morton publishing company;Colorado;1990
- A Teachers Guide to No apologies A Character Building; Abstinence Program; International Resource Group:Colorado Springs; Colorado;2005
- Population Reference Bureau;Youth in Subsahara Africa a Chart Book on Sexual experience and Reproductive Health;April 2001.
- Youth Risk Behavior Surveillance; Morbidity and Mortality Weekly Report Center For disease Control,Vol 51,No SS-4;June 26,2002.

Comperative Study Of Print Media Coverage Of A Football Match In Different Newspapers

Dr. Asish Paul¹, Dr. Gopa Saha Roy², Antara Mukherjee³, Dr Atindra Nath Dey⁴

¹ Asstt. Professor, Department of Physical Education, Jadavpur University, Kolkata, W. B.,²

Asstt. Professor,³ Student, M.P.Ed.,

State Institute of Physical Education for Women, Hasting

⁴The Director, School of Education, Netaji Subhas Open University, Kolkata, West Bengal, E-mail: asp_f2000@yahoo.com

Abstract

Football is the passion of the people of Bengal without having any success in international level. The electronic media have a very basic viewers base considering the different international football league but there is no such print media coverage. Only the Bengali newspaper provides lot of coverage considering the state and national league as there is a fan base of football. The exhibition match between Argentina and Venezuela at Yuba Bharati Krirangan created a tremendous hype in the mind of the football lovers of West Bengal due to the presence of Lionel Messi. In the present study, the researchers made an attempt to compare the print media coverage of four different newspapers considering a single international exhibition football match. The area of coverage of the specific match in the Anandabazar Patrika, Sonmarg, The Hindu and the Statesman during the period of 14 days, were measured by using a simple scale and these areas were then added. the calculated area of coverage regarding literature published in the Ananda bazar Patrica, revealed that the coverage (9843.00 Cm²) was much more than the coverage of Sonmarg(2092.86 Cm²), the Hindu(1722.35 Cm²) and the Statesman(3190.00 Cm²). In case of photo also the coverage of the Ananda bazar Patrica (4925.25 Cm²) was much more than the coverage of Sonmarg(2266.89 Cm²), the Hindu(1115.70 Cm²) and the Statesman(1877.65 Cm²). The total coverage of the Ananda Bazar Patrika(14768.25 Cm²) also much greater than the other three newspapers. It has concluded that the coverage of Bengali newspaper was more than the other newspaper.

Key Words: Telecast, Media Mileage, Coverage, Sponsorship, Merchandising

Introduction

Media is an important information provider of present happenings. It creates public opinion and alertness by providing information through news and photos. Through both the Print and Electronic media this enhances the process of sharing the views and exchange the related ideas of different matter. At present the splendiferous advancement of science and technology with the help of satellite communication creates an worldwide service network where the service of the information provider became very easier and considering its business characteristics the world of media became more and more competitive. Sport always a factor of public interest having its own market to be in the news of different events and thus always have an relationship with media. The product of sport for which the peoples are willing to pay are the services rendered by the athlete which is mainly nothing but the performance of the sportsperson. Beyond this there are the winning of the favourite team, commonality and relative and absolute quality which are also considered as the factor of media interest . In modern Professional sport the source of funds are Sponsorship, Merchandizing of sport through Advertisement and Broadcasting. In modern society media becomes an inseparable part of the social life in which one of the most stimulating factor is sport. It is a medium in creating public views by providing information, description and analysis of various social activities, including politics, business, economics, culture and sport. Media and sport are the part and parcel of our day to day existence. They create a synthesized bonding which gives us immense entertainment and learning. Thus, it is important to understand the relation between sports and media coverage. The popularity of football spreaded all over the world irrespective of caste, culture, religion, socioeconomic condition etc. We the Indians are also not the exception. Although there is no performance at all in the international football scenario for last fourty years, the Indians are very much affectionate about football. Sometimes in Nehru cup and in the SAFF games the performance throw some light in the mind of the football lovers. But simply only for Asian level it demands a lot more to be in the mind of the Indian supporters. Whenever people intended on discussing about football at present time, the names came on their mind are Messi, Neymar, Pirlo, Klose, Forelan, and so many other player who are the representatives of their countries such as Brazil, Argentina, England, Germany, Italy, Uruguay

etc. That was on 2nd September, 2011 the highest football sensations created in West Bengal due to an international exhibition match between Argentina and Venezuela at the Yuba Bharati Krirangan, Salt lake, Kolkata. According to the India based TV ratings agency TAM Media Research today Cricket comes first with 122 million viewers but the football lovers are not far behind. There is a great no. of viewers of EPL, La-Liga, Serie-A, Bundesliga in India. But there was no such data considering the print media coverage. This study was relevant as no comprehensive data set is available at present in football to understand the practical relation between media and sports coverage in India. It provided some very specific information regarding the Print media coverage. The problem of the present investigation was precisely stated as 'Comparative study of print media coverage of a football match in different newspapers'. This study has traced out that how much importance, the mass media has given to this high profile match. The purposes were:

- 1) To compare the print media coverage of a specific football match in four newspapers.
- 2) To get some specific information about the print media coverage of football.

Four newspapers the Hindu, the statesman, the Ananda bazar patrica and the Sanmarg were considered for this study. The measurement has been taken in the three phases for 15 days. Considering the football match as the fulcrum, the 1st phase was prior to match, 2nd phase was during the match and the 3rd phase was immediately after conclusion of the football match. The phases were for 7 days, 3 days and 4 days respectively. A Scissor was used to cut the covered area in the newspaper and simple measuring tape was used to measure the area.

Results and discussions:

Table-1: Coverage on different days in three different newspapers

No. of days	Dates	SONMARG (Cm ²)		ANANDABAZAR PATRICA (Cm ²)		THE HINDU (Cm ²)		THE STATESMAN (Cm ²)	
		Literature	Photo	Literature	Photo	Literature	Photo	Literature	Photo
1	25.08.11	--	--	381.00	56.00	--	--	131.75	78.75
2	26.08.11	--	--	882.75	415.25	--	--	--	--
3	27.08.11	--	--	662.00	263.00	132.00	--	--	--
4	28.08.11	--	--	1212.5	327.75	--	--	--	--
5	29.08.11	171.00	185.00	250.00	446.00	24.00	--	--	--
6	30.08.11	--	--	411.00	106.50	168.60	--	280.00	126.00
7	31.08.11	268.32	370.30	948.00	396.50	260.00	225.00	234.00	162.50
8	01.09.11	470.48	387.98	1681.75	891.00	833.50	379.70	854.75	185.00
9	02.09.11	549.20	536.65	1583.00	656.50	--	--	653.50	371.50
10	03.09.11	368.39	602.16	744.00	1128.25	208.25	511.00	607.00	393.00
11	04.09.11	111.75	84.00	359.00	107.25	96.00	--	132.00	140.00
12	05.09.11	--	--	294.00	55.00	--	--	--	--
13	06.09.11	153.72	100.80	238.00	20.00	--	--	297.00	420.90
14	07.09.11	--	--	196.00	56.25	--	--	--	--
Total		2092.86	2266.89	9843.00	4925.25	1722.35	1115.70	3190.00	1877.65

From Table I, the calculated area of coverage regarding literature published in the Ananda bazar Patrica, revealed that the coverage (9843.00 Cm²) was much more than the coverage of Sonmarg(2092.86 Cm²), the Hindu(1722.35 Cm²) and the Statesman(3190.00 Cm²). In case of photo also the coverage of the Ananda bazar Patrica (4925.25 Cm²) was much more than the coverage of Sonmarg(2266.89 Cm²), the Hindu(1115.70 Cm²) and the Statesman(1877.65 Cm²).

Table-2: Total coverage of different newspapers

Name of the paper	Literature (Cm ²)	Photo (Cm ²)	Total (Cm ²)
Sanmarg	2092.86	2266.89	4359.75
Ananda Bazar	9843.00	4925.25	14768.25
The Hindu	1722.35	1115.70	2838.05
The Statesmen	3190.00	1877.65	5067.65

From the table No. 2 we revealed that the total coverage of the Ananda Bazar Patrika(14768.25 Cm²) also much greater than the other three newspapers.

Table No- 3 Media coverage in news Papers among 3 Phases regarding literature and Photos.

Paper	1 st phase(25/08-31/08) (Cm ²)		2 nd phase(01/09-03/09) (Cm ²)		3 rd phase(04/09-07/09) (Cm ²)				
Sanmarg	L	439.32	994.25	L	1388.07	2914.86	L	265.47	450.27
	P	555.30		P	1526.79		P	184.80	
Ananda Bazar Patrica	L	4747.25	6758.25	L	4008.75	6684.50	L	1087.00	1325.50
	P	2011.00		P	2675.75		P	238.50	
The Hindu	L	584.60	809.60	L	1041.75	1932.45	L	96	96.00
	P	225.00		P	890.70		P	--	
The Statesman	L	645.75	1013.00	L	2115.25	3064.75	L	429.00	989.90
	P	367.25		P	949.50		P	560.00	

From the table No-3 it was clear that in all respect considering the different phases of coverage the Anandabazar patrica has given maximum weightage to cover the specific football match. The two Hindi newspaper, the Hindu and Sanmarg has not given such weightage whereas the Statesman has given some more space.

Discussion

From the results, it has seen that considering the total area of sports coverage of a newspaper the Anandabazar Patrica has given maximum weightage in comparison to the other papers. This was due to the fact that still football is the most popular game in West Bengal and the said newspaper is the most circulated Bengali newspaper in West Bengal and as well as in India also according to the Audit and Beauru of Circulation. Cricket becomes a cocktail of sports, glamour, business and entertainment which provides us national pride at the International level and produces icons constantly. In comparison to that there is no such performance in football and we are lacking far behind in International standard. But still there is a passion about football in west Bengal and considering its long back heritage the people of this area is very much focused about football. At the time of world cup football the enthusiasm touch the peak of madness and the supporters vertically divided in to Brazil and Argentina. So naturally a tremendous hype developed to see the team Argentina especially Lionel Messi, the world no.1. In comparison to that the Hindi newspapers Sonmarg and the Hindu have no such huge reader base in West Bengal. The Statesman in English never be a newspaper of the general people. For this these three authority have no such strategy to cover this specific football match and encash the affection. As the hype was maximum at the time of match review and preview then it was very clear about the reason of maximum coverage in the middle phase that were only for three days. The following conclusions were drawn on the basis of results and discussion.

Conclusions

In comparison to Hindi and English Newspapers the coverage of Bengali newspaper was more. The charisma of a performer influence a lot to the media coverage. The coverage depends upon the relative intensity of the competition. The commonality of the supporters, winning of competitive team etc. are the major factors to decide the area of mileage provided by a newspapers.

Media providers demand for Icon and provide media mileage for them.

