ISSN 2231-3265
(Online and Print)

VOLUME. 3, No. 1
QUARTERLY
July 2011 to September 2011

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

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

Publisher: **Indian Federation of Computer Science in sports** **www.ijhpecss.org** **under the auspices of** **International Association of Computer Science in sportsEmail:rajesh2sports@yahoo.co.in**	**International Journal of Health, Physical Education and Computer Science in sports (ISSN 2231-3265 On-line and Print) Journal published Quarterly for the months of March, June, September and December. IJHPECSS is refereed Journal** **Published by the Indian Federation of Computer Science in sports**

Content

S.No	Name of Article	Page No.
1	Virtual Reality and Simulation in Physical Education – Dr.Jayashree S. Reddy	1
2	Impact of 12 weeks Aerobic Exercises and Water Exercise on Quality of Life (QOL) and happiness among middle age non-athlete women. Lila Sabbaghian Rad, Soleimani Tooran, Norbaksh Mahvash, Alijani Eidy, Ensan Atefeh, Soleimani Ali	4
3	Effect of Training with Gym Ball and Medicine Ball on Motor Fitness – A Comparative Study Gopal Chandra Saha, Shantanu Halder	12
4	A Comparative Study of Self Esteem between Male and Female Fencers of Manipur - Prof. Jaowad Ali, Abdul Rahaman	15
5	Comparison of H-Reflex Response of Long Distance Runners and Non Athletes – Ashok Kumar and Jogbinder Singh Soodan	18
6	A Study of Body Mass Index & Lipid Profile in Type 2 Diabetic Punjabi Population – Ashok Kumar and Gurdeep Singh	21
7	Medical Consideration and Management Strategies for Elite Athletes for High Level Performance – David Banda	25
8	Waist –to-hip ratio is the better predictor of abdominal adiposity than BMI in Type 2 diabetes Ashok Kumar and Gurdeep Singh	28
9	Relationships among Height, Weight and Motor Nerve conduction velocity Aerobic Trained Athletes – Ashok Kumar & Jogbinder Singh Soodan	32
10	Effect of Explosive Strength for the improvement of the grab start in Competitive Swimmers – Dr.G.L. Moghe & Dr.P.N.Deshmukh	36
11	A Comparative study of Aggression between University Level Throwers and Jumpers- Lalit Mohan Tiwari, Bhagwat Singh, Manoj Singh	39
12	Self Confidence and Performance- Dr.Anil Kumar Edward, Dr.Yeshwanth Kumar H	43
13	Anxiety and Performance – M.S.Raj Kumar, Dr.Anil Kumar Edward and Dr.M.S.Pasodi	47
14	Effects of Aerobic, AnAerobic and Combined Training on selected Liver Profile status among over weight School Children – Dr.R.Venkatesan, G.Meena, S.Abirami Kiruthiga	51
15	A Comparison of Programs and facilities for Physical Eduction & sports in Government Aided Schools of Jammu and Kashmir – Dr.Mohd. Ibrahim, Prof.Jaowad Ali and Pankaj Gwari	55
16	Role of the community in implementation of girl child education in Nalgonda District – D.Balaramulu	59

17	Effect of Sex and Age on Self Concept of Inter University Volley Ball Players – Dr.Quadri Syed Javeed , Yadav B.A., Dr.Kalidas Tadlaprkar	63
18	The Urban Indian Health Profile for the period 2000-2008 – Prof.Adrian Kennedy	67
19	Effect of Yogic Practices and Interval Training on selected Physiological and Bio-Chemical Variables among High School Boys – Satya Sridevi Datla	70
20	A Study on the significance of Physique towards the Physical Performance between sports students and students with sedentary life style – Dr.Abdussalam Kanniyan, Wilson V.A.	74
21	The Effect of Yoga Practices on Acth Hormone Secretion in Women – Dr.K.Deepla , P.Munikrishnaiah	77
22	A Comparative study of Aerobic Endurance among middle distance runners and long distance runners of Hyderabad. Dr.Rajesh Kumar, A.Xavier, E.Jyothi	80
23	Effect of Physical activity on health related quality of life in retired women in NIOC – Lila Sabbaghian Rad, Seyed Amir Ahmad Mozafari, Mahshid Haji Heidari	86
24	Plyometric Training in Basket Ball – J.Prabhakar Rao, Prof.P.Venkat Reddy	89
25	Motivation in Sports – Dr.I.Balram Reddy, Prof.K.Surender Reddy	90
26	Physical Conditioning in Foot Ball – Prof.L.B.Laxmikanth Rathod, G.P.Paramjyothi	92
27	Exercise for Children – Dr.B.Sunil Kumar, Y.Emmanuel Shashi Kumar	94
28	Sport Person Performance up to Adroit through Technology – Dr.Md.Yousuf Khan, Md.Omar, Md. Amjad Ali Khan	95
29	Motivation for Children – Dr.V.Satyanarayana, S.R.Prem Raj	100
30	Comparative Study of Body Composition,Flexibility and Muscular Endurance between Body Builders and Weight Lifters – Dr.Kaukab Azeem, Dr.Abdul Hameed Al Ameer	102
31	Health and Fitness – G.Venkatnarayana, P.Ravi Shankar, Bikash Karar, Sunil Dutt	105
32	A Study on the An Aerobic Power and body composition of Athletics trained Vegetarian and Non Vegetarian – Prof. Syed Ibrahim	107


INDIANA
SPORTS
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ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp1-3

Virtual Reality and Simulation in Physical Education

Dr.Jayashree S.Reddy
Post Doctoral Fellow(UGC),Dept. of Edn.Gulbarga University

Abstract: There are many different ways to integrate and utilize technology in Physical Education. There is a range from the basic tools such as heart rate monitors, pedometers, and GPS, to complex computer generated sports simulators. Sports simulators and Virtual realities are pieces of equipment that incorporate computer software to simulate real life movements in sports- like settings. These pieces of equipment allow one to be active and play almost any sport in the comfort and privacy of their own home. There are many different sports and activities that one can play.

CONCEPT OF SIMULATION AND VIRTUAL REALITY: Virtual reality is an artificial environment that is created with software and presented to the user in such a way that the user suspends belief and accepts it as a real environment. On a computer, virtual reality is primarily experienced through two of the five senses: sight and sound. Virtual reality (VR) is a term that applies to three-dimensional (3D) computer-simulated environments that can simulate places in the real world, as well as in imaginary worlds. Today, most virtual reality environments consist of visual and audio experiences, displayed on a computer screen. Some examples are [http//:secondlife.com] and [http//:activeworlds.com]. Some more advanced virtual reality environments include additional sensory information such as surround sound through speakers or headphones through a head-mounted display (HMD) and haptic systems that include tactile information through the use of biosensors attached to the skin, generally known as force feedback. These advances are used in medical, military, as well as gaming applications. Virtual reality can be divided into; i)The simulation of a real environment for training and education. ii)The development of an imagined environment for a game or interactive story.

DIFFERENT KINDS OF VIRTUAL REALITY

There is more than one type of virtual reality. Furthermore, there are different schema for classifying various types of virtual reality. Jacobson (1993a) suggests that there are four types of virtual reality: (1) immersive virtual reality; (2) desktop virtual reality (i.e., low cost homebrew virtual reality); (3) projection virtual reality; and (4) simulation virtual reality.

SIMULATION: "a simulation should imitate the internal processes and not merely the results of the thing being simulated", or " the act of imitating the behavior of some situation or some process by means of something suitably analogous (especially for the purpose of study or personnel training), the act of giving a false appearance; or it is a representation of something"

TYPES OF SIMULATION

Simulators are usually divided into the following categories or **simulation modes**; Behavioral simulation, Functional simulation, Static timing analysis, Gate-level simulation, Switch-level simulation and Transistor-level or circuit-level simulation

SIMULATORS AND VIRTUAL REALITY IN SPORTS

Sports simulators and Virtual realities are pieces of equipment that incorporate computer software to simulate real life movements in sports- like settings. These pieces of equipment allow one to be active and play almost any sport in the comfort and privacy of their own home. There are many different sports and activities that one can play. With this technology, one can play golf, basketball, volleyball, baseball, hockey, bowling, archery, soccer and others all year- round and indoors. These state of the art systems use high speed vision cameras that can take two thousand pictures each and every second. These cameras are able to determine the exact trajectory, speed, and direction of any object with proven pin-point accuracy. These machines use a combination of high speed performance CCD chips, the latest in LED technology, and state-of-the-art optics to track any object from any location. This technology can be used in many ways. It can be used in residential, commercial, educational, and training settings. There is a range of shapes and sizes that can fit in almost any room and budget. With software for almost any sport, there is no limit on what one can do. Sports simulators have many useful features that can be used in physical education. This sophisticated equipment can allow the students to practice many different skills in a limited amount of space. It can also allow the teacher to track the student's progress in a variety of sports skills and see what areas of the player's game need to be improved. Another way these simulators can be used in physical education is when the teacher lacks gym space. When there are other events going on in the gym, the space is limited for activities. When teachers cannot utilize the gym space, they are forced to use another classroom. Simulators could be moved to another room within the school and be used to play many different sports games. The teacher can still teach important sports skills by using the simulators. Not only could these systems be important with limited space, but they can help motivate students to improve their skills. Simulators can help make learning fun and enjoyable for students, and improve their sports skills at the same time.

McMaster University has unveiled the first interactive motion simulator to be used for teaching undergraduate students how to develop software for simulated flight, driving, real-time game design, medical research, virtual reality systems, and a host of other applications.

Mohnsen (2001) noted that in 1985 a programmer developed a virtual reality system so that he could learn to juggle. With virtual goggles over his eyes and virtual gloves on his hands, which were both connected to a computer, the programmer picked up the virtual balls and began practicing juggling. The programmer created a new artificial world in which the balls moved downward in slow motion, thus altering physics to suit his needs. This gave him more time to react accurately; however, each of his tosses and catches needed to be accurate since the computer responded to the force and release angle of each throw. The better the programmer juggled, the faster he allowed the virtual balls to move, until the speed matched reality. Eventually, the programmer removed the virtual equipment and began juggling real balls. In addition, virtual reality simulators for golf (Puttre, 1993), skiing (Lerman, 1993), and squash (Johnstone, 1990) have been around since the early 1990s.

Virtual reality offers (1) greater student learning in relation to the national standards (National Association for Sport and Physical Education, 1995), (2) an increase in student motivation for learning, and (3) fewer student accidents in the learning environment. Although the research is not definitive, virtual reality appears to be an ideal training …

Virtual Reality may be used for athletics in several ways. First, VR can give enhanced training and instruction for participating in traditional sports. Second, VR can enhance non-participatory engagement in traditional athletics that includes, but is limited to, watching. Third, VR can lead to new virtual components for traditional sports or solely new sports within virtual constructs

DISADVANTAGES OF TECHNOLOGY IN PHYSICAL EDUCATION

The goal of physical education is to increase physical activity and fitness levels. When incorporating technology into physical education curriculum it could decrease the time the class has for students to be motor engaged. When students have less time of being engaged in physical activity the whole reason for physical education class is lost. One of the big disadvantages of technology in physical education is that students tend to lose out on learning team building skills.

CONCLUSION

Some challenges in the field of virtual reality are developing better tracking systems for improved interaction, developing more realistic virtual worlds at a faster pace, ergonomics, and cost. Virtual Reality is already a huge commercial sector with uses in amusement, information processing, design, medicine, robotics, trade, direction, military, real property, travel, sports and education. Multiple factors will probably speed up growth in basic VR applied science and expand its use to diverse industries. Evolutionary and revolutionary (e.g. nanotech computing, holographic computing, biological and quantum computing) advances in computing will improve the quality and drop the price of Virtual Reality systems available to businesses and the general public. Progress in the field of telerobotics will grow the demand for high-quality VR-based interfaces for human users

REFERENCES

Websites:

http://en.wikibooks.org/wiki/Tidbits_in_Tech:_Integration_in_Education/Technology_in_Physical_Education,_Is_It_Possible%3F

http://en.wikibooks.org/wiki/Tidbits_in_Tech:_Integration_in_Education/Technology_in_Physical_Education,_Is_It_Possible%3F

http://www.virtego.com/3.HTM

http://searchcio-midmarket.techtarget.com/definition/virtual-reality

http://www.aect.or

http://iroi.seu.edu.cn/books/asics/Book2/CH13/CH13.1.htm

McMaster University(2006,September 24) Virtual Reality Simulator Brings Computing And Software Education To Life. *ScienceDaily*. Retrieved May 26, 2011, from http://www.sciencedaily.co/releases/2006/09/060922093713.htm

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp4-11

Impact of 12 weeks Aerobic Exercises and Water Exercise on Quality of Life (QOL) and Happiness among middle age non- athlete women

1 Lila Sabbaghian Rad,2 Soleimani Tooran, 3 Norbakhsh Mahvash, 4 Alijani Eidy, 5 Ensan Atefeh, 6 Soleimani Ali

1,6 Physical Education and Sport Science Department, Science and Research Branch,Islamic Azad University,Tehran,Iran2 Physical Education MA of Azad Islamic University Karaj Branch,3,4 Associate Professor Azad Islamic University Karaj Branch, 5 Lecturer Science & Culture University

Abstract:

The present study aims at review impact of doing aerobic exercises and water exercise for 12 weeks on quality of life and happiness among middle age non- athlete women. Statistical population of this research was middle age women who had participated in aerobics class and water exercise and they were available for this study. Among them, 60 persons, as volunteers, participated in this study. Participants were randomly divided into three aerobic and water exercise and control groups with 20 members. Methodology of this study was of semi- empirical and applied type and research tools included Quality of Life (QOL) short questionnaires from World Health Organization (WHOQOL-26) and Oxford Happiness Questionnaire. The results showed that aerobic exercises has affected on quality of life among middle age women ($P<0.05$). Aerobic exercises has also affected on happiness of middle age women ($P<0.05$). The exercises of water exercises have had effect on quality of life among middle age women ($P<0.05$). The exercises of water exercises have had impact on happiness among middle age women ($P<0.05$). There is a significant difference in rate of quality of life and happiness of middle age non-athlete women among three groups: Aerobic and water exercise and control groups ($P<0.05$). Similarly, there is significant difference in quality of life and happiness between aerobic and water exercise groups and control group ($P<0.05$). However, there is no significant difference among two groups of aerobics and water exercise ($P<0.05$). Generally, study results indicated that both water exercise and aerobic exercises have affected on improvement of quality of life and happiness of middle age non- athlete women.

Keywords: *Quality of Life (QOL), happiness, middle age, aerobic exercises, water exercise*

Introduction Today, health subject has extremely drawn researchers' attention. Definition by WHO of term *health* and other definitions typically emphasize on human's comprehensive fitness (1). Health-related quality of life focuses on physical, psychological and social dimensions and it seems that it is a distinct and clear area that is affected by individual's ideas, feelings and expectations (17). During middle age period (40-60), non- athlete women are faced with reduced cardiac and respiratory resistance and in general decreased level of physical fitness as well as start of menopause. Menopause is to stop in ovary's activity and secretion of the related hormones and it leads to the end of fertility among women (2). Menopause is not kind of disease, but it is followed by a lot of physical and mental problems (*Ibid*). Sport and physical exercise may affect on recovery of the given problem to some extent (18). With respect to this fact that today the community is suffering from scarce exercise for several reasons and technological advancement has caused to widespread machining life, so non- athlete women may be suffered from inappropriate physical state in terms of all factors of physical fitness and more importantly including failure in cardiovascular system, breathing and muscles etc and also because of the given characteristics of these ages, metabolism of those people decreases physiologically; and as a result, they may be suffered from increasing weight and obesity that comprises a cycle from obesity to disease and from disease to obesity per se. Similarly, because of the fact that simultaneously with increasing in age, heart diseases,

arthritis, diabetes, osteoporosis, especially among women, and losing muscular strength and power, weakness of respiratory system and skeletal limitations and atrophy of muscles are increased in these people, the mentioned issues may restrict the individual sporting capacity (3). Numerous researches have also showed that lack of sporting exercises might create mental traumas. Mac Convill (2002) introduced nine important factors in creation of happiness and mental health where one of the foremost factors is doing sport and physical exercises (19). Leonhardt (2003) has refuted *Theory of Money brings Happiness*, arguing that exercise is a strong tool for reduction of mental stresses and increasing happiness (20). Quality of life is life fundamental thought that paid attention to person and individual life environment while thinking about excellent standards and it is related to welfare, health status, satisfaction and hope. However, it differs from them at the same time; one may deem a set of physical, psychological and social fitness (like satisfaction, health, economic success, happiness etc), which are comprehended by a person and a group of individuals, as an appropriate definition about quality of life (21). Happiness is a type of feeling that all of us want to have but few of us may obtain it and that is the most common state of mind i.e. satisfaction and happiness and distinctive characteristic of such feeling is gratitude, Internal tranquility, and sense of satisfaction and interest toward others (4). In history, exercise has been considered useful and appropriate for body and like as music for body and such definition infiltrates into aerobic exercise. Several thousand years ago, Iranians were the first nation which they did exercise systematically and rhythmically. Aerobic sport belongs to Iranian people and it kind of exercise that grants hilarity and health to all people. Aerobics may improve cardiac, vascular and respiratory power, and strengthen and optimize body muscles while it is the best way for control and losing weight. The best element of aerobics is harmony of nerves and muscles. Aerobic athletes are active, positive, creative and entrepreneur peoples and they enjoy further harmony, speed, agility and balance in doing their daily tasks while resisting against life adverse circumstance better. Sense of synergy is at high level among them. Aerobics is the best recreation for families and one of the ways toward achieving a secured community and it fights against depression (5). At the present study, the impact of aerobic exercises and water exercise on quality of life and happiness of non- athlete women during middle age period has been explored. Collet et al (2010) carried out a study under title of effect of a basic plan of physical exercise on quality of life among non- active old people. Results of their research showed that sporting exercises might have positive effect on quality of life among old people. One can justify the possible reason for positive impact of physical exercise on quality of life in that physical activity may reduce the activity limitations, and lead to more independence, improvement in role- playing and a happy and prosperous life; and consequently) it causes improvement in quality of life and having good sense in old population (22). Parker et al (2008) conducted a study called physical exercise, quality of life and mental health in old people and they found that physical exercise is one of most efficient methods of prevention from mental and physical disorders during old age period and it postpones old age period and improves health and hilarity among this people while rising level of life quality among them (22). Sibel Eyigor et al (2007) conducted study under title of effects of exercise plans of basic group on physical performance, muscular power and quality of life in old women. Carrying out this study was aimed at identifying the impact of exercise plan of basic group (fundamental exercises) on physical performance, muscular power and Quality of Life (QOL) 4 in old women. Methodology was of empirical type and statistical population of old women comprised ones with ages between 62 and 76 and statistical sample included 20 persons of them whom they were evaluated during a 8 week exercise period and they were trained by technical and modern instructions. Research tools (Pretest and Post- test) included 4-20ms walking test- 6minutes walking test- , rising from steps, Sit-up test on chair and Isokinetic test on muscles of knee, heel, and also it comprised Quality of Life QOL 36 question short questionnaire and finally application of Geriatric Depression Scale (GDS) 5. After completion of exercise plan, it was identified that all physical performance tests and scores of participants' QOL questionnaires show a significant improvement and progress. Given that probability ($P<0.05$) in assessments of strong muscles, and at the maximum angular accelerating exercises, a significant increase has shown in torque force for opening and bending of knee as well as bending leg sole and heel ($P<0.05$). This study led us toward this conclusion that when this exercise plan is carried out for old women, it may improve physical performance, muscular power, and at the same time in knees, heels and soles and eventually approximation of rising scores in quality of life in future. At last, researcher managed to show that such exercise plans might be followed by the needed efficiency and reliability for the given age group of women (24). Fountain (2007) conducted a study on physical exercise and improvement of mental health and indicated that individual and collective physical exercise improves mental health and physical fitness and contributes to reduction of anxiety and

depression (25). In a meta-analysis which was conducted by Plant and Rodin (2006) to investigate into effect of exercise on mental health, they came to the result in that sporting exercises might improve temper and spirit, mental health, self- reliance and self- esteem of participants (26). Dilorenzo et al (1999) concluded that appropriate physical exercises play a vital role in rising serotonin level (an effective hormone in temper and spirit improvement). Thus, it seems that exercise may contribute to secrete more serotonin in body and it is maintained for longer time during exercise (27). Kelp et al (1999) declare that physical exercises affect on improvement of temper and spirit by two direct ways: one is to spread of Androphene (Androphenes are natural pain- killers and cause creating pleasant feelings so that physical exercise may cause rising at Androphene levels) and the latter by reduction at cortisol levels (the hormone that is secreted by neural stress) (28). Borna et al (2010) carried out a study on effect of 8 weeks walking regular exercises on rate of happiness and mental health among old women. In this research, 49 persons of old women between ages 60 and 75, residing in Tabriz old people asylum participated voluntarily in this study. Descriptive methodology of this study was of field type. To measure rate of happiness and mental health among old people, Oxford Happiness Questionnaire (OHQ) was used. Participants did regular walking and aerobic exercise for eight weeks and within three weekly sessions during 45minutes. The statistical method of dependent groups was used to test research hypotheses by t- test. The result showed that there is significant difference between self- esteem among old women before and after exercise and generally results of this study indicate that in comparison with non- athlete old people, old women who participated in physical exercises and sporting activities enjoy higher mental health and happiness (6). Shabani Bahar et al (2006) carried out a study on impact of special exercise plan on quality of life among non- athlete menopausal women. Their methodology was of semi- empirical and field type. Statistical population of menopausal women from Tehran Region-6 is a sample including 60 participants and they were chosen randomly with 52 as average age. Research tools comprise special and regular aerobic exercises for 12 weeks and with 3 sessions per week and also Menopausal Women's Quality of Life Standard Questionnaire (MENQOL Questionnaire). Results showed that there was a significant effect in exercise both in physical and mental and social fields while such difference was not significant in two vasomotor and sexual fields. Similarly, one can conclude in general that participants' quality of life had significant effect on improved exercise plan (7). Aslankhani, Mohammad Ali et al (2009) conducted a study on the interactive role of physical exercise and dimensions of mental health on quality of life among old women. The statistical sample of the present study included 140 passive old women who did not participated in any physical exercise and also 140 active old women who did regular physical exercise one hour during three days a week for 5 consecutive years. Method sampling was of multi- stage cluster type and they were selected randomly from different areas at west Tehran. Research tools included Goldberg- Hiller Mental Health Questionnaire and Lippard Quality of Life Questionnaire which they were specified to old people. Study result showed that there is significant difference between quality of life and elements of mental health in passive and active old women. And it can be concluded generally that physical exercise and sport had positive impact on elements of mental health and quality of life among old women (8). Pengel et al (2002) explored the effect of training and exercise treatments, hydrotherapy exercises (water exercise), and massage for patients who were suffered from lumbago (backache). These researchers reported that although no remarkable effect has been observed during six weeks up to three months, but such therapies may be useful from six weeks up to six months (29). Maher (2004) compared several treatments with each other including LASER therapy, massage therapy and hydrotherapic exercises (water exercise). These exercises lasted two month with three weekly sessions. He concluded that water exercises plays greater role in reduction of lumbago and improvement of quality of life (30). Morad Parmon (2004) conducted a hydrotherapy plan to recover the people who were suffered from chronic lumbago. He concluded that hydrotherapy (plus water exercise) for three month with three weekly sessions might reduce their lumbago. Similarly, these exercises have caused to increase flexibility of spinal cord and hamstring muscles (9).

Methodology This study was of semi- empirical and applied type. Research plan (2×3) comprises three groups including (aerobic, water exercise and control) groups with pretest and posttest. Statistical population in this research is middle age women who had participated for the first time in aerobics classes and water exercise and they were available for testing. 60 persons voluntarily participated in this study among them. Participants were randomly divided into three groups of aerobic, water exercise and control. In the current study, independent variable is aerobic exercises and water exercise and dependent variable includes quality of life and happiness. With respect to methodology and research goals, the best tools for gathering of the needed information are questionnaires. At the present research, Quality of Life (QOL) 26- question short questionnaire of World Health Organization (WHOQOL-26) has been used. This form includes 26 questions about four subjects: physical health, psychology, social relations and life state which are used as a scale for the statistical population and it totally comprises life general quality and levels of public health (18). Questions in this questionnaire are of 5- choice type and their scoring is done based on scores from 1 to 5. For instance, answers to these questions include choices of not at all, a little, so-so, very and very extremely where answers *not at all*, *a little*, *so-so*, *very* and *very extremely* denote scores of 1, 2, 3, 4 and 4, respectively. Since 1996, validity and reliability of this questionnaire have been measured by WHO and in different countries and cultures (10). Also, Gholami Kurd Abadi (2003) has obtained value of Cronbach Alpha coefficient as 90% for reliability coefficient of this test (11). To make sure further in this study, reliability coefficient for QOL questionnaire has been computed by Cronbach alpha coefficient that was 81%. Some of professors in psychology and physical exercise disciplines have observed this questionnaire, and its validity was virtually verified. Oxford Happiness Questionnaire (1989) was also used in this study. This questionnaire has been also prepared by Argyle and Lo in 1989. After consulting with Beck, Argyle decided to reverse Beck's Depression Scale Sentences and after doing it, they added 11 other items to 21- question depression scale in order to cover other aspects of happiness. After reading this 32 question form, they omitted 3 questions of them. Thus, its final form includes 29 items. After its delivery, this tool has led to many researches (10). In this questionnaire, each question has 4 choices and these choices have scores of 0 to 3 respectively. Choices of never, a little, in average, and very have scores of zero, one, two and three respectively. Sum of scores among 29 items constitutes total scale. Participants' score also range from zero to 87. Validity of this test has been verified by Argyle and Lo (1990) abroad and by Alipour and Noon Bala (1999) in Iran. (12, 31) Similarly, In his study, Keshavarz (2005) reported the value of Cronbach Alpha coefficient as 82%.In order to conduct a basic review on reliability and validity of Oxford Happiness Questionnaire, 101 students from Allameh Tabatabaei and SHAHED Universities (62 women and 39 men) with age range (19-39) have been explored. In this test that was carried out by Alipour et al (2000), internal consistency of questionnaire items showed that all its 29 items were correlated to total score. The values of Cronbach alpha coefficient and final half- split test were 93% and 92% respectively. After 3 weeks, questionnaire retest reliability (m=25) was 79%. Nour (1995) after 8 months has reported retest reliability as 83% by means of a shorter form. In this study, reliability of this questionnaire has been calculated as 94% by means of Cronbach alpha coefficient (14) that it indicates an acceptable coefficient of reliability. For 12 weeks, samples were under designated plan of aerobic exercise and water exercise. Number exercise sessions were 3 per week and 1 hour period was designated for each exercise session. At the beginning, all participants acted with 50% of maximum heart beat and during twelfth week, the exercise was done with 75% of maximum hear beat rate. Aerobic exercises included doing calisthenics for 15 minutes which was started by slow pace and routine exercises and then harmonious aerobic simple exercises (Low Impact) along with music were used and at these exercises one of legs is always placed on ground. Low Impact exercises included walking on site, slow pace, pace 7 &8, walking to, walking fro, mumbo, steering pace, pace and knee (where a composition of four motions was used maximally in each session) and at the end of each session returning to the original state was done by vigorous and slow movements for 15 minutes. Physical exercises in water comprised routine exercises at shallow part of pool for 15 minutes by walking and also doing isometric and routine exercises and then doing aerobic exercises for 30 minutes like quick walking along 10 meters and slow walking and/ or slow running along 10 meters as well as 10 meters walking and then 10 meters quick running and 10 meters slow running and also using pool wall to create resistance and by application of special sporting dumbbells in water to do strong exercises at the shallow and deep parts of the pool. Furthermore, at the deep part of pool, persons used floating belts and at the end of returning to the primary state, some routine exercises were done for 15 minutes and by application of sauna and Jacuzzi. It should be noted that body activity or class planning goal, over this time and approaching to the final week, period of execution of main

exercise plan was reduced to 45 minutes by decrease in period of starting and finishing calisthenics. At this study, descriptive and inferential statistics were used for data analysis. In the other words, in order to organize and summarize raw scores and description of the derived measures from samples, descriptive statistics (Average, percentile, frequency, standard deviation and tables) was used. Similarly, in data analysis, SPSS software was utilized along with testing hypotheses. First, demographic characteristics were described in research samples and tables of frequency distribution and percentile were drawn. Descriptive statistics was used for depiction of data from tendency indices toward center and from discrepancy to frequency distribution, and diagram of frequency distribution and normality index of variable distribution. And at second chapter, in order to conduct descriptive analysis of study findings and testing of hypotheses, first Kolmogorov- Smirnov Test was used to determine normality of data (data-test significance). Then binary t- test, one- way analysis of variance and Tuki Follow up Test, t- test of two independent group and Kendall Correlation Coefficient were explored.