References

1. Ang, I. (1996). *Living room wars: Rethinking media audiences for a postmodern world*. London: Rout ledge.
2. Ball-Rokeach, S. J. (1985). "The origins of individual media system dependency: A sociological framework." 3. Bernikar, M. (1995a). "Broadcast network jumping abroad the Internet." *Broadcasting & Cable*, 125, 29-30.
4. Defleur, M.L., & Ball-Rokeach, S. (1989). *Theories of mass communication*. New York: Longman Inc.
5. Goodhart, G.J. et al. (1975). *The television audience*. London: Saxon.
6. Lewis, L.A. (Ed.). (1992). *The adoring audience: fan culture and popular media*. London: Rout ledge.
7. Paul, A. (2012). *Status of print media coverage of mega cricket event*. International Journal of behavioral social and movement science, Vol. 1. July 2012, issue 3
8. Paul, A. et al. (2010). *The status of print media coverage of various sports event during commonwealth game 2010*: International Journal of sports science and fitness, Vol. -1 issue 2
9. Rowe D (2004). *Critical Readings: Sport, Culture and the Media*. England: Berkshire, McGraw- Hill

A Comparative Study of Explosive Power among Long Jumpers and High Jumpers of Hyderabad District

Dr.Rajesh Kumar
 Chairman,Board of Studies in Physical Education,Osmania University
Dr.J.Prabhakar Rao
 Principal,University College of Physical Education,Osmania University
Dr.I.Balaram Reddy
 Head,Dept. of Physical Education,Osmania University
Dr.K.Deepla
 Secretary,Inter College Tournaments, OU(Women)

Abstract:

The purpose of the present study to find out Explosive Power among Long Jumpers and High Jumpers of Hyderabad. The sample for the present study consists of 10 Male Long Jumpers and 10 Male High Jumpers of Hyderabad District between the age group 18 to 20 Years. The standing Broad Jump Test is used to assess the the Explosive Power. The results of the study shows that High Jumpers are having more explosive than long jumpers. This type of study is useful to develop the explosive power among the High Jumpers and Long Jumpers to enhance the performance.

Key Words: High Jumpers,Long Jumpers, Explosive power etc.

Introduction:

The **long jump** (formerly commonly called the "broad jump") is a track and field event in which athletes combine speed, strength, and agility in an attempt to leap as far as possible from a take off point. This event has been an Olympic medal event since the first modern Olympics in 1896 (a medal event for women since 1948) and has a history in the Ancient Olympic Games. There are five main components of the long jump: the approach run, takeoff, action in the air and landing. Speed in the run-up, or approach, and a high leap off the board are the fundamentals of success. Because speed is such an important factor of the approach, it is not surprising that many long jumpers also compete successfully in sprints. A classic example of this long jump / sprint doubling are performances by Carl Lewis.

The approach

The objective of the approach is to gradually accelerate to a maximum controlled speed at takeoff. The most important factor for the distance traveled by an object is its velocity at takeoff - both the speed and angle. Elite jumpers usually leave the ground at an angle of twenty degrees or less; therefore, it is more beneficial for a jumper to focus on the speed component of the jump. The greater the speed at takeoff, the longer the trajectory of the center of mass will be. The importance of a takeoff speed is a factor in the success of sprinters in this event. The length of the approach is usually consistent distance for an athlete. Approaches can vary between 12 and 19 strides on the novice and intermediate levels, while at the elite level they are closer to between 20 and 22 stride.

Takeoff

The objective of the takeoff is to create a vertical impulse through the athlete's center of gravity while maintaining balance and control. This phase is one of the most technical parts of the long jump. Jumpers must be conscious to place the foot flat on the ground, because jumping off either the heels or the toes negatively affects the jump. Taking off from the board heel-first has a braking effect, which decreases velocity and strains the joints. Jumping off the toes decreases stability, putting the leg at risk of buckling or collapsing from underneath the jumper. While concentrating on foot placement, the athlete must also work to maintain proper body position, keeping the torso upright and moving the hips forward and up to achieve the maximum distance from board contact to foot release. There are four main styles of takeoff: the kick style, double-arm style, sprint takeoff, and the power sprint or bounding takeoff.

Action in the air and landing

There are three major flight techniques for the long jump: the hang, the sail, and the hitch-kick. Each technique is to combat the forward rotation experienced from take-off but is basically down to preference from the athlete. It is important to note that once the body is airborne, there is nothing that the athlete can do to change the direction they are travelling and consequently where they are going to land in the pit. However, it can be argued that certain techniques influence an athlete's landing, which can have an impact on distance measured. For example, if an athlete lands feet first but falls back because they are not correctly balanced, a lower distance will be measured. There are three different styles used for the flight part of a long jump. They are the: sail, hang and hitch kick. The best thing to do is start with a simple technique and progress as you gain more experience.

The Sail: This is the most basic technique; when performed, it looks like you are reaching out and touching your toes. After the takeoff, drive your free leg out and hold it in front of your body as long as possible. The takeoff leg will move into the same position once you are in the air. Bring your arms forward towards your toes, which keeps you from falling back at the landing.

The Hang: This style is a little more stable, and helps bring the feet up higher above the ground.

After takeoff, drive your free leg forward and up then drop it underneath your hips.

The takeoff leg will then come up to meet the free leg.

The knees should be bent at a 90-degree angle and will look like a backwards 'L.'

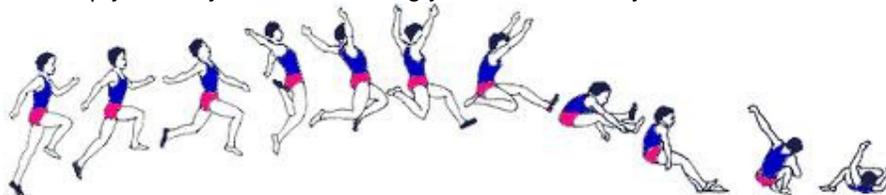
Extend your arms and reach up over your head. At the peak of the jump, rotate your arms forward.

This should also cause your legs to extend forward.

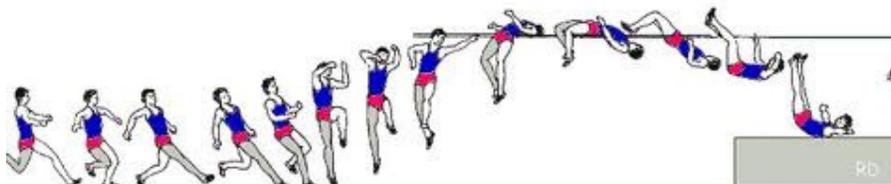
The Hitch-Kick: The most advanced long jump technique, it looks like a running motion in the air.

At the take off, drive the free leg up to make 90-degree angle.

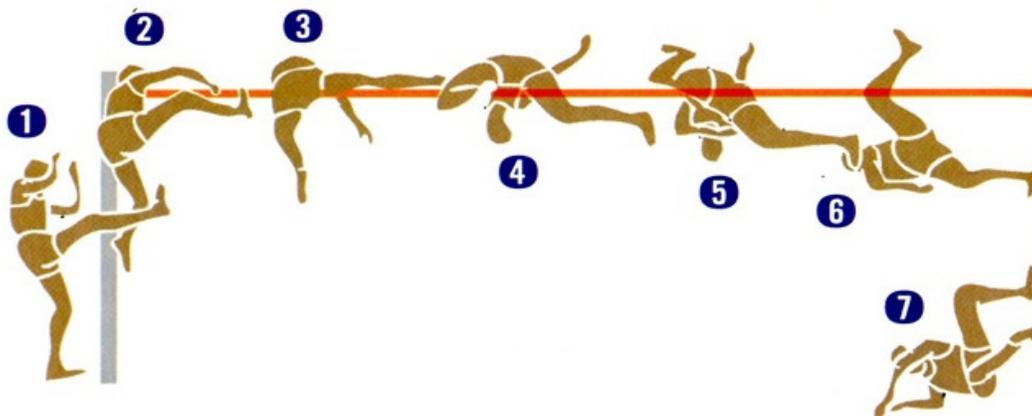
The opposite arm of your free leg will pump upwards. You will then bring your free leg back to make a circular motion but your body should be moving up and forward. The opposite arm will also make a circling motion back as well. As the free leg is cycling, bring the takeoff leg to a 90-degree angle and start to extend it outwards. The arm opposite of the takeoff leg should also start coming forward and extend it out as well. As your free leg finishes making a cycle, move it forward to take join the take off leg for landing. Bring around the second arm so both are extended outwards. You will then push you arms back but keep your body forward and bring your chin towards your knee



The Fosbury Flop is a style used in the athletics event of high jump. It was popularized and perfected by American athlete Dick Fosbury, whose gold medal in the 1968 Summer Olympics brought it to the world's attention.



The **straddle technique** was the dominant style in the high jump before the development of the Fosbury Flop. It is a successor of the **western roll**. Unlike the scissors or flop style of jump, where the jumper approaches the bar so as to take off from the outer foot, the straddle jumper approaches from the opposite side, so as to take off from the inner foot. In this respect the straddle resembles the western roll. However, in the western roll the jumper's side or back faces the bar; in the straddle the jumper crosses the bar face down, with legs straddling it. With this clearance position, the straddle has a mechanical advantage over the western roll, since it is possible to clear a bar that is higher relative to the jumper's center of gravity.



The objective of the study is to compare the explosive power among Long Jumpers and High Jumpers of Hyderabad District.

Materials and Methods:

The purpose for the present study to find out the explosive power among Long Jumpers and High Jumpers. The sample for the present study consists of 10 Male High Jumpers and 10 Male Long Jumpers of Hyderabad between the age group of 18 to 20 years and have taken part in the District and State Level Athletics Meet. The Standing long jump, also called the Broad Jump, is a common and easy to administer test of explosive leg power.

Standing Board Jump:

purpose: to measure the explosive power of the legs

Equipment required: Tape measure to measure distance jumped, non-slip floor for takeoff, and soft landing area preferred. Commercial Long Jump Landing Mats are also available. The take off line should be clearly marked.

Procedure: The athlete stands behind a line marked on the ground with feet slightly apart. A two foot take-off and landing is used, with swinging of the arms and bending of the knees to provide forward drive. The subject attempts to jump as far as possible, landing on both feet without falling backwards. Three attempts are allowed. Best of three is recorded for the performance.

Results and Discussion:

This study shows that High Jumpers are having the good Explosive Power compare to Long jumpers.

Table-I: Showing the Mean Values of High Jumpers and Long Jumpers in Standing Broad Jump

Standing Broad Jump	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig.(2tailed)
Long Jumpers	10	2.8800	.1476	4.667E-02	-1603	18.00	.126
High Jumpers	10	2.9850	.1454	4.598E-02			

In Table I the Mean Performance of High Jumpers is 2.9850, Standard deviation is .1476 and Mean Performance of Long Jumpers is 2.8800, Standard deviation is .1454 and t values is -1603 and significance is .126. The High Jumpers mean values is 2.9850 is better than Long Jumpers mean values is 2.8800.

Conclusion:

It is concluded that High Jumpers are having the good explosive power compare to the LongJumpers. Explosive power is a combination of speed, muscular endurance and muscular strength, all of which can be developed through plyometric exercises.

Recommendations:

Similar Studies can be conducted among Girls. Similar studies can be conducted on other events in athletics This type of studies is useful to the athletic coaches to give the coaching as per the need of the athlete.

References:

Wikipedia, Long Jump and High Jump
www.brianmac.co.uk/plymo.htm
<http://www.pponline.co.uk>
[www.topendsports.com/testing/tests/sprint-Standing broad jump](http://www.topendsports.com/testing/tests/sprint-Standing%20broad%20jump)
 Asian Journal of Physical Education and Computer Science in Sports

Comparative Study On Agility And Endurance Between Football And Basketball Players

***Dr. A. Praveen, Assistant Professor, ** Mr. S. Binthu Mathavan, Ph.D Scholar, Department of Physical Education and Sports, Pondicherry University, Kalapet, Puducherry-605014, Email: ,praveencjis@gmail.com, sbmathavan@live.com Mob:-09750647970, 09789948333**

Abstract

Study aim: The purpose of the study was to comparative study on Agility, Endurance and Explosive power between Football and Basketball players. The study was conducted on the college men football and basketball players only. The age for the football players was between 17 to 28 years as per their college records. The study was to only thirty subjects who had participated in inter college matches. Each group (Football and Basketball) consist of fifteen players from Pondicherry University, Puducherry. The data was collected from that group't' test was used. The level of significance was fixed at 0.05 level of confidence. The results of the study revealed that there is no significant difference between football and basketball group in the variable of agility as well as there is significant difference between football and basketball group.

Key Words:- Agility and Endurance

Introduction

Football

A game played on a rectangular field with net goals at either end in which two teams of 11 players each try to drive a ball into the other's goal by kicking, heading, or using any part of the body except the arms and hands. The goalie is the only player who may touch or move the ball with the arms or hands. Football refers to a number of sports that involve, to varying degrees, kicking a ball with the foot to score a goal. The most popular of these sports worldwide is association football, more commonly known as just "football" or "soccer". Unqualified, the word *football* applies to whichever form of football is the most popular in the regional context in which the word appears, including association football, as well as American football, Australian rules football, Canadian football, Gaelic football, rugby league, rugby union and other related games. These variations of football are known as football codes.

Basketball

A game played between two teams of five players each, the object being to throw a ball through an elevated basket on the opponent's side of a rectangular court. Players may move the ball by dribbling or passing with the hands. The inflated, spherical ball used in this game.

Basketball is a team sport, the objective being to shoot a ball through a basket horizontally positioned to score points while following a set of rules. Usually, two teams of five players play on a marked rectangular court with a basket at each width end. Basketball is one of the world's most popular and widely viewed sports.

Statement Of The Problem

The purpose of the study was to comparative study on Agility and Endurance between Football and Basketball players.

Significance Of The Study

1. The result of the study may help to know whether football players or basketball players have more agility, endurance and explosive power.
2. The study may help to select the football players and basketball players on the basis of their physical fitness variables to participate at top level, national and inter-national matches.
3. The result of the study may be helpful in predicting the dimension of selected football and basketball players.

Hypothesis

It was hypothesized that the football players may have better agility than basketball players. It was also hypothesized that football players may have endurance than basketball players.

Delimitations

The study was limited to the following aspects.

The study was conducted on the college men football and basketball players only.

The age for the football players was between 17 and 28 years.

The study was delimited to only thirty subjects who had participated in inter college matches.

Each group (Football and Basketball) consist of fifteen players from Pondicherry University, Puducherry. The study was conducted only two variables namely agility and endurance variables

Limitation

The factor like diet, daily routine habits were not controlled and they might have an effect on the results of the study and this was considered as limitation.

No special motivational techniques were used during test. Lack of motivation may affect the performance and also on the results and that was considered as limitations.

The day to day activities were not controlled and they might have affected their performance during the test administration and that was considered as limitations.

Related Reviews

Pyne, et. al., (September 2009) Repeated sprint testing is gaining popularity in team sports, but the methods of data analysis and relationships to speed and endurance qualities are not well described. We compared three different methods for analyzing repeated sprint test results, and we quantified relationships between repeated sprints, short sprints, and endurance test scores. Well-trained male junior Australian Football players ($n = 60$, age 18.1 ± 0.4 years, height 1.88 ± 0.07 m, mass 82.0 ± 8.1 kg; mean \pm SD) completed a 6×30 -m repeated sprint running test on a 20-second cycle, a 20-m sprint test (short sprint), and the 20-m multistage shuttle run for endurance. Repeated sprint results were evaluated in three ways: total time for all six sprints (TOTAL), percent change from predicted times (PRED) from the fastest 30-m sprint time, and percent change from first to last sprint (CHANGE). We observed a very large decrement (CHANGE $6.3 \pm 0.7\%$, mean \pm 90% confidence limits) in 30-m performance from the first to last sprint (4.16 ± 0.10 to 4.42 ± 0.11 seconds, mean \pm SD). Results from TOTAL were highly correlated with 20-m sprint and 20-m multistage shuttle run tests. Performance decrements calculated by PRED were highly correlated with TOTAL ($r = 0.91$), but neither method was directly comparable with CHANGE ($r = -0.23$ and $r = 0.12$ respectively). TOTAL was moderately correlated with fastest 20-m sprint time ($r = 0.66$) but not the 20-m multistage shuttle run ($r = -0.20$). Evaluation of repeated sprint testing is sensitive to the method of data analysis employed. The total sprint time and indices of the relative decrement in performance are not directly interchangeable. Repeated sprint ability seems more related to short sprint.

Kaplan, et. al., (May 2009) The professional and amateur soccer players were tested to determine the running speed and agility performance by playing positions. The sample included 108 professional male soccer players at the national level and 79 amateur male soccer players at a regional level on teams from 10 clubs in Turkey. The study involved the players being assessed by the 10- x 5-m shuttle run test (10 x 5 SRT) on a soccer field in a soccer season. The difference between the mean scores of the professional and amateur players is significant. Differences between mean scores according to playing positions of soccer players are not significant. In conclusion, professional soccer players' running speed and agility performances are higher than amateur soccer players. In addition, these results indicate that all soccer players have the same running speed and agility performance in accordance with their different playing positions. Coaches should consider individual training programs based on the positional role of soccer players.

Sporis, et. al., (March 2010) The purpose of this study was to evaluate the reliability and factorial validity of agility tests used in soccer. One hundred fifty ($n = 150$), elite, male, junior soccer players, members of the First Junior League Team, volunteered to participate in the study. The slalom test (ST) sprint 4×5 m ($S4 \times 5$) and sprint 9-3-6-3-6-9 m with 180 degree turns ($S180$ degrees) tests had a greater reliability coefficient ($\alpha = 0.992, 0.979, \text{ and } 0.976$), whereas the within-subject variation ranged between 2.9 and 5.6%. The mentioned 6 agility tests resulted in the extraction of 2 significant components. The $S4 \times 5$ test had the lowest correlation coefficient with the first component ($r = 0.38$), whereas the correlation coefficients of the other 5 agility tests were higher than 0.63. The T-test (TT) showed statistically significant differences between the defenders and midfielders ($p < 0.05$) and between the defenders and attackers ($p < 0.05$). Statistical significant differences were determined between the attackers and defenders in the sprint 9-3-6-3-9 m with backward and forward running (SBF) and $p < 0.05$. It can be concluded that of the 6 agility tests used in this study, the SBF, TT, and $S180$ degrees are the most reliable and valid tests for estimating the agility of soccer players. According to the results of the study, the TT proved to be the most appropriate for estimating the agility of defenders, the SBF, and $S180$ degrees for estimating the agility of midfielders, whereas the $S4 \times 5$ test can be used for estimating the agility of attackers.

Conclusions: The RAT used within this study demonstrates evidence of reliability and construct validity. It further suggests the ability of a reactive component within agility test designs to discriminate among athletes of different competition levels, highlighting its importance within training activities.

Tests Used In The Study:

Agility-(T- Test)
Bent Knee Sit Up

Statistical Procedure

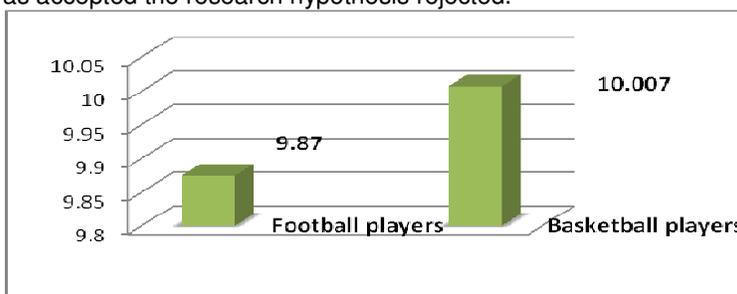
The data collected from the groups on the selected variables were statistically examined to find out whether there was any significant difference between basketball players and football players 't' ratio was used. The level of significance was fixed at 0.05 level of confidence.

Table I
Mean, Standard Deviation, Standard Error Of The Mean And 'T' Ratio On Agility Among Football Players And Basketball Players

Groups	Mean	S.D	S.D.M Error	'T' Ratio
Football Players	0.874333	0.363135	0.1086	1.2249
Basketball Players	0.00733	0.47108		

Significant At 0.05 Level Of Confidence With Degrees Of Freedom 28. The Table Value Is 2.05.

Table I indicates that calculated 't' value was 1.2249, which is less than the table value of 2.05 at 0.05 level of confidence for 58 degrees of freedom. This indicates that there is no significant difference, so there was no difference between football and basketball players in agility. Hence the null hypothesis was accepted the research hypothesis rejected.



[Figure 1]

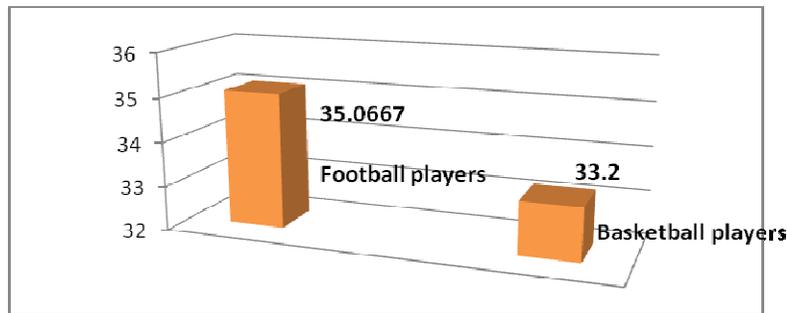
Bar Diagram Showing The Mean Values Of Football And Basketball Players On Agility (Seconds)

Table II
Mean, Standard Deviation, Standard Error Of The Mean And 'T' Ratio On Endurance Among Football Players And Basketball Players (Nos),

Groups	Mean	S.D	S.D.M Error	'T' Ratio
Football Players	5.0667	3.4234	0.8753	2.1327
Basketball Players	33.2	3.3570		

Significant At 0.05 Level Of Confidence With Degrees Of Freedom 58. The Table Value Was 2.05.

Table II indicates that calculated 't' value was 2.1327, which is more than the table value of 2.05 at 0.05 level of confidence for 58 degrees of freedom. This indicates that there is a significant difference, so there was difference between football and basketball players in endurance. Hence the null hypothesis was rejected the research hypothesis was accepted.



[Figure II]

Bar Diagram Showing The Mean Values Of Football And Basketball Players On Endurance (Mts)

Conclusion

It was concluded that the football players and basketball players they were not have a difference in agility but endurance the football players were have more endurance than the basketball players in school level players.

Recommendations

On the basis of observations and conclusions drawn from this study, the following recommendations were made:

Similar studies may also be conducted for women players.

Similar studies may be conducted in various games and sports.

Similar studies may be conducted on different age groups and sex.