Table -1: The results of t-test for the effect of Aerobic exercise on Quality of life of subjects

Variable	Average	Standard deviation	Average difference	T value	Degrees	Significance
Quality of life before aerobic exercises	85.05	11.20	5.8	2.15	19	0.04
Quality of life after aerobic exercise	90.85	9.87				

Table -2: The results of t-test for the effect of Water exercise on Quality of life of subjects

Variable	Average	Standard deviation	Average difference	T value	Degrees	Significance
Quality of life before water exercise	86.25	7.9	6.85	3.86	19	0.001
Quality of life after water exercise	93.10	9.3				

Table -3: The results of t-test for the effect of Aerobic exercise on Happiness of subjects

Variable	Average	Standard deviation	Average difference	T value	Degrees	Significance
Happiness before aerobic exercises	85.61	17.25	5.39	2.35	19	0.03
Happiness after aerobic exercise	91	16.04				

Table -4: The results of t-test for the effect of Water exercise on Happiness of subjects

Variable	Average	Standard deviation	Average difference	T value	Degrees	Significance
Happiness before water exercise	84.40	13.6	12.25	4.64	19	0.00
Happiness after water exercise	96.65	11.2				

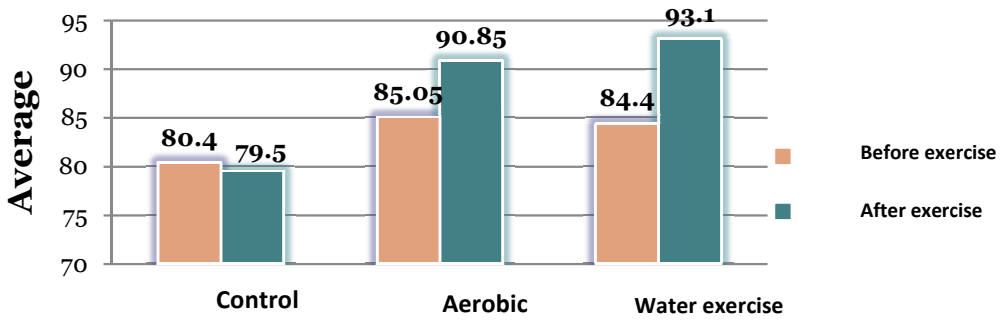
Table-5 : One-way ANOVA test results to examine differences in Quality of life between group

Variable	groups	Average	F value	Significance
Quality of life	Aerobic	79.50	7.599	0.001
	Water exercise	93.10		
	Control	90.85		

Table -6: Tukey post hoc test results to examine differences in Quality of life between research groups

	Average difference	P value
Control group		
Water exercise group	-14.84	0.005
Aerobic group	-12.57	0.02
Water exercise group		
Control group	14.84	0.005
Aerobic group	2.25	0.849
Aerobic group		
Control group	12.57	0.02
Water exercise group	-2.25	0.849

Diagram-1 Rate of Quality of life among studied groups



Table–7: One-way ANOVA test results to examine differences in Happiness between groups

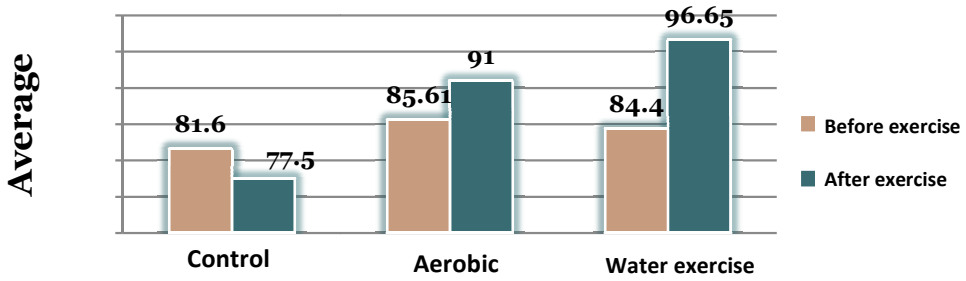
Variable	groups	Average	F value	Significance
Happiness	Aerobic	77.5	7.730	0.001
	Water exercise	96.65		
	Control	91		

Table-8:Tukey post hoc test results to examine differences in Happiness between research groups

	Average difference	P value
Control group		
Water exercise group	-17.59	0.005
Aerobic group	-11.95	0.034

Water exercise group		
Control group	**17.59**	**0.005**
Aerobic group	**5.65**	**0.313**
Aerobic group		
Control group	**11.95**	**0.034**
Water exercise group	**-5.65**	**0.313**

Diagram-2 Rate of Happiness among studied groups



Results and Discussion The present study was conducted by aiming at review of effect of 12 weeks doing aerobic exercises and water exercise on quality of life and happiness of middle age non- athlete women. In this section, in addition to discussion about results of testing hypotheses of the current research, we analyze findings of other parallel researches and their result will be compared with findings of testing the given hypotheses. Parallel research denote those studies which they deal with review of aerobics and water exercise impact (and of other similar and parallel factors), quality of life and happiness (and other similar and parallel factors). According to finding of the present study, a significant difference was observed between rate of quality of life among middle age non- athlete women before and after aerobic exercises at (α= 0.05) level so this is in conformance to the findings of studies done by Parker et al (2008), Cupper et al (1989), and Aslankhani et al (2010) concerning to exercise impact, particularly aerobic exercises on quality, health and comfort of life. Based on finding of this research, a significant difference is observed between rates of happiness among middle age non- athlete women before and after doing aerobic exercises at (α= 0.05) level. So aerobic exercises have affected on happiness of middle age women (23, 32,8). Also this finding is in conformity to the studies done by Goodarzi and Hemayat Talab (2005), Plant and Rodin (2006), Leonhardt (2003), and Shafiei (2001) about the impact of sport, Especially aerobic exercise on temper and spirit, mental health and happiness of participants (15,26,20,16). According to finding of the present research, a significant difference is seen in rate of quality of life in middle age non- athlete women before and after doing exercises in water at (α= 0.05) level and this is in conformity to the study findings by Golumin Francis (1998), Vargas (1998), Norton (1997), Maher (2004), Morad Parhoon (2005), and Shafiei (2001) concerning to effect of doing exercises in water on quality, health and comfort of life (33, 34, 35, 30, 9, 16). Also results and findings from Pengel et al (2002) suggested that no remarkable effect is seen after six to twelve weeks doing exercises on quality of their life so this contradicts to this finding, but they have also declared that doing such exercises might be helpful for six to twenty four weeks (29). According to finding of this study, a significant difference is observed in rate of happiness among middle age non- athlete women before and after doing exercises in water at (α= 0.05) level and water exercises were effective on happiness of middle age women so this is in conformity to study findings by Archive et al (1999) concerning to impact of sport, especially doing exercises in water, on temper and spirit, mental health and happiness of them (36).

Conclusion This study disclosed the effect of exercise on better life and happy life. Findings of researches and the present study may be purposefully used, especially in community of non- athlete women and create motive for them. Findings of this study indicated that aerobic exercises and water exercise have influenced on improvement of quality of life and happiness of middle age non- athlete women. No significant difference was observed concerning to quality of life and happiness among water exercise and aerobic group and at the same time happiness variations have been greater in water exercise group while both doing water exercise and aerobic exercises have been effective on improvement of quality of life and happiness among middle age non- athlete women. The results signified that water exercise exercises have been effective in improvement of quality of life and happiness of middle age non- athlete women. Thus, it is suggested to middle age non- athlete women to participate in doing water exercises in order to improve quality of their life and to make their life happier. Similarly, it was indicated that both aerobic and water exercise exercises have been effective on improvement quality of life and happiness among middle age non- athlete women; therefore, it is suggested to them participate in each of aerobic and water exercise exercises which are provided for them in order to improve quality of their life and to make their life happier. Whereas results of this study showed that happiness variations had been greater in water exercise group; thus, it is suggested to middle age non- athlete women to participate further in water exercise in order to make their life happier.

References: 1- Rostami, Arian, (2002), Effect of training on quality of women's life during menopause, Unpublished MA Thesis healthcare training discipline, Tarbiat Moders University, Faculty of Medical Sciences.2- Jonathan. S (1996), Women's diseases, Tehran Translators Group, Eshtiagh Pub., 1996 3- Veisi, Koroush and Keshtidar, Mohammad (2009), Aerobic, training and its advantages, 1st ed. , Tehran, Bamdad Ketab 4- Karlson, Richard (2001), Happiness, Trans. By Parviz Sharifi Daramadi, Tehran, Ravansanji Pub., year of publishing in source language (1996) 5- Shahidi, Fereshteh, (translator), Physical exercise and its resulting mental advantages, Resolution of International Society of Sport Psychology (ISSP) 6- Borna, Saba et al (2010), Effect of eight weeks regular walking exercises on rate of happiness and mental health of old women, An abstract of purposed essays in Conference of Sport & Mental Health, Tehran, Olympic National Academy 7- Shabani Bahar, Gholamreza et al (2006), Impact of special exercise plan on quality of life among non- athlete menopausal women, Journal of Research on Sport sciences, No XII, pp 123-133. 8- Aslankhani, Mohammad Ali, Shams Amir, Shamsipour Dehkurdi, Parvaneh (2008), Comparison between mental and physical exercises and a composition of static and dynamic equilibrium in healthy old people, SLAMAND Quarterly, Third year, No IX & X. 9- Morad Parmon, Aziz (2005), Effect of hydrotherapy plan in treatment of patients who suffered from lumbago, MA Thesis. 10- Hafarian, Leila (2007), Comparison of self- esteem, happiness, quality of divorce And non- divorced women in Shiraz city, MA Thesis, Islamic Azad University Khorasegan branch 11- Gholami Kurd Abadi, Maryam (2003), Review of quality of life in insulin- dependent diabetic (type I) and insulin- independent (type II) patients in Isfahan, MA thesis in general psychology discipline, Islamic Azad University Khorasegan branch 12- Alipour Ahmad, Nour Bala Ahmad Ali (1999), Basic review on reliability and validity of Oxford Happiness Questionnaire in students of Tehran University, Thought & Behavior Monthly Journal, No (I & II): 55, 56 13- Keshavarz, Amir (2005), Review of relationship between happiness and hilarity, resoluteness, flexibility and demographic characteristics of people of Isfahan, MA Thesis in General Psychology discipline, Isfahan University 14- Alipour Ahmad, Nour Bala Ahmad Ali, Ajei Javad, and Motieyan Hossein (2000), Happiness and performance of body's immunity system, Journal of Psychology IV (3): 219, 233 15- Goodarzi, Mahmoud and Hemayat Talab Rasoul (2005), Comparison of happiness in athlete female and male students of Tehran University, HAREKAT Quarterly, (XXV): 432-52 16- Shafiei Shiva (2001), Review on reasons for lumbago and response to medical and physical therapies in 156 patients who suffered from lumbago out of references to nerves clinic of Tabriz Razi center, an abstract of purposed essays in Lumbago Nationwide Conference, Tehran.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp12-14

Effect of Training with Gym Ball and Medicine Ball on Motor Fitness – A Comparative Study

Gopal Chandra Saha (Assistant, P.G. Govt. Institute for Phy.Edn., Banipur,West Bengal)
Shantanu Halder (Research Scholar, Kalyani University) and **Somnath Roy** (MPEd Scholar)

Abstract

The main purpose of the study was to find out the comparative effect of training with Gym Ball and Medicine Ball on Motor Fitness ability of sports related persons. Out of 90 students 60 male subjects were randomly selected from Post Graduate Government Institute for Physical Education, Banipur. 20 Subjects each was randomly and equally divided into three equal groups and was named as Group 'A' (Gym ball Group) Group 'B' (Medicine ball Group) and Group 'C' (Control Group) and accordingly training was given, whereas Group 'C' (Control Group) received no training. Variables undertaken were Abdominal Strength, Agility, Flexibility and Balance. In order to investigate the existence of significant difference in the effect of Training with Gym Ball and Medicine Ball on Motor Fitness among three groups, Analysis of Co-variance statistical technique was used. The result revealed that there was insignificant difference in the development of Motor Fitness through the exercises training between Gym ball and Medicine ball.

Key Words: Gym Ball, Medicine Ball, Motor Fitness.

Introduction

Motor Fitness is necessary for success in most of the games and sports. Without a high level of motor fitness an individual will not be able to withstand the stress and strain caused on the body by various games and sports. Motor Fitness in addition to bringing about better performance in games and sports, also helps in prevention of injuries in the long run(Doneash Scaton et.al, 1956).Every game needs different type of Motor Fitness. Motor Fitness differs from game to game because every games has its own rules, regulation and technique. Yet some times we find some games need high quality motor fitness and sometimes it is difficult to understand and differentiate the Motor Fitness between the two games(Doneash Scaton et.al, 1956).Now-a-days to develop Motor Fitness various exercise materials are used such as Gym Ball and Medicine Ball.In order to investigate such subject matter of this thought and in order to study the degree of its logical authenticity in expecting the same as the established fact, such study has been undertaken.

Statement of the Problem

The main purpose of the study was to find out the comparative effect of training with Gym Ball and Medicine Ball on Motor Fitness ability of sports related persons.

Hypothesis

It was hypothesized that due to the comparative effect of training with Gym Ball and Medicine Ball there would not be any significant differences on motor fitness ability of sports related persons.

Methodology

Out of 90 students 60 male subjects were randomly selected from Post Graduate Government Institute for Physical Education, Banipur. They were selected at random for the purpose of the study. The age of the subjects ranged between 21 to 27 years. 20 Subjects each were randomly divided into three equal groups and was named as Group 'A' (Gym ball Group) Group 'B' (Medicine ball Group) and Group 'C' (Control Group), Further Group 'A' was assigned fitness training with Gym ball and Group 'B' was assigned fitness training with Medicine Ball while no training was assigned to Group 'C' (Control Group).

Variables:

On the bases of review of related literature, expert's opinions and research scholar's own Understanding the following variables have been undertaken:

1) Abdominal strength (core strength) was measured by the Bent knee sit up.
2) Agility was measured by 4 x 10 yards shuttle run.
3) Flexibility was measured by Sit and Reach test.
4) Balance was measured by stork stand test.

Findings

TABLE- 1

Analysis of Co-variance of the means of Bent Knee Sit ups Test among two experimental groups and one control group

Mean	Gym	Medicine	Control	Source of Variance	SS	df	MSS	F -ratio
Pre-test	39.60	37.25	40.70	Among	124.23	2	62.12	1.13
				Within	3128.75	57	54.89	
Post-test	45.10	41.75	42.70	Among	119.23	2	59.62	1.73
				Within	1960	57	34.38	
Adjusted Post-test	44.86	42.86	41.83	Among	94.99	2	47.50	2.87
				Within	926.21	56	16.54	

$F_{.05}(2,57) = 3.15$, $F_{.05}(2,56) = 3.15$ A = Among means variance. W = Within group variance.

The Table-1 clearly revealed no significant differences in Bent Knee Sit ups Test among two experimental groups (Group-A i.e. Gym Ball Group and Group-B i.e. Medicine Ball Group) and one Control Group i.e. Group-C in pre-, post- and adjusted post-test phases at 0.05 level of significant (F=1.13, 1.1.73 and 2.87<3.15 respectively). It was evident that the Gym Ball Group is better than the Medicine Ball Group and Control Group.

TABLE- 2

Analysis of Co-variance of the means of 4 x 10 yards Shuttle Run Test among two experimental groups and one control group

Mean	Gym	Medicine	Control	Source of Variance	SS	df	MSS	F -ratio
Pre-test	9.34	9.17	9.48	Among	0.98	2	0.49	2.58
				Within	10.78	57	0.19	
Post-test	9.49	9.24	9.42	Among	0.70	2	0.35	1.30
				Within	15.0	57	0.27	
Adjusted Post-test	9.48	9.37	9.30	Among	0.33	2	0.17	1.12
				Within	8.32	56	0.15	

$F_{.05}(2,57) = 3.15$, $F_{.05}(2,56) = 3.15$ A = Among means variance. W = Within group variance.

The Table-2 clearly revealed no significant differences in 4 x 10 yards Shuttle Run Test among two experimental groups (Group-A i.e. Gym Ball Group and Group-B i.e. Medicine Ball Group) and one Control group i.e. Group-C in pre-, post- and adjusted post-test phases at 0.05 level of significant (F=2.58, 1.30 and 1.12<3.15 respectively). It was evident that the Gym Ball group is better than the Medicine Ball group and Control group.

TABLE- 3

Analysis of Co-variance of the means of Sit and Reach Test among two experimental groups and one control group

Mean	Gym	Medicine	Control	Source of Variance	SS	df	MSS	F -ratio
Pre-test	16.83	17.65	16.92	Among	8.15	2	4.08	1.10
				Within	212.13	57	3.72	
Post-test	17.67	18.34	17.24	Among	12.30	2	6.15	1.83
				Within	192.0	57	3.37	
Adjusted Post-test	17.94	17.89	17.43	Among	3.16	2	1.58	2.71
				Within	32.59	56	0.58	

$F_{.05}(2,57) = 3.15$, $F_{.05}(2,56) = 3.15$ A = Among means variance. W = Within group variance. The Table-3 clearly revealed no significant differences in Sit and Reach Test among two experimental groups (Group-A i.e. Gym Ball Group and Group-B i.e. Medicine Ball Group) and one Control Group i.e. Group-C in pre-, post- and adjusted post-test phases at 0.05 level of significant (F=1.10, 1.83 and 2.71<3.15 respectively). It was evident that the Gym Ball Group is better than the Medicine Ball Group and Control Group.

TABLE- 4

Analysis of Co-variance of the means of Stork Stand Test among two experimental groups and one control group

Mean	Gym	Medicine	Control	Source of Variance	SS	df	MSS	F -ratio
Pre-test	19.99	21.30	16.01	Among	304.21	2	152.11	0.46
				Within	18968.57	57	332.78	
Post-test	36.69	36.98	23.79	Among	2269.12	2	1134.56	2.32
				Within	27843.0	57	488.47	
Adjusted Post-test	35.95	35.15	26.35	Among	1120.45	2	560.23	2.11
				Within	14867.53	56	265.49	

$F_{.05}(2,57) = 3.15$, $F_{.05}(2,56) = 3.15$ A = Among means variance. W = Within group variance.

The Table-6 and Figure-8 clearly revealed no significant differences in Stork Stand Test among two experimental groups (Group-A i.e. Gym Ball Group and Group-B i.e. Medicine Ball Group) and one Control group i.e. Group-C in pre-, post- and adjusted post-test phases at 0.05 level of significant (F=0.46, 2.32 and 2.11<3.15 respectively). It was evident that the Gym Ball group is better than the Medicine Ball group and Control group.

Discussion of Findings

Gathering pre treatment and post treatment results and its subsequent statistical calculation employing the statistics of Analysis of Co-variance (ANCOVA) revealed that there was insignificant difference in the development of Motor Fitness through the exercises of Gym ball and Medicine ball. The Motor Fitness component selected under the study were- Core Strength (Abdominal Strength), Agility, Flexibility and Balance. The effect of Gym balls is their ability to provide an unstable surface to exerciser. Gym ball help to increase balance, increase the strength of the core region (Warpeha, 2004).

The medicine balls also have been used historically for training upper and lower body muscles as well as core muscles(Faigenbaum et. al, 2007). medicine balls have been used in a variety of populations including resistance training in school-aged boys (Faigenbaum et. al, 2007 and Cocrane and Hawke, 2007), to increase the motor abilities and fitness and fitness in obese children(Korsten, 2007).The exercises chosen for both Gym ball and Medicine ball were found to have some similarity in movement execution and activating of the same muscle group. The doses of exercises were also found similar. That's there was probability of getting insignificant difference of Motor Fitness development between the two types of training among two experimental groups i.e. Gym Ball Group and Medicine Ball Group. Thus the null hypothesis of no difference in developing Motor Fitness through the two types of training was accepted. Further it was seen that there was a insignificant higher trend in improvement of Motor Fitness through Gym Ball Training than Medicine Ball Training. This result revealed that Gym Ball may be a new and interesting equipment for the subjects and they enjoy it while training with the same apparatus without filling bored and monotonous rather feeling a sense of fatigue.

Conclusion: On the basis of analysis of data and interpretation of results it was concluded that exercise training with Gym ball and medicine ball have showed positive improvement but no difference between both the training was found. Further it may concluded that both the ball training is beneficial for the development of motor fitness.

References:

1. Doneash Scaton et.al, "Basic Book of Sports" (Engle wood cliffs, New Jersey : Prentic Hall INC,1956). P.6
2. Lorne Gold Enberg, Peter Twist, "Strength Ball Training, 69 Exercises using Swiss balls and medicine ball". Pg:x-xi,
3. Warpeha Joseph M.: The stability Ball: Not Just for Circus any more. NSCA's Performance Training Journal. Nov 2004. Vol-3. No-6.
4. Faigenbaum Ad, McFarland JE, Johnson L, et. al: Preliminary evaluation of an after school resistance training programme for improving physical fitness in middle school-age boys. Percept Mot Skills. 2007: 104: 407-415.
5. Cochrane DJ, Hawke EJ: Effects of acute upper-body vibration on strength and power variables in climbers. J Strength Cond Res. 2007: 21: 527-531.
6. Korsten-Reck U, Kaspar T, Korsten, et. al: Motor abilities and aerobic fitness of obese Children. Int J Sports Med. 2007; 28: 762-767.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp15-17

A Comparative Study of Self Esteem between Male and Female Fencers of Manipur

Prof. Jaowad Ali*, Abdul Rahaman**
*Professor, Department of Physical Health and Sports Education, A.M.U., Aligarh.
**Research Scholar, Department of Physical Health and Sports Education, A.M.U., Aligarh

Abstract

Self-esteem is the experience of being competent to cope with the basic challenges of life and being worthy of happiness. The purpose of the present investigation was to compare the level of self-esteem between male and female national fencers of Manipur. Forty (40) fencers (male = 20, female = 20) who have represented Manipur in the national fencing championship were taken as the subjects. The age of the subjects ranged from 17 to 25 years. To find out their level of self-esteem, Rosenberg Self-Esteem Scale (RSES) developed by Rosenberg (1965) was administered on the subjects. 't' test was used to analyze the data. Results of the study revealed no significant difference between male and female fencers of Manipur in regard to self-esteem.

Keywords: *Self-Esteem and Fencing*

INTRODUCTION

The sport of fencing is a fast athletic and full of thrilling encounters between two contestants trying to outsmart their opponents. The movements are so fast that the touches are scored electrically-more like Star Wars than Errol Flynn.

Self-esteem is a positive or negative orientation toward oneself; an overall evaluation of one's worth or value. People are motivated to have high self-esteem, and having it indicates positive self-regard, not egotism. Self-esteem is only one component of the self-concept, which Rosenberg defines as "totality of the individual's thoughts and feelings with reference to himself as an object." Besides self-esteem, self-efficacy or mastery, and self-identities are important parts of the self-concept.

Performance is the outcome of athlete's biological, psychological, sociological, and physical construct. In the games and sports, psychological and physiological factors play a significant role in determining the performance level. However, in recent times great importance has been laid to psychological parameters in competitive sports (Tracy & Erkut, 2002; Koivula, Hassmen & Fallby, 2002; Pedersen & Seidam, 2004; Coatsworth & Conroy, 2006; Hein & Hagger, 2007).

MATERIALS AND METHODS

Subjects:

For the purpose of this study forty (40) fencers (male = twenty (20), female = twenty (20) who represented Manipur state in the national championships, were considered as subjects.

Tools:

For measuring the self-esteem of the subjects a questionnaire developed by Rosenberg (1965) was used. It is a four point likert type scale having 10 items. It is a popular tool being used by the psychologists for measuring the level of self-esteem.

Procedure:

The questionnaire was administered on the subjects during regular coaching camp held at Khuman Lampak, Imphal (Manipur) 2011, jointly organized by Sports Authority of India (SAI) and Directorate of Youth Affairs and Sports, Manipur.

Data Analysis:

The obtained data thus collected were statistically manipulated by computing Mean, S.D. and t-ratio to findout significant difference between two experimental groups on the psychological parameter i.e. self-esteem. The results have been depicted in the following table:

RESULTS

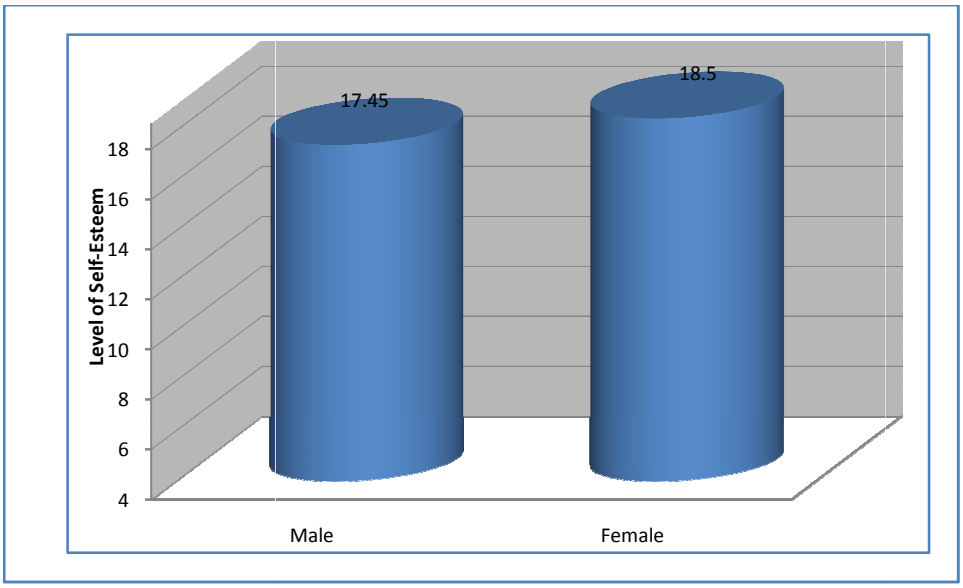
Table: Indicating the mean difference on self-esteem between national level male and female fencers of Manipur.

Variable: Self-Esteem			
Experimental Groups	Mean	Standard Deviation	't' Value
Male	17.45	± 2.41	0.18
Female	18.5	± 2.52	

Tabled value of 't' at 0.05 level of significance with 38 df = 2.02

It has been depicted in the above mentioned table that there was no significant difference between male and female fencers on their level of self-esteem. As, the calculated 't' (0.18) value is much lower than the tabulated 't' value (2.02) at 0.05 level of confidence with 38 degree of freedom.

Figure: Illustration showing difference of Self-Esteem between male and female national level fencers of Manipur



DISCUSSION

As per the scoring norms the obtained mean scores male = 17.45 and female = 18.5 have shown that both the groups of fencers have moderate level of self-esteem. But, by comparing the mean scores, it was evident that no significant difference was observed between male and female fencers of Manipur on their level of self-esteem.

The result of the study may be corroborated with the findings of Frost & McKelvie (2005) who measured global self-esteem, body satisfaction, and body build in relation to exercise activity and reported a positive and robust relationship between exercise activity and self-esteem across sex and age. In a similar study Bridges & Madlem (2007) analysed yoga, physical education, and self-esteem off the court and onto the mat for assessing mental health of the subjects and observed no significant difference in self-esteem between the subjects of regular physical education activities and yoga.

CONCLUSIONS

On the basis of the obtained results from the present empirical investigation it may be concluded that national level male and female fencers of Manipur did not significantly differ on their level of self-esteem. The findings also suggest that the level of self-esteem of both the groups of fencers (male and female) fall in the moderate range which seemed to be necessary for being assertive to excel at highest level in any of the competitive sporting including fencing.

REFERENCES

Bridges, K.A. and Madlem, M.S. (2007). Yoga, Physical Education, and Self-Esteem: Off the Court and Onto the Mat for Mental Health. *Californian Journal of Health Promotion,* 5(2):13-17.

Coatsworth, J.D. and Conroy, D.E. (2006). Enhancing the Self-Esteem of Youth Swimmers through Coach Training: Gender and Age Effects. *Psychology of Sport and Exercise,* 7(2): 173-192.

Frost, J. and McKelvie, S.J. (2005). The Relationship of Self-Esteem and Body Satisfaction to Exercise Activity for Male and Female Elementary School, High School, and University Students. *Athletic Insight: The Online Journal of Sport Psychology,* 7(4):36-49.

Hein, V. and Hagger, M.S. (2007). Global Self-Esteem, Goal Achievement Orientations, and Self-Determined Behavioral Regulations in a Physical Education Setting. *Journal of Sports Sciences,* 25(2):149-159.

Koivula, N., Hassmen, P. and Fallby, J. (2002). Self-Esteem and Perfectionism in Elite Athletes: Effects on Competitive Anxiety and Self-Confidence. *Personality and Individual Differences,* 32(5):865-875.

Pedersen, S. and Seidam, E. (2004). Team Sports Achievement and Self-Esteem Development among Urban Adolescent Girls. *Psychology of Women Quarterly,* 28:412-422.

Tracy, A.J. and Erkut, S. (2002). Gender and Race Patterns in the Pathways from Sport Participation to Self-Esteem. *Sociological Perspectives,* 45(4):445-466.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp18-20

Comparison of H-Reflex Response of Long Distance Runners & Non Athletes

Ashok Kumar * & Jogbinder Singh Soodan **

* Assistant Professor ** Ph.D. Research Scholar
Department of Sports Science
Punjabi University Patiala (Punjab) India

Abstract

The aim of this study was to observe the effects of training type (aerobic) on Hoffmann reflex (H- reflex) response parameters in long distance runners & non athletes. For this purpose, 10 male long distance runners(Group1) and 10 non athlete subjects (Group 2) were involved in this study in which the amplitude and latency values of H- reflex were measured with the help of an equipment called "Neuroperfect" (Medicaid Systems, India). Statistical analysis was performed by using statistical software 'SPSS,' means ± SD and student's *t* test was used. The mean age and body height of group 1& 2 were 24.32 ± 2.57 years & 169.2±6.11 cm and 24.28 ± 2.45 years and 168.80±3.25 cm respectively. The H-reflex amplitude and latency values found in group 1 and 2 were 3.85±0.31 mV & 27.42±2.62 ms and 7.10±0.58 mV & 28.52±2.59 ms respectively. There was no statistically significant difference between the groups with respect to latencies of H- reflex. In the test group (long distance runners), the amplitude of the H-reflex was significantly smaller than the control group ($p<0.05$). The results of this study suggest that training of skeletal muscles affect the H- reflex response parameters.

Key words: Amplitude, Latency, Training

Introduction

The H-reflex is an estimate of alpha motoneuron (αMN) excitability when presynaptic inhibition and intrinsic excitability of the αMNs remain constant (Zehr 2002). This measurement can be used to assess the response of the nervous system to different neurologic conditions, (Fisher 1992) exercise training and performance of motor tasks (Earles et al. 2002). It is known that a number of factors affect the normal value of H-reflex amplitude and latency like age, body height and extremity length reveal direct correlation with the latency value of the H-reflex, its amplitude is associated with contraction of muscle, intensity of stimulus, vestibular stimulation, movements of head and neck, and temperature (Oh 1993). The type and training level of skeletal muscle also affects H-reflex amplitude (Casabona *et al.* 1990). The aim of the present study was to determine the effects of the type of training on H-reflex response parameters like amplitude and latency in long distance runners and non trained individuals.

Materials & Methods

All subjects involved in this study were closely matched with respect to their age and height. A total of 20 male subjects were included in this study. They comprised of fifteen long distance runners (Group 1) and fifteen non athlete subjects (Group 2, control). The group 1 long distance runners were engaged in specific endurance training and group 2 that is untrained control group consisted of 10 healthy subjects who did not carry out any kind of sports, were not engaged in any regular training program professionally for recreational physical activity. All subjects were non smokers, non alcoholic, none had any medical problem. The H- reflex response was recorded on the right and left extremity of 20 subjects involved in this study were measured with the help of computerized equipment called "Neuroperfect" (Medicaid Systems, India).The subject lay comfortably in the prone position on a wooden table. Their skin was degreased, conducting paste was applied before recording and stimulating electrodes were placed. The recording electrode was positioned over the medial gastrocnemius muscle halfway between the midpoint of the popliteal fossa and upper border of the medial malleolus.

The reference electrode was also positioned in the same line 5 cm distal to the active electrode, and the ground electrode was placed between the tendon and reference electrode. A thick support was placed under the ankle to ensure 90 degrees of flexion and 0.5 ms pulses of constant voltage were applied to the tibial nerve in the popliteal fossa. The time base was adjusted to 10 ms, sensitivity to 0.5-5 mV and filters to 10-500 Hz. The intensity of the stimulus was increased by 0.5 mA until maximum H-reflex amplitude and minimum motor response was obtained and then 5 maximum H-reflex responses were recorded. The maximum peak to peak amplitude and latency values were used for assessment. A peak to peak interval (inter peak) was regarded as the amplitude.Statistical analysis was performed by using statistical software 'SPSS' for windows, means ± SD and student's *t* test was used. $p<0.05$ was considered to be statistically significant.

Results

The mean age and body height of group 1 & 2 were 24.32 ± 2.57 years & 169.2±6.11cm and 24.28 ± 2.45years and 168.80±3.25cm (Table 1)

Table 1 Mean ± SD of age & body weight of long distance runners & non trained subjects

	Group 1 (long distance runners)	**Group 2** (non athlete subjects)
Age (years)	24.32 ± 2.57	24.28 ± 2.45
Body Height (cm)	169.2±6.11	168.80±3.25

It was found that there was not statistical significant difference between the age and height of the long distance runners and non athlete subjects.

Table 2 Mean ± SD of H-reflex variables on the right & left side in long distance runners

	H-reflex	
Variables	**Latency (ms)**	**Amplitude (mV)**
Right leg	26.85±2.50	3.90 ± 0.38
Left leg	27.55± 2.75	3.70 ± 0.29

It was found that there was no significant difference between the latency and amplitude values on the right and left side (Table 2&3) in either group; both values were pooled for statistical evaluation.

Table 3 Mean ±SD of H-reflex variables on the right & left side in non athlete subjects

	H-reflex	
Variables	**Latency (ms)**	**Amplitude (mV)**
Right leg	27.95± 2.55	7.20 ±0.65
Left leg	28.65 ± 2.70	6.96±0.52

After pooling of the values on the left and right side, the mean peak amplitude and latency values of H-reflex found in group 1and 2 were 3.50±0.23 mV & 25.02±2.62 ms and 6.19±0.44 mV & 26.79±1.85 ms, respectively. There was statistical significant difference between group 1 and 2 with respect to the H-reflex peak amplitude. The test group 1 had significantly smaller H-reflex peak amplitude value compared to the control group ($p<0.05$) but there was no significant difference between the groups with respect to H-reflex latency (Table 4).

Table 4 Comparison of H-reflex variables of long distance runners & non athlete subjects

	H-reflex	
Variables	**Latency (ms)**	**Amplitude (mV)**
Group 1 (long distance runners)	27.42 ± 2.62	3.85± 0.31*
Group 2 (non trained)	28.52 ± 2.59	7.10 ± 0.58*

* ($p<0.05$)

Discussion

It is known that physical exercises can cause structural changes in skeletal muscles as well as an increase in excitability of motor units (Hoppeler 1988). But the effects of the type of exercise on these changes have not been studied in detail. The H-reflex is considered to reflect directly the excitability level of alpha motor neurons in the spinal cord. In H-reflex studies, stimulation is directly applied to the Ia fibers (Oh 1993). The main result of our study concerned the fact that the H-reflex amplitude of trained subjects (long distance runners) was significantly smaller than those of the non athlete subjects. Casabona et al. (1990) reported that maximum H response of physically trained subjects was lower than in non trained subjects and they suggested that this was due to the dominance of synapses between Ia motor neurons and small motor neurons in the ventral horns of the spinal cord. In attempts to characterize muscle fiber differences in trained (athletes) and non trained subjects, marked changes in motor unit morphology and functional aspects were reported by Tesch & Karlsson (1985). Aerobic exercise with long lasting contractions causes biochemical changes in motor units (Hakkinen et al. 1985). It has been shown that slowly contracting motor units that are resistant to fatigue are involved in the H-reflex (Nardone and Schieppati 1988). The number of small motoneurons and interneurons that receive input from Ia afferents is lower in trained athletes than in sedentary subjects. This finding supports the idea that there is a close relation between morphological and functional characteristics of the neuromuscular system and that these can be affected by type and duration of physical training. However, it is also possible that the presynaptic inhibition is enhanced so that the output from the motor neuron pool in response to Ia afferent input will be decreased and the influence of Ia afferents will be limited. The different muscle fiber types of these subjects could also explain the difference obtained between the H-reflex responses in this study. It is believed that motor neuron excitability is not the only factor in the exercise induced changes of H-reflex parameters, since other parameters may also be involved (Van Boxtel 1986). Perot et al. (1991) compared the pre and post exercise H-reflex parameters and found that changes occurred in muscle stretch receptor responses. In conclusion, the results of this study point out that chronic training programmes can alters H- reflex amplitude and that the type of training is also important in these reflex changes. These changes may enhance the adaptation ability of athletes to do excessive physical activity but the mechanism mediating these changes and the exact role of this modulation remains to be determined.

References

1. Casabona A, Polizzi Mc, Perciavalle V. 1990. Differences in H-reflex between athletes trained for explosive contractions and non-trained subjects. *Eur J Appl Physiol* 61: 26-32.
2. Earles DR, Dierking JT, Robertson CT, Koceja DM. 2002. Pre and post synaptic control of motoneuron excitability in athletes. *Med Sci Sports Exerc* 34:1766-1772.
3. Fisher MA.1992. H reflexes and F waves: physiology and clinical indications. Muscle Nerve15:1223-1233. AAEM Minimonograph 13.
4. Hakkinen K, Komi PV, Alen M. 1985. Effect of explosive type strength training on isometric force and relaxation time, electromyographic and muscle fibre characteristics of leg extensor muscles. *Acta Physiol Scand* 125: 587-600.
5. Hoppeler H. 1988.Exercise-induced structural changes of skeletal muscle. *ISI Atlas Sci Biochem* 2: 247-255.
6. Nardone A, Schieppati M. 1988. Shift of activity from slow to fast muscle during voluntary lengthening contractions of the triceps surae muscles in humans. *J Physiol Lond* 395: 363-381.
7. Oh SJ. 1993. *Clinical Electromyography: Nerve Conduction Studies*. Second Edition. Baltimore, Williams & Wilkins.
8. Tesch PA, Karlsson J.1985. Muscle fiber types and size in trained and untrained muscles of elite athletes. *J Appl Physiol* 59: 1716-1720.
9. Van Boxtel A. 1986. Differential effects of low-frequency depression vibration-induced inhibition and posttetanic potentiation on H-reflexes and tendon jerks in the human soleus muscle. *J Neurophysiol* 55: 551-568.
10. Zehr EP. 2002.Considerations for use of the Hoffmann reflex in exercise studies. *Eur J Appl Physiol* 86:455-468.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp21-24

A Study of Body Mass Index & Lipid Profile in Type 2 Diabetic Punjabi Population

Ashok Kumar* and Gurdeep Singh*

***Assistant Professor, ** Ph.D. Research Scholar**

Department of Sports Science, Punjabi University Patiala (India)

Abstract: The purpose of the study was to observe body mass index and the prevalence of dyslipidaemia in type 2 diabetics in the male Punjabi population. *Method(s)*: A total of 120 Type 2 diabetic men with an age ranged from 30 to 70 years volunteered to participate in this study. The body mass index (BMI), fasting blood sugar (FBS) & lipid profiles were recorded with standard procedure. The data was analyzed using Mean ±SD, and Pearson correlation. *Results*: The mean age, BMI and FBS was 50.3 ± 11.8 years, 27.3 ± 3.7 kg/m² and 135.1±27.4 mg/dl respectively. There were 59% subjects with high total cholesterol (TC) levels and 98% were increased LDL levels. The 89% of the subjects were found lower HDL level. *Conclusion*: It is concluded from the results of the present study that type 2 diabetics were either overweight or type I obese and dyslipidaemia was very common. Results strongly suggest that further investigations should relate the effects of dyslipidaemia and abnormalities of insulin resistance in type 2 diabetics. And ethnic specific patterns of lipid profile in type 2 diabetics regardless of their glucose levels, suggests that ethnic-specific strategies and guidelines on risk assessment and prevention of CVD due to dyslipidemia are required.

Keywords: CVD, FBS, Dyslipidaemia

Introduction

Dyslipidemia is one of the major cardiovascular disease (CVD) risk factors and plays an important role in the progress of atherosclerosis, the underlying pathology of CVD. The prevalence of dyslipidemia in type 2 diabetes is double with respect to the general population (Haffner, 1998). These are more complex abnormalities that are caused by the interrelation among obesity, insulin resistance and hyperinsulinism (Burstein et al., 1970 & American Diabetes Association, 1998). According to Freedman et al. (1999), when the overweight subjects were compared with their respective thinner pairs, they presented 2.4 to 7.1 times higher probability to have an elevated total cholesterol, LDL cholesterol, triglycerides and blood pressure as well as 12.6 times higher probability to have hyperinsulinemia. It is worth to emphasize that the fatty tissue is exclusively related to risk factors, such as the altered insulin and lipid profile, which can contribute to the development of the insulin resistance syndrome, which comprises several risk factors for the emergence of cardiovascular complications (Gower, 1999).

In patients with type 2 diabetes, which is equivalent to CHD (Juutilainen et al. 2005), it is most commonly characterized by elevated TG and reduced HDL-C (Goldberg 2001). These abnormalities can be present alone or in combination with other metabolic disorders. The prevalence of dyslipidaemia varies depending on the population studied, geographic location, socioeconomic development and the definition used (Wood et al. 1972; Berrios et al. 1997).

Very few cross-sectional studies have evaluated the relationship between lipid and blood glucose concentrations in type 2 diabetics in Punjabi population. The present study was planned to identify the prevalence of abnormalities in lipid profile among type 2 diabetic Punjabi population.

Materials and Methods

The one hundred and twenty Type 2 diabetic male patients belonging to Patiala district of Punjab were selected as subjects after obtaining their informed written consent and age ranged from 30-70 years. The objectives of the present study were thoroughly explained to them. Clinical history was also documented and following exclusion criteria were used- not taken any steroid therapy in past 3 months, any liver, kidney or cardiac failure, neoplasm and patients who were on any type of anti-lipidemic therapy. The study protocol was reviewed and approved by the Ethics Committee of Punjabi University, Patiala. The serum was separated immediately after obtaining the blood sample (overnight fasting) using centrifugation for 10 minutes. Fasting blood glucose concentration and Lipid Profile [Total Cholesterol (TC), HDL, VLDL & Triglycerides (TG)] were measured using Blood Analyzer by the qualified laboratory technician. The appropriate chemical testing kits were used. LDL was calculated by using Friedewald formula: LDL= TC – (TG/5) - HDL. Body Mass Index (BMI) was calculated using weight and height (kg/m²)

ResultsTable 1 shows the mean values of age, BMI and fasting blood sugar were 50.3± 11.8 years, 27.3 **±** 3.7 kg/m² and 135.1±27.4 mg/dl respectively. Results of the BMI in the present study indicate that our subjects were not obese but their mean fasting blood sugar level was more than the normal value

Table 1. Mean±SD of Age, BMI & FBS of Type 2 diabetics

Variables	
Age (years)	50.3 ± 11.8
BMI(kg/m²)	27.3 ± 3.7
FBS(mg/dl)	135.1 ± 27.4

BMI-body mass index, FBS-fasting blood suga

Further, it was found that the BMI value of 30% of Type 2 diabetics were in normal range (21 to 25 kg/m²), 50% overweight (i.e. 25 to 30 kg/m²) and 20% were type I obese (> 30 kg/m²).

Table 2 shows the quantitative analysis of lipid profile of Type 2 diabetics and found that the total cholesterol, triglycerides, HDL, LDL, VLDL & LDL / HDL ratio were 203.9 ±15.8 mg/dl, 151.1 ± 17.7 mg/dl, 47.7 ± 6.2 mg/dl, 124.4 ± 11.9 mg/dl, 32.3 ± 7.1 mg/dl and 2.63 ± .37 respectivel

Table 2. Mean±SD of lipid profile of Type 2 diabetics

Variables	
Total Cholesterol,TC (mg/dl)	203.9 ±15.8
Triglycerides, TAG (mg/dl)	151.1 ± 17.7
HDL-C (mg/dl)	47.7 ± 6.2
LDL-C (mg/dl)	124.4 ± 11.9
VLDL (mg/dl)	32.3 ± 7.1
Ratio of LDL / HDL	2.63 ± .37

TC- total cholesterol, HDL- high density lipoproteins,

LDL-low density lipoproteins, VLDL- very low density lipoproteins,

TG- triglycerides

In the present study, we also analyzed the prevalence rate of hypercholesterolemia, hypertriglyceridemia, low HDL and high low density lipoproteinaemia among type 2 diabetics. It was found that 59% Type 2 diabetics in this study had hypercholesterolemia, 53% Hypertriglyceridemia and 98% abnormal LDL levels. In 89% of Type 2 diabetics, the HDL was less than 40 mg/dl. Thus, the results of the present study shows that in Type 2 diabetics the dyslipidaemia is the most common abnormality and it was found in the level of LDL-C value.

Table 3. Correlation (Pearson) among BMI, FBS& lipid profiles of Type 2 diabetics

Variables	FBS	HDL	LDL	VLDL	TG	BMI	Ratio LDL/HDL
TC	.76**	.50**	.64**	.52**	.79**	.22*	-.02
FBS	-	.41**	.43**	.45**	.69**	.13	-.10
HDL		-	.29**	.33**	.52**	.25**	-.74**
LDL			-	.44**	.48**	.04	.38**
VLDL				-	.63**	.08	.09
TG					-	.21*	-.14
BMI						-	-.17

** significant at the 0.01 level; * significant at the 0.05 level.

TC- total cholesterol, HDL- high density lipoproteins,

LDL-low density lipoproteins, VLDL- very low density lipoproteins,

TG- triglycerides

Table 3 shows correlation among body mass index, fasting blood sugar and lipid profiles. It was found that BMI was significantly and positively related with total cholesterol (r=.22), high density lipoprotein (r=.25) and triglycerides (r=.21). The fasting blood sugar was significantly and positively related with high density lipoprotein (r=.41), low density lipoprotein (r=.43), very low density lipoprotein (r=.45) and triglyceride (r=.69)

Discussion

For the interpretation of serum lipid reference values, we followed the guidelines of National Cholesterol Education Programme (NCEP) Adult Treatment Panel III (ATP III). According to NCEP-ATPIII guidelines, hypercholesterolemia is defined as TC>200 mg/dl, high LDL-C when value >100 mg/dl, hypertriglyceridemia as TAG >150 mg/dl and low HDL-C when value <40 mg/dl. Dyslipidemia was defined by presence of one or more than one abnormal serum lipid concentration (Menik et al., 2005). The results of the present study were in agreement with the previous research reports that dyslipidemia, overweight and obesity is a common association with type 2 diabetic patients (Haffner, 1998 and American Diabetes Association, 1998). The seventy percent of type 2 diabetics in this study were either overweight or type I obese (50% overweight & 20% Type I obese). The 59% of them had hypercholesterolemia and 98% abnormal LDL levels. Type of dyslipidaemia reported among diabetic population is numerous in different places in world indicating that dyslipidemia can be influenced by the interaction of genetic and environmental factors (Carlos et al., 2001).The prevalence of the lipid abnormalities reported by Mexican nationwide survey done by Carlos et al. is similar to that observed in Turkish (Mahley et al., 1995) and other Asian populations, including Bangladeshi and Pakistani populations (Bhopal et al., 1999) Their study shows that 53% of the diabetic population had Hypertriglyceridemia . We are in agreement with the above report in relation to prevalence rates of hypertriglyceridemia among type 2 diabetic Punjabi population (53% in ours and 54% in Mexican nationwide survey). We also found that 98% Type 2

diabetics had high LDL levels and 59% showing hypercholesterolemia. This observation further confirms that patients with Type 2 diabetes had co-incidence of several abnormal lipid profiles. It further confirms that dyslipidemia could have impact on the development of insulin resistance in type 2 diabetes mellitus. We have recently found out that there is a significant genetic association between development of insulin resistance and dyslipidemia among type 2 diabetic patients (Menik et al., 2005)

Conclusion: It is concluded from the results of the present study that type 2 diabetics were either overweight or type I obese and dyslipidaemia was very common. Results strongly suggest that further investigations should relate the effects of dyslipidaemia and abnormalities of insulin resistance in type 2 diabetics. And ethnic specific patterns of lipid profile in type 2 diabetics regardless of their glucose levels, suggesting that ethnic-specific strategies and guidelines on risk assessment and prevention of CVD due to dyslipidemia are required.

References

American Diabetes Association – Position Statement. Management of Dyslipidemia in Adults with Diabetes. Diabetes Care 1998; 21:179-82.

American Diabetes Association – Position Statement. Management of Dyslipidemia in Adults with Diabetes. Diabetes Care 2001; 24 Supp 1.

Bhopal R, Unwin N, White M, et al. Heterogeneity of coronary heart disease risk factors in Indian, Pakistani, Bangladeshi and European origin populations: cross sectional study. British Medical Journal 1999; 319: 215-20.

Burstein M, Selvenick HR, Morfin RJ. Journal of Lipid Research 1970; 11: 583, and (1970) Koeler DF, Azar MM and Cols. Clin Chem 22,98 (1976) Lopez-Virella M. Clin Chem 23, 882, (1977) Frenewald WT. Clin Chem 14, 499 (1972).

Berrios X, Koponen T, Huiguang T, Khaltaev N, Puska P, Nissinen A (1997): Distributionand prevalence of major risk factors of noncommunicable diseases in selected countries: the WHO Inter-Health Programme. *Bull World Health Organ* 75: 99-108.

Carlos A, Aguilar S, Gustavo O, et al. High prevalence of low HDL cholesterol concentrations and mixed hyperlipidemia in a Mexican nationwide survey. Journal of Lipid Research 2001; 42: 1298-307.

Evans JL, Rushakoff RJ. Oral pharmacological Agents for Type 2 Diabetes: Sulfonylurea, Meglitinides, Metformin, Thiazolidinediones, α-Glucosidase Inhibitors, and Emerging Approaches. In: Endotext.com; Diabetes and Carbohydrate Metabolism. Degroot L , Goldfine ID, Rushakoff RJ,

Freedman DS, Dietz WH, Srinivasan SR, Berenson GS. *The relation of overweight to cardiovascular risk factors among children and adolescents*: the Bogalusa Heart Study. Pediatrics 1999; 103:

Gower BA. Syndrome X in children: influence of ethnicity and visceral fat. Am. J Hum Biol 1999; 11: 249-

Goldberg IJ (2001): Clinical review 124: Diabetic dyslipidemia: causes and consequences. *J Clin Endocrinol Metab* 86: 965-971.

Haffner SM. Management of dyslipidemia in adults with diabetes. Diabetes Care 1998; 21: 160-78.

Juutilainen A, Lehto S, Ronnemaa T, Pyorala K, Laakso M (2005): Type 2 diabetes as a "coronary heart disease equivalent": an 18-year prospective population-based study in Finnish subjects. *Diabetes Care* 28: 2901-2907.

Mahley RW, Erhan-Palaoglu K, Atak Z, et al. Turkish heart study: lipids, lipoproteins and apolipoproteins. Journal of Lipid Research 1995; 36: 839-59.

Menik HL, Sammanthi JS, Priyantha WT, et al. Significant genetic association between insulin resistance and total cholesterol in type 2 diabetes mellitus; Preliminary study.

NCEP: *Summary of The Third Report of The National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, And Treatment of High Blood Cholesterol In Adults (Adult Treatment Panel III). JAMA 2001; 285: 2486-97*

Park K. *Park's Textbook of Preventive and Social Medicine.* 19th ed. Jabalpur: M/s B.Bhanot; 2007

Purnell JQ, Brunzell JD. Effect of intensive diabetes therapy on diabetic dyslipidemia. Diabetes Reviews 1997; 5: 434-44.

Steiner G. Lipid intervention trials in diabetes. Diabetes Care 2000; 23: 49-53.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp25-27

Medical Consideration and Management Strategies for Elite Athletes for High Level Performance

David Banda,Lect.in Phy.Edn.Dr.BRR Govt. Deg.College, Jadcherla

Introduction: The elite runner acquires his/her skills through a combination of talent for running systematic coaching and proper lifestyle. But even an athlete at that level has to maintain an up to date understanding of how his or her body function, how to train and prepare properly and now to watch out the sings of bodily stain and fatigue. Clinicians generally agree that misalignment of the lower extremity.\, excessive foot pronation and repetitive and high impact loading predispose a runner in injury. The list of injuries associated with excessive pronation is ling and includes injuries such as plant facilities.stress fracture, Achilles tendonitis and runner's knee. Lack of cushioning in the footwear has been identified as a primary causative factor in stress fracture and degenerative joint injuries. The medical problems such as injuries of the bone, muscle and tendon which are specific to the elite athletes and the management strategies to overcome such problems are discussed.

BONE INJURIES (Stress Fracture)

Unlike the common bone fractures occurring in contact sports, the runner's bone may cause stress fracture as a result of repetitive minor trauma accumulating over weeks or months. The most likely cause for stress fracture appears to be an abnormal concentration of stress at a particular site in the bone which is insufficiently strong at chat she to resist those forces.The initial response in bones subjected to increased loading is the activities of specialized cells, osteoclasts. Whose function is to cause bone reabsorptions. During this process bone minerals are reabsorbed by the body. This is known as osteon clonal.

Excavation. During this phase bone strength is likely to be reduced placing the bone at increased risk of fracture. Hard training during the early period of bone weakening is more likely to cause fracture. Novice runners are particularly vulnerable. When the train enters 8 to 12 weeks of duration for these runners there is an increase muscle and heart fitness which will allow them to train much harder and at this particular juncture their bones are not yet strong enough to compel with the added stress of heavy training. Another adverse feature of suddenly increasing the training distance is that it causes accumulated muscle fatigue which may then reduce the muscles ability to absorb fatigue which may result in the inability of muscles to absorb shock a function which is been passed on the be bones. Which are thus more likely to fracture.

MUSCLE INJURIES

Chronic muscle Tears the importance of chronic tears (muscle knots) is that these are probably the thing most common injury among all groups of runners, there are several feature in the diagnosis of muscle tears: The pain starts gradually, initially coming on after exercise. The pain is deep seated and can be very severe but passes of rapidly with rest. In contrast to bone injuries, which will improve if sufficient rest is allowed, chronic muscle tears will never improve unless the correct treatment is prescribed. To confirm that the injury is indeed a chronic muscle tear is to press firmly with two fingers into the affected muscle in

the area in which the pain is felt. If it is possible to find very tender hard" Knot" in the muscle then the injury is definitely a chronic muscle tear.

The mechanism of injury in chronic muscle tear is largely unknown but new evidence suggests that these muscle injuries occur when the muscle is contracting eccentrically. For example, the hamstring muscle is now known to the tear when the muscle contracts eccentrically: that is while it contracts during the swing phase of the running cycle as the muscle contracts to decelerate the foot immediately prior to have stroke.

MUSCLE CRAMPS

MUSCLE CRAMPS ARE DEFINED AS SPASMODIC PAINFUL INVOLUNTARY CONTRADISCITONS OF MUSCLES. Muscle cramps tend to occur in people who run further or faster than they are accustomed. Thus the athlete whose longest regular training run is 30 Km is likely todevelop muscle cramps during the last few kilometers of a 42.2 Km standard marathon. It is postulated the during prolonged exercise the inverse stretchreflex the one that inhibits excessive muscle contractions become inactive reflex the muscle can go into spasms.

The only factor that appears to reduce the risk of cramping is simply more training especially long distance runs in those who run marathon and longer races. Adequate pre-race stretching attention to adequate fluid land carbohydrate replacement before and during exercise and not running too fast too early in the race . Arecent theory predicts that cramps could be prevented if the activity of the inverse stretch reflex is maintained during prolonged exercise. This is done by regular stretch reflex.

TENDON INJURIES Tendons connect muscles to the bone of all the overuse problem associated with physical activity tendonitis is among the most common. Tendonitis is a catch all term that can describe many different pathological conditions of a tendon. It describes any inflammation within the tendon. Tendonitis most commonly occurs in the Achilles tendon in the back of the lower leg in runners or in the rotator cuff-tendons of the shoulder joint in swimmers or thrower although it can certainly flare up in any tendon in which overuse and repetitive movements occurs

ACHILLES TENDON

Achilles tendonitis is one of the most debilitating injuries that has curtailed the training programme and modified aspiration of manygreatrunners. The most probablecauseGenetic factors that predispose to Achilles tendonitis include tight inflexibility calf muscles, hyper mobile feet and in a small percentage of runners the high arched canvas foot. The initial treatment for the injured Achilles tendon is to apply an ice pack to the Sore area for at least 30 minutes three times per day especially immediately before and after running. Appropriate calf muscle stretching exercise must be done for between 10 to 20 minutes per day. IN addition eccentric strengthening of the Achilles tendon may be very helpful. There is a risk that cortisone injected in the tendon may make it more liable to rupture completely.

Objective of the study

General Preventive Measures for Musculoskeletal Injuries Medical Examination of the Athlete

Studies consistently identify previous musculoskeletal injury as a risk factor for re injury. The pre participation physical evaluation monograph supports the 90 seconds orthopedic screening examination as a use friendly tool to detect major musculoskeletal abnormalities. The orthopedic screening examination should be done in the following manner. I) Spread the fingers and make fist ii) Tighten quadriceps iii) Duck walk for four steps iv) Touch toes with knees straight v) Look at the ceiling and floor

vi) Perform resisted shoulder shrug vii) Perform resisted shoulder abduction viii) Perform active shoulder external rotation ix) Perform active elbow flexion and extension x) Perform active wrist flexion and extension.

Proper Training and Conditioning

Strength training should include exercises that train all the major muscle groups –that is gluteus , quadriceps , hamstrings , pectorals , latissimusdorsi , deltoid , biceps ,triceps , scapular stabilizers and abdominals. One to three sets of 8 to 12 repetition a Borg perceived Exertion Rating of 12 to 13 (somewhat hard) or 60% to 80% 1RM , should be performed for two or times per week at least 48 hours between sessions. A number of studies have insulin action, lessens the decline in bone mineral density and improves

Errors in Training

A majority of running problems, according to Halpern (2006) are created by errors in training. Factors which should be considered include any changes in running , surface , shoes, patterns , inadequate warm up , lower extremity weakness and imbalance of muscles. For example, running down can cause popliteus tendonitis, running on a banked track irritates lateral the peso anserine (tendons of medial side of the knee) and running on a hillside irritates lateral knee structure, specifically the iliotibial band. A training with alternative heavy and light session during a week is advisable. Overtraining or failure to rest period may lead to depression.