References

- D.B. Pyne, et. al., "Relationships Between Repeated Sprint Testing, Speed, and Endurance" *Journal of Strength and Conditioning Research* 22(5), (September 2009): 1633-7.
- T.Kaplan, et. al., "The Evaluation of The Running Speed and Agility Performance in Professional and Amateur Soccer Players" *Journal of Strength and Conditioning Research* 23(3), (May 2009) :774-8.
- K.Thomas, et. al., "The Effect of two Plyometric Training Techniques on Muscular Power and Agility in Youth Soccer Players" *Journal of Strength and Conditioning Research* 23(1), (January 2009): 332-5.
- E.J. Drinkwater, et. al., "Design and Interpretation of Anthropometric and Fitness Testing of Basketball Players" *Journal of Sports Medicine* 38(7), (October 2008): 565-78
- M. Visnapuu, et. al., " The Influence of Basic Body and Hand Anthropometry on the Results of Different Throwing Tests in Young Handball and Basketball Players"
- C. Castagna, et. al., "Effects Of Intermittent-Endurance Fitness on Match Performance in Young Male Soccer Players" *Journal of Sports Physiological Performanc* 23(7), (December 2009): 1954-9.
- A .Delextrat and D.Cohen, "Strength, Power, Speed, and Agility of Men Basketball Players According to Playing Position" *Journal of Strength and Conditioning Research* 23(7), (October 2009):1974-81.
- Harrison H. Clarke and David H. Clarke, *Application of Measurement to Health and Recreation Education* (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1987): 160.
- G. Sporis, et. al., "Reliability and Factorial Validity of Agility Tests for Soccer Players" *Journal of Strength and Conditioning Research* 24(3), (March 2010): 679-86.
- ¹⁴J.P. Veale, et. al., "Reliability and Validity of a Reactive Agility Test for Australian Football" *Journal of Sports Physiological Performance* 5(2), (January 2010): 239-48.

Effect Of Aerobic Circuit Training And Parcours Training On Selected Physical And Physiological Variables Among College Men Students

*Dr. S. Nagarajan, **Mr. C. Damodharan And Dr. A. Praveen

* Assistant Professor Alagappa University College of Physical Education, Karaikudi.

** P.hd., Research Scholar, Department of Physical Education Karpagam University.

*** Assistant Professor Pondicherry University Department of Physical Education, Puducherry.

Abstract

Training is a program of exercise designed to improve the skills and increase the energy capacities of an athlete for a particular. The training is used in its broad sense and its meaning varies with the field of application. In sports, the word training is generally understood to be a synonym of doing physical exercises. In its narrow sense, training is doing physical exercises for the improvement of performance. Training improves the functioning of the circulatory, respiratory and the muscle systems, while practice is largely aimed at improving the control of muscular activity by the nervous system. Systematic nature of the training process is reflected adequately by the fact that the various means and methods, load dynamics, training tasks etcetera are all planned in order to achieve short or long term goals, keeping in view the interrelationship of various training elements, cyclic nature of performance developments and long term goal of sports training, the method adopted for the selection of subjects, variables used, experimental design, training programme, procedures for test administration and methods employed for statistical treatment of data have been explained. A flow chart on methodology used in the study has been presented. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F value 32.45 was greater than the required table F value to be significant at 0.05 levels. It was concluded that comparing between treatment groups, there was significant difference between Aerobic Circuit training and Parcours training

Key Words: Aerobic Circuit Training, Parcours Training

Introduction

Training is the basic form of preparation of sportsmen. 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. Training is widely used in sports. The Complex nature of training involving physical exercises along with other means becomes obvious when one looks at the training of advanced sports persons. Training is done for improving performance. The performance, as any other type of human performance, is not the product of one single system or aspect of human personality. On the contrary, it is the product of the total personality of the person. The personality of a person has several dimensions e.g. physical, physiological, and social in order to improve performance the social capacities of the person also have to be improved in addition to the physical and physiological ones. In other words the total personality of a sportsman has to be improved in order to improve his performance. Training therefore, directly and indirectly aims at improving the personality of the person. No wonder, therefore training is an educational pedagogical process. Training is a systematic process extending over a long period. For best results the system of training has to be based and conducted on scientific facts and lines

Methodology

The method adopted for the selection of subjects, variables used, experimental design, training programme, procedures for test administration and methods employed for statistical treatment of data have been explained. A flow chart on methodology used in the study has been presented.

Table – I Variables And Tests

Serial No.	Variables	Tests	Unit of measurements
1.	Leg explosive power	Standing broad jump	Meters
2.	Speed	50 meters run	Seconds
3.	Agility	Shuttle run (4x30 feet)	Seconds
4.	Strength endurance	Sit-ups (bent knee)	Seconds
5.	Flexibility	Modified sit and reach test	Meters
6.	Resting heart rate	Manual method	Seconds
7.	Cardio-respiratory endurance	12 minutes run/walk	Seconds
8.	Maximum oxygen consumption		Seconds

The method adopted for the selection of subjects, variables used, experimental design, training programme, procedures for test administration and methods employed for statistical treatment of data have been explained. A flow chart on methodology used in the study has been presented.

Selection Of Subjects

Since the purpose of the study was to find out the effect of Aerobic circuit training and parcours training on physical and physiological variables on college men, it was decided to select untrained men students who were not participating in any of the games or sports or in any special training or coaching programme. However, they were allowed to participate in their routine physical education classes in the college. Since, during the period of training the subjects were susceptible for changes due to growth; it was decided to have one control group for the study. For this purpose, thirty men students, free from deformities and ailments, were selected at random by lot from VGR, Groups of arts and science college Thiruvallur. The age of the subjects ranged from 20 to 25 years. The subjects were randomly assigned equally to one of the three groups in which group I acted as control (n=10), group II underwent circuit training (n=10), and group III underwent parcours training (n=10). The subjects were free to withdraw their consent, in case they felt any discomfort during the period of training. But there were no dropouts in the study. A qualified physician examined the subjects medically and declared that they were fit for the study. All the subjects had a similar academic work and regular activities in accordance with the requirements of the college curriculum. The subjects in the control group were not engaged in any activity other than the regular curriculum during this training period.

Aerobic Circuit Training

In circuit training, a subject moved from one station to another and performed the prescribed exercise with the fixed duration at each station. The time was increased from Fifteen seconds to forty seconds per station after six weeks training. It was emphasized that the intensity of the exercise was kept at the maximum possible level throughout the total time prescribed. The circuit was repeated thrice daily.

Exercises At Aerobic Circuit Stations

The exercises performed at different circuit stations.

Jumping jacks, Step te., Rope skipping, High Knee Action, Push Ups, Sit Ups, Shuttle Run, Squat thrust

Parcours Training: Parcours training is a new concept developed in Europe and adopted recently in United States and Canada. It consists of a series of stations set up over a one to two and half km path, to provide exercise circuit for individuals. Parcours is a technique for improving cardio respiratory endurance that basically combines continuous training and circuit training. This technique involves jogging a short distance from station to station and performing a designated exercise at each station according to guidelines and directions provided on an instruction board located at that station. Parcours circuits provide an excellent means for gaining some aerobic benefits while incorporating some of the benefits of calisthenics, besides promoting muscular and cardio respiratory endurance, continuous training aids in caloric expenditure, a key to proper weight maintenance (Prentice, 1994).

Exercise At Parcours Station

The following were the exercises performed at different parcours stations:

Jumping Jack, Step up, Rope skipping, Jumping on and off the bench, Push up, Sit up, Shuttle Run
Half squat with weights

Scheffe's Confidence Interval Test Scores on Leg Explosive Power

MEANS				Required . C I
Circuit training Group	Parcours training Group	Control Group	Mean Difference	
2.07	2.19		0.12*	0.05
2.07		1.87	0.20*	0.05
	2.19	1.87	0.31*	0.05

* Significant

Bar Diagram On Ordered Adjusted Means On Leg Explosive Power

Scheffe's Confidence Interval Test Scores on Speed

MEANS				Required . C I
Circuit training Group	Parcours training Group	Control Group	Mean Difference	
6.85	6.98		0.13*	0.06
6.85		7.13	0.28*	0.06
	6.98	7.13	0.15*	0.06

* Significant

Bar Diagram On Adjusted Means On Speed

Scheffe's Confidence Interval Test Scores on VO₂ Max

MEANS				Required . C I
Circuit training Group	Parcours training Group	Control Group	Mean Difference	
44.14	43.00		1.14*	1.04
44.14		40.65	3.49*	1.04
	43.00	40.65	2.35*	1.04

* Significant

Bar Diagram On Ordered Adjusted Means On Vo₂ Max

Discussion and findings

That there would be no significant influence due to aerobic circuit training and parcours training on VO₂ max was accepted as there was significant influence due to aerobic circuit training and parcours training on VO₂ max. Further the hypothesis that there would be significant influence in VO₂ max between aerobic circuit training and parcours training was accepted as there was significant difference between aerobic circuit training and parcours training group

Conclusions

This research proved that Aerobic circuit training and parcours training improved physical fitness and physiological variables of college men. Hence, it was recommended to include these training methods for improving specified physical fitness and physiological variables of college men.

References

- Arnheim, D.D. essentials of athletic Training (St. Louis: Toronto Sunta Clara: Times Mirror College Publishing, 1987), p. 70
 Arnhem, D.D. modern principles of Athletic Training (ST. Louis: Toronto Santa Clara: times Mirror/Mosby college publishing, 1985), p.145.
 Author's guide,physical fitness (new letter XV:A).
 Cokes, chuck, coaches Training Manual Universal Gym; Universal Athletic Sales Co, 1972),p.23.
 David A.Armbruster, Lastre W.Irwin and Frank F.Muskar, Basic Skills in sports for men and women (st.Louis: the C.V.Mosby Co., 1971), p.362.
 Brown, A.M. "The Effect of Circuit Training on the physical fitness Grade Five Girls", Completed Research,
 Bnrakis (1983). "Training Effect of Upper Body Circuit Training Programmer on Heart Rate and Oxygen Uptake" Completed research 27;125-127.
 Donald E. Miller,: An investigation of circuit training and Weight Training Programmer in the Development of Upper Body Strength in Ninth Grade Boys", Completed Research.
 Donald P K err." The Effect of weight training on the jumping of High School Volleyball Players and Non volleyball Players", Research Quarterly 12:)1956). 66.
 Edward Chui, "The Effect of Systematic Weight Training on Athletic Power:;, Research Quarterly 21 (1950), 188-194.

Effect Of Weight Training And Plyometric Training On Strength Endurance And Leg Strength

Mr. R. Lakshmikrishnan* And Dr. K. Sivakumar**

* Ph.D. Scholar and ** Associate Professor, Department of Physical Education and Sports
 Sciences Annamalai University, Chidambaram, Tamilnadu, India.

Abstract

The purpose of the present study was to find the effect of weight training and plyometric training on strength endurance and leg strength. For this purpose, thirty male students studying in various classes in the faculty of Agriculture of Annamalai University in the age group of 19 – 25 years were selected. They were divided into three equal groups, each group consisted of ten subjects, in which group – I underwent weight training, group – II underwent plyometric training and group – III acted as control group who did not participate in any special training. The training period for this study was three days in a week for twelve weeks. Prior to and after the training period the subjects were tested for strength endurance by conducting sit-ups test and leg strength was assessed by using dynamometer. The statistical toll used for this study is analysis of covariance (ANCOVA). Whenever the 'F' ratio was significant, the Scheffé S was applied as post-hoc test. It was concluded after the weight training and plyometric training periods, both the training groups were improved all the criterion variables significantly.