Muscle Imbalance

Muscle imbalance is often a forgotten element in programme prescription, whether it be a conditioning programme for the athletes or a rehabilitation programme, Many of the skeletal muscles work in pairs and if one muscle is over worked at the expense of opposing muscle it may predispose they are to injury.

Flexibility

Flexibility should be maintained or improved by the use of slow, static stretches. The main muscle groups to be stretched are the Achilles tendon (gastrocnemius soleus groups) the hamstring muscles, the lower back muscles, the groin muscles and the quadriceps muscles

Conclusions

Common sense and the self-discipline of knowing when to stop or when not to start a session of physical activity are the two essential factors in avoiding any kind of injury, illness, fatigue, pain and stiffness. The above factors are the warnings that an Athlete should not be taking exercise. If the Athlete disregard he unacceptable risk with his health and wellbeing.

References:

Friden.J. Kjorell. U. and L. E. Thornell. (1984) Delayed muscle soreness and sytoskeletal alterations. An immunocytological study in man . Int. J . Sports Med.5:15-18

Fridden.J.And R.I.Lieber (1992).the structural and mechanical basis of exercise induced muscle injury Med.

Sci.Sport Exerc.24:521-530.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp28-31

Waist-to-Hip Ratio is the better predictor of Abdominal Adiposity than BMI in Type 2 Diabetics

Ashok Kumar* and Gurdeep Singh**

***Assistant Professor, ** Ph.D. Research Scholar**

Department of Sports Science, Punjabi University Patiala (India)

Abstract

Aims: The purpose of the study was to observe the relationship among waist-to-hip ratio, BMI and abdominal adiposity in male type 2 diabetic Punjabi population. *Method(s)*: A total of 120 Type 2 diabetic men with an age ranged from 30 to 70 years volunteered to participate in this study. The body mass index (BMI), fasting blood sugar (FBS), waist circumference (WC), hip circumference (HC) & waist to hip ratio (WHR) were recorded with standard procedure. The data was analyzed using Mean ±SD. *Results*: The mean age, BMI and FBS was 50.3 ± 11.8 years, 27.3 ± 3.7 kg/m² and 135.1±27.4 mg/dl respectively. The mean waist circumference, hip circumference & waist to hip ratio was 102.2 ± 8.3cm, 98.40 ± 7.3cm & 1.03 ± .02, respectively. Waist-to-hip ratio showed that all Type 2 diabetics had abdominal obesity whereas the BMI values shown 30% normal, 50% overweight and 20% type I obese. *Conclusion*: It is concluded from the results of the present study that waist-to-hip ratio is the better way to come to know the level of obesity i.e. abdominal obesity in Type 2 diabetics than BMI. As abdominal obesity would further leads to excessive morbidity and mortality in Type 2 diabetics by increasing the incidence of cardiovascular diseases and insulin resistance.

Keywords: Obesity, Insulin resistance, CVD.

Introduction

Diabetes Mellitus (DM) is a syndrome characterized by a state of chronic hyperglycemia causing disturbance of carbohydrate or fat metabolism, associated with absolute or relative deficiency in insulin secretion or insulin action (Lea and Febiger, 1994). The increased fatty tissue is exclusively related to risk factors, such as the altered insulin and lipid profile, which can contribute to the development of the insulin resistance syndrome, which further comprises several risk factors for the emergence of cardiovascular complications (Gower, 1999). Prevalence of diabetes is higher in Indian subcontinent & It is estimated that 20% of global burden resides in South East Asia Region (SEAR) area, which will be tripled to 228 million by the year 2025 from the current 84 million(Park,2007).

Obesity and diabetes mellitus shares an intimate relationship. It was found that risk for diabetes is almost double in the mildly obese, 5 times in moderately obese and 10 times in morbidly obese persons (AACE/ACE, 1998).Obesity in type 2 diabetes occurs commonly due to changes in diet and life style. As fat mass & fat cell size increases, the regulation of free fatty acid (FFA) metabolism becomes abnormal. These changes lead to an increase in FFA production. The increased FFA concentrations compete with glucose for oxygen in insulin-sensitive tissues and stimulate endogenous glucose production, causing insulin resistance, which is the earliest detectable abnormality in obese type 2 diabetics (Evans, 1996).Lahti-Koski et al. (2000) reported that abdominal adiposity as measured by an elevated waist to hip ratio (WHR) is known to be a strong risk factor for type 2 diabetes mellitus. It has been reported that abdominal adiposity is an independent predictor of alteration in the plasma lipid, lipoprotein and plasma glucose concentrations (Enino et al., 2001).High proportion of upper-body fat or abdominal fat, independent of overall obesity, is recognized as an important component in the insulin resistance in type 2 diabetes mellitus (Abate et al., 1995). Kannel et al., (1996) reported that insulin resistance and hyperisulinaemia are associated with lipoprotein lipase (LPL) deficiency, which causes elevation in the level of free fatty acids and a reduction in high-density lipoprotein cholesterol (HDL-C) levels in Type 2 diabetics.Indian population is more susceptible of developing abdominal adiposity, which might account for the excessive morbidity and mortality from type 2 diabetes (Chandalia et al., 1999). However, the data in this area is scanty on the Punjabi population. Therefore, the present study was conducted to observe the Body mass index (BMI), waist & hip circumferences, waste-to-hip ratio (WHR) of type 2 diabetics.

Materials and Method

The 120 Type 2 diabetic male patients belonging to Patiala district of Punjab were selected as subjects after obtaining their informed written consent and their age ranged from 30-70 years. The following exclusion criteria were used- taken any steroid therapy in past 3 months, any liver, kidney or cardiac failure, and patients who were on any type of anti-lipidemic therapy. The study protocol was reviewed and approved by the Ethics Committee of Punjabi University, Patiala. The serum was separated immediately after obtaining the blood sample (overnight fasting). Fasting blood glucose concentration was measured using Blood Analyzer by the qualified laboratory technician. The appropriate chemical testing kits were used. The Body Mass Index (BMI) was calculated using weight and height (kg/m^2) waist-to-hip ratio was also calculated with the help of waist and hip circumference.

Statistical Analysis: The statistical analysis was done by using SPSS version 16. The level of significance was <.05

Results

Table - 1 shows the general information of the study population. As given by ICMR, study of data revealed that mean weight of male patients was 76.19 kg, which is higher than the reference Indian male. BMI of the study population revealed that only 30% subjects were normal as per the categories of BMI, where 50% were overweight (i.e. 25 to 30 kg/m^2) and 20% of them were type I obese (> 30 kg/m^2). Mean fasting blood glucose level of the patients was 135.18±27.42 mg/dl indicates elevated or poor control on diabetes.

Table 1. Mean ±SD of Age, Heigth, Weight , BMI & FBS of Type 2 diabetics

Variables	
Age (years)	**50.3 ± 11.8**
Height (cms)	**166.88 ± 7.2**
Weight (kgs)	**76.19 ± 11.9**
BMI (kg/m²)	**27.3 ± 3.7**
FBS (mg/dl)	**135.1 ± 27.4**

BMI-body mass index, FBS-fasting blood sugar

Table 2 shows that all the Type 2 diabetics had circumference values of hip and waist more than the normal reported values thus indicates an abdominal obesity in them. The waist-to- hip ratio also suggests the abdominal obesity in type 2 diabetics.

Table 2. Mean ±SD of Circumference variables of Type 2 diabetics

Variables	Observed Values	Normal Values
Waist Circumference (cms)	**102.2 ± 8.3**	**86**
Hip Circumference (cms)	**98.40 ± 7.3**	**81**
Waist-to-Hip Ratio (WHR)	**1.03 ± .02**	**>0.96**

Discussion

The anthropometric measurements like waist circumference (WC), hip circumference (HC) (Okosun et al.,2000), and body mass index (BMI) (Vikram et al.,2003) were considered measurements of obesity and diagnostic components of the metabolic syndrome in Type 2 diabetics (Jeong et al.,2004). However, waist-to-hip ratio (WHR) is considered as an appropriate marker of abdominal obesity (Snehalatha et al., 2003).The results of the present study were in agreement with the previous research reports that there is direct relationship among abdominal obesity and WHR in type 2 diabetics. As per BMI values 30% Type 2 diabetics in this study were normal and 50% were overweight but the values of waist circumference, hip circumference and waist-to-hip ratio showed that all Type 2 diabetics had abdominal obesity. Total body fat is not the sole source of the adverse health complications of obesity; rather the fat distribution or the relative proportion of lipids in various potential lipid deposition compartments is what determines the metabolic risk of the individual**.** Upper body obesity, manifested clinically by increased waist circumference, is known to be associated with cardiovascular disease.

The findings of the present study clearly showed that Type2 diabetics were with elevated abdominal adiposity (indexed by WHR) which were in direct agreement with the studies of Seidell et al., 1989. These results clearly indicate that waist-t-hip ratio is the more reliable method to predict the prevalence of

abdominal obesity in type 2 diabetic patients than BMI. Further, the excessive adiposity induces a certain degree of insulin resistance in Type 2 diabetics as adipose tissue in them do not utilize glucose as effectively as normal weight individuals. This leads to decreased number of plasma membrane insulin receptors but that is in part reversible with weight reduction.

Conclusion

It is concluded from the results of the present study that waist-to-hip ratio is the better way to come to know the level of obesity i.e. abdominal obesity in Type 2 diabetics than BMI. As abdominal obesity would further leads to excessive morbidity and mortality in Type 2 diabetics by increasing the incidence of cardiovascular diseases and insulin resistance.

References

AACE/ACE-.American Association of Clinical Endocrinologists/ American College of Endocrinology (AACE/ACE).AACE/ ACE Position statement on the prevention, diagnosis and treatment of obesity (1998 Revision).Endocrine Practice 1998; 4:297-330.

Abate N, Garg A, Peshok RM, Stray-Gundersen J, Grundy SM. Relationships of generalized and regional adiposity to insulin sensitivity in men. J Clin Invest 1995; 96:88-98.

Chandalia M, Abate N, Garg A, Stray-Gubdersen J, Grundy SM. Relationship between generalized and upper body obesity to insulin resistance in Asian Indian men. J Clin Endocrinol Metab 1999; 84:2329-35.

Enino WF, Tchernof A, Dionne IJ, Toth MJ, Ades PA, Sites CK, Poehlman ET. Contribution of abdominal adiposity to age-related differences in insulin sensitivity and plasma lipids in healthy non-obese women. Diabetes Care 2001; 24:925-32.

Evans Gary. Co Picolinate - Everything u need to know. Paragon Press, Honesdale PA, New York, 1996; pp 25-30.

Gower BA. *Syndrome X in children: influence of ethnicity and visceral fat*. Am. J Hum Biol 1999; 11: 249-57.

Jeong SK, Nam HS, Rhee JA, Shin JH, Kim JM, Cho KH. *Metabolic syndrome and ALT: a community study in adult Koreans. Int J Obes Relat Metab Disord 2004; 28: 1033-8*

Lahti-Koski M, Pietinen P, Mannisto S, Vartiainen E. Trends in waist-to-hip ratio and its determinants in adults in Finland from 1987 to 1997. Am J Clin Nutr 2000; 72:1436-44.

Lea and Febiger: A Waverly company; *Joslin's Diabetes Mellitus.* 13 th ed. 1994. p. 133.

Okosun IS, Liao Y, Rotimi CN, Choi S, Cooper RS. *Predictive values of waist circumference for dyslipidemia, type 2 diabetes and hypertension in overweight White, Black, and Hispanic American adults.J Clin Epidemiol 2000; 53: 401-8*

Park K. *Park's Textbook of Preventive and Social Medicine.* 19th ed. Jabalpur: M/s Banarasidas Bhanot; 2007.

Seidell JC, Bjorntorp P, Sjostrom L, Sannerstedt R, Krotkiewski M, Kvist H. Regional distribution of muscle and fat mass in men-new insight into the risk of abdominal obesity using computed tomography. Int J Obes 1989; 13:289-303.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp32-35

Relationship among Height, Weight and Motor Nerve Conduction Velocity in Aerobic trained Athletes

Ashok Kumar * & Jogbinder Singh Soodan **
* Assistant Professor ** Ph.D. Research Scholar
Department of Sports Science
Punjabi University Patiala (Punjab) India

Abstract

The purpose of this study was to investigate the relationship among height, weight and motor nerve conduction velocity (MNCV) in upper and lower extremities (radial & sural nerve of bilateral side) in aerobic trained athletes (long distance runners & cyclists). A total of 50 male long distance runners & cyclists with an average age, height and weight of 23±2 years, 172.8±5.8 cm and 70.05±4.2 Kg respectively, volunteered to participate in this study. Each subject's MNCV was measured with the help of computerized equipment called "NEUROPERFECT" (Medicaid Systems, India) and the data was analyzed using Mean ±SD and Pearson correlation. Results shows that MNCV of radial nerve of right and left side was not significantly different ($p < .05$) but MNCV of sural nerve of bilateral side significantly different ($p < .05$). The sural nerve had significantly faster MNCV than the radial nerve. The body height was positively and significantly related with MNCV of left radial nerve ($r=.41$) but negatively with MNCV of right sural nerve ($r= -.30$).The body weight was also positively and significantly related with MNCV of right radial nerve ($r=.29$) and left radial nerve ($r=.33$) respectively. Thus, it is concluded that the faster MNCV of sural nerve in long distance runners and cyclists may be the result of their long term training adaptations which may be further related to their pattern of movement requirement.

Key Words: Motor Nerve Conduction Velocity, Long Distance Runners, Cyclists

Introduction

Theorists have pointed to the contribution of neurological system to the performance of the athletes of different sports due to the requirement of different motor actions (Payne & Morrow 1993). Some studies suggest strength and power athletes have faster MNCV than endurance athletes (Kamen et al.,1984). However, it has also been reported that no differences were evident between power and endurance groups (Sleivert et al., 1995). Other researchers have shown that trained individuals have faster MNCV than untrained ones (Hoyle & Holt 1983).The findings of nerve conduction velocity may give explanations for poor performance of the athletes due to poor muscle coordination and/or weakness of muscle actions (Wilbourn 1990). It is more meaningful and interesting to measure the motor nerve conduction velocity in upper and lower extremities of aerobic trained athlete like long distance runners & cyclists who need to control their movement patterns accurately and maintained pace or speed during the performance and this requires neural adaptation in them. In theory, changes in MNCV may be an indicator of improved neural adaptations in athletes due to their exercise training program. There is some evidence that physical activity has some influence on nerve conduction velocity. Halar *et al*., (1985) showed in 20 subjects that the nerve conduction velocity of the sural nerve increased from 36.1±3.1 m/sec to 39.0±3.2 m/sec during 30 minutes of walking. However, Halar *et al*., (1985) pointed out that the influence of physical activity is not the same for all types of exercise and that not all nerves may be affected in the same way. Campbell et al., (1981) reported that the motor nerve conduction velocity is also influenced by other variables like body height and segment lengths. Thus, the purpose of this study was to investigate the relationship among height, weight and motor nerve conduction velocity (MNCV) in upper and lower extremities (radial & sural nerve of bilateral side) in aerobic trained athletes (long distance runners & cyclists) and to understand whether their neural specification would change from long term training.

Methods

The fifty aerobic trained athletes (25 long distance runners & 25 cyclists) in the age range of 18-25 years were voluntarily recruited as subjects in the present study on the basis of their predominant energy system i.e. aerobic. The subject's physical characteristics are shown in Table 1. Informed consent was obtained from all subjects. The data was collected in Exercise Neurophysiology Laboratory. Motor Nerve Conduction Velocity was assessed with the help of computerized equipment called "Neuroperfect" (Medicaid Systems, India) by using the standard technique (Smorto & Basmajian 1979).The subject lay on a wooden table with the straight arm and leg as radial and sural nerve motor nerve conduction velocity was tested. The differences in the mean values and relationship among age, height, weight and MNCV was identified using Pearson correlation with a significance level of $p < 0.05$ by statistical software 'SPSS' version 10.

Results

The mean age, body height and body weight of the subjects were 23±2 years, 172.8±5.8 cm and 70.5±4.2 kg respectively (Table 1).

Table 1 Mean ±SD of physical characteristics of aerobic trained athletes

Group	N	Age (yrs)	Height (cm)	Weight (kg)
Aerobic	50	**23 ±2**	**172.8±5.8**	**70.5±4.2**

The mean of motor nerve conduction velocity of right and left radial nerve and sural nerve was 42.4 m/s, 42.6 m/s, 51.1 m/s and 53.3 m/s respectively (Table 2). It was found that the mean values of bilateral MNCV of sural nerve were greater than radial nerve. Further, the mean MNCV of left sural was more than the right sural nerve.

Table 2 Mean ±SD of motor nerve conduction velocity of radial & sural nerve of aerobic trained athletes

	Radial Nerve (m/s)	Sural Nerve (m/s)
Right	**42.4± 6.9**	**51.1± 8.3***
Left	**42.6± 7.3**	**53.3± 7.2***

* significant at the 0.05 level

The results of correlation showed (Table 3) that age was positively and significantly related body height (r= .46) and body weight (r= .34). The body height was positively and significantly related with body weight (r= .31) and MNCV of left radial nerve (r=.41) but negatively related with MNCV of right sural nerve (r= -.30).The body weight was also positively and significantly related with MNCV of right radial nerve (r=.29) and left radial nerve (r=.33) respectively. Further, MNCV of right radial and MNCV of right sural was positively and significantly related with MNCV of left radial (r=.65) and MNCV of left sural (r=.64) respectively.

Table 3 Correlation among age, height, weight & motor nerve conduction velocity in aerobic trained athletes

	Body Height	Body Weight	MNCV of right radial	MNCV of left radial	MNCV of right sural	MNCV of left sural
Age	**.46****	**.34***	**-.14**	**-.23**	**.15**	**.21**
Body Height	-	**.31***	**.26**	**.41****	**-.30***	**-.15**
Body Weight		-	**.29***	**.33***	**.14**	**-.04**
MNCV of right radial			-	**.65****	**.13**	**.10**
MNCV of left radial				-	**.10**	**.28**
MNCV of right sural					-	**.64****

**significant at the 0.01 level ; *significant at the 0.05 level; MNCV-motor nerve conduction velocity

Discussion

In the presented study, the results showed that aerobic trained athletes had faster motor conduction velocity in sural nerve than the radial nerve. The results seem reasonable, since, the goals of long distance runners and cyclists training program are more rapid and coordinated movements in the lower extremity. It may cause physiological adaptations in nerve structure. Gerchman et al., (1975) indicated that ventral motoneurons following long term exercise had histochemical changes. The changes in nerve conduction velocity may be indicative of adaptations in the nerve structure such as increased axon diameter and myelination (Ross et al., 2001). It was also observed in the present study that motor nerve conduction velocity of sural nerve was significantly and negatively related with body height. Similar results were also reported by Falck and Stalberg (1995). Based on a good correlation between the height of the individual and the length of the nerve, the motor nerve conduction velocity in lower limbs decreases by 2-3 m/s for 10 cm increase in height (Falck and Stalberg 1995). Gilliatt and Thomas (1960) reported that nerve impulses propagate faster in the proximal than in the distal nerve segments. It is presumed that the neural adaptation of muscles in the trained athletes is due to a more active recruitment of motor units and an increase of their firing rates upon maximum voluntary contraction. The recruitments of slow- (type I) and fast twitch (type IIa,b) muscle fibers are in relation to the intensity of effort. For rapid, powerful movements, the fast-twitch fibers are activated (Edgerton 1976). Further, it is also assumed that the improvement of strength performance to be due to the fact that the athletes can recruit more of type IIa, and especially type IIb, motor units during maximum contraction of the measured muscles, and that they can express their true strength capacity by increasing their capacity to recruit more type II motor units during rapid, powerful movements. This means that trained athletes can more fully activate their prime moving muscles in maximal voluntary contractions. However, there is inter subject variability in this ability, and some muscles are more difficult to activate than others. Untrained subjects may have difficulty both in recruiting all motor units and in gaining optimal firing rates of the activated units in certain muscles (Sale 1987). Apart from the increased activation of the agonist muscle (prime movers in a task), neural adaptation may cause changes in the activation of synergist and antagonist muscles, which can be manifested as improved skill and coordination (Rutherford & Jones 1986). The contraction of antagonist muscles may provide a stabilization factor during rapid contractions of agonist muscles. These findings lead to the conclusion that it is possible to increase strength without adaptation in the muscle, but, not without adaptation in the nervous system (Clarke 1973). In a competitive run, athlete would be able to move along at higher rates of speed. Finally, the nervous system can also learn to activate motor units in a way which will produce not only the desired level of strength and power for a particular sport, but, also the most energy-efficient production of strength and power. By dialling up' just the right motor units for a particular activity and 'calling' them at the correct time, the nervous system enhances coordination (skill and efficiency of movement), thus conserving energy and allowing competitive levels of effort to be carried out at a lower (and thus easier) percentage of 'max'. It matters not whether the 'max' refers to maximal aerobic capacity (VO2max), maximal running speed, max cycling speed, max rowing speed, top swimming speed, etc. - if the nervous system allows any effort to be carried out at a lower percentage of maximal that effort will be easier to tolerate and sustain during workouts and competitions. All of these positive changes within the nervous system can be called 'neural adaptations' to training (Honet *et al.,* 1968).Thus, the nervous system plays a critically important role in the development of greater strength, and the nervous system can even learn patterns of muscle coordination and activation which can be utilized by the trained athletes to boost their performance in the sport competitions.

Conclusion

The results of the present study indicate that long term training is important for increasing motor nerve conduction velocity in athletes. But, the types of training may have different levels of adaptation in them. Thus, it is concluded that the faster motor nerve conduction velocity in sural nerve of long distance runners and cyclists may be the result of their long term training adaptations which may be further related to their pattern of movement requirement.

Acknowledgments: The authors would like to thanks the long distance runners & cyclists who voluntarily participated in this study.

References

Campbell W.W, Ward L. and Swift T. (1981) Nerve conduction velocity varies inversely with height. *Muscle Nerve,* **3**: 436-437.

Clarke, D.H. (1973). Adaptations in strength and muscular endurance resulting from exercise. *Exer. Sports Sci. Rev.,* **1**:73-102.

Edgerton, V.R. (1976). Neuromuscular adaptations power and endurance work. *Canadian J. Appl. Sports Sci.,* **1**:49-58.

Falck B., and Stålberg E. (1995) Motor Nerve Conduction Studies: Measurement principles and interpretation of findings. *J. Clin. Neurophysiol.,* **12**: 254-279.

Gerchman, L.B., Edgerton, V.R, Carrow, RE. (1975). Effect of physical training on the histochemistry and morphology of ventral motor neurons. *Exp Neurol,* 49, 790-801.

Gilliatt R.W. and Thomas P.K. (1960) Changes in nerve conduction with ulnar lesions at the elbow. *J. Neurol. Neurosurg. Psychiatry,* **23**: 312-320.

Halar, E.M., Hammond, M.C. and Dirks, S. (1985) Physical activity: Its influence on nerve conduction velocity. *Arch. Phys. Med. Rehabil* .,**66**: 605-609.

Honet. J.C., Jebsen, R.H. and Perrin, E.B. (1968). Variability of Nerve conduction velocity determinations in normal person, *Arch. Phy. Med.,* **49**:650-654.

Hoyle R.J. & Holt L.E. (1983). Comparison of athletes and non-athletes on selected neuromuscular tests. *AustJ Sport Sci.* 3(1) ,13-18.

Kamen, G., Taylor, P., & Beehler, P. (1984). Ulnar and posterior tibial nerve conduction velocity in ath"etes. *1nl J Sports Med,* 5, 26-30.

Payne, I.G. and Morrow J. (1993) Exercise & VO2 max in children : A metaanalysis. Med. Sci. Sports Exer., 26: 510-514.

Ross, A. Leveritl M. & Riek S (2001). Neural influences on sprint running: training adaptations and acute responses. *Sports Med,* 31(6),409-25.

Rutherford, O.M. and Jones, D.A. (1986) The role of learning and co-ordination in strength training. *Eur. J. Appl. Physiol.,* **55**: 100-105.

Sale, D.G. (1987). Influence of exercise training on motor unit activation. *Exer. Sports Sci. Rev.,* **15**:95-151.

Sleivert GG, Backus RD & Wenger HA (1995). Neuromuscular differences between volleyball players, middle distance runners and untrained controls. Int *J Sports Med 16(6),* 390-398.

Smorto MP., Basmajian JV (1979). In Baltimore, William & Wilkins. (ed. 2), *Clinical electroneurography.*

Wilbourn A.J.1990. Electrodiagnostic testing of neurologic injuries in athletes. Clin. Sports Med., **9**:229-245.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp36-38

Effect of Explosive Strength for the improvement of the Grab Start in Competitive Swimmers

Dr. G. L. Moghe Director Physical Education, Maharashtra College, Nilanga

Dr.P.N.Deshmukh, Dean, Faculty of Physical Education, S.R.T.Univ.Nanded

ABSTRACT

Starting style used in swimming like grab starts, rear weighted track start. Explosive strength ability is very important in competitive swimmers in competitions swimming, the fundamental goal is to cover a set distance in the lest amount of time. Plymetric training uses the acceleration and deceleration of the body. Method used for this study is experimental method. Data Analysis men, standard deviation, standard difference and T-test was taken. Finally, the following conclusion drawn in the present study. Performance in the start is strongly related to the overall swim performance. There are indications that, Regardless of the posture used, intensive practice of the start significance improvement shows. Swimmers very explosive and symmetrical in force production. It may be worthwhile. Changing to grab start where they can produce very high force in short period.

Introduction: Historically swimming is as old as ancient mythology but for practical purposes, a review of progress over the last 50 years is all that is necessary. During this period methods of water progression have changed remarkably; each change in stroke has signalized by a corresponding increase in speed. Fifty year ago, the breaststroke was in general use for all purposes including racing. Then the over hand sidestroke was discovered, and it becomes the popular, with the result that all known speed standards where beaten. Later the trudged stroke was taken up and again new records were set up in the early age the cruel stroke took front place in popular favors and since then all speed, records have been reduced to figures which would have appeared fantastic to the old time performerOver the many starting styles have been used in free style butterfly and breast stroke events Initially swimmers took a starting position with arms extended backward. They soon found that they could start their body moving towards the water more quickly by swinging their arms backward (action reaction principal). Therefore, they assumed a preparatory position with arms in front. They would swing the arm straight backswing start was later replaced by a circular backswing on the theory that a longer arm swing would general additional momentum and increase the distance traveled through the air.The circular arm swing (conventional start) has now been replaced by a faster Methods the grab start. The grab start was introduced by Hamauer in 1960 and has rapidly gained in popularity since that time (Hamaure 1972). Several research studies have verified that grab is faster than other methods (Jorgenson 1971), Rofter 1972, Nelson 1972, Bowers and Cavan 1995, Thorse 1975. The grab is superior because you can get your body moving toward the water faster by pulling against the staring platform.Unfortunately dry land exercises and weight-training programs in the sport of swimming frequently focus their attention on the development of upper body strength. In accordance with the concept of specificity, much time and effort has been spent on the development of specific exercises or weight training procedure that closely mimicswimming movement. Because of this, it has been suggested that swimmers, in general, lack the dynamic lower body strength needed to maximize performance in the block start and tarns. This may also be because the benefits of developing explosive strength have not been properly investigated.In competitive swimming, the fundamental goal is to cover a set distance in the least amount of time (Adrian's Cooper, 1995). The swimming starts has been defined as including

those events that takes place between the command, “take your marks” and the of beginning the first stoke (Ambruster, Allen, Billingsley, 1973). In competitive swimming, the fundamental goal is to cover a set distance in the least amount of time (Adrian’s Cooper, 1995). The swimming starts has been defined as including those events that takes place between the command, “take your marks” and the of beginning the first stoke (Ambruster, Allen, Billingsley, 1973). Plyometrics were developed in the mid 1960’s as a training method to relate muscular strength and power (Adams 1985). Although researches articles “plyometrics” some what differently, Despains and Chevertle (1987) point put that most agree the term refers to exercises that are characterized by powerful muscular contractions in response to rapid , dynamic loading or stretching of the involved muscles. This loading or stretching of the involved muscles is an advantage of plyometric exercises in that they involve the dynamic stretch shorten cycle movement similar to those adapted in sporting action (young 1991). Traditionally plyometric training uses the acceleration and deceleration of the body weight as the overload in dynamic activities such as depth jumps and bounds (Thomus 1998). These activities eliminate the deceleration phase seen in traditional weight training activities or training methods. This is due to the body not having to achieve zero velocity at the end of the concentric movement. Therefore plyometrics involve the production of high forces and acceleration throughout the entire range of motion, which is again specific to most athletic movements like the swimming block start.It is a combination of strength and speed abilities. It can be defined as the ability to over come resistance with high speed (Hardayal singh 1991).

Methods and procedures: The participant for this study were 20 swimmers in each group control as well as experimental, they are participating regularly in school national swimming competitions in under 19 age group. The experimental group has given fifteen days training. Initially researcher has taken starts timing of 15 mts. Mark in seconds in i) conventional start ii) grab start iii) rear weighted track start iv) forward weighted track start, each starting technique taught to the swimmers in detail and given 15 days for practice the skill and establish the skill. Then three were starts taken in each style and average start timing was taken for calculation. Measurement of explosive strength researcher took two test, i) standing broad jump test, ii) standing vertical jump test in three attempt considered highest score as test score.

Data Analyses: For data analyses mean score, standard deviation, standard difference and T-test taken.

RESULTS: Mean score, standard deviation, standard difference T-test

UNDER-19, PRE-TEST RESULT

Sr. No.	***Name Of The Starts***	***Mean***		***Std-Dev***		***Std-Diff***	***T-Test***
		Control Group	***Experimental Group***	***Control Group***	***Experimental Group***		
1	Conven. start	5.84	5.89	0.05	0.07	0.03	4.85
2	Grab Start	5.57	5.58	0.06	0.06	0.02	0.29*
3	Forward Weighted Track Start	5.40	5.91	0.11	0.16	0.09	18.81
4	Rear Weighted Track Start	5.87	5.57	0.11	0.15	0.07	7.49

***Significant at 0.05 levels.**The table shows the name of starts, mean of control group and mean of experimental group, their standard deviation, standard difference, t-test values and number of objects. In table 4.9-In conventional start, the mean of the control group is 5.84 and of the experimental group are 5.89.In grab start, the mean of the control group is 5.57 and of the experimental group are 5.58.In forward weighted track start, the mean of the control group is 5.40 and of the experimental group are 5.91.In rear weighted track start, the mean of the control group is 5.87, and of the experimental group are 5.57.From these means, it is clear that the mean of the experimental group of each start is better than the mean of the control group of each start respectively. (* stands for better start). Moreover, the t-test values 4.85

(conventional start), 0.29 (grab start), 7.49 (forward weighted track start), 18.81 (rear weighted track start) are > 0.05as well as 0.01level. Therefore, the t-test values are **Significant at 1% level**. In these t-test values, the value of grab start is most **significant at 1% level**.

Mean score, standard deviation, standard difference T-test

UNDER-19, POST-TEST RESULT

Sr. No.	***Name Of The Starts***	***Mean***		***Std-Dev***		***Std-Diff***	***T-Test***
		Control Group	***Experimental Group***	***Control Group***	***Experimental Group***		
1	Conventional Start	5.78	5.40	0.11	0.23	0.14	8.50
2	Grab Start	5.53	4.90	0.06	0.19	0.19	7.12*
3	Forward Weighted Track Start	5.82	5.38	0.11	0.28	0.18	7.82
4	Rear Weighted Track Start	5.38	5.23	0.14	0.14	0.01	53.39

***Significant at 0.01 levels.**

DISCUSSION: The table shows, name of the starts, mean of the control group and experimental group, standard deviation of the groups, their standard difference, t-test values and number of subjects. In table 4.10-In conventional start, the mean of the control group is 5.78 and of the experimental group are 5.40.In grab start, the mean of the control group is 5.53 and of the experimental group are 4.90.In forward weighted track start, the mean of the control group is 5.82 and of the experimental group are 5.38.In rear weighted track start, the mean of the control group is 5.38, and of the experimental group are 5.23.This shows that the mean of the experimental group of each start is better than the mean of the control group of each start respectively. (* stands for better start). And the t-test values 8.50(conventional start), 7.12 (grab start), 7.82 (forward weighted track start), 53.39 (rear weighted track start) are > 0.01level. Therefore, the t-test values are **Significant at 1% level**. In these t-test values, the value of grabs start is most **significant at 1% level**.

CONCLUSION: Finally, the following conclusions were drawn in the present study:

1) Performance in the start is strongly related to the overall swim performance.
2) There are indications that, regardless of the posture used, intensive practice of start results in significant improvement even among experienced competitive swimmers.
3) Increasing the amount of start practice significantly increases start performance.
4) For swimmer who is very explosive and symmetrical in their force production, it may be worthwhile changing to grab start where they can produce very high force levels in a short period.

REFERENCES:

1. Ambruster D.A.,Allen,R.H. and Billingsley,H.S. (1995) Swimming and Diving (sixth ed.),The C.V. Mosby Co.
2. Beritzhoff, S. T. (1974). 'The Relative Effectiveness of Two Breaststoke Starting Technique Among Selected Intercollegiate Swimmers.' Master's thesis, California State University Chico, California.
3. Blanks by Nicholsun and Elliott (2001) Biomechanical analysis of the grab, track and handles starts : an intervention study. Sports biomechanics; 1(1):11-27.
4. Brady, M. L. (1987). A comparison of the effects of vertical and horizontal playometrics on leg power. Completed research in Health, Physical Education and Recreation. 29. pp-22.
5. Consilman; J. E. 1979 B.E. Nomura, T.S. Endu, M. Three types of grab starts for competitive swimming, swimming and medicine in swimming (PP. 81-91) cham paiserva IL. It unach kinetics publishers.
6. Cossor S. Mosans (2001) What can we learn from competitions analysis the 1999 pan pacific Swimming championships? In R. Sanders and Y. Wong (Eds). Proceedings of XVIII symposium on Biomechanics in sorts : applied programme application of biomechanical study in swimming (PP. 75-82) Hong Kong.
7. Covangaugh, P. R. Palmgren, J. V. and Kerr, B. A. (1975). "A Device to Measure Forces at the Hand During the Grab Start in Swimming." Swimming II, ed. J. P. Clarys and L. Lewillie, pp. 43-50. Baltimore: University Park Press.
8. David wilkie and Kelvin Juba, The Hand Book of Swimming 1986, PP. 5 to 13

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp39-42

A Comparative Study of Aggression between University Level Throwers and Jumpers

Lalit Mohan Tiwari, Research Scholar, DPE, Punjabi University, Patiala

Bhagwanth Singh, Asst. Professor, DPE, Govt. P.G.College Sec.11, Chandigarh

Manoj Singh, Research Scholar,DPE, Punjabi University, Patiala

ABSTRACT

Purpose: The Purpose of the study was to **"compare the degree of aggression between university level throwers and jumpers."** The study was conducted on 15 University Level Male Jumpers and 15 male throwers ranging from 17 to 24 years. The subjects were selected from Punjabi University Patiala and National Institute of Sports Patiala Punjab. The sports aggression inventory questionnaire of aggression by Anand Kumar/ Prem Shanker Shukla was distributed to the 30 male jumpers & throwers. It was hypothesized that there would be a significant a difference between the Throwers and Jumpers on the degree of aggression. The't' test was employed to compare the degree of aggression between throwers and jumpers. **Findings:** To analyze the score t-test was employed; the level of significance for testing the hypothesis was set at 0.05 level of confidence. The mean of the score of thrower was 14.73 and jumper was 10.06. The calculated t- value was 3.85 which showed significant difference between the aggression levels of University level Jumpers & Throwers (t_{cal}=3.85 >t_{tab}=2.04). The aggression level of throwers was found to be higher than the jumpers. The t-value required to be significant for 28 degree of freedom was 2.04 at 0.05 level of confidence.**Key Words:** Sports aggression inventory, Aggression, Jumpers, Throwers

INTRODUCTION

Sports competition without "aggression" is a body without soul, competition and aggression are twins. There is clear evidence that, in general aggression is more boisterous games, may help performance because it arouses players overly to put in harder effort, and "do or die" for the success of the team. Contrarily there is also indication, and valid too, that aggression committed by players in certain contexts situation or position may implies performance of individual skill as well as success of the team. The word Aggression comes from the Latin work aggress, 'ad' (to or toward) and greater (walk). Literally then the word means to "to work towards or approach". Aggressive act can be defined as those which the athlete (1) is highly motivated (2) demonstrate the great realize of physical energy, and / or (3) is not inhibited by fear of potential fracture or injury. Aggression is defined as the infliction of an oversize stimulus physical, verbal or gesture upon one person by another. Aggression is not an attitude but behavior and most critically it is reflected in the acts committed with the intention to injure.

This definition of aggression includes such wide range of acts engaged in by athletes, coaches and spectators as physically hitting another individual and verbal abuse.

Burris (1955) conducted a study on aggression in boxers are wrestlers as measured by projective techniques. In this study, Rosenzweeg P. F. conducted selected TAT Pictures, and a sentence completion test was administered at intervals throughout the season to the following college groups. Nine boxers, eight wrestlers, nine cross-country runners and seventeen control subjects. The tests were

analyzed for number, severity, and direction of aggressive responses Significant differences indicated that the boxers were least aggressive of the groups, and that they tended to direct their aggressive feelings inwardly (intropunitive) rather than outwardly upon persons or things in their environment (extra punitive).

Ciccolerlla and Elizabeth Margaret, (1978) conducted a study to determine any differences in aggression of male and female Athletes. Subjects for this study included male and female under graduate students at Alma College and Brigham young university who participated intervarsity in basketball, softball (baseball for men), tennis, and swimming during the 1977-78 academic calendar year. The study employed the Minnesota Multiphase Personality Inventory (MMPI) as the measuring instrument. The scales of the MMPI selected to determine aggression were 2 (depression), 3(Hysteria), 4(psychopathic Deviancy), 5(Masculinity - femininity) and 9(Hypomania). The statistical analysis included a univariate analysis of the five selected MMPI scales and an inspection of group mean profiles. The conclusion of this study was that female varsity athletes were more aggressive than male varsity athletes.

Husman and F. Burris (1955) conducted a study on aggression in boxers are wrestlers as measured by projective techniques. In this study, Rosenzweeg P. F. conducted selected TAT Pictures, and a sentence completion test was administered at intervals throughout the season to the following college groups. Nine boxers, eight wrestlers, nine cross-country runners and seventeen control subjects. The tests were analyzed for number, severity, and direction of aggressive responses Significant differences indicated that the boxers were least aggressive of the groups, and that they tended to direct their aggressive feelings inwardly (intropunitive) rather than outwardly upon persons or things in their environment (extra punitive). Indications were that the intensity and direction of aggression of these various athlete and non-athlete groups were quite different. The Thermatic Apperception test was judged the best instrument for assessing aggression.

McGuire et al (1992) conducted a study on Aggression as a potential mediator of the home advantage in professional Ice Hockey. Based on the subject - defined delineation between aggressive and non-aggressive ice hockey penalties established by Midmeyer and Brich, 13 measures were used on data collected from the official game reports and penalty records of the National Hockey League for the 1987-1988 seasons. Both macro-analytic and micro analytic strategies and analyses were employed. Initial analysis revealed that home team won 58.3 percent of the decided games. Further analyses showed a significant interaction between game location and performance Home team incurred more aggressive penalties in game they won whereas visiting teams incurred more aggressive penalties in games they lost. Implication for the potential role of aggression in contribution to the home advantage is discussed.

Ranbir Singh Dahiya (1986) conducted a study with an objective to find out the difference between combative sportsman and track & field athlete on aggression with the hypothesis that combative sportsman are like to differ from track & field athlete in aggression. The data was collected during 12th inter University Championship / athletic meet held at North India University in 1998-1999, 249 combative Sportsman and 210 track & field athletes were randomly drawn for conducting the study. Aggression score test standardized by Pati 1976, Containing 16 options were used to assess the aggression behavior of the individual. The Combative mean score indicate that athlete had significantly higher level of aggression compare to combative sportsman.

Reusser and Janet (1987) conducted a study on an analysis of the aggressive and non-aggressive behavior of a college basketball coach. An inter-collegiate female basketball coach selected by the investigator was videotaped six times during the 1985-86 basketball season. The data were systematically analyzed by Cheffer's Adaptation of Flanders Interaction Analysis System and the emotional dimension of Cheffer's system, CAFIAS. She find out that the subject did not become more aggressive while losing as opposed to winning. More aggressive behavior was exhibited during home games when compared to away games. The subject became more aggressive when first and second halves were compared and became less aggressive as the season progressed. The subject was silent for more extended period of time and emitted more directive behavior as the season progressed.

Walker conducted a study on Aggression in sport. The purpose of the study was to determine difference in the occurrences of aggressive actions (fouls) under several conditions evident in basketball contests. The intent was to examine the possibility of predicting aggressive actions throughout the game. Official's play-by-play score seat and official National Collegiate Athletic Association Box Score sheets were used together the data. The findings of this investigation indicate, the fouling is predictable when the range of scoring increases, and during the first and last five minutes of the second half. The implications associated with the findings are the following: (a) The frustrations of the game situation cause aggressive behavior. (b) No cathartic effect is apparent as result of displaying aggressive actions. (c) Several factors contribute to the occurrence of fouling behavior in basketball games including accidents, international fouls, and coach requested fouls and over aggressiveness by players.

METHODS

Subjects

Thirty (30) University level Male players (15 throwers and 15 jumpers) were randomly selected from Punjabi University Patiala and National Institute of Sport Patiala Punjab as a subject. They were attending yearly camp in their respective sport. The age of the subjects were ranged from 17-24 years.

Collection of data

The criterion measure chosen to test the hypothesis was the scores obtain in sports aggression inventory by Anand Kumar and Prem Shankar Shukla

Hypothesis: -

The hypothesis was that there would be a significant a difference between the Throwers and Jumpers on the degree of aggression.

Administration of the Test: Based on expert opinion and by personal understanding the sports aggression inventory by Anand Kumar and Prem Shankar Shukla questionnaire was used. The aggression questionnaire was distributed to throwers and jumpers. To ensure maximum cooperation from the subjects the investigator had a meeting with selected subjects in presence of coach. Subjects were oriented and explained regarding the purpose and the procedure of the questionnaire. Sports Aggression Inventory consists of 25 items in which 13 items are keyed "YES" and 12 are keyed "NO". The statements which are keyed "YES" are 1,4,5,6,9,12,14,16,18,21,22,24 and 25 and the statements which are keyed "NO" are 2,3,7,8,10,11,13,17,19,20 and 23.

Scoring of Questionnaire Maximum score for each statement was one. Sores obtained for each statement was added up which represent an individual's total score on aggression.

STATISTICAL ANALYSES

For the purpose of analysis of data, 't' test was applied to compare the degree of aggression between throwers and jumpers. The level of Significance was set at 0.05 levels ($p < 0.05$).

RESULTS: The scores were obtained by using the key as suggested by Anand Kumar/ Prem Shanker Shukla. The data was analyzed by using "t" test. The significance of mean difference was found between scores obtain on aggression by university level throwers and jumpers has been presented in Table – 1.

TABLE-1

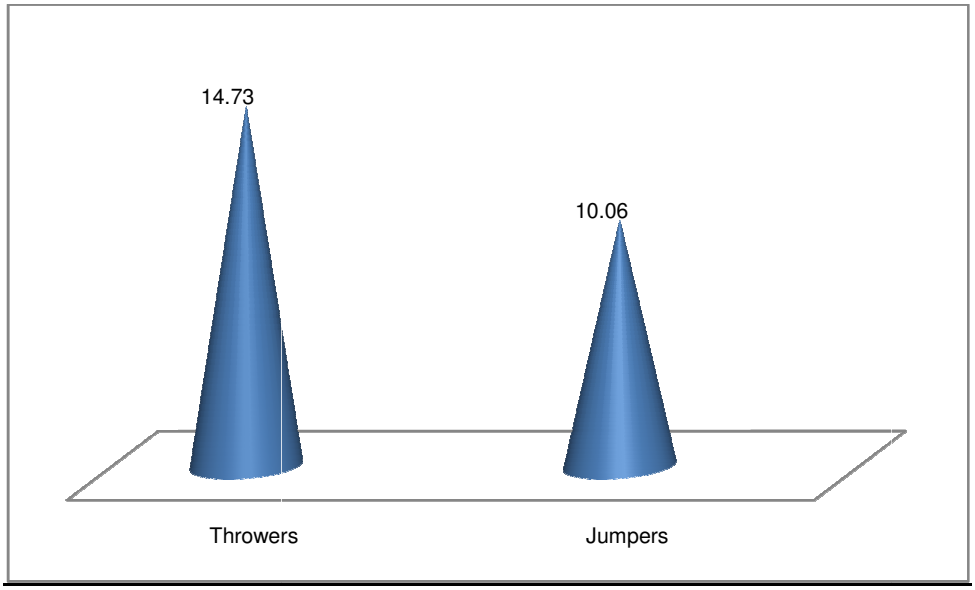
SIGNIFICANT DIFFERENCE OF MEAN ON AGGRESSION BETWEEN UNIVERSITY LEVEL THROWERS AND JUMPERS

Variable	Group Mean		Mean Diff.	t-Ratio
	Throwers	Jumpers		
Aggression	14.73	10.06	4.67	3.85*

*Significant at .05 level of confidence

$t_{.05}$ (28) 2.048.It is evident from Table-1 that there was a significant difference between the means of throwers and jumpers on the scores of aggression since the obtained value of 't' (3.85) was higher than the tabulated value of 't' (2.048) which was required to be significant at 28 degree of freedom with 0.05 level of confidence.

FIGURE 1 :COMPARISON OF MEAN SCORES BETWEEN THROWERS AND JUMPERS ON AGGRESSION



DISCUSSIONThe mean value (14.73) of throwers on aggression was found to be higher than the jumpers (10.06), which revealed that throwers were more aggressive in comparison to the jumpers. Scholar was unable to locate the literature to support the above finding however reasons for throwers being more aggressive would be use of implements. Furthermore the physique and body structure of throwers would be other reasons for aggressiveness.

DISCUSSION OF HYPOTHESIS: The hypothesis that there will be a significant difference on aggression between University level throwers and jumpers is accepted.

CONCLUSIONSIn regard to aggression there was a significant difference between the means of University level throwers and jumpers. The aggression level of throwers was found to be higher than the jumpers.

REFERENCES:

1. *Burris F. Husman, (1955) "Aggression in Boxers and Wrestlers as Measured by Projective Techniques"*
2. Ciecolella, Elizabeth Margaret, (1978) "Differences in Aggression of Male and Female Athletes." Dissertatiion Abstracts International 39:6.
3. Dahiya Ranbir Singh (1986) "A study of Aggression of Combative Sports & Track and Field Athlete". Unpublished Master's Thesis, Agriculture Univeristy, Hisar.
4. D. Teipel, G. Gerish and M. Busse.(1983) "Evaluation of Aggression Behavior in Football." International Journal of Sports p14.
5. Goldsstein, G. Leon G. and N. Mosel James.(1962) "A Factor of Drivers Attitudes, with Fasther Study on Drivers Aggression." Research Quarterly p33.
6. Hatcher, Paul Graham. (1980) "An Investigation of the Inter- relationship Existing Among Psychologicla Aggression, Court Aggression and Skill in Male and Female Inter- collegiate Tennis Players." Dissertation Abstracts International 41:2.
7. Husman, Buris F. (1955) "Aggression in Boxers and Wrestlers as Measured by Projective Technique." The Research Quarterly 26:4, p. 77
8. Kumar Anand and Shukla Prem Shanker, "Sports Aggression Inventory" Agra: National Psychological Corporation, pp1-7.
9. Rensser Janet K. (1987) "An Analysis of the Aggressive and Non-Aggressive Behavior of a Colege Basketball Coach"

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp43-46

Self Confidence and Performance

Dr. Anil Kumar Edward and Dr.Yeshwanth Kumar H

Introduction

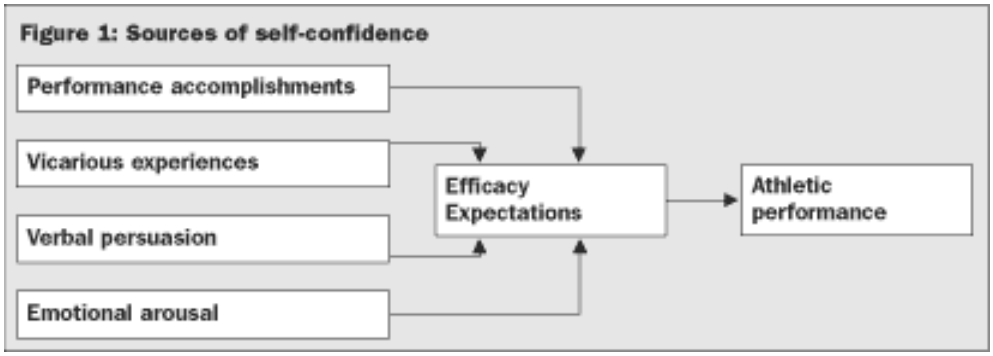
The importance of sports and games in life can be understood by the fact that it has social emotional as well has physical aspects. It helps to introduce people to a competitive environment. It increases the social interaction as you play with other people around you. Participating in events that require making teams helps in an understanding of working in teams that may help in professional life. Sports and games provide us with an escape from the daily stress full environment. It teaches us sports man spirit, obeying rule and regulations and working hard. It also helps us in developing such attributes as responsibility, self-confidence, sacrifice, discipline and accountability. The physical exercise helps in staying away from diseases and remaining healthy.Professional sports are a very important part of our culture. They have given us an escape from the hectic life we live and a place of childhood fun. Even in the 1890's sports had a great influence on people's lives. It was the first time that work could be an enjoyable thing. It was in actuality, the first time that life had something enjoyable for everyone, and not just small children and these sports have evolved into the great games we play today.

Key word: Self Confidence, Sportsmen

Psychology and Sport: In competitive sports, psychological preparation of a team is as important as teaching them the different skills of a game with scientific methods. In these days, the teams are prepared not only to play, but to win the games. And for winning the games, it is not only the proficiency in the skills, which matters, but also the spirit and attitude of the players with which they play. The mental attitude of each individual player as well as of the team can help or hinder their performance. Most of the coaches agree that the physical characteristics, skills and training of the players are extremely important, but they also feel that good mental or psychological preparation for competition is a necessary component for success. The branch of psychology which is intimately connected with human behaviour on the playfield-both under practice and competitive situations-with a view to bring about qualitative improvement in performance, is called Sport Psychology.

A) Self Confidence

Self-confidence is an attitude, which all individuals have positive yet realistic views of themselves and their situations. Self-confidence people trust their own abilities have a general sense of control in their lives and believe that, within reason, they will be able to do what they wish, plan, and expect. Sport psychologists define self-confidence as the belief that you can successfully perform a desired behaviour. Confident athletes expect success and have a high level of self-belief that appears crucial in determining how far they strive towards their goals. It is largely confidence that determines whether people give up or remain committed to their goals following a series of setbacks. For the sake of simplicity, we may consider self-confidence as conceptually opposite to cognitive anxiety (negative beliefs and performance worries). Both are related to our beliefs and both, ultimately, influence our performance.



Concept of performance The nature of sports performance has been insufficiently explored because sports performance is a complicated multi-dimensional process of tackling a sports task. Its exploration further needs an integrated effort on the part of various training science disciplines and theory and methods of specific sports. Human movement, human performance is a subject for such varied sciences as exercise, physiology, neuro-physiology, biomechanics, psychology, human cybernetics etc (Brook and Whiting, 1975).

Structure of the Performance Capacity

The performance capacity along with external factors determines the sports performance. Performance capacity is a complex performance, which is divided into five groups.

a) **Personality:** It consists of belief, values, interest, attitudes, temperament, mental capacities, personality traits, habits etc.
b) **Condition:** It is also known as physical fitness. It consists of strength, speed, endurance and their complex forms.
c) **Technique/Co-ordination:** It consists of technical skills, flexibility and coordinative abilities.
d) **Tactics:** It consists of tactical knowledge, tactical skill and tactical abilities.
e) **Constitution:** It is consists of physique, body height and weight, size, width and length of body parts, body fat, lean body mass and stability of bones, joints etc.

All these five factors are inter-related and inter-dependent. The degree of importance of these factors for performance is different and hence training for each sport must be differently formulated to ensure the optimum development of each performance factor for better and higher sports performance.

Statement of the Problem:

To study the effect of Self-confidence on Athletes in relation to their performance.

Hypothesis of the Study:

The following hypothesis have been formulated and tested in the present study.

1. There is a significant influence of Self-confidence on the performance of Athletes.
2. There is a significant difference in the motor ability performance of Athletes.

The Sample:

The sample consists of 100 Athletes selected from various colleges of Gulbarga University. The samples divided equally into high and low Self-confidence groups. The sample design is given below:

Sample Design

SELF CONFIDENCE	ATHLETES	Total
High	50	50
Low	50	50
Total	100	100

Tools:

1. Personal data schedule was used to collect the information related to personal and socio-demographic status of the subject.
2. The following Physical Fitness tests have been used to measure the performance of samples in the study.

Motor Ability Tests (AAHPER 1976)

Sl. No.	Motor Ability	Test	Unit of Measurement
1.	Speed	50 yard dash	Time
2.	Endurance	12 min. Run & Walk	Distance
3.	Flexibility	Sit & Reach test	Inches
4.	Agility	Shuttle run 10x4 yards	Time
5.	Strength	Pull Ups	Score

The procedure and scoring have selected motor ability tests are done as per the norms given in the manual of tests and scales.

3. **Self Confidence Questionnaire (SCQ) (1975)**The self-confidence questionnaire (SCQ) developed by Basavanna. The questionnaire consists of 100 items. The odd-even (split-half) reliability co-efficient calculated by Spearmen Brown formula was fond to be 0.904.

4. **Statistical Analysis**To meet the objective of the study the statistical tools like **Mean, SD** and **t-tests** were used in this study

Analysis and Interpretation The present study is to find out the effect of Self-confidence on Athletes in relation to their performance. In this regard the suitable methodology been applied and statistically computed and presented through following tables and explanations.

Table – 1

Means, SD and t- valves of Speed test of Athletes in two levels of Self-confidence (N-100)

Self- Confidence	Mean Scores.	SD	t-Value
Low SC	11.42	1.77	5.81**
High SC	9.50	1.57	

** Significant at 0.01 level.

Table-1 gives the scores of motor ability speed of athletes in low and high self-confidence. It is seen that mean score in high sc is 9.50 and that of Low is 11.42 This shows that the high SC athletes have taken significantly lesser time in the completion of the task. It is because of the fact the self – confidence has made them to acquire more skills in the speed test. The t–value of 5.81 is significant at 0.01 level to suggest the significant difference between the two levels of self-confidence. Thus self-confidence facilitates performance in the athletes.

Table–2

Means, SD and t-values of Endurance of Athletes in two levels of self-confidence (N-100)

Self- Confidence	Mean Scores.	SD	t-Value
Low SC	2025.9	161.9	8.69**
High SC	2312.8	164.6	

** Significant at 0.01 level.

Table- 2 shows that high Self- confidence sample has outscored the low in the motor test of Endurance. The means of high self-confidence are higher than the low. The t-value is also significant. Thus the self-confidence is a cause for the difference in the performance. The low confident players have indeed scored significantly lower. This reveals that self-confidence is prime factor for motor ability of athletes.

Table-3

Means, SD and t-values of Agility of Athletes in two levels of self-confidence (N-100)

Self- Confidence	Mean Scores.	SD	t-Value
Low SC	15.32	1.82	6.76**
High SC	12.41	1.69	

** Significant at 0.01 level.

Table-3 gives the results of motor ability of agility of two categories of the sample. It is seen that high confidence athletes have scored a mean of 12.41 and low confident players have scored a mean of 15.32 in agility test. This shows that athletes of high self-confidence have relatively higher performance than the low the t-value of 6.76 is significant to suggest the significant differences in the agility between the two levels of self-confidence.

Table:4:Means, SD and t-values of Flexibility of Athletes in two levels of Self-confidence (N-100)

Self- Confidence	Mean Scores.	SD	t-Value
Low SC	2.14	1.69	4.05**
High SC	3.52	1.77	

** Significant at 0.01 level.

Table – 4 shows mean scores of the flexibility of the athletes. It is seen that the mean scores are higher in high confident group than the low. The flexibility is significantly higher in players of high self-confidence. This indicates that self-confidence helps development of sports skills in the participants. The t-value which is significant and also indicates that there is a significant also indicates that there is a significant difference in flexibility between the two groups of samples.

Table 5 :Means, SD and t- values of Strength of Athletes in two levels of Self-confidence (N- 100)

Self- Confidence	Mean Scores.	SD	t-value
Low SC	11.47	2.78	8.09**
High SC	15.60	2.18	

** Significant at 0.01 level.

Table – 5 gives the result of motor ability of strength of two groups of self-confidence sample. The high confident group has a mean of 15.60 and the low has a mean of 15.60 and the low has a mean of 11.45. The t-value of 8.09 which is significant at 0.01 level indicates that there is a significant difference in the strength test between the two groups. Thus the self-confidence proves to be significant influencing future in increasing the performance. **Conclusions**

- The high self-confidence athletes are having high speed than low self-confidence athletes.
- There is a significant effect of self-confidence on the physical fitness test of endurance, and high self-confidence athletes are having high endurance than low self-confidence athletes.
- There is a significant difference in physical fitness test of agility between low and high self-confidence. The high self-confidence athletes have significantly higher performance in agility than the low self-confidence.
- There is a significant influence of self-confidence on the physical fitness test of flexibility of the athletes. High self-confidence athletes are having high flexibility than low self-confidence athletes.
- There is a significant difference in physical fitness test of strength between two sample sub groups. High self-confidence athletes are having high strength than low self-confidence athletes.