Introduction

Sports training is a scientifically based and pedagogically organized process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition. Plyometrics is a popular training technique used by many coaches today. It has been tested as a way to bridge the gap between sheer strength and power. The term plyometrics can be used to describe any exercise that allows the athletes to take advantage of the stretch-shortening cycle to produce an explosive movement. Although plyometric training has been around for many years, there is still debate on its effectiveness and safety. This literature review seeks to review all relevant information on plyometric training so that its value can be assessed as a training technique. Weight training is use of resistance other than the weight of the body to develop specific areas of the body. Generally, it is used to develop strength endurance and power. It also develops muscular endurance, elasticity and co-ordination. Leg strength plays a vital role in the daily activities of man. It is an essential factor for including in almost all games and sports. There is an old saying than an athlete will go only as long as his legs will carry him. Jumping ability depends on strong muscles and tendons and flexibility of the ankle, knee and hip joints. One of the best measures of human power is broad jump. Strength endurance is defined as the capacity of the whole organism to withstand under the long lasting experience of strength. Consequently, it is characterized by a relatively high ability to express strength together with a faculty to preserve.

Methods

This study under investigation involves the experimentation of weight training and plyometric training on strength endurance and leg strength. Only male students those who were studying in various classes from the faculty of Agriculture of Annamalai University and aged between 19 and 25 years were selected. The selected thirty subjects were randomly divided into three groups of ten each, out of which group - I (n = 10) underwent weight training, group - II (n = 10) underwent plyometric training and group - III (n = 10) remained as control. The training programme was carried out for three days per week for twelve weeks. Strength endurance was assessed by sit – ups test and leg strength was assessed by using dynamometer.

Analysis Of Data

The data collected prior to and after the experimental periods on strength endurance and leg strength on weight training group, plyometric training group and control group were analysed and presented in the following table -I.

Table – I
Analysis of Covariance and 'F' ratio for Strength endurance and Leg Strength for Weight training Group, Plyometric training Group and Control Groups

Variable Name	Group Name	Weight Training Group	Plyometric Training Group	Control Group	'F' Ratio
Strength endurance (in Nos. / min)	Pre-test Mean ± S.D	32.0 ± 1.491	33.00 ± 1.491	32.0 ± 1.33	1.607
	Post-test Mean ± S.D.	35.70 ± 1.889	36.0 ± 2.357	31.90 ± 1.969	12.05*
	Adj. Post-test Mean	36.105	35.19	32.306	29.448*
Leg Strength (in Kgs.)	Pre-test Mean ± S.D	68.0 ± 2.16	68.8 ± 2.348	66.80 ± 1.932	2.185
	Post-test Mean ± S.D.	72.60 ± 2.01	71.8 ± 1.932	66.5 ± 2.0414	27.86*
	Adj. Post-test Mean	72.509	71.162	67.229	37.22*

* Significant at .05 level of confidence.

(The table value required for significance at .05 level of confidence with df 2 and 43 and 2 and 42 were 3.21 and 3.22 respectively).

Results: Table – I showed that there was a significant difference among weight training, plyometric training and control groups on strength endurance and leg strength.

Further to determine which of the paired means has a significant improvement, Scheffé S test was applied as post-hoc test. The result of the follow-up test is presented in Table - II.

Table – II: Scheffé S Test for the Difference Between the Adjusted Post-Test Mean of Strength endurance, Self-concept and Blood Pressure (systolic and diastolic)

Adjusted Post-test Mean of Strength endurance (in Nos. . min)				
Weight training Group	Plyometric training Group	Control Group	Mean Difference	Confidence interval at .05 level
36.105		32.305	3.80*	1.335946
36.105	35.190		0.915	1.335946
	35.190	32.305	2.885*	1.335946
<i>Leg Strength (in Kgs.)</i>				
72.509		67.229	5.28*	1.577042
72.509	71.162		1.347	1.577042
	71.162	67.229	3.993*	1.577042

* Significant at 0.05 level of confidence.

Conclusion

Table – II shows that the Scheffé S test on speed for the difference between adjusted post-test mean of weight training group and control group was 3.80 and plyometric training group and control group was 2.885 which was significant at .05 level of confidence. But there was no significant difference was found between plyometric training group and weight training group (0.915) on strength endurance. Table – II shows that the Scheffé S test on leg strength for the difference between adjusted post-test mean difference of weight training and control groups was 5.28 and plyometric training group and control group was 3.993, which was significant at .05 level of confidence. But there was no significant difference between weight training group and plyometric training group (1.347) on leg strength after the respective training programmes.

Reference:

- Hardayal Singh, *Sports Training: General Theory Methods*, (Patiala: N.I.S. Publishing, 1986), p.45.
 Daniel D. Arnheim and Carl E. Klafs, *Modern Principles of Athletic Training*, (St. Louis: The C.V. Mosby Publishers, 1963), p.
 Hardayal Singh, *Science of Sports Training*, (New Delhi: D.V.S. Publications, 1991), p.14.
 Robert W. Anderson, "The Effect of Weight Training on Total Body Reaction Time", *Unpublished Master Thesis*, University of Illinois, (1957).

Comparative analysis of mental health between male and female students of cochin university of science & technology

Sujith .S[§], Dr. Ajith Mohan K.R[#] and Dr.T.I.Manoj*

[§]Research Scholar, Karpagam University, Coimbatore.

[#]Asst. Director & Head,Dept. of Physical Education, Cochin University of Science &
 Technology, Ernakulam.

*Head & Associate Professor, College of Agriculture, Kerala Agricultural University, Vellayani,
 Trivandrum.

Abstract

The purpose of the study was to find if any differences exists on mental health covered by the Trier Personality Inventory (TPI) between male and female students of Cochin University of Science & Technology, Cochin. 100 male and female students (50 + 50) studying in different under graduate courses within the main campus of Cochin University of Science & Technology, Cochin were selects as subjects for the study. The age of selected students ranged from 18 years 23 years (mean age was 21 years \pm 3). The 9 sub-scales of TPI were subjected to a 't' test for the total sample and stratified for sex. The results of the 't' test shows that, there is significant differences exist between male and female students studying in CUSAT in overall TPI value indicated by mental health of participated students ($t= 2.48$). The result in mental health measured by TPI clearly shows that, female students of the CUSAT scored higher than the male students' scores in overall mental health.

Key words: mental health, personality measurement, behavior control

Introduction

Health is a valuable asset for every individual. According to an Arabian proverb "A man who is healthy, has an optimistic view and who has optimistic view, has everything. In evaluating, judging and assessing the quality of person's adjustment, generally we uses term such as good adjustment, bad adjustment and some time maladjustment. Good adjustment and mental health are almost synonymous these days. An individual who has achieved good adjustment will be called the mentally healthy. The view of Peters (1984) that mental health should be defined as a specific form of person environment fit, focusing on the social and cultural aspects of the environment, is opposed by concepts which emphasize the personal-existential aspects (Becker,1992). Mental health, in this view, should not be reduced to the ability to cope with demands from the environment. It should be considered that human beings aim at goals, which they themselves define. Living in harmony with oneself, might be as or even more important as adaptation to the (social) environment. From an existential-analytical viewpoint mental health is defined as the ability of a person to act in such a way that the behavior – during the act and retrospectively – is sensed as proper and right by her-/himself (Langle, 1992). Human beings unfold their self most significantly not by adaptation but by taking a standpoint in relation to themselves (Langle, 1988). Only if a person's appraisal includes the recognition of values in a spontaneous and responsible way, can existential fulfillment be reached (Orgler, 1991). While, according to Frankal (1983), to some degree even neurotics are able to make their life meaningful, existential fulfillment relies on noetic resources.

The present investigation deals with mental health, covered by the Trier Personality Inventory –TPI (Becker, 1989). Furthermore, it addresses the question whether their differences exists depends on sex. Purpose of the study was to find if any differences exists on mental health covered by the Trier Personality Inventory (TPI) between male and female students of Cochin University of Science & Technology, Cochin.

Materials and Methods

Participants

100 male and female students (50 + 50) studying in different under graduate courses within the main campus of Cochin University of Science & Technology, Cochin were selects as subjects for the study. The age of selected students ranged from 18 years 23 years (mean age was 21 years \pm 3).

Instrumentation

The TPI has 9 sub-scales: Behavior control, mental health, meaningfulness (vs. depression), self-obliviousness (vs. self-centeredness), and freedom from distress (vs. nervousness), expansiveness, autonomy, self-esteem, and capacity to love.

Results

The 9 sub-scales overall score of the were subjected to a 't' test for the total sample stratified for sex and the level of significance, set to 5%, were considered. The descriptive statistics "t" ratio was used to find out the differences statistically at 0.05 levels of confidence.

Table 1 Descriptive Statistics and Result of 't' Test

Group	N	Mean	Standard Deviation	S.E	Mean Difference	't' Ratio
Female	50	58.34	8.32	1.18	3.82	2.48*
Male	50	54.52	6.28	1.54 0.89		

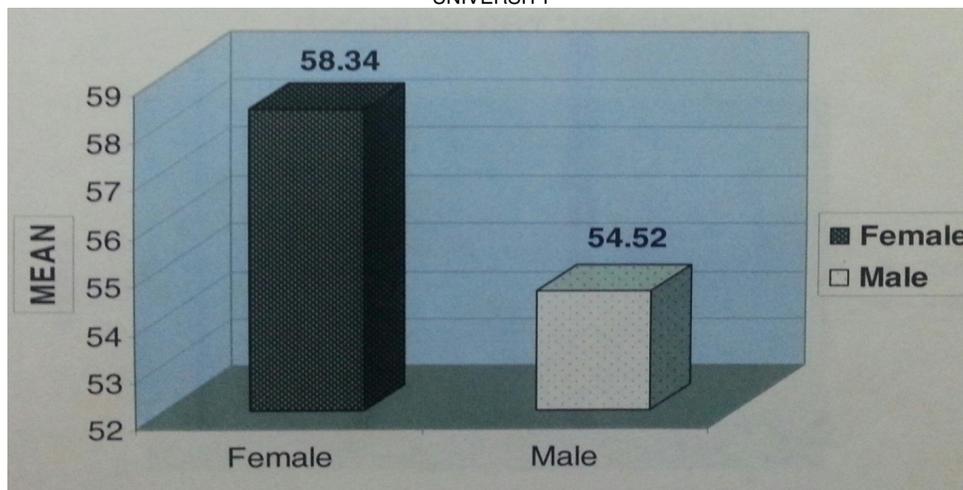
Table value: *0.05 Level = 2.01, **0.01 Level = 2.67

*Significant at 0.05 level of confidence. Required table value at 0.05 levels is 2.01 for 49 degree of freedom.

The mean value on overall TPI shows that, the female scored 58.34 at the same time the male score was 54.52 (Mean difference = 3.82). The results of the 't' test shows that, there is significant differences exist between male and female students studying in CUSAT in overall TPI value indicated by mental health of participated students (t = 2.48). The 9 sub-scales wise differences were beyond the scope of this paper.

Figure.1

GRAPHICAL REPRESENTATION OF MENTAL HEALTH MEANS BETWEEN MALE AND FEMALE STUDENTS OF COCHIN UNIVERSITY



Discussion

Gender is a critical determinant of mental health and mental illness. The morbidity associated with mental illness has received substantially more attention than the gender specific determinants and mechanisms that promote and protect mental health and foster resilience to stress and adversity. Gender determines the differential power and control men and women have over the socioeconomic determinants of their mental health and lives, their social position, status and treatment in society and their susceptibility and exposure to specific mental health risks (WHO). The result in mental health measured by TPI clearly shows that, female students of the CUSAT scored higher than the male students' scores in overall mental health. The World Health Organization defines mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community". It was previously stated that there was no one "official" definition of mental health. Cultural differences, subjective assessments, and competing professional theories all affect how "mental health" is defined. There are different types of mental health problems, some of which are common, such as depression and anxiety disorders, and some not so common, such as schizophrenia and bipolar disorder.

Four of the criteria that showed evidence of gender bias were easier for men than for women to endorse (given similar levels of the latent trait). When we consider the content of these items, they seem to make intuitive sense.

The literature indicates that boys (a) exhibit more aggressive behavior than do girls, (b) are more likely to approach than to withdraw, (c) are more assertive, and (d) are higher on agentic or instrumental traits (Bakan, 1966). Though Kerala rank top in women's literacy rate and education, the work participation sex-ratio shows a deviation. There are only 345 female workers per 1000 male workers which is lower than the national average (1991). The work participation rate for women in 1991 was only 15.85 while that of men was 47.58 which are about three times that of women. This in turn indicate that women's share of earned income in the state is only 12%. The above fact leaves the note that the higher rate of literacy/education among women is not a sufficient condition for gender equality in work. Along with low work participation, rates of unemployment and gender differentials in the labour market persist across the society (<http://www.old.kerala.gov.in/education/status.htm>). It may be one of the reason for women students showing higher values in mental health. Furthermore, their content does not reflect extreme forms of female-stereotyped behavior. We see no clear explanation for this finding, and we believe that this aspect of our results should be interpreted with special caution.

References:

- Ashmore R, Carver N, Banks D, " Mental health nursing students relationships with the pharmaceutical industry", *Nurse Educ Today*, 27(6): 2007 Aug; (551-60).
- Becker P (1989) *Der Trierer-Personlichkeitsfragebogen TPF*. Handanweisung. Göttingen: Hogrefe
- Becker P (1992) Seelische Gesundheit als protektive Persönlichkeitseigenschaft. *Z f klin Psych* 21:64-75
- Calderoni ME, Alderman EM, Silver EJ, Bauman LJ. "The Mental Health Impact Of 9/11 On Inner-City High School Students 20 Miles North Of Ground Zero", *J Adolesc Health*. 39(1): 2006 Jul; (57-65).
- Donovan MO, "Implementing Reflection: Insights From Pre- Registration Mental Health Students", *Rev Saude Publica*, 27(6): 2007 Aug; (610-6).
- Frankl V E (1983) *Theorie and Therapie der Neurosen*. München: Reinhardt
- Gender and women's mental health: Gender disparities and mental health: The Facts, http://www.who.int/mental_health/prevention/genderwomen/en/, Retrieved on 27th January 2013.
- Gleser, J., & Mendelberg, H. (1990). "Exercise and sport in mental health: A review of the literature". *Israel Journal of Psychiatry and Related Sciences*, 27, 99-112.
- Kutash K, Banks S, Duchnowki A, Lynn N, "Implications Of Nested Designs In School-Based Mental Health Services Research", *Eval Program Plan*. 30(2): 2007 May; (161-71).
- Kuznetsova LM, Kuznetsov VD, Timoshenko KT, "Mental Health Indices in Senior School children and Students", *Gig Sanit*. (3): 2008 May-Jun; 59-63.
- Längle A (1988) *Wende ins Existentielle. Die Methode der Sinnerfassung*. In: A. Längle (Hrsg)
- Längle A (1992) *Existenzanalyse und Logotherapie*. In: Pritz A, Petzold H (Hrsg). *Der Krankheitsbegriff in*
- Mazidi M, Ostovar S, "Effects of religion and type of religious internalization on the mental health of Iranian adolescents", *Percept Mot Skills*. 103(1): 2006 Aug; (301-6).
- Muraki S, Maehara T, Ishil K, Ajimoto M, Kikuchi K, Gender difference in the relationship between physical fitness and mental health, *Ann Physiol Anthropol*. 12(6):1993 Nov; 379-84.
- Michael Kundi, Elisabeth Wurst and Alfried Langle, (2003) *Existential Analytical Aspects of Mental Health*, *European Psychotherapy/Vol. 4 No. 1.*, 87-96
- Nagai M, Tsuchiya KJ, Touloupoulou T, Takei N, "Poor mental health associated with job dissatisfaction among school teachers in Japan", *J Intellect Disabil Res*. 52(Pt 4), 2008 Apr; (299-308).
- Semansky RM, Altschul D, Sommerfeld D, Hough R, Willging CE, "Capacity for Delivering Culturally Competent Mental Health Services in New Mexico: Results of a Statewide Agency Survey", *Adm Policy Ment Health*. (16), 2009 Apr.
- Status of Women**, <http://www.old.kerala.gov.in/education/status.htm>, retrieved on 27th January 2013.
- Peters U (1984) *Wörterbuch der Psychiatrie und Medizinischen Psychologie*. München: Urban und Schwarzenberg.
- Wurst E, Maslo R (1996) *Seelische Gesundheit – Persönlichkeit – Existentialität. Ein empirischer Beitrag aus*

“Fundamental Skills Development A & Evaluation Of Wrestling Sports In Physical Education Through Video Cd: A Case Study On School Going Children”

**Dr.A.V.Thoke, Director of Physical Education,
S.V.K.T.Science and Commerce College,
Deolali Camp, Nashik 422401 (MS)**

Introduction:

In today's competitive world, it is necessary that a continuous search be made new trends and training in sports. India is a large country with vast potential to accept the challenges in diverse fields of life. However for reasons, known and unknown, the nation as a whole still lacks a sports culture. It is necessary that we make best use of a giant network of universities, colleges and schools and of students placed in these institutes running through across the country to create and impart a sports culture. It is many times suggested that we should tap the children at very young age and impart them a special training in the interest of the children themselves and the nation. Training plans have become an integral part of a sport at any level and particularly so when it is a competitive game at State, National or International level. A change either small or radical can be implemented through training plans. But with the era of communication we are forced to accept the new communication techniques in every field and particularly so in the field of sport. Training programmes and plans need to be monitored, tested objectively and, in turn, the entire methodology must be reexamined using modern tools. Quantitative studies must be initiated wherever possible and these reports must be brought to the notice of concerned players, teachers, sport directors, and people at large. The Aim of sports training can be achieved only if scientific designs already tested are used in a systematic manner.

Key of works: To find out the new methodology in Wrestling for the development of human being, to remove the fear of water, to update the knowledge & avoid the threats. To give scope to the inherent qualities & to increase the status of Wrestling. To increase the curiosity & interest among the people by showing video clips. Benefits of practical knowledge. Production of Audio-visual aids. Competitive preparation, physical fitness, happy human life. Self study physical fitness. Make people sports aware of education & increase in the quality. Increase in scientific knowledge.

Aim & Object of the study:

To develop the basic skills in wrestling. To create awareness about Skill of wrestling. To remove the fear of wrestling. To give information about wrestling skills through communication. To find out the new trends, training through communication skills a video. To do comparative study of new training methodology & compare them. To find effectiveness of new training methodologies in wrestling

Methods & Material:

The experiment conducted assessed the efficiency of (a) traditional method (T1), (b) Audio-visual method (T2) and (c) the combination of traditional and audio-visual methods (T3), on imparting and developing the basic skills of the sports of Wrestling among school going children through the distance education method. The experiment was designed, planned and performed over a span of six weeks in Bhagur Nashik in the state of Maharashtra (India) in the year May /June 2012. The target group was 60 school going children between the ages ranging from 09 to 18 years ages. These students were randomly allocated to three different groups G1, G2 and G3 corresponding to T1, T2 and T3 treatments. T1 can be called the traditional method. It is a subjective method of imparting basic instructions to beginners, which forms the potential population for a special training in future. The method relies heavily on individual coaches and their expertise. In order to have uniformity amongst the individual coaches a short-term workshop was conducted the authors which the necessary information and details were spelled. Treatment T2 consisted of imparting instructions to subjects only through audio-visual media. A set of audio-visual cassettes was prepared by the authors and was made available to group 2 (G2). The study material was thus available to the subjects and they could use the same as per their individual needs. Treatment 3, labeled as T3, is a combination of T1 and T2. Five experts on a 10-point scale judged the performance and progress of the students.

The scores were awarded for the basic skill in the Sport of Wrestling

- (a) Fear Removing Drill (FRD)
- (b) Font Rolls (FR)
- (c) Stance Jump (SJ)
- (d) Single Leg Hop (SLH) and
- (e) Doable Leg Hop (DLH).

The FRD test was performed before the beginning of the experiment and also at the end of 2nd, 4th, 6th week. FR and SJ test was performed at the end of 2nd, 4th, 6th week. The SLH and DLH test were performed in 4th and 6th week only. These data based on scores were analyzed in order to test the efficiency of the treatments.

Material Observation, Analysis & Discussion:

The comparison and effect of treatments can be evaluated in a scientific manner using the principles of Statistics when the homogeneity of the subject is assured. Table 1 below gives the values of scores (mean \pm s.d) of the three groups to which these treatments were respectively applied. Table 1 clearly demonstrates that each of the treatments is meaningful and does build a confidence among the beginners. Moreover the progress of all the groups was satisfactory. However the improvements in the subject differ.

Table: 1

Treatment	Test (Points)	Before the trial	Week 2	Week 4	Week 6
T1	FRD	6.70 \pm 1.2	4.50 \pm 0.73	3.70 \pm 0.75	0.53 \pm 0.82
	FR		1.4	4.3	7.5
	SJ		3.5	4.3	7.5
	SLH			4.6	7.4
	DLH			3.5	5.2
T2	FRD	6.70 \pm 1.21	4.43 \pm 0.77	2.63 \pm 1.30	0.28 \pm 0.48
	FR		2.5	5.5	7.8
	SJ		3.5	5.5	7.8
	SLH			4.5	8.0
	DLH			3.9	5.7
T3	FRD	6.67 \pm 1.15	3.83 \pm 0.75	4.50 \pm 0.61	0.17 \pm 0.38
	FR		1.5	6.6	7.9
	SJ		3.4	6.7	8.0
	SLH			4.4	7.8
	DLH			3.7	6.3

Scores of Test Based on 20 subjects in each group

Amongst the three groups the group receiving T3 treatment showed the most progress, where as group 2 and group 1 showed almost the same level of improvement or nearby each other. It simply means that the present day communication techniques combined with traditional methods should be employed to accelerate the learning capacity of individual Wrestling.

Results and Discussion:

It has been suggested many times that a SMART objective plays a role. It stands for Specific, Measurable, Achievable, Realistic and Time bound activity. All these systems usually recommend various approaches, which are claimed to be effective. These claims need to be tested in a scientific manner. Our analysis underlines the importance of combined effect of traditional approach and the role of modern communication techniques. If these two are combined skillfully then satisfactory results can be expected to all. Undoubtedly, these techniques have proved beneficial to newcomers but to know the exact role of similar techniques, scientific experiments need to be designed.

The analysis of a well-planned experiment only can bring out the contribution of modern technological methods in imparting training to children through competitive sports. The current approaches also need to be examined statistically by developing accurate statistical models. The distance education can play a meaningful role particularly in the remote areas wherein we expect an untapped resource of talent in sport. To conclude, our experiment shows ways to propose and evaluate different methodologies of imparting training in Wrestling. These experiments need to be replicated in different sports under the careful guidance of experts in the field of physical education and educational statistics.