Hence there is a significant effect of self-confidence on physical fitness performance of athletes.

REFERENCES.

1. Lorenz K (1966) . The eight deadly sins of civilizes mean, New york, H.B.J.
2. Smith. T. (1983) competition trait Anxiety in youth sport : Differences According to Age, Sex race and playing status. Perceptual and motor skills 57 : 1235 – 1238.
3. Alderman R.B. (1974) : Psychological behavior in sports Saunders Philadelphia.
4. Jung. C.G. (1929). The significance and constitution of Heredity in psychology. In collected works, Princeton University press. Princeton.
5. Eysenck H.J. (1947) Dimension of personality. Rout ledge. London.
6. Eysenek. H.J. and Eysenck. S.B.G. (1975) Psychoticism . A dimension of personality.

   Rutledge and Kagen paul. London.
7. M.Basavanna (1971) : Self Confidence inventory, R.P.C. Varanasi.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp47-50

Anxiety and Performance

***MS.Rajkumar, ** Dr.Anilkumar Edward and ***Dr.M.S.Pasodi**

Introduction

Applications of psychology to sports and athletics are numerous. They focus both on the individual athlete and on the team. Psychology is increasingly involved with athletes, coaches, and trainers to enhance athletic performance through improved physical and mental training. Examples of psychological techniques applied to helping athletes acquire motor skills and improve performance range from visual motor behavior research where athletes mentally practice movements, to anxiety reduction techniques like thought stopping and relaxation training. A knowledge of psychology is essential for understanding each individual's motivation and developing that motivation to an optimal level for athletic performance. In addition to facilitating athletic performance psychology is important in rehabilitating athletes from physical injuries and psychological trauma, as well as in providing more routine counseling services.

Anxiety:

A great deal of research has been devoted to the effect of anxiety on sports performance. Researchers have found that competitive state anxiety is higher for amateur athletes in individual sports compared with athletes in team sports (Simon & Martens, 1977).

Anxiety exerts a variety of effects on athletic performance. These effects vary based on sport, gender and level of experience. In order to facilitate peak performances by athletes, sport psychologists must consider the three different facts of anxiety: cognitive anxiety, somatic anxiety, and self-confidence. Given the research that indicates that successful athletes who interpret their anxiety as being facilitative is characterized by high scores on self-confidence and low scores on somatic and cognitive anxiety, sport psychologist should work towards achieving this ideal state among their clients. Let us now turn our attention to the variety of treatments that are available for the treatment of anxiety within the athletic context.Stress is a state that results from the demands that are placed on the individual which require that person to engage in some coping behavior (Jones, 1990). Arousal can be considered to be a signal to the individual that he or she has entered a stressful state and is characterized by physiological signs (Hardy 1996). Anxiety results when the individual doubts his or her ability to cope with the situation that causes him or her stress (Hardy 1996). Another important point that needs to be clarified is the difference between state and trait anxiety (Spielberger, 1966). While state anxiety can be considered to be more situational in nature and is often associated with arousal of the autonomic nervous system, trait anxiety can be thought of as a world view that an individual uses when coping with situations in his or her environment (Spielberger, 1966). Trait anxiety influences performances in that individuals with high trait anxiety will attend more to information related to state anxiety (Hardy 1996). Previous research outside of sport and exercise psychology has indicated that individuals with high trait anxiety who are state anxious attend to threat related information, while individuals with low trait anxiety who are state anxious will attend away from threat related information (MacLeod, 1990). Within the context of sports, those individuals who are low trait anxious and experience high state anxiety would find it facilitative to a peak performance; but, those individuals with who are high trait anxious and experience state anxiety will find it debilitative to athletic performance (Hardy 1996).

Variable

Cricket players are the independent variables. The Anxiety behaviour is the dependent.

Limitations

1. In the present study the psychological variable i.e. Anxiety behaviour has been chosen alone.
2. In this study in the cricket players only chosen as a sample for this study.

DelimitationsThe sample age ranges from 18-25 were selected, those students studying in post graduate and under graduate in Gulbarga University. And questionnaire was administered to collect the relevant data in order to make the a detail analysis of the study

Methodology

The present investigation is in the framework of ex-post-facto research. Keeping the objectives in view, appropriate research design is adopted. The sample for the present study are the cricket players of Gulbarga University who took part in Gulbarga University intercollegiate cricket tournaments, were administered Anxiety scale and Physical fitness tests to assess the differences in their psychological and physiological factors.

The Sample:

The sample consists of 100 cricket players selected randomly from the various colleges of Gulbarga University. The selected sample were firstly administered Anxiety scale and according to that the total sample were divided into two groups of High Anxiety group (50) and Low Anxiety group (50) after the group divide both group's physical fitness was measured in five physical tests i.e. speed, endurance, flexibility, agility and strength. The collected data were analyzed by statistical procedure and presented in analysis part of the study.
The sample design is as under:

Category	High Anxiety	Low Anxiety	Total
Samples	50	50	100

Statement of the Problem:

To understand the role of Anxiety factor on the physical fitness performance of cricket players.

Objectives of the Study:

1. To study the impact of Anxiety factor on the physical fitness performance of cricket players.
2. To study the difference between sample sub-groups in relation to their physical fitness performance.

Hypothesis of the Study:

The following hypothesis has been formulated

3. There is a significant impact of Anxiety factor on the physical fitness performance of cricket players.
4. There is a significant difference in the physical fitness performance among sample sub-groups.

Tools:

- Personal data framed to collect information regarding the personal and socio demographic status of the sample.
- Anxiety scale developed by K. P. Sinha and L. N. K. Sinha (SCAT). The responses are scored with the help of manual.
- **Physical fitness test**

For the measurement of performance, the physical fitness ability test developed by AAHPER (1976) was used. The test measures performance of players in five different areas. These are mentioned as under;

Sl.No.	Motor ability	Test	Unit of Measurement
1	Speed	50 yard dash	Time
2	Endurance	12min. Run and walk	Distance
3	Flexibility	Sit and reach test	Inches
4	Agility	Shuttle run 10X4 yard	Time
5	Strength	Pull ups	Score

- Keeping the objectives of the study in view Mean, SD and t-test statistical methods were used to assess the significant differences between sample sub-groups.

ANALYSIS OF DATA AND INTERPRETATION

The study attempts to examine the role of Anxiety behaviour on the physical fitness performance of Gulbarga university cricket players. The data were organized, statistically analyzed and presented in the tables.

Table-1
Mean, SD and t-values of Physical fitness tests among two groups (N=100)

Anxiety		Speed	Endurance	Flexibility	Agility	Strength
High Anxiety	M	12.48	2011.4	3.76	17.25	11.28
	SD	1.31	160.8	0.45	1.92	2.62
Low Anxiety	M	11.25	2219.2	4.80	15.25	12.65
	SD	1.69	169.2	0.41	1.92	3.02
t-values		4.10**	6.23**	9.19**	5.26**	2.54**

**Significant at 0.01 level

The results given in Table-1 clearly reveal that there is significant effect of Anxiety factor on the physical fitness test performance like speed, endurance, agility, flexibility and strength. The performances of cricketers of High Anxiety are lower than Low Anxiety sample. The t-values on these tests are significant to suggest the significant differences in the ability.

In Table-1 the mean scores of speed tests in two groups' shows that the mean scores of high Anxiety cricketers were 12.48 while the mean score of low Anxiety cricketers were 11.25. This shows that the high Anxiety cricketers have taken more time to complete the given task, while the Low Anxiety cricketers are taken less time. The t-value 4.10 is significant at 0.01 level which states that there is a significant difference in the speed performance between the two groups. This clearly indicates that there is significant role of Anxiety factor on physical fitness performance of cricket players.

The mean scores of endurance test of both sample sub-groups shows that the scores of Low Anxiety cricketers (2219.2) were significantly higher than the High Anxiety cricketers (2011.4). The t-value (6.23) is significant and shows the significant differences between the two groups in the physical fitness performance.

Table also gives the score of flexibility among both sample sub-groups. It is seen that the mean score of Low Anxiety cricketers is 4.80 and mean score of high Anxiety cricketers is 3.76. The t-value of 9.19 which is significant and also reveals that the Low Anxiety cricketers performance is higher than high Anxiety cricketers.

The results given in table indicates that Low Anxiety cricketers have taken significantly less time (15.25) than the high Anxiety cricketers (17.25) in agility performance test. The t-value (5.26) which is significant at 0.01 level and also exposed that the Low Anxiety sample have shown high agility performance than high Anxiety sample.

Table-1 also presents the results of strength test of both sample sub-groups. It is seen that mean score of Low Anxiety cricketers (12.65) is higher than the high Anxiety cricketers (11.28). The t-value is 2.54 which is significant at 0.01 level and also reveals that the Low Anxiety cricketers have higher strength than high Anxiety cricketers.

CONCLUSIONS

- There is a significant difference in physical fitness test of speed between Low and high Anxiety cricketers. Low Anxiety cricketers have significantly higher performance in speed test than the high Anxiety cricketers.
- There is a significant difference in physical fitness test of endurance between Low and high Anxiety cricketers. Low Anxiety cricketers have significantly higher performance in endurance test than the high Anxiety cricketers.
- There is a significant difference found in physical fitness test of agility between sample sub-groups: Low Anxiety sample have significantly higher performance in agility than the high Anxiety sample.
- There is a significant difference observed in physical fitness test of flexibility of both groups and the Low Anxiety cricketers are performed higher than high Anxiety crickets.
- There is a significant difference in physical fitness test performance of strength between sample sub-groups and the Low Anxiety cricketers have shown high strength performance than the high Anxiety cricketers.
- Hence there were significant differences found in physical fitness test performances of the Low and high Anxiety cricketers, in all the tests Low Anxiety cricketers have higher fitness performance than high Anxiety cricketers.
- Anxiety factor have played the significant role on the performance of cricket players. This is proved in the analysis part.

References

1. **Simon, J. A., & Martens, R. (1977)**, *S.C.A.T. as a predictor of A-states in varying competitive situations* in D. M. Landers & R. W. Christina (Eds.), Psychology of Motor Behaviour and Sport (Vol. 2), Human Kinetics, Champaign, IL.
2. **Lowe, R. & McGrath, J. E. (1971)**. Stress arousal and performance: Some findings calling for a new theory. Project Report, AF, AFOSR.
3. **Jones, G. (1990)**, *A cognitive perspective on the process underlying the relationship between stress and performance in sport* in G. Jones & L.
4. **Hardy, L. (1996)**, *A test of catastrophe models of anxiety and sports performance against multidimensional anxiety theory models using the method of dynamic differences,* in Anxiety, Stress and Coping: An International Journal, No 9.
5. **Spielberger, C. S. (1966)**. *Theory and research on anxiety*, In C. S. Spielberger (Ed.), Anxiety and Behaviour, Academic Press, New York.
6. **MacLeod, C. (1990)**. *Mood disorders and cognition*, in M. W. Eysenck (Ed.), Cognitive Psychology: An International Review. Wiley, Chichester.
7. **President Council (1995).** Youth physical fitness, Washington, on Youth Fitness, U.S Government Printing Office, PP 5-9.
8. **Singh Hardayal.** "Science of sports Training" Published by D.VS. Publications, 100 T. K. Giri Nagar. Kalkaji, New Delhi
9. **Sudip Sunder Das & Dr. A. K : Banerjee** 'Volition in duration of training period" on the performance variable of young a soccer players (1992 NIS scientific journal. July 1992 Vol-1 0

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp51-54

Effects of Aerobic, An Aerobic and Combined Training on selected liver profile status among over weight school children

Dr.R.Venkatesan, Asst. Professor, Dept. of Exercise Physiology and Nutrition, T. N. P.E. S. University,
G. Meena, Ph.D Research scholar, Dept. of Physical Education, T. N. Phy. Education and Sports University,
S.ABIRAMI KIRUTHIGA, Ph.D Research scholar, Dept. of Physical Education,T. N.P. E.. S. University,

Introduction:
MEANING OF OBESITY: The condition of being obese; increased body weight caused by excessive accumulation of fat. Obesity is a major health problem worldwide. Obesity rates continue to climb throughout the world, fatty liver disease has become a major epidemic yet one that often falls in the shadows compared to other more well known disease epidemics like heart disease and diabetes.

FUNCTION OF LIVER: The liver regulates most chemical levels in the blood and excretes a product called "bile," which helps carry away waste products from the liver. All the blood leaving the stomach and intestines passes through the liver. The liver processes this blood and breaks down the nutrients and drugs into forms that are easier to use for the rest of the body. The liver is the most complex and metabolically active organ in the body. It performs more than 500 vital functions. Some of the important ones are It provides immunity against infection. Hence if the liver is damaged, infections are more likely. It is the factory for manufacturing most of the important proteins in the body, and also cholesterol and special fat forms called lipoproteins in which all body fats are carried. It clears the blood of most chemicals, drugs and alcohol. It excretes bile into the intestine. Bile is vital for digestion of fats, and also serves to throw out body wastes.

TYPES OF OBESITY: The fat distribution in body is identified among three types of obesity Android, Gynoid and the third type. Android obesity is male type obesity where excess fat is accumulated in the upper half of the body like the shape of an apple. Gynoid type of obesity has fat accumulation in the lower part of the body, seen on both the genders but more commonly in women, and is similar to pear shape

Android: Android type of obesity is likened to the shape of an apple. The shoulders, face, arms, neck, chest & upper portion of the abdomen are bloated. The stomach gives a stiff appearance. So also the arms, shoulders & breast, The back seems to be erect but the neck is compressed and there will be protruding chest because of the bulk in the stomach. The lower portion of the body the hips, thighs & legs are thinner beyond proportion in comparison with the upper part. In these persons the vital organs affected will be mostly the heart, liver, kidneys & lungs. Though this typed of obesity is found more in males it is common in females too. Those females, who are under hormone treatment for their menstrual abnormalities or after childbirth, are more prone to this type of obesity. It occurs in females around menopause too due to thyroid glands functional disturbance. In this type, the excess flesh is less likely to reduce especially in female than males. Android type of obesity is a major risk for heart damage & heart disease due to high cholesterol.

Gynoid: In this type the lower part of the body has the extra flesh. This type of obesity is also common to both sexes though females are more affected. Gynoid type of obesity is similar to pears. The flesh is somewhat flabby in the abdomen, thighs, buttocks & legs. The face & neck mostly give a normal appearance. In some persons, the cheeks may be drawn too. As these persons grow old the whole figure assumes a stooping posture and the spine is never erect due to the heavy hips & thighs. Vital organs affected mostly are the kidneys, uterus, intestines, bladder & bowls. But the functions of these organs sometimes have a direct effect on the heart. In this type of obesity, exercises or dieting will not help appreciably in reducing weight. Here unani herbal medicine is the only hope. One should have more patience & undertake proper treatment to achieve the goal of reducing weight & preventing further weight again.

Third type (MIXED): Besides android & gynoid, there is one more type of obesity. Some persons neither belong to android or to gynoid category. Their whole body from head to toe looks like a barrel. Their gait is more to rolling rather than walking. The fat tissues in their body hinder the movement of all the internal organs & consequently affect their brisk functioning. For them any exercise is difficult due to the enormous size of the body. So such person should follow a strict in diet & do plenty of exercise.

MAIN FUNCTIONS OF THE LIVER'S: A brief summary of the liver's functions follows, but remember there are more than 500 functions:

1. processing digested food from the intestine
2. controlling levels of fats, amino acids and glucose in the blood
3. combating infections in the body
4. clearing the blood of particles and infections including bacteria
5. neutralizing and destroying drugs and toxins
6. manufacturing bile
7. storing iron, vitamins and other essential chemicals
8. breaking down food and turning it into energy
9. manufacturing, breaking down and regulating numerous hormones including sex hormones
10. Making enzymes and proteins which are responsible for most chemical reactions in the body, for example those involved in blood clotting and repair of damaged tissues.

LIVER FUNCTION TESTS: Common tests that are used to evaluate how well the liver is working (liver function) include: Albumin, Alpha-1 antitrypsin, ALP, ALT, AST, Gamma-glutamyl transpeptidase (GGT), Prothrombin time, Serum Bilirubin, Urine Bilirubin.

STATEMENT OF THE PROBLEM: The purpose of the study was to investigate effects of aerobic anaerobic and combined training on selected liver profile status among overweight school children.

MATERIALS AND METHODS - **SELECTION OF SUBJECTS**: To execute this investigation, the investigator randomly selected forty five school children, belonging to the age group of 14- 17 years. They were divided in to three equal groups of fifteen subjects each and assigned as Experimental Group I, Experimental Group II and Control Group.

SELECTION OF VARIABLES: The following variables were selected for this study:
DEPENDENT VARIABLES: Serum Bilirubin Total, Aspartate Amino Transferase and Alanine Amino Transferase

INDEPENDENT VARIABLE: 1. Experimental group I, 2. Experimental G- II, 3. Experimental group III

EXPERIMENTAL DESIGN: The study was formulated as a true random group design consisting of a Pre test and post test. For this purpose, forty five school children, were selected at random and assigned to three equal groups. The groups were assigned as Experimental group I, Experimental group II and Experimental group III. Pre test were conducted for all three groups on selected Liver profile status. The experimental groups were participated in their respective Training for a period of eight weeks on alternate days. Post tests were conducted on the above Mentioned dependent variables after eight weeks of the training period.
DATA COLLECTION: Blood sample was collected from individual's ear lobe in the morning with empty stomach to check the value of the individual Serum Bilirubin Total, Aspartate Amino Transferase and Alanine Amino Transferase, in pre and post training session. The blood sample was analyzed in the biochemistry lab in Chennai.
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).

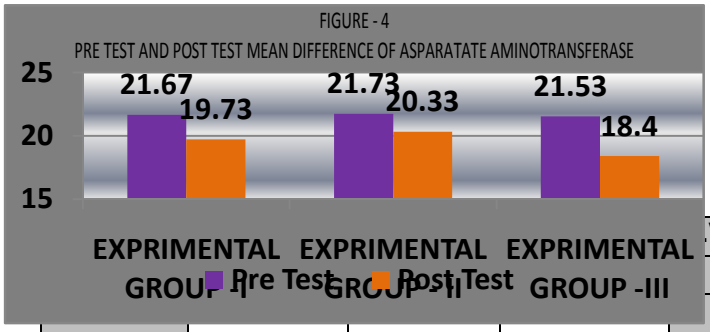
RESULT AND DISCUSSIONS: the following tables illustrate the statistical results of effects of aerobic anaerobic and combined training on selected liver profile status among overweight school children and ordered adjusted means and the difference between the means of the groups under study.

TABLE – I
COMPUTATION OF ANALYSIS OF COVARIANCE OF SERUM BILIRUBIN TOTAL

Means	EXP - I	EXP - II	EXP - III	S.V	S.S	D.F	M.S	O. F
Pre test	58.66	58.00	58.00	B	4.44	2	2.22	**0.01**
				W	8853.33	42	210.79	
Post test	50	37.33	45.33	B	1231.11	2	615.56	**9.69***
				W	2666.67	42	63.49	
Adj.Post.tes Mean	49.89	37.39	45.39	B	1201.28	2	600.64	**11.84***
				W	2079.50	41	50.72	

Table F–ratio at 0.05 level of confidence for 2 and 87 (df) =3.1 and 86 (df) = 3.1 *significant

DISCUSSION ON FINDINGS OF LOW DENSITY LIPOPROTEIN: From these analyses, it is found that the results obtained from the experimental group II had significant improvement in the Serum Bilirubin Total when compared with the experimental group II AND III. This is due to the inclusion of Aerobic Training 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 AND III on the reduction of Serum Bilirubin Total level. This is due to the variation in the Experimental Group I training.

				V	S.S	D.F	M.S	O. F
				B	0.31	2	0.16	**0.01**
				W	470.00	42	11.19	
Post test Mean	19.73	20.33	18.40	B	29.38	2	14.69	**2.88**
				W	213.87	42	5.09	
Adj.post test Mean	19.72	20.30	18.45	B	26.92	2	13.46	**4.12***
				W	133.96	41	3.27	

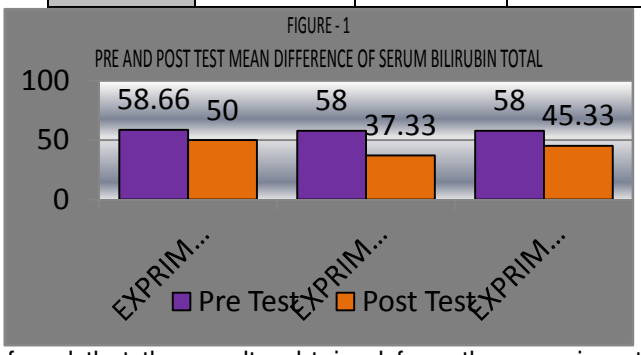


TABLE – II
COMPUTATION OF ANALYSIS OF COVARIANCE OF ASPARATATE AMINO TRANSFERASE

Table F–ratio at 0.05 level of confidence for 2 and 87 (df) =3.1 and 86 (df) = 3.1 *significant

FINDINGS OF ASPARATATE AMINO TRANSFERASE RESULT: From these analyses, it is found that the results obtained from the experimental group III had increase reduction in the Asparatate Amino Transferase level when compared with the Experimental group. This is due to the inclusion of aerobic exercise in the analyses on Experimental Groups. This "good" cholesterol carries LDL back to the liver, where it is converted to single chain Lipoprotein and helps to prevent cholesterol buildup in blood vessels. Low HDL level increases the heart disease risk.

It is concluded that the experimental group I has great improvement in high density lipoprotein, than the Experimental group II, due influence of natural supplementation with Aerobic Exercise for a period of eight week training.

TABLE – III
COMPUTATION OF ANALYSIS OF COVARIANCE OF ALANINE AMINO TRANSFERASE

Means	EXP - I	EXP - II	Con.Grup	S.V	S.S	D.F	M.S	O. F
Pre test Mean	16.07	16.27	16.20	B	0.31	2	0.16	**0.44**
				W	178.27	42	4.24	
				B	40.13	2	20.07	**4.76***
				W	177.07	42	4.22	
Adj.post test ean	17.51	15.16	15.92	B	43.08	2	21.54	**6.07***
				W	145.57	41	3.55	

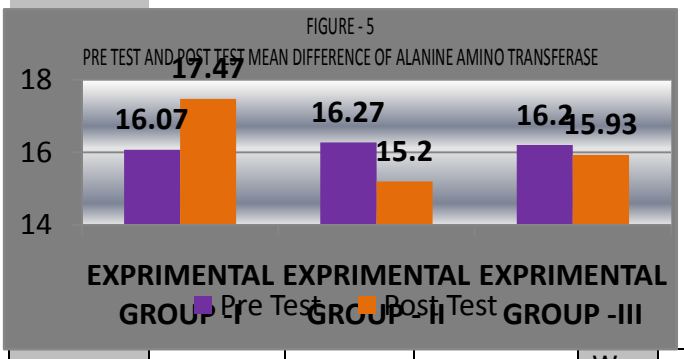


Table F–ratio at 0.05 level of confidence for 2 and 87 (df) =3.1 and 86 (df) = 3.1 *significant

DISCUSSION ON FINDINGS OF ALANINE AMINO TRANSFERASE: From these analyses, it is found that the results obtained from the Experimental groups had significant reduction in the Alanine Amino Transferase level when compared with other Experimental group. This is due to the inclusion of Different Aerobic Exercise 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 Triglycerides level. This is due to the variation in the statin supplementation with aerobic exercise.It is concluded that the Experimental group II had great reduction in Alanine Amino Transferase, than the Experimental group I, due to influence of Aerobic Exercise for a period of eight week training.

RESULTS: Within the limitations of the study, the following conclusions were drawn:

1. Experimental groups showed significant Improvement on Serum Bilirubin Total, Asparatate Amino Transferase and Alanine Amino Transferase due to influence of eight weeks aerobic, anaerobic and combined training at the end of eight week period of time.
1. Experimental group III (Combined Group) showed significantly greater reduction on Serum Bilirubin Total, Asparatate Amino Transferase and Alanine Amino Transferase than that of Experimental group I and II at the end of eight week period of time.

FINDINGS: After incorporate statistical technique, it was found that a significant decrease in Serum Bilirubin Total, Aspartate Amino Transferase and Alanine Amino Transferase.The two training methods adopted in this study, on the whole, brought about significantly both positive and negative changes from the respective Experimental groups. But in the **combined training has greater potential to optimize the** Serum Bilirubin Total, Asparatate Amino Transferase and Alanine Amino Transferase **than other experimental groups.**

REFERENCE BOOKS

Hardayal Singh (1984), **Sports Training General Theory and Methods**, Patiala: Nethaji Subash National Institute of Sports

Powers, Scott K. and Edward T. Howley (1994), **Exercise Physiology,** Debuque, Brown & Benchmark Publishers, p.25.

Shaver Larry G (1982), **Essential of Exercise Physiology**, Delhi, Surjeet Publications Pp.6-302.

Thirumalaisamy R (1995), **Statistics in Physical Education,** Karaikudi, Senthil Kumar Publishers, Pp108-112.

Monique Verschuren et.al (1994) "**Total and HDL-Cholesterol in The Netherlands: 1987–1992. Levels and Changes over Time in Relation to Age, Gender and Educational Level** "international journal of Epidemiology, Volume 23, Number 5,Pp. 948-956.

Hu D, **Hannah J** et.al (2000) **"Effects of obesity and body fat distribution on lipids and lipoproteins in nondiabetic American Indians: The Strong Heart Study"** Obes Res,8(6):411-21, Washington, DC 20010, USA.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp55-58

A Comparison of Programs and facilities for Physical Education & Sports, in Government Aided Schools of Jammu and Kashmir

Dr. Mohd Ibrahim, Prof. Jaowad Ali and Pankaj Gwari

Department of Physical Health and Sports Education, A.M.U., Aligarh

ABSTRACT

The purpose of the present study was to compare the programs and facilities of physical education and sports in the schools of four districts of Jammu & Kashmir. The total numbers of 120 government aided high schools (30 schools from each district) were randomly included in the study. The data were collected by self developed questionnaire, interviews and self observation method. The present paper has emphasized to investigate and compare the programs and facilities for Physical education and sports in the government aided schools of J&K. The collected data were analyzed using percentile ratio. Thus barring the schools of Reasi district, the schools of Jammu, Poonch and Samba have been found satisfactory as far as the facilities and programs of physical education and sports is concerned in the government aided schools of Jammu & Kashmir.

Keywords*:* facilities, programs, government aided schools.

INTRODUCTION:In the era of globalization there is an instant need to re-vamp the educational sector to address the concerns of the citizenry and comply with the millennium development goals (MDGS). It is established fact that both students and teachers need facilities such as libraries, scientific resources, sports equipments and teaching aids etc. (Ajayi, 2001). The conference of education ministers of the states in 1956, 1959 and 1964 also emphasized that greater attention should be paid to Physical education, games and sports. High priority should be given to the provision of playgrounds in educational institutions and adequate funds should be provided for the purpose and also that Physical exercises, sports and games must be provided to every student (Education Ministers Conference 1964). Physical education has been a part of society from time immemorial. It provides opportunities to the players to interact with the other players hails from different societies and cultures. Students are considered ambassadors of the institution they belong to. Physical education and sports for furnish favorable environment for them to groom their innate traits and than to develop their personality in a desirable manner. Viewing this, present researcher has made sincere efforts to examine the status of policies, programs and facilities in the schools of Jammu & Kashmir. In present time there has been a great need for physical education as a part of balanced living. Program is a series of steps to be carried out or goals to be accomplished. (Jack 1946) has reported that progress in sports depends primarily on available sports facilities, Physical education teachers, sports infrastructure, and long term systematic training that play a vital role in nurturing the talent to the peak performance in a given sports. Factors such as number of years of continued physical education, size of playgrounds and grading system used in physical education showed no significance difference between large and small schools. Rink and Hensley (1996) categorically suggested that the effective teaching, ideal resources such as facilities and equipment, and the policy followed by the school were all important elements in determining the success of a physical education program. The present exploratory study was designed to finding out the status of facilities and programs in government aided schools of Samba, Reasi, Jammu and Poonch districts of Jammu & Kashmir State of India. The main objectives of the study were to determine the availability of indoor and outdoor facilities, Physical education teachers, level of participation of the schools in games and sports, quality of equipments provided, per-student annual budget of the school, sports programs organized and the enrolled strength of students in the schools.

METHODOLOGY

For carrying out the present investigation, 120 government-aided schools of Samba, Reasi, Jammu and Poonch districts of Jammu & Kashmir were randomly selected (n=30 from each district). The data were collected from Physical education teachers/ principals of the schools by using self-developed questionnaire, personal interviews and inspection methods. Keeping in view the formulated objectives, a questionnaire was developed by the investigator with the help of experts in the area of physical education and sports. The test- re-test reliability was found to be 0.73.

The data for the present empirical investigation were gathered by administering the said questionnaire on physical education teachers and principals of the schools. For the purpose of additional facts, personal interviews and self-observation methods were also used. The data thus collected were systematically tabulated and analyzed using MS-Excel 2003. The open questions were analyzed by coding the data into categories and developing and sorting them into items for their simple description. The results have been presented in the following tables:

Table 1: Showing difference of facilities and programmes of physical Education and Sports in the Government Aided Schools of Jammu and Kashmir

S.No	Facilities & Programs	Jammu		Poonch		Reasi		Samba	
(i)	Gymnasium	0%		0%		0%		0%	
(ii)	Indoor games facility	40%		50%		0%		60%	
(iii)	Outdoor games facility	100%		90%		50%		70%	
(iv)	P.E Teacher Appointed	60%		60%		10%		60%	
(v)	Quality of equipments	Superior 05%	Good 0%	Superior 10%	Good 18%	Superior 0%	Good 0%	Superior 02%	Good 08%
		Average 95%	Poor 0%	Average 60%	Poor 12%	Average 70%	Poor 10%	Average 80%	Poor 10%
						Not Available 20%			
(vi)	School Sports Meet	80%		70%		30%		70%	
(vii)	Participation in games & sports	70%		70%		60%		60%	

DISCUSSION

- It may be observed from the Table 1 (i) that there existed no gymnasium in any of the government aided schools of four districts of Jammu & Kashmir
- Table 1(ii) has shown that the schools of Samba, Poonch and Jammu have 60%, 50% and 40% Facilities for indoor games, respectively. It is pathetic to note that no indoor games facility existed in any of the schools of Reasi district (percentile volume =0%).
- It has been revealed from table 1(iii) that the schools of Jammu, Poonch, Samba and Reasi have 100%, 90%, 70% and 50% facilities for outdoor games.
- It may be seen from table 1 (iv) tat 60% schools of Jammu, Poonch and Samba have physical education teachers whereas only 10 schools of Reasi have physical education teachers.
- Table 1 (v) has elaborated the quality of equipments provided in the schools under studied. It has been noted that 95% schools of Jammu, 80% schools of Samba, 70% schools of Reasi and 60% schools of Poonch possess average quality equipments. Whereas 18% and 8% schools of Poonch and Samba have above average quality equipments; and only 10%, 5% and 2% schools of Jammu, Poonch and Samba respectively have superior quality equipments, respectively, which may be considered inadequate. It is alarming to note that 20% schools of Reasi district did not have any equipment for physical education & sports programs.
- Table 1 (vi) has displayed the percentage of schools that organize annual sports meet. Jammu, Samba and Poonch have a large percentage in organizing schools sports meet with 80%, 70% and 70% respectively, contrary to it only 30% schools of Reasi district organize annual sports meet.
- As observed from the results presented in inter-schools the above table 1 (vii) the schools of Jammu and Poonch have 70% active participation in games and sports, while 60% schools of Samba and Reasi take part in inter-schools games and sports competitions.

CONCLUSION

On the basis the results presented above it may be concluded that:

1. In none of the targeted schools of Jammu and Kashmir have the facility of gymnasium, Jammu and Kashmir being a hilly state having cold environment during major part of the year the facility of gymnasium for physical activities is essentially required to maintain the health and vitality of the students.

2. As far as the facility for indoor and outdoor games in these schools are concerned by and large the condition is satisfactory except the schools of Reasi district where the condition is poor with specific reference to the facility for indoor games.
3. The most of the schools of Jammu, Poonch and Samba districts have the services of physical education teachers barring the schools of Reasi where the percentage of such teachers is negligible.
4. The results of the study have also revealed that in most of the schools of all four districts average quality equipments have been provided for sports activities. It is to point out that the schools of Reasi district ironically did not have any sports equipment for their activities in 20% of its schools.
5. It is also evident from the above mention results that inspite of the draw backs being experienced by the above mentioned schools of Jammu and Kashmir, it may be appreciated that there participation in sports activities found to be very encouraging in inter-schools competitions.
6. It may also be praised worthy to found that most of the school of the above four districts regularly organize annual sports meet.

The above cited conclusions have indicated about the deficiency in terms of gymnasium, sports equipments, facility for indoor games as well as physical education teacher in general and for schools of Reasi district, particularly which need to be taken care of by the schools administration and the government as well.

REFERENCES

Ajayi K (2001). Effective Planning Strategies for UBE Programmes.In: UBE Forum. *Journal of Basic Education in Nigeria, 1(1)23-33.*

B.Sharma L.P. (1995). A survey of sports facilities and programmes in the context of this Utilization in Indian Universities. Unpublished thesis, Jiwaji University, Gwalior.

Bailey R. Morley K & Dismore H (2009). Talent Development in Physical education: A National Survey of Policy and Practice in England, *Physical education and Sport Pedagogy* Vol.14,No.1.59-72.

Report of Education Ministers Conference (1964).

Rink J.R. & Hensley L.D (1996). Assessment in the schools of physical education. In B.F.Hennessy (South Africa). Dissertations Abstracts International (DAI), 50 05A.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp59-62

Role of the community in implementation of Girl Child Education in Nalgonda District

D. Balaramulu
Associate Professor, Department of Education
Institute of Advanced Study in Education, Osmania University, Hyderabad-7

INTRODUCTION

Education contributes to the development, advancement and perpetuation of Nation's culture. Education is not confined to the limits of schools. It is present in all the experience of an individual is the home temple, clubs, Play grounds, as well as the schools. The educational institutions represent a place where you spend most of time between the ages of ten to fourteen year of age.Plato is the earliest important educational thinker. He saw education as the key to creating and sustaining his Republic. He advocated extreme methods: removing children from their mothers' care and raising them as wards of the state, with great care being taken to differentiate children suitable to the various castes, the highest receiving the most education, so that they could act as guardians of the city and care for the less able. Education would be holistic, including facts, skills, physical discipline, and music and art, which he considered the highest form of endeavour. The central purpose of education is the development of rational powers of human kind. These powers and the essence of the ability are to think. This development of ability to reason is central and unique because it is through such rational powers that people achieve the ability to realize all the goals of society.

Girl Child Education

The Indian government has expressed a strong commitment towards education for all; however, India still has one of the lowest female literacy rates in Asia. In 1991, less than 40 percent of the 330 million women aged 7 and over were literate, which means today there are over 200 million illiterate women in India.Education of girls and women in general has been a high priority with the Government of India. In the new millennium, India has consolidated its earlier educational reforms with increased resources and stronger policy commitments for achieving elementary education for all children, particularly girls.*Girls Education at Elementary Level***:** Education of girls has been a high priority with the Government of India. The National commitment to provide free and compulsory education to all children in the 6-14 years age group is now a Fundamental Right of every child in India after the passing of the Constitution (86th Amendment) Act in December, 2002. Reaching out to the girl child is central to the efforts to universalize elementary education. Sarva Shiksha Abhiyan, or 'Education for All' programme recognizes that ensuring girl's education requires changes not only in the education system but also in societal norms and attitudes. A two-pronged gender strategy has therefore been adopted, to make the education system responsive to the needs of the girls through targeted interventions which serve as a pull factor to enhance access and retention of girls in schools and on the other hand, to generate a community demand for girls' education through training and mobilization.Kasturba Gandhi Balika Vidyalaya (KGBV): The Kasturba Gandhi Balika Vidyalaya (KGBV) scheme was launched by the Government of India in August, 2004 for setting up residential schools at upper primary level for girls belonging predominantly to the SC, ST, OBC and minorities in difficult areas. The scheme of the KGBV ran as a separate scheme but in harmony with the Sarva Shiksha Abhiyan (SSA), National Programme for Education of Girls at Elementary Level (NPEGEL) and Mahila Samakhya (MS) for the first two years,

but has since 1st April, 2007 merged with the SSA programme as a separate component of that programme.

Kasturba Gandhi Balika Vidyalaya (KGBV) is a scheme launched in July 2004, for setting up residential schools at upper primary level for girls belonging predominantly to the SC, ST, OBC and minority communities. The scheme is being implemented in educationally backward blocks of the country where the female rural literacy is below the national average and gender gap in literacy is above the national average. The scheme provides for a minimum reservation of 75% of the seats for girls belonging to SC, ST, OBC or minority communities and priority for the remaining 25%, is accorded to girls from families below poverty line. The scheme is being implemented in 24 States *namely*: Assam, Andhra Pradesh, Arunachal Pradesh, Bihar, Jharkhand, Gujarat, Haryana, Himachal Pradesh, Karnataka, Jammu and Kashmir, Madhya Pradesh, Chattisgarh, Manipur, Maharashtra, Meghalaya, Mizoram, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh, Uttaranchal and West Bengal and the Union Territory of Dadar & Nagar Haveli. 2180 KGBVs were sanctioned by Government of India upto March 2007. Of these, 1226 KGBVs are reported to have been made operational in the States and 80,853 girls enrolled in them. (19823 SC girls (25%); 23298 ST girls (29%); 20137 OBC girls (25%); 13417 BPL girls (17%); 4178 Minority girls (5%). The total amount released by Government of India till 31.3.2007 is Rs.43552.54 lakhs. The Kasturba Gandhi Balika Vidyalaya scheme is merged with Sarva Shiksha Abhiyan in the XI Plan with effect from 01-04-2007.

Objectives of the Study: The main objectives of the pre present study are : (i) To study the status of girl child education, (ii) To study the problems of girl child education, (iii) To study the community involvement in girl child education.

Hypothesis: The study is hypothesized that there is significant involvement of community in implementation of girl child education in Nalgonda district.

Limitations**:** The following are the limitations under which the study was under taken and the conclusion arrived at:

a) The study is sampling study as the investigator could not approach the teachers of all the schools in Nalgonda District.

b) The investigator could not study the response as through personal interviewer or by case study methods.

c) The important limitations were the constraint of the time factor as the study had to be completed within a particular period which is quite short.

d) The study was limited to sample of 50 (25 male and 25 female) teachers due to time constraint.

Delimitation of the Study**:** The study is confined to Nalgonda district only. And the study conducted in government and private schools of Thungaturthy and Arvapally Mandals of Nalgonda district.

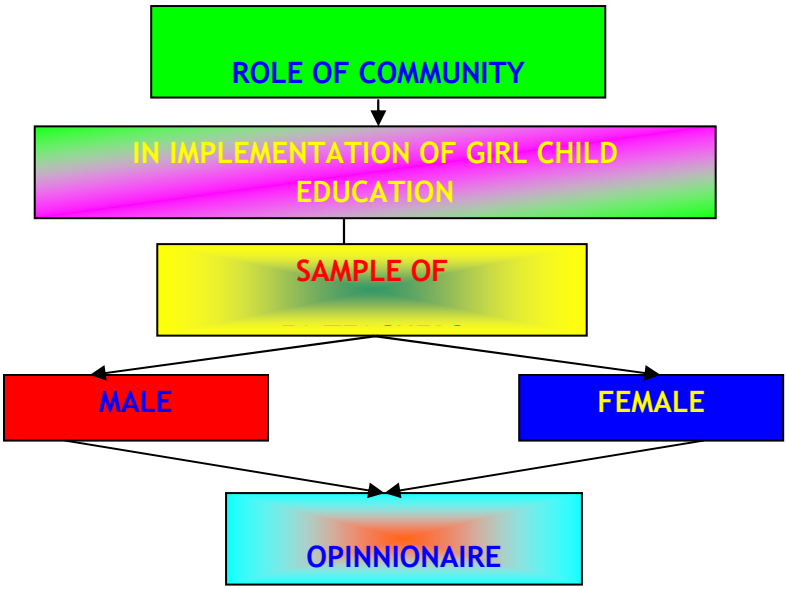
REVIEW OF RELATED LITERATURE Lam, Mei Seung (2009) opined that the transition from home to kindergarten is the first and major ecological transition in children's educational lives in Hong Kong. In this transition, children cross a cultural boundary from home to kindergarten and start to learn about "school" as a place to learn and about themselves as "pupils" in kindergarten. The conceptual framework of this paper is developed from socio-cultural theory and select literature on rites of passage and pupil career. Descriptive data were mainly collected from participant observations, semi-structured interviews, photovoice and review of documents. Utilising the conceptual framework, this paper describes and analyses the story of a three-year-old girl's playing and learning experiences, strategic actions and adaptation outcomes during the transition from home to kindergarten in Hong Kong. Her pattern of strategic actions fell into the dimensions of non-conformity, redefinition and adaptation, but most often fell

into the dimension of non-conformity, that is, being independent with respect to formal school expectations.

Olateju, Moji A. (2007) reported in this paper on the Reading Kiosks English literacy project carried out in Opa-settlement, Ile-Ife in Nigeria. In all, 46 girls between the ages of 7 and 22 years took part in activities such as journal writing, shared reading, uninterrupted sustained silent reading, world literacy day celebration, story telling, retelling and writing, a reading festival, etc. The project reveals that, given the opportunity, girls are able to use available resources to achieve empowerment for both personal and national development. Since the gender gap in literacy and education is widespread, and especially marked in less developed countries of the world, and because the equity issue has significant economic, demographic and health implications, the paper is essentially concerned with the ways by which the girl-child can be empowered to achieve her full role in the community.

METHDOLOGY

Design: The main aim of this study is to assess the community participation towards girl child one hand and the association between girl child education towards role of the community, type of the school, and the type of the management of schools on the other hand. The description of the research design forms an important phase of the research process. It deals with the collection of the data. The research technique adopted, the tool selected or developed for the purpose, sampling procedures employed and the statistical techniques applied. The researcher therefore presented on account of these aspects in the following sections.



Sample: The sample chosen for the study are 25 teachers from government and 25 private schools of Nalgonda district. One of the main reasons for the identification of teachers as respondents of this study is that they must positive opinion towards Girl Child Education in order to make expected behavioural changes in them.

Questionnaire: The tool used in this collection is a structured questionnaire for teachers. Part-A consist of general information of teacher. Part-B consists of 25 statements. A three point Likert type of scale is used to know the opinion where Yes-3, No-2, and Don't Know-1. This scaling was reversed for the negative statements. The questionnaire consists of 5 negative and 20 positive statements.

Administration of the Tool: 50 questionnaires were distributed in all at the rate of 10 teachers each of the schools three government and two private. All questionnaires were found to be useful for investigation. The list of the schools from where the teachers were selected is enclosed under appendix.

Collection of Data: The investigator has prepared questionnaire consisting of 25 statements. It was distributed to 50 teachers of Nalgonda District schools on a random sample method. The time limit given was a 6 days. So it is pleasure and novel experience to the investigator. The teacher ever told of the purpose of the scale and they were asked to answer the question truthfully and with freedom.

Statistical Techniques Used: The statistical analysis employed is percentages, which has been rather elementary. However, it was felt that this would serve the purpose of the present investigation.

FINDINGS AND SUGGESTIONS

***Main Findings*:**

1. It was found that the teachers want to include any other aspects in the teacher training.
2. It was found that 92% of teachers expressed that the future plan for their girls children.
3. It was found that 58% of the teachers don't want separate school for girls.
4. It was found that 88% of the teachers expressed special interest on girls.
5. It was found that 84% of the teachers expressed that interesting changes in the matter of girls education.
6. It was found that 64% of the teachers expressed that tuitions are compulsory for girls.
7. It was found that 82% of the teachers accepted that the girls complete their home work after returning from the school.
8. It was found that 90% of the teachers expressed that the girls studied properly in their school.
9. It was found that 84% of the teachers accepted the suitable atmosphere for the girls in their school.
10. It was found that 94% of the teachers expressed that compulsory lady teachers in the school.

***Suggestions*:**

1. Majority of the teachers suggested that there should be a provision for physical facilities of girls.
2. Majority of the teachers suggested that to encourage the community towards their girl child education.
3. Majority of the managements of the schools are suggested to provide some vocational courses in the schools for girls.
4. Most of the school managements were suggested that increase the co-curricular and extra curricular activities at B.Ed. level.
5. Majority of the teachers opined that the community participation is positive towards the Girls Child Education Programmes.
6. All the respondent teachers feel that they treated equally both girls and boys in their schools.
7. All the teachers felt that the physical facilities are not sufficient in the schools.

BIBLIOGRAPHY

Devendra K. (1995), "Girl child in rural India", *Social Change: Issues and Perspectives*, 25(2-3):189-96.

Olateju, Moji A. (2007), "Reading Kiosks: Literacy Empowerment for the Girl-Child", Language, Culture and Curriculum 20(2): 155-163.

Sudhir, M.A. (2001), "Education and Socialisation of Rural Girl Child", *Research Monograph of Gandhigram Rural Institute*, Gandhigram-624 302 Tamil Nadu.

Shanthi Ananthakrishnan and P. Nalini (2002), "Social status of the rural girl child in Tamil Nadu", *Indian Journal of Pediatrics*, 69 (7).

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp63-66

Effect of Sex and Age on Self-concept of Interuniversity Volleyball Players

Dr.Quadri Syed Javeed Assoc.Professor in Psychology, MSS College,Jalna

Yadav B.A. Assoc.Professor in Physical Education, MSS College, Jalna

Dr.Kalidas Tadlaprkar MSM College of Physical Education, Aurangabad

Introduction:

Self-concept (also called self-construction or self-perspective) is a multi-dimensional construct that refers to an individual's perception of "self" in relation to any number of characteristics, such as academics (and nonacademic's), gender roles and sexuality, racial identity, and many others. While closely related with self-concept clarity (which "refers to the extent to which self-knowledge is clearly and confidently defined, internally consistent, and temporally stable"),it presupposes but is distinguishable from self-awareness, which is simply an individual's awareness of their self. It is also more general than self-esteem, which is the purely evaluative element of the self-concept. The self-concept is composed of relatively permanent self-assessments, such as personality attributes, knowledge of one's skills and abilities, one's occupation and hobbies, and awareness of one's physical attributes. For example, the statement, "I am lazy" is a self-assessment that contributes to the self-concept. In contrast, the statement "I am tired" would not normally be considered part of someone's self-concept, since being tired is a temporary state. Nevertheless, a person's self-concept may change with time, possibly going through turbulent periods of identity crisis and reassessment. The self-concept is not restricted to the present. It includes past selves and future selves. Future selves or "possible selves" represent individuals' ideas of what they might become, what they would like to become, and what they are afraid of becoming. They correspond to hopes, fears, standards, goals, and threats. Possible selves may function as incentives for future behavior and they also provide an evaluative and interpretive context for the current view of self. Volleyball is an Olympic team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules. The complete rules are extensive. But simply, play proceeds as follows: A player on one of the teams begins a 'rally' by serving the ball (tossing or releasing it and then hitting it with a hand or arm), from behind the back boundary line of the court, over the net, and into the receiving team's court. The receiving team must not let the ball be grounded within their court. They may touch the ball as many as three times. Typically, the first two touches are to set up for an *attack*, an attempt to direct the ball back over the net in such a way that the serving team is unable to prevent it from being grounded in their court. The rally continues, with each team allowed as many as three consecutive touches, until either (1): a team makes a *kill*, grounding the ball on the opponent's court and winning the rally; or (2): a team commits a *fault* and loses the rally. The team that wins the rally is awarded a point, and serves the ball to start the next rally. The ball is usually played with the hands or arms, but players can legally strike or push (short contact) the ball with any part of the body. A number of consistent techniques have evolved in volleyball, including *spiking* and *blocking* (because these plays are made above the top of the net the vertical jump is an athletic skill emphasized in the sport) as well as *passing*, *setting*, and specialized player positions and offensive and defensive structures.

Carly B. Slutzky, Sandra D. Simpkins (*May 2009)* The link between children sport participation and self-esteem: Exploring the mediating role of sport self-concept. Sport participation is positively associated with indices of adjustment, such as self-esteem, among adolescent participants.Less is known about the processes through which younger children benefit from their sport participation. The purpose of this investigation was to test whether children's sport self-concept mediated the longitudinal associations between time spent in individual- and team-oriented organized sport activities and later self-esteem. We used four waves of data from the Childhood and Beyond Study collected from three cohorts of elementary school-aged children ($N = 987$), their parents, and their teachers. Findings indicated that children who spent more time in team sports, but not time in individual sports. Sport self-concept, which, in turn, was associated with higher self-esteem than their peers. Multi-group analyses suggested that these relations did not vary across gender, sport ability, sport importance beliefs, or peer acceptance. Study results suggested that the relations between time spent in sports and children's sport self-concept depends, in part, on whether the time was spent in team or individual sports. This investigation highlighted the value of examining mediating processes so as to better explicate the association between time in sports and self-esteem.Rod K. Dishman, Derek P. Hales, Karin A. Pfeiffer, Gwen Felton, Ruth Saunders, Dianne S. Ward, Marsha Dowda, Russell R. Pate (*May 2006)* Physical Self-Concept and Self-Esteem Mediate Cross-Sectional Relations of Physical Activity and Sport Participation With Depression Symptoms Among Adolescent Girls.. The authors tested whether physical self-concept and self-esteem would mediate cross-sectional relations of physical activity and sport participation with depression symptoms among 1,250 girls in 12th grade. There was a strong positive relation between global physical self-concept and self-esteem and a moderate inverse relation between self-esteem and depression symptoms. Physical activity and sport participation each had an indirect, positive relation with global physical self-concept that was independent of objective measures of cardio respiratory fitness and body fatness. These correlational findings provide initial evidence suggesting that physical activity and sport participation might reduce depression risk among adolescent girls by unique, positive influences on physical self-concept that operate independently of fitness, body mass index, and perceptions of sports competence, body fat, and appearance.

Methodology

Aim and Objective of the study:

To Examine the Self-concept of Male and Female Interuniversity Volleyball Players.

To Examine the Self-concept of 18-21years and 22-25years Interuniversity Volleyball Players.

Hypothesis:

Male Interuniversity Volleyball Players have Significantly Better Self-concept than the Female Interuniversity Volleyball Players.22-25years Interuniversity Volleyball Players have Significantly Better Self-concept than the 18-21years Interuniversity Volleyball Players.

Sample For the present study 200 players were selected from Maharashtra. The effective sample consisted of 200 subjects, out of which 100 subjects were male and 100 subjects were female. The age range of subjects where 18 to 25 years.

Tools

Self-Concept scale:

This test is developed and standardized by C.G.Deshpande. The test consisted of 60 Items. The subjectwere required to respond to each item in terms of 'YES' OR 'NO'. The reliability coefficient of the test was found 0.86 with Spearman Brown formula. The validity coefficient was found 0.84.

Procedures of data collection

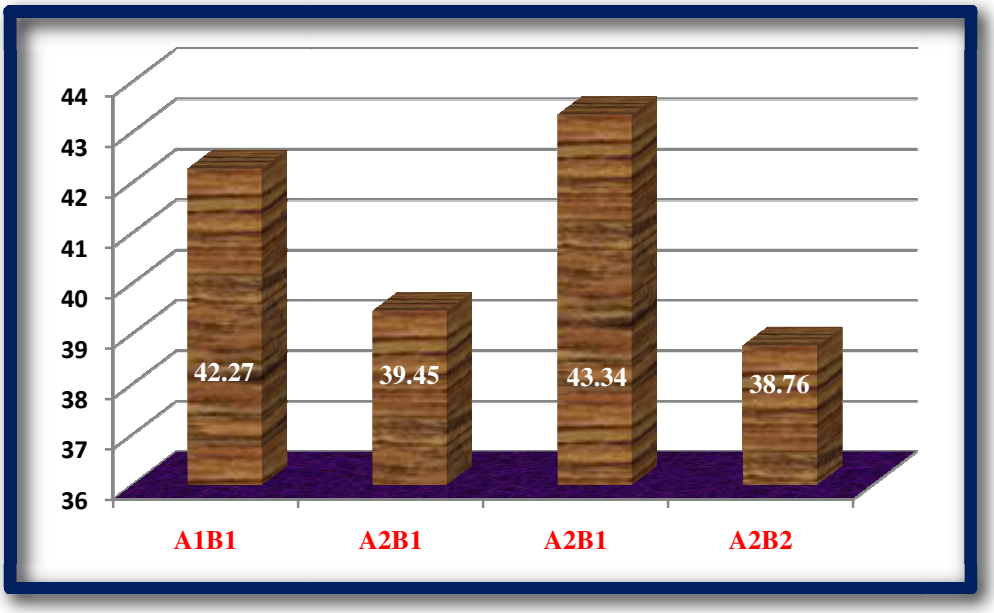
Each of the three instruments could be administered individuals as well as a small group. While collecting the data for the study the later approaches was Adopted. The subjects were called in a small group of 20 to 25 subjects and there seating arrangements was made in a classroom. Prior to administration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

Variable
Independent variable- **Gender** a) Male b) Female
Age a) 18-21y b) 22-25y
Dependent variable- 1. Self-concept
Statistical Treatment of Data
Male and Female Interuniversity Volleyball Players Shows the mean S.D and't' value of factors 'Self Concept'

Factor	Group	A1B1	A2B1	A2B1	A2B2
Self- concept	Mean	42.27	39.45	43.34	38.76
	S.D.	2.51	2.86	2.06	2.19

A = Gender **B = Age**

A1 = Male **A2 = Female** **B1 = 22-25y** **B2 = 18-21y**



Summary of Two Way ANOVA

Source	Ss	df	MS	F	P
A	990.13	1	990.13	378.75	< 0.01
B	465.13	1	465.13	177.93	< 0.01
A x B	1.12	1	1.12	0.43	NS
Within	512.38	196	2.61		
Total	1968.76	199			

From the Summary and graph it is seen that main effect A is highly significant main effect A refer to the factor Gender. It was varied at two levels i.e. Male and Female it was assumed Male & female differ significantly with regards to Self-concept. Since the main effect A is highly Singificant (F = 378.75, df = 1and 192, P < 0.01) It is Clear that Male and Female Subjects Differ Significantly From each other from the mean scores and graph it was found that the males had significantly Better Self-Concept than the Females this Result Support the HypothesisThe Second Independent Variable the Factor of Age It was also varied at two levels. The effective sample was divided in to two groups, 22-25years and 18-21years.Main effect has yielded highly significantly result and F Values of 177.93 for 1 and 192 df is significant beyond 0.01 level. And Support the Hypothesis 22-25years Interuniversity Volleyball Players has Significantly Better Self-concept than 18-21years Interuniversity Volleyball Players.

Results: Male Interuniversity Volleyball Players have Significantly Better Self-concept than the Female Interuniversity Volleyball Players.22-25years Interuniversity Volleyball Players have Significantly Better Self-concept than the 18-21years Interuniversity Volleyball Players.

References

Aries, Elizabeth, et al. "Race and gender as components of the working self-concept." The Journal of Social Psychology 138.3 (1998): 277+.

Ayduk, Ozlem, Anett Gyurak, and Anna Luerssen. "Rejection sensitivity moderates the impact of rejection on self-concept clarity." Personality & Social Psychology Bulletin 35.11 (2009): 1467+.

Bong, M., & Clark, R. E. (1999). Comparison between self-concept and self-efficacy in academic motivation research. Educational Psychologist, 34(3), 139-153.

Byrne, B. M. (1984). The general/academic self-concept nomological network: A review of construct validation research. Review of Educational Research, 54, 427-456.

Byrne, B. M., & Worth Gavin, D. A. (1996). The Shavelson model revisited: Testing for the structure of academic self-concept across pre-, early, and late adolescents. Journal of Educational Psychology, 88, 215-228.

Fleming, J. S.; Courtney, B. E. (1984). "The dimensionality of self-esteem: II Hierarchical facet model for revised measurement scales". *Journal of Personality and Social Psychology* **46**: 404–421.

Hoffman, Rose Marie, John A. Hattie, and L. DiAnne Borders. "Personal definitions of masculinity and femininity as an aspect of gender self-concept." Journal of Humanistic Counseling, Education and Development 44.1 (2005): Hoffman, Rose Marie. "Conceptualizing heterosexual identity development: issues and challenges." Journal of Counseling and Development 82.3 (2004): 375+.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp67-69

The Urban India Health Profile for the period 2000-2008

Prof.Adrian Kennedy

MD -Lifetime WellnessRx International Limited

Introduction:Over the last decade, since the year 2000, the Health and Lifestyle Department of the Apollo Hospitals Group has been doing the Health Assessment and Lifestyle Counselling for clients that walk in for their Health Checks. This article is a compilation of the Health details of 1, 16,731 persons covered during the 9 year period from 2000 to 2008 from 8 cities (Delhi, Hyderabad, Chennai, Madurai,Coimbatore, Bangalore, Kolkata and Ranchi)In order to compare the improvement or deterioration of Health during this period, we have taken the period 2000 -2004 with 68,986 Clients as one period and compared it with the period 2005 -2008 with 47,745 Clients ,and our findings are as follows:

Fitness and Nutrition:-

Factor	2000 - 2004	2005 -2008
	%	%
Do not Exercise	40.74	34.00
Physically unfit	70.25	67.03
Large abdomen	53.31	42.58
Over weight	72.08	61.03
High Fat intake	36.08	26.00
High Sugar intake	34.08	23.00
Eat out frequently	27.29	16.00

The findings that the urban population is exercising more ,getting fitter ,losing weight and eating healthier is compatible with the findings of the CII Corporate Wellness Survey of the same period of 2000 -2008 .In the CII survey covering 30 cities and over 229,000 employees ,the percentage of fitness conscious employees was even better as opposed composed to the Urban population with only 48 .46 % employees physically unfit and 32.52 % overweight .These findings indicate that Corporate Executives

are generally healthier than the average population and is in line with the WHO findings that Corporate organizations frequently set an example in Business and Lifestyle which entrepreneual organizations follow:

Stress and Tension:

The 2000 – 2008 CII Corporate Wellness Survey indicated that Employee Stress in 2008 at 50.52 % was higher than it was in 2000 at 39.00 % .This increase in Stress and tension ,was attributed to the Global Financial crisis of 2008 .However the Urban Indian Survey for the same period of 2000-2008 shows a continued downward trend in Urban Stress in all aspects ,except Family relations as follows :-

Factor	2000-2004	2005-2008
	%	%
Multi Stress	24.34	12.18
Chronic Stress	82.3	59.14
Occupational Stress	5.26	0.81
Daily pressures	20.44	6.84
Family Stress	3.51	14.48

A subsequent check with families covered in the Survey pointed to the changes in the Family fabric as being a cause of Stress ,with more and more families becoming nuclear , and both parents having to work to make ends meet ,as the primary cause of Stress. Other pressures included children admission to schools and the sharp drop in employment opportunities.