References:

Thoke A.V. ("Primary Skill Development and Evaluation of Swimming in Physical Education Through Video Cassette", Ph.D. thesis submitted to YCMOU, Nashik, 1999. Thoke A. V. and R. Pokharapurkar " Development of Basic Skills in Swimming Through Distance Education Method" paper read in the conference on "Planning and Management of Open and De System: Visions, Paths, Experience and Development" held at Nashik in the year 2000 Thoke A.V. "AADHUNIK VA SHASTRIYA JALTARAN PRASHIKSHAN", (Marathi) Priyanka Prakashan, Nashik-5, 2001.

A Study Of Anthropometric And Biomotor Characteristics Of Young Male Athletes

Dr. Rajashekhar.M.Hiremath
 Assistant professor of Physical Education, University of Horticultural Sciences,
 Udyanagiri, Bagalkot-578103

Introduction

Sport and games can be recognized as an important part of nation's culture. Professional sports attract millions of spectators each year. It captures newspaper, Television, Magazines, headlines, where sports news consumes more space than all the arts combined. Now sports enter into the fashion world also, holds television viewers' attention, and generates crores of rupees a year in revenue for entrepreneurs. Sports also have an impact on international affairs. During the last decade the number of sports participants in our society has increased dramatically. In most cases nine to ten children are involved. This age is the most vital period of habit formation and consolidation of movement pattern. Compared with adult athletes, who have already reached a high standard of performance, adolescents involved in many sports are still in the developmental phase, both physically and technically. A natural physical characteristic gives individual some initial advantage over their opponents. Since, from several years many studies have been focused on finding the required anthropometric characters, biomotor qualities and body composition for specific sports and to distinguish the above said characters between elite athletes from different sports. Studies have shown that there are structural differences between sportspersons and normal population, between the sportspersons of the same game and also between games.

Purpose of the study

Study of anthropometric and biomotor variables of competitive athletes who are still in various stages of physical development provides an opportunity to answer some of these questions such as: Which of the anthropometric and biomotor variables discriminate effectively Kabaddi players, football players, hockey players and controls from each other? What are the anthropometric and biomotor variables that discriminate effectively between division level and state level Kabaddi players, Football players and Hockey players? Do anthropometric and biomotor characters vary according to growth and maturity? Do the somatotype characters of sportsmen differ for different age groups?

Significance of the study

Enable to select children's for coaching. Prediction of successful performance
 To help coaches to identify deficiencies and to overcome through compensatory training.

Review Of Literature

Dan (1990) in his attempt to determine the relationship of physical fitness and morphological variables to kicking ability among the college Football players, has found a positive and significant relationship between the morphological variables and the kicking ability. Mishra (1990) made a comparative study of morphological profiles of Football and Hockey players and state that Football players were more mature, taller with longer body segments, but lighter. Malina (1984), postulate that, knowledge of physical characteristics is primarily important for providing early competitive advantages for securing expert coaching. A natural physical characteristic gives individual some initial advantage over their opponents. Wassmer Dj and Mookerjee, S. (2002). A descriptive profile of Elite U.S. Women's collegiate field hockey player. *Journal of sports medicine and physical fitness*. 42(2), 165-157

Methodology

Subjects: Each group having 30 subjects and group one 10 to 13 years and another group 14 to 16 years young male players, who participated in sub junior and junior interschool Belagam division and state level Kabaddi, Football and Hockey competitions were selected as subjects. Thirty 10 to 13 years and thirty 14 to 16 years aged non sporting but active children's were selected as control subjects. Control subjects were selected by simple random sampling technique.

Variables:

Body mass lengths, skin fold measurements (triceps, sub-scapular, supra-spinale, medial claf, mid-thigh), width measurements(bi-acromial, bi-iliocrystal, bi-epicondylar humerus, bi-epicondylar femur), girth measurements(tensed-arm, fore-arm, thigh, calf), and biomotor variables(nelsons choice-response movement test, shuttle run, vertical jump) were measured. Dan,Kalyankumar,(1990) "Relationship of physical Fitness, Anthropometric measurement and body composition with soccer kicking ability"

Data Transformations:

The following general formulae, proposed by Ross and Wilson (1974) were used to translate absolute anthropometric measure into z-scores,

$$Z=1/s [v (170.18/h)d - p] \text{ and } Z=1/s [v (64.58/w)d - p]$$

Where, Z is a proportionality value or Z- score; V is the size of any given variable, and S is the standard deviation of the phantom value for that variable 170.18 is the phantom stature in centimete 64.58 is the phantom wt in kg, h is the subject's obtained stature and w is obtained weight, p is the value of the phantom dimension for that variable an d is the dimensional exponent. When scaled geometrically, d=1 for all lengths, widths, girths And skin fold measures d=2 foe all areas and d=3 for all weights and volume. Body density, percent body fat and leg power was calculated by using following

formulae.

Body density

$$\text{Body density (Db)} = 1.1034 - (0.00132 * \text{Mtsf}) - (0.00131 * \text{ssf})$$

(Sloan. A.W. 1967)

Percent body fat

$$\text{Percent body fat} = 457/\text{Db} - 414.20534$$

(Brozek, et al 1963)

Leg power

$$\text{Leg power } P = W * \sqrt{4.9 * D}$$

(Kirkndall, et al. 1987)

The somatotype were calculated using the following Health-carter method (carter 1980).

1. Endomorphy

The Endomorphy component is obtained using the following formula.

$$\text{Endomarmy} = 0.1451x^2 - 0.0000014x^3 - 0.7182$$

Where

X=the sum of triceps,supraspinale skin folds.

2. Mesomorphy

The Mesomorphy component is obtained using the following formula

$$\text{Mesomorphy} = 0.858(E) + 0.601(K) + 0.188(A) + 0.161(C) - 0.131(H) = 4.5$$

3.Ectomorphy..

The Ectomophy component is obtained from the reciprocal of the ponderal Index RPI

$$\text{RPI} = h (w - 0.333)$$

Somatotype Dispersion Distance

The distance between mean somatoplot and individual somatotype is referred to as Somatotype dispersion distance. It was calculated by using the formulae given by Ross and Wilson (1973).

$$\text{S.D.D.} = [3 * (X1 - X2)^2 + (Y1 - Y2)^2]^{0.5}$$

Where,

X1 and Y1 are the scalar coordinates of mean somatoplot

X2 and Y2 are the co-ordinates of individual somatoplot.

The S.D.D. is represented in Y distance units, i.e., in terms of distances at Y- axis of a somatoplot.

Mean Somatotype Dispersion

It was calculated as the average of all somatotype dispersion distances.

$$\text{S.D.M.} = \sum \text{S.D.D.} / N$$

The S.D.D. values of each members of a group with there respective group S.D.M. value is plotted on the somatochart. If the S.D.D. values of all the members are found more scattered from their respective S.D.M. value then the group is said to be heterogeneous in their somatotype character, if the S.D.D. values of all the members is found closer to their S.D.M. value the group is said to be homogenous in their somatotype character. Ross,W.D. and Wilson ,B.D(1973) A Somato-type dispersion distance. Research quarterly 44:372-374

Results

In first hypothesis the variables reaction time, agility, leg power, stature adjusted body mass, biacromial width, bi-apicondylar femur width, tensed arm girth, fore arm girth, thigh girth, calf girth, subischial leg length, mesomorphy and ectomorphy showed significant difference between groups. In post – hoc analysis, agility, stature adjusted body mass biacromial width, bi-apicondylar femur width, tensed arm girth, fore arm girth, thigh girth, calf girth, subischial leg length, somatotype components, mesomorphy and ectomorphy were found significant between Kabaddi and Football players. When Kabaddi and Hockey players were compared leg power, stature adjusted body mass, biacromial width, bi-apicondylar femur width, tensed arm girth, fore arm girth, thigh girth, calf girth, subischial leg length, mesomorphy and ectomorphy were found significant between them. Reaction time, agility, stature adjusted body mass, biacromial width, bi-apicondylar femur width, tensed arm girth, fore arm girth, thigh girth, calf girth, subischial leg length, mesomorphy and ectomorphy and somatotype components such as mesomorphy and ectomorphy were found significant between Kabaddi players and controls. Stature adjusted body mass, biacromial width, bi-apicondylar femur width, tensed arm girth, fore arm girth, thigh girth, calf girth, subischial leg length, mesomorphy and ectomorphy were the variables found significant between Hockey players. Reaction time, agility, stature adjusted body mass, biacromial width, bi-apicondylar femur width, tensed arm girth, fore arm girth, thigh girth, calf girth, subischial leg length, mesomorphy were found significant between Football and controls.

Conclusion:

Based on the results of this study it was concluded that selected anthropometric measures, biomotor variables, somatotype components, body density and percent body fat could effectively discriminate between Kabaddi players, Football players, Hockey players and control subjects matched for age and gender. The variable such as Reaction time, agility, stature adjusted body mass, biacromial width, bi-apicondylar femur width, tensed arm girth, fore arm girth, thigh girth, calf girth, subischial leg length, mesomorphy and ectomorphy were found significant between the groups.

References:

- Mishra M.S.(1990) "comparative study of some Anthropometric Measurement of inter -collegiate Hockey and Football players"
 Carter, J.E.I.(1980).the heart-carter somatotype method. San diego, Ca: san diego state university.
 Brozek,j,Grand,Anderson,J,and keys,a(1963),"densitometric Analysis of body composition :revisobn of some quantitative assumption,"annals of the new York Academy of science.110,113-140.
 Haire,j,P Anderson,r.E&tatham,R.L(1987).Multivariate data analysis(pp.72-144)Newyork mackmillan.
 Jonson Barry.L and Nelson Jack K.(1988) practical measurement for evaluation in physical education thied edn.surgeet publications(pp.199-354)
 Karir,B,S.and sidhu,L.S (1986) a comparative study of height and weight of asian junior Footballers with respect to their level of achievement in L.S.sidhu and N.N.Mall(eds.).modern perspective in physical education and sport science.
 Kirkindall Don R, Gruber J.J. and Johnson R.E. (1987). Measurement and evaluation for physical educators (Second Edn). Human kinetics publishers, Inc. Champaign Illinois (p.119).
 Malina, R.M. (1984). Maturational consideration in elite young athletes, in J.A.P. Day (Ed.), Perspectives in Kin anthropometry, Human Kinetics publishers Champaign.
 Reilly, T., Borrie, A. (1992). Physiology Applied to Field Hockey. Sports Medicine. 14(1), 10-26.

Effects Of Two Different Fat Reduction With Aerobic Training On Selected Lipid Profile Status And Testosterone Among Middle Aged Men

Dr.R.Venkatesan

**Head of Department, Department of Exercise Physiology and nutrition,
 Tamil Nadu Physical Education and Sports University, Chennai – 600 006**

Introduction: Cholesterol, a waxy substance produced by liver and found in certain foods is needed to make vitamin D and some hormones, build cell walls, and create bile salts that help digest fat, Dennis Lee et.al,(2009)

Deposition And Benefits Of Cholesterol: Lipids are fats that are found throughout the body. The liver produces about 1,000 milligrams of cholesterol a day, and 150 to 250 Milligrams in the foods you eat. The body needs cholesterol for digesting dietary fats, making hormones, building cell walls, and other important processes. The bloodstream carries cholesterol in particles called lipoproteins that are like blood-borne cargo trucks delivering cholesterol to various body tissues to be used, stored or excreted. But too much of this circulating cholesterol can injure arteries, especially the coronary ones that supply blood to heart.