Alcohol, Smoking, Paan:

The Health ministries sustained campaign over the years to ban Smoking, Alochol and Paan, seems to be having the desired effect on Urban India ,with sharp reductions in these habits as follows:

Factor	2000-2004	2005-2008
	%	%
Alcohol	32.22	19.00
Smoking	17.33	11.83
Paan	14.69	3.00

The Statistics above are not those of habitual offenders, meaning that these figures pertain to social and infrequent usage .The figure for habitual and daily usage is even less.

Chronic Ailments :-

That the overall health of Urban India has improved over the last decade in most evident from the reduction in Chronic Ailments and consequent reduction in daily medication usage as follows:-

Factor	2000-2004	2005-2008
	%	%
High Blood Pressure	43.14	32.87
Diabetes	21.27	17.49
High Cholesterol	65.66	51.49
Headache	24.73	16.00
Respiratory ailments	8.59	6.00
Digestive Problem	39.01	29.00
Joint Ailments	37.66	30.00
Daily Medication	36.26	31.00

Any reduction in Chronic Ailments can only come from a combination of factors .Certainly improved food habits,improved fitness and Exercise and also the reduction in smoking ,may be the reasons ,but this will need to be substantiated by a separate study .We will also need to look at the very positive role that Alternate and Complimentary therapies and clinics are having in weaning away clients from over the counter (OTC) medication for chronic ailment.

Concluding Remarks:

Certainly with an Improved Urban Health report like this .Congratulations are in order to all concerned

- To the ministry of Health for its sustained campaign against Alcohol, Smoking and paan.
- To the popular Media, Electronic and Print for popularizing the latest diets, Exercises and Fashion.
- To the FMGC and other Health Product companies for flooding the market with healthy choices in foods. High fibre, low fat, low calorie etc.
- To the Gym, Spas and Health Clinics for making available their facilities in every city –almost on every Street.
- Most of all ,congratulations to the urban Indian ,the young and the not so young, who dedicatedly stick to their diets ,and go for their walks and do their Exercise, with the objective of either body beautiful or just Health improvement as their age categories.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp70-73

Effect of Yogic practices and Interval Training on selected Physiological and Bio-Chemical Variables among High School Boys

Satya Sridevi Datla

Physical Directress

,A.P. Social Welfare Residential Jr. College (Girls),Elkathurthi, Karimnagar (Dist.)A.P.India.

INTRODUCTION: Yoga has a complete message for humanity. It has a message for the human body, it has a message for the human mind, and it has also a message for the human soul. Intelligent and capable youth must come forth to carry this message to every individual not only in India, but also in every other part of the world. The purpose of the study was to find out whether there is any significant improvement on the efficiency of the Physiological and Biochemical variables through selected asanas and interval training.

INTERVAL TRAINING; Interval training involves activities that are more intermittent. It consists of alternating periods of relatively intense work and active recovery. It allows for performance of much more work at a more intense workload over a longer period of time than if working continuously.Interval training is to subject the body to repeated but short intermittent periods of reduced intensity. Interval training is advocated by many of the top coaches, trainers and performers who have used it to advantage. According to Kalafs and Aeaheinm the following four factors are significant in interval training.

1. A specific distance that is repeated at given number of times.
2. a recovery period during which the athlete jogs slowly and relaxes.

A pre-determined pace, carefully timed at which the athlete covers the set distance, anda pre-determined number of repetitions in running the distance.

METHODOLOGY To execute this investigation, the research scholar employed random sampling method. The study was conducted on a total sample of ninety boy students drawn randomly from one hundred and fifty students of APSWR School, Jangoan, Warangal Dist, age was ranged from twelve to fifteen years. The pre and post tests design employing analysis of covariance technique was adopted.The purpose of the study was to find out whether Asanas and interval training had any influential effect, individually and collectively on the selected Physiological variables and Bio-chemical variables. Further it was aimed to find out which of the experimental variables were more effective.For this purpose, the research scholar followed the following procedure.The subjects for the study were selected at random and divided into three homogenous groups based on their initial performance. Among the three groups, the control group was strictly under control without undergoing any special activity. The experimental groups were subjected special activity. The experimental groups were subjected to the experimental treatment.

EXPERIMENTATION –I The selected ten Asanas training was given in six days a week except Sunday. The duration of the exercises was 20 minutes during the first month 30 minutes during the next month and 40 minutes during the third month in the morning from 6:30 A.M. to 7.10 A.M.

EXPERIMENTAL – II The interval training was practiced by the subjects three days per week over a period of three months. Before giving the interval training the subjects were asked to warm up. The duration training schedule was 20 minutes during the first month 30 minutes during the second month and 40 minutes during the third month in the morning from 6:30 am to 7:10 am.

CRITERION MEASURES: The following criterion measures were chosen for testing the hypothesis.

1. Vital capacity was recorded in liters / minute.
2. Pulse rate was measured in beats per minute.
3. Breath holding time was recorded in seconds.
4. Red blood cells, white blood cells and serum cholesterol was measured through blood analysis.

Test Administration of Physiological variables

Vital Capacity

Purpose; To measure the lung capacity.

Equipment: Peak flow meter

Scoring: The subject score was read in litre/minute on a scale fastened to the outside of the peak flow meter.

Pulse rate :Equipment : Stop watch

Breath holding Time :Objective : To measure the breath holding time. **Equipment :**Stop watch

Scoring: The time of holding is till the moment the subject let the air out was clocked by using the stop watch, to the nearest one tenth of a second as breath holding time.

Estimation of Bio-Chemical variables

The Hematological parameters were measured by the following method

Counting the R.B.C Draw blood to the 0.5 marks in the R.B.C. pipette. Wipe tip clean and draw diluting fluid to the 1.01 mark shake for 3 minutes charge the chamber count the R.B.C's using 40 objectives in the 80 smallest squares as indicated in the diagram of the chamber

R.B.C. diluting fluid: - Hayem's fluid

1.	Mercuric chloride	0.5 gm
2.	Sodium chloride	1.0 gm
3.	Sodium sulphate	5.0 gm
4.	Distilled water to	200 ml

Formula: Number of cells counted x diluting factor

X depth factor

R.B.C. count = _____

Area counted

Dilution is 1 in 200, depth is /10mm, Area counted is 80/400, 1/5 sq. mm.

Number of counted x 200 x 10 = Number of counted x 10,000

1/5

Bulk Dilution Method

i. Place 3.98 ml. dilution fluid in an ordinary 6" x ¾" test tube.
ii. Measure 0.02 ml. with a sahli pipette from a well mixed specimen of oxculated blood, taking care to see that the blood is not drawn beyond the mark. Carefully wipe the tip of the pipette.
iii. Expel the blood into the diluting fluid, rinse the pipette in the fluid by sucking up fluid and re expelling it two or three times.5
iv. Mixing can be done by rotating either by hand or in mechanical or in a mechanical mixer

Technique of White Blood Cell counts: The same principle discussed under total red blood cell count was also applied here. White blood cells are achieved by using the special white blood cell pipette or by bulk dilution where 20 cu. mm (0.02ml) of blood is mixed with 0.38 ml of diluting fluid in the small test tubes.The leucocyte pipette is smaller than the red cell pipette and is marked 0.5, I and II. It permits dilution Of the blood in the order of 1 in 2 or 1 in 10. The diluting fluids are as follows:

Clacial actic acid - 1.5 ml

One percent solution of Gentian

Violet in water - 1.0 ml

Distilled water - 98.0 ml

The glacial acetic acid and the gentian violet slightly stain the nuclei of the leucocytes. The leucocytes therefore may be added to the diluting fluids in order to prevent the growth of moulds.

Micro dilution

1. The special white blood cell pipette is used.
2. Blood is drawn up to the 0.5 mark and the tip is wiped clear.
3. Diluting fluid is drawn to the 11 mark.
4. The pipette is well shaken at right angle to its axis to mix the fluid and cells.
5. After discarding the first few drops the counting chamber is charged.

When the lower power objective is used, the cells are magnified 100 times. The objective is used for the white cell court. It is usually labeled 10 or 16 mm. The cells in the four large corner squares of the counting chamber are counted, using the same technique of red blood cells count. The basic formula to be used calculation is

Total white blood = No. of cells counted x Dilution factor x Depth factor / Area of chamber counted Cells/Cu. mm

= No. of cells counted x 20 x 10

Cholesterol:The Principle The reaction of cholesterol with ferric Perchlorate and sulphuric acid mixture in hot conditions to form a coloured complex having a maximum absorbance at 560 mm. is used in this kit.

Reagents provided;

i) Colour reagent 250 ml

ii) Cholesterol standard (200 mg o/o) 0.5 ml

Sample: Serum/E.D.T.A. plasma

Test Procedure

	Pipette into test tube	
	Standard	Test
Colour Reagent	3.0 ml	3.0 ml
Serum/plasma	-	0.02 ml
Standard	0.02 ml	

mix well and immediately place in a boiling water bathe for exactly one minute. Cool under running tap and read absorbance of standard (s) and test (T) on a photo colorimeter using yellow green or on a spectra photometer at 560 mm

Calculations

Cholesterol in mg %

$$= \frac{\text{A of (T)}}{\text{A of (S)}} \text{ X } 200$$

Statistical Procedure: In this study the analysis of covariance was used to analyse the results. The scheff's post hoc test was used to analyse the means and differences between the means of the various groups

CONCLUSIONS

Within the limitations imposed by the experimental conditions, the following conclusions were drawn.

1. Yogic practices and Interval Training had significantly improved the pulse rate, breath holding time, vital capacity and serum cholesterol.
2. When the experimental group-I (yogic practices) were compared with control group, there was significant improvement in pulse rate, vital capacity, breath holding time and serum cholesterol.
3. When the experimental group-II (Interval Training) was compared with control group, there was significant improvement in pulse rate, vital capacity, and breath holding time and serum cholesterol.
4. When the experimental group-I was compared with experimental group-II, experimental group-I had no significant difference in physiological variables where experimental group-II had a significant difference in physiological variables

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp74-76

A Study on the significance of Physique towards the Physical Performance between Sports Students and Students with sedentary life style

Dr.Abdussalam Kanniyan,Faculty in Physical Education,King Fahad University of Petroleum and Minerals, Dhahran, Saudi Arabia
Mr Wilson VA,Asst. Professor, School of Physical Education, Kannur Univ. Kerala,India

ABSTRACT:*The purpose of the study was to analyze the significance of physique on the physical performance of students who actively participated in sports competitions by being the members of University athletic / games teams which participated in inter University competitions with that of the other students who follow a sedentary life style (those who do not participate in any sports/ athletic programs). Twenty male students of various teams of King Fahd University, who participated in inter university competitions were selected and twenty eight students who follow a normal sedentary life style were also selected for the study. Specific parameters for the test viz,* hand grip strength, back strength, standing long jump , basketball throw and shuttle run *were selected and study was conducted.*

INTRODUCTION:

It is believed that physique appears to be important only for items which directly influences muscular strength which in turn contributes to any activity involving acceleration of the whole body or other massive object. Some studies have proved that it may also be related to other physiological functions such as the capacity of the individual for aerobic work. Previously, many authors have assumed that physique influences performance only by its passive effect on such parameters as body mass and the length of various body levers. Here an attempt is made to analyze the contribution of physical size on the performance of different physical parameters selected for the test.

METHODOLOGYThe subjects of the study were twenty students of the sports category (SC)and twenty eight students of the Non Sports Category(NSC) selected from King Fahd University, Dhahran, Saudi Arabia. The measurements taken on each subject were height, weight, left and right hand grip strength, back strength, standing long jump , basketball throw and shuttle run. Height was taken to the nearest millimeters using stadio meter and weight was taken to nearest 500 gm using standard weighing machine. Grip strength and back strength were taken using TKK dynamo meter by giving four attempts on each item in which the highest score was recorded. For standing broad jump , three trials were given and best was counted. For shuttle run and for Basketball throw, AAPHER standard measurements were used. The reliabilities of the measuring procedures were summarized in table -1.

Table -1. Test , Re-test reliabilities of the test items used in the study

TEST	Test – retest correlation	% change (retest – test)
Hand grip	0.97	1.70 ± 2.3
Back strength	0.96	2.1 ± 2.3
Standing long jump	0.94	0.9 ±3.7.
Basketball throw	0.95	2.6 ±3.5
Shuttle run	0.91	-0.82±2.5

ANALYSIS OF THE DATA AND RESULTS OF THE STUDY

There were no difference in height and the performance in hand grip strength between the two groups viz., Non Sports Category (NSC) and the Sports Category(SC). The body weights of NSC were comparatively higher than that of SC. It is assumed that the body fat % in NSC will be higher than the SC. The back strengths of NSC was lower than that of Sports Category which was apparently noted than all the other items.

Table -2. Descriptive statistics of SPORTS CATEGORY (SC) and NON SPORTS CATEGORY(NSC)

MEASUREMENT	**NON SPORTS CATEGORY**	**SPORTS CATEGORY**
Height(cm)	1.75 ± .55	1.74 ± 06
Weight(kg)	70 ± .5	66 ± .8
Hand grip(kg)	48 ± 8.7	48.1 ± 9.8
Back strength(kg)	98 ± 11.1	143.1 ± 12.2
Standing long jump(meters)	1.65 ± .15	2.05 ± .19
Basketball throw(meters)	11.1 ± .12	15.2 ± 0.22
Shuttle run(sec)	14.23 ± .5	11.21 ± .4

In basketball throw and shuttle run, the difference was clear with a clear domination of the sports category. When the difference is expressed in terms of the ratio of the difference between the means to the standard error of the difference, the greatest disparity between the two groups occurred in the shuttle run test. Hand grip and back strength are significantly related to both height and weight. Basketball throw was the only other performance item related to height, and it has a positive correlation with weight also. The multiple correlations between each performance variable and height and weight indicate that back strength is the variable most highly related to body size.

Table -3. Relationship of performance variables to height and weight and strength index

Variable	**Correlation with height**	**Correlation with weight**	**Multiple correlation with height and weight**	**Correlation with strength index**
Hand grip	0.46	0.625	0.66	0.002
Back strength	0.437	0.752	0.713	0.003
Standing long jump	0.216	0.113	0.221	0.453
Basketball throw	0.310	0.354	0.399	0.499
Shuttle run	-0.198	-0.326	0.449	-0.431

the correlations of performance variables with the strength index indicates that performance in standing long jump, basketball throw, and shuttle run were significantly related with strength.

CONCLUSIONS

The results of this study indicate substantial differences exist in physical performance between a group of students who actively participate in sports activities and with other group of students of the same age who are leading a sedentary life style. Table 3 indicates that the overall performance of students are influenced by their physical size irrespective of their category. This study also justifies with the studies conducted earlier that muscular strength is highly influenced by measures of overall body size and also by somato type. Jones has suggested that 75% of the variations in strength of adolescent males can be accounted for in terms of differences in height, weight and somatotype components. Allowing for differences in the body weight of the two present groups of subjects reduces the disparity in strength, but the students remain stronger per kg of body weight, indicating that the differences in strength are not attributable solely to differences in size. Watson and O' Donovan have suggested that the variations in strength of male adolescents are principally a function of differences in physique.

REFERENCES

1. Bengstsson E,: "The working capacity in normal children evaluated by sub maximal tests on a bicycle ergo meter and compared with adults" Acta Medical Stand.,LIV, 91-109,1991
2. C A H P E R ,: " The physical working capacity of Canadian children" , Toronto, Canadian Association for Health, Physical education and Recreation, 1968.
3. Jones H E ,: "The relationship of strength to Physique" ,American Journal of Physical Anthropology 5, 29-40 , 1987.
4. Lamphiear D E., Montoye H J : " Muscular strength and body size" Human Biology, 48, 147-160 ,

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp77-79

The Effect of Yoga Practices on Acth Horomone Secretion in Women

Dr.K.Deepla, Associate Professor, Dept. of Phy.Edn.O.U.

P.Munikrishnaiah, Lect.in Phy.Edn. G.C.P.E.Hyd

Abstract: Findings of the study, by practice of yogasana effect on ACTH hormone secretion in pituitarain. 20 female subject, aged 18 to 20 years were taken for the purpose of the study. 10 subjects for each group were assigned to control group and 10 subjects for experimental group at random. Experimental group under went six weeks yogasana training programme. The criterion variable serum ACTH hormone was tested through RIA Micro Biological assessment. Both the groups were tested twice before and after practice of yogasana. Pre-test were tested without training (yogasana), and then Post-test were tested after training (yogasana training given to experimental group only). The results of hormone secretion analyzed through ANOVA (2×2×2). The data obtained showed that after six weeks of training, Experimental group had significantly less concentration of ACTH hormone secretion, when compared to the control group.

Introduction: A great finding of our ancestors in yoga effect in human body Endocrane systems by practice of yogasana was get good results. Now we go for in deep observations of hormones concentration in particular land and it uses. In this study hormone ACTH (Adrino Cortico Tropic Hormone) secretion in the pituitary gland and this is presented in middle of the brain. It is a Master gland and secreted 8 hormones. The results of the ACTH to synthesis and secretion is gluco-mineralo-corticoseroids and androgenic steroids. It stimulates the release of steroid hormones by the adrenal glands, specifically cortisol by the adrenal cortex. Specifically targets cells producing hormones called gluco-cortco-steroids, which effect glucose metabolism and it involved in stress response. The ACTH mechanism was an extensive capillary network and hypophyseal portal system and provides entry into the circulatory system. Few studies have examined the effect of yoga exercise on gluco-regulation

Methodology: The purpose of the study was to analyze the effect of yoga (asanas) on selected hormone secretion differences among the subjects. This study has been carried following the steps of methods**.** **Selection of subjects**: This study was conducted on a total sample of 20 female subjects, aged 18 to 20 years, which are divided into two group {control group (n=10) and experimental group (n =10)}. **Selection of Variable**: Find out ACTH hormone secretion among the selected subjects. **Selection of Training**: Yoga (asanas) training was given to subjects of experimental group every day half an hour. This training programme was given to the experimental group for six week. **Selection of Test:** Through the Blood specimen collection, ACTH levels were measured by radioimmunoassay (RIA). **Test Administration**: Blood is typically drawn from a vein, usually from the inside of the elbow of the subjects. The ACTH concentrations of the subjects were assessed two times. (In each test blood were collected before participation of Yogasana and immediate completion of Yogasana) Pre-test was conducted without given any yogaasanas training. Post-test were conducted after completion of yogasana training programme (six weeks). **Scoring**: According to clinical observation, ACTH level was in pg/ml or pmol/l (44.01 – 189.74) and pg/ml or pmol/L (9.68 – 41.74) following the statistical analysis.

Statistical Analysis: The data collected from two groups pre-test and post-test, before and after 70 minutes of matches on selected variable (ACTH), were statistically examined for significant difference, if any, by applying the analysis of variance (ANOVA). This study comes under 2 (group) × 2 (treatment) × 2 (competition) factorial designs with repeated measure.The table – I shows mean and standard deviation for the data on ACTH hormone, pre-treatment and post-treatment, the data were collected from the subjects before practice and immediate after the completion of the yogasana.

Table – I

MEAN AND STANDARD DEVIATION FOR ACTH (pg/ml) AMONG THE CONTRL AND EXPERIMENTAL GROUPS PRE AND POST TREATMENT(YOGASANA)

		Pre-test		Post-test	
		Before Competition (pg/ml)	After Competition (pg/ml)	Before Competition (pg/ml)	After Competition (pg/ml)
Control group	Mean	44.01	167.24	43.21	169.31
	S.D	± 7.11	± 5.28	± 5.67	± 8.27
Experimental group	Mean	44.675	168.62	44.52	157.33
	S.D	± 4.55	± 7.19	± 5.25	± 5.90

The mean values of ACTH hormone secretion for control and experimental groups were graphically represented in Figure – (a).

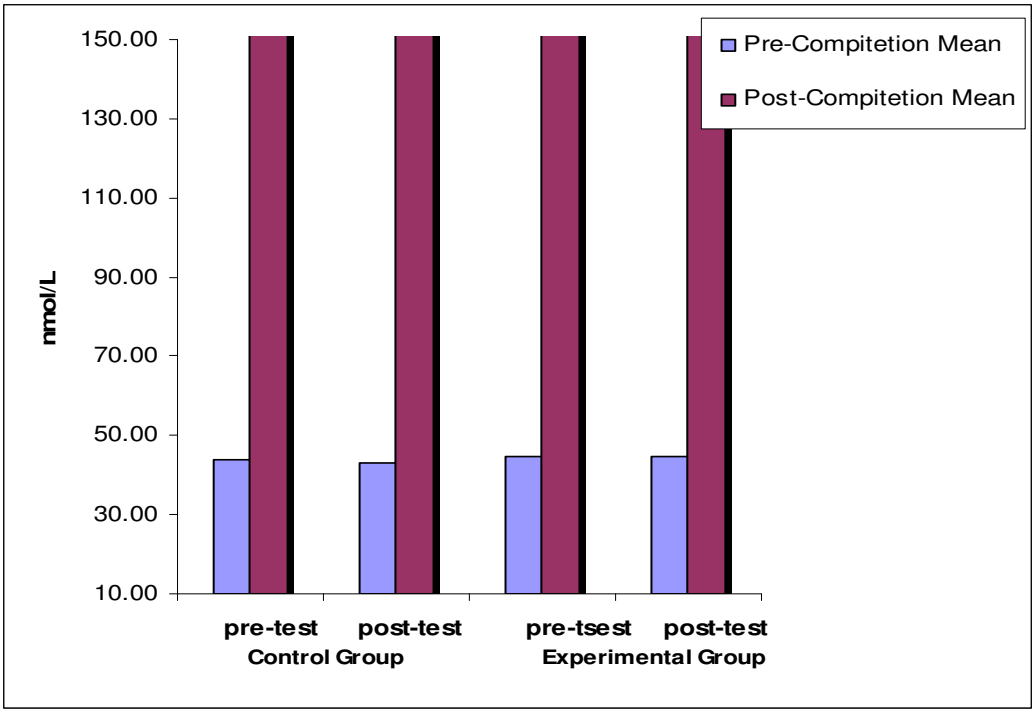


Figure-(a) THE MEAN VALUES OF ACTH HORMONE SECRETION, BOTH CONTROL AND EXPERIMENTAL GROUPS BEFORE AND AFTER TREATMENT.

The criteria for statistical significance were set at 0.5 level of confidence. The results have been presented in table – II Table-II

ANALYSIS OF VARIANCE FOR THE DATA ON ACTH HORMONE OF CONTROL GROUP AND EXPERIMENTAL GROUPS

Source of variation	S.S.	df	M.S.	F' ratio
A (groups)	**93.07**	**1**	**93.07**	**2.37**
B (treatment)	**129.26**	**1**	**129.26**	**3.30**
C (tests)	**295353.14**	**1**	**295353.14**	**7529.74**
AB	**201.96**	**1**	**201.96**	**5.15**
BC	**85.47**	**1**	**85.47**	**2.18**
AC	**197.73**	**1**	**197.73**	**5.04**
ABC	**244.97**	**1**	**244.97**	**6.25**
Within treatments (Error)	**2824.19**	**72**	**39.22**	
Total:	**299129.79**	**79**		

Significant t 0.05 level of confidence. The value for significance at 0.05 with df 1 and 72 are 4.15 respectively.

- **An** examination of Table – II indicates that the obtained 'F' ratio for A factor **2.37** is less than the table value 4.15 at 0.05 level.
- 'F' ratio for B factor **3.30** is higher than the table value 4.15 at 0.05 level.
- The obtained 'F' ratio for C (competition between the groups) is **7529.74,** which is more than the table value of 4.15.
- 'F' for AB Interaction, 'F' for BC Interaction, 'F' for AC Interaction, 'F' for ABC Interaction **5.15, 2.18, 5.04, 6.25** was more than the table value 4.15 at 0.05 levels.

Findings and Conclusions:This study proved that those who have additional practice of yogasana have improved endocrine resistance rather than the control group. The time and intensity of exercise will dictate the level of ACTH release. The subject's glycogen stores (fuel) will decrease significantly and the increased stress tolerance even low amount of ACTH secretion.Due to the practice of yogasana control of stress management and effect of ACTH release will decrease and ability to tolerate physical exercise intensity with less amount of gluconeogenesis (the production of new glucose).

References: 1. B.K.S.Iyengar " Light of Yoga" Swapna Printing Works Pvt Ltd 52, Raja Rammohun Roy Sarani, Calcutta - 700 009. p-20. 2. Gavin Flood (1996) "Technologies or disciplines of asceticism and Meditation" in Wikipedia. pp. 94, 96, 98.3. Pandit Usharbudh Arya (1985). "The philosophy of hatha yoga". Himalayan Institute Press; 2nd ed. 4. Sri Swami Rama (2008) "*The royal path: Practical lessons on yoga*". Himalayan Institute Press; New Ededition.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp80-85

A Comparative study of Aerobic Endurance among Middle distance Runners and Long Distance Runners of Hyderabad

By

Dr.Rajesh Kumar
Associate Professor
Department of Physical Education,Osmania University, Hyderabad
A.Xavier, Physical Fitness Coach, Osmania University
E.Jyothi, Physical Education Teacher, Nasr Girls H.S.Hyd

Abstract

The aim of the present study was to study the difference in aerobic endurance among Middle distance Runners and Long distance runners of Hyderabad.The 20 Male Middle distance runner and 20 Male long distance Runners of Hyderabad those who are doing regular athletic practice were taken for the study. The 12 Run Cooper Test were used to evaluate the aerobic endurance among Middle distance Runners and Long distance runners. The Middle distance runners are of 800 M and 1500 M and Long distance Runners are of 5000 M and 10000 M . The Study shows that the middle distance runners are having very good aerobic endurance compare to the long distance runners because the 12 Min cooper Test it is very efficient to perform well for middle distance runners. . It is recommended that middle distance and long distance runners must be given good endurance training to perform well in the middle and long distance events.

Key words: , Aerobic Endurance, athletic, runners etc.

INTRODUCTION:

AEROBIC ENDURANCE:

Aerobic Endurance is the amount of oxygen intake during exercise. Aerobic Endurance is the time which you can exercise, without producing lactic acid in your muscles. During aerobic (with oxygen) work, the body is working at a level that the demands for oxygen and fuel can be meet by the body's intake. The only waste products formed are carbon-dioxide and water which are removed by sweating and breathing.

Aerobic endurance can be sub-divided as follows:

- Short aerobic – 2 minutes to 8 minutes (lactic/aerobic)
- Medium aerobic – 8 minutes to 30 minutes (mainly aerobic)
- Long aerobic – 30 minutes + (aerobic)

Middle distance events generally include the 800 M, 1000 M, 1500M, One Mile Run and 2000 M.Competitors do not use starting blocks. Runners may not touch the ground with their hands at the start. In the 800 M starting positions are staggered to equalize the length of each lane on the curved track.

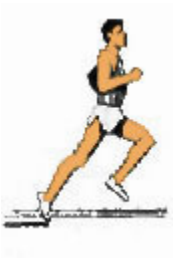
Runners must remain in their lanes until the end of the first turn. Aerobic endurance is important in all middledistance events, as is strategy as runners must conserve some energy in order to finish strong.

Middle Distance Running Technique

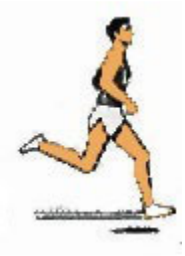
Guidance on the running technique of the middle distance runner is provided in the form of a series of pictures and associated notes that highlight the main technical points.

The foot strikes the ground below the centre of gravity (which is around the central area of the hips) The strike is slightly on the outside of the foot and from the ball of the foot to the mid-foot. There is then a role across and a dropping of the heel. The leg's role is supporting and driving.

As the foot strikes the ground there is also some flexion in the knee. This should not be too excessive, so leg strength must be developed to ensure stability in and around the knee. There is also some movement around the hip girdle. This can be excessive, so strength exercises for the whole region, especially abdominal and lower back, are required. It is very important that this region is kept stable, thus giving a strong platform from which to drive.



As the torso moves ahead of the foot, the drive is initiated and the achilles and calf are placed under great stress. It is therefore important that stretching and strengthening of this area be incorporated into training. Muscle fibres in the calf respond to a reflex action as they are placed in near full stretch and contract quickly, thus apparently straightening the foot, forcing the athlete back up higher on their fore-foot. (This makes the foot a further lever, often forgotten by many runners). The foot "grips" the ground as the torso