Natural Supplements: 1. MASHROOM 2. OLIVE OIL

Health Benefits Of Mashroom: Button mushrooms are the most consumed mushrooms in the United States, accounting for 90 percent of mushroom intake according to the United States Department of Agriculture. Also referred to as white button mushrooms or commercial mushrooms, they are available year-round and are used in soups, salads, casseroles or eaten raw. A look into the health benefits of this widely consumed fungus may prompt you to add more to your diet.

Extra Virgin Olive Oil Health Benefits: Taken as a food supplement, olive oil has beneficial effects on the following:

Cardiovascular and heart: In Mediterranean countries where people consume fresh extra virgin olive oil daily, the incidence of cardiovascular and heart diseases is lower than in other geographical regions. Possible explanation is the abundance of antioxidants in olive oil. Polyphenols, Vitamin E and beta carotene are few of the beneficial materials found in olive oil that help the body to fight cardiovascular diseases. Oleic acid, the monounsaturated fatty oil, replaces other not so healthy fats. There is a proven dependency between olive oil and cholesterol, daily ration of extra virgin olive oil can reduce the level of LDL (the bad cholesterol) in the blood while increasing the level of the HDL (the good cholesterol).

Blood Pressure: Olive oil helps to maintain our blood pressure in its normal range. It does so by reducing LDL (the bad cholesterol) level while not affecting the level of the HDL (the good cholesterol). This is mainly due to the high content of oleic acid, the unique monounsaturated fatty acid. A genuine extra virgin olive oil contains between 50 to 80 percent of this very beneficial fat. Obviously one needs to replace other fatty staff with olive oil.

Statement Of The Problem: The purpose of the study was to investigate “effects of two different fat reductions with aerobic training on selected lipid profile and testosterone status among middle aged men”.

Selection Of Variables: The study was to find out the Effect of aerobic exercise and natural supplementation on selected lipid profile and testosterone status among middle aged men. The following variables were selected for their study.

i. Dependent Variables: 1.Total cholesterol, 2.High density lipoprotein 3.Low density lipoprotein 4.Triglycerides 5.Testosterone

ii. Independent Variables: 1.Olive Oil with Aerobic Exercise 2.Mushroom With Aerobic Exercise 3.Control Group

Experimental Design: The subject were selected for this study through the random group design consisting of pre and post test, forty five middle aged men randomly divided into three groups, the group was assigned as an experimental group and control group.

Mushroom with Aerobic Exercise

Olive Oil with Aerobic Exercise

Control Group

The lipid profile status was analyzed through blood test. After the experimental periods of eight weeks post test were conducted and the data were collected.

Training Schedules And Supplementation: During the training period, the experimental group underwent their walking program period of eight weeks for all days (7 days) with proper supplement. The experimental group underwent walking for initially 30 minutes duration. Gradually increases the distances to the subjects.

Training Schedule: Aerobic Exercise with Mushroom Supplementation Programme I: This group prescribed the olive oil with aerobic training, during the in evening hours between 4:30 to 5:30 p.m

MEANS	EXP-I	EXP- II	CON	S.V	S.S	D.F	M.S	O.F	T.F
Pre test Mean	242.36	241.03	241.03	B	35.56	2	17.778	0.09	3.23
				W	16390.90	87	188.40		
Post test mean	194.8	176.03	249.93	B	88530.82	2	44265.41	268.23	
				W	14357.63	87	165.03		
Adj. Mean	194.44	176.22	250.12	B	88918.19	2	44459.09	329.15	
				W	11616.275	86	135.07		

Table I - Computation Of Analysis Of Covariance Of Total Cholesterol

Aerobic Exercise With olive oil Supplementation Programme II: this group prescribed the mushroom with aerobic training, during in the evening hours between 4:30 to 5:30 p.m for five days per week. The duration for the training will be standardizing for forty five minutes.

Statistical Technique: Analysis of Covariance statistical technique was used, to test the significant difference among the treatment groups. If the adjusted post-test results were significant, the scheffe's post hoc test was used to determine the paired mean significant difference. Thirumalaisamy R. (2004).

COMPUTATION OF ANALYSIS OF COVARIANCE AND "SCHEFFE'S POST HOC" TEST

The following tables illustrate the statistical results of the effects of two different fat reductions with aerobic training on total cholesterol among middle aged men and ordered adjusted means and the difference between the means of the groups under study.

Discussions And Findings Of Total Cholesterol

This result indicated that the effect of mushroom with aerobic training and olive oil with aerobic training had significantly reduced the total cholesterol among middle aged men, when compared with control group in terms of means. The further findings of the study indicated that aerobic training with mushroom had greater reduction in total cholesterol than the olive oil with aerobic training. In Experimental Group had implementing the training and supplementation prescription is influenced the significant reduction in total cholesterol, when compare to the control group. It's all because of the supplementing the natural products is influenced and converted the excess total cholesterol spent as energy and it avoid to formation of excess cholesterol in the body. So the researcher concluded that the aerobic training and supplementation had significantly influenced to avoid the level of total cholesterol deposited in the body due to influence of eight weeks of training period.

TABLE – II - COMPUTATION OF ANALYSIS OF COVARIANCE OF TRIGLYCERIDES

Means	EXP - I	EXP - II	Con.Grup	S.V	S.S	D.F	M.S	O. F
Pre test Mean	164.9	165.50	164.57	B	13.42	2	6.711	0.04
				W	13929.57	87	160.11	
Post test Mean	150.86	146.00	165.00	B	5844.36	2	2922.18	44.62
				W	5697.47	87	65.49	
Adj.post test Mean	150.90	145.81	165.16	B	6030.30	2	3015.15	68.85
				W	3766.264	86	43.79	

Discussion On Findings Of Triglycerides:

From these analyses, it is found that the results obtained from the experimental groups had significant reduction in the triglycerides level when compared with the one from the control group. This is due to the inclusion of Different Fat Reduction with aerobic training methods in the Experimental Groups.

It is interesting to note that the results obtained from Experimental Group I had more effect than Experimental Group II on the reduction of Triglycerides level. This is due to the implementing different training methods with supplementation for the period of eight week in the middle aged men.

It is concluded that the experimental groups had greater reduction on triglycerides due to prescription of different supplementation with aerobic training for the period of eight week. During training period the physiological systems is responsible to convert the excess triglycerides as fuel source for the working muscles. So there is chance of reduced triglycerides in serum level in the middle aged group.

Table – Iii - Computation Of Analysis Of Covariance Of Hdl

Means	EXP - I	EXP - II	Con.Group	S.V	S.S	D.	M.S	O. F
Pre test Mean	36.53	36.67	36.67	B	0.36	2	0.178	0.01
				W	1788.80	87	20.56	
Post test Mean	39.30	42.07	36.67	B	437.49	2	218.74	23.59
				W	806.83	87	9.27	
Adj.post test Mean	39.33	42.05	36.65	B	437.41	2	218.70	33.91
				W	554.733	86	6.45	

Discussion On Findings Of High Density Lipoprotein:

From these analyses, it is found that the results obtained from the experimental groups had increase in the High Density Lipoprotein level when compared with the one from the control group. This is due to the inclusion of Different Fat Reduction with Walking in the analyses on Experimental Groups.

The result surprisingly indicated that the mushroom supplementation with walking having increased high density lipoprotein than experimental I. the reason for increased high density lipoprotein in experimental group is introduced mushroom with aerobic training for the period of eight week of training.

The "good" cholesterol carries always carries bad cholesterol from the unwanted storage in the body back to the liver, where it is converted to single chain Lipoprotein and utilized the excess glucose might be utilize as energy fuel for working muscle. The prime function of the good cholesterol is helps our systems to prevent cholesterol buildup in blood vessels.

Table – Iv - Computation Of Analysis Of Covariance Of Ldl

Means	EXP - I	EXP - II	Con.Group	S.V	S.S	D.F	M.S	O. F
Pre test Mean	167.33	168.30	165.20	B	150.96	2	75.478	0.96
				W	6849.77	87	78.73	
Post test	137.60	133.13	167.33	B	20736.62	2	10368.31	259.56
				W	3475.33	87	39.95	
Adj.Post test Mean	137.45	132.61	168.00	B	21635.15	2	10817.58	377.89
				W	2461.843	86	28.63	

Discussion On Findings Of Low Density Lipoprotein

From these analyses, it is found that the results obtained from the experimental groups had significant reduction in the Low Density Lipoprotein level when compared with the one from the control group.

This is due to the inclusion of Different Fat Reduction with Walking in the analyses on Experimental Groups. It is interesting to note that the results obtained from Experimental Group II had more effect than Experimental Group I on the reduction of Low Density Lipoprotein level. This is due to the implementation of variation in the supplementation in Experimental Group II. These results are found to be in good agreement with the earlier works done by different researchers. Coggan et.al (1990) has proved that the Supplementations with Walk causes a decreased reliance on Low Density Lipoprotein as an energy source during exercise performed at the same absolute intensity due to a lower rate of appearance, disappearance and clearance. After Supplementations with Walk, steady state Low Density Lipoprotein turnover, over a period of Eight Week. It is concluded that the bad cholesterol (LDL) is always block and build up waxy substances deposited in the arteries. So due to this reason we have to maintain the normal level of ldl in the body is always is good for the internal systems.

Table – V - Computation Of Analysis Of Covariance Of Testosterone

Means	EXP - I	EXP - II	Con. Group	S.V	S.S	D.F	M.S	O. F
Pre test Mean	668.86	667.40	666.40	B	92.36	2	46.178	0.09
				W	44591.87	87	512.55	
Post test	683.33	698.37	667.40	B	14388.07	2	7194.03	30.35
				W	20622.83	87	237.04	
Adj.Post test Mean	682.76	698.43	667.90	B	13982.57	2	6991.29	49.18
				W	12225.195	86	142.15	

Discussion On Findings Of Testosterone:

From these analyses, it is found that the results obtained from the experimental groups had significantly reduced in the Testosterone level when compared with the one from the control group. This is due to the inclusion of Different Fat Reduction with Walking in the analyses on Experimental Groups. It is interesting to note that the results obtained the value of testosterone from Experimental Group II had greater increase from its lower level to optimal level than Experimental Group I on the improvement of Testosterone. This is due to prescribe the natural supplemented to boost the volume of testosterone in the Experimental Groups II. It is concluded that the experimental groups had greater improvement in volume of Testosterone in the middle aged men, due to influence of natural supplementation with aerobic training for a period of eight week training in the middle aged men. If the testosterone level is very low in the men it leads to erectile dysfunction and sexual related problems in their life

Results:

Within the limitations of the study, the following conclusions were drawn:

Experimental group I (olive oil with aerobic exercise) showed significantly greater reduction on Low Density Lipoprotein, High Density Lipoprotein and Triglycerides than that of Experimental group II of training at the end of eight week period of time.

Experimental group II (mushroom with aerobic exercise) showed significant Improvement on High Density Lipoprotein and testosterone than that of Experimental group I at the end of eight week period of time.

Findings: After incorporate statistically technique, it was found that a significant decrease in Total Cholesterol, low density and triglycerides in the experimental group I (mushroom with aerobic exercise), and also found that high density lipoprotein and testosterone significantly increase due to eight weeks of Natural Supplementation with aerobic training than that of olive oil with aerobic exercise.

The two types of supplementation with aerobic training adopted in this study, on the whole, brought about significantly both positive and negative changes from the respective Experimental groups. But in the mushroom Natural Supplementation has great potential to increase the good cholesterol, anti-inflammation, metabolism, cardiovascular function and increased testosterone secretion without any side effects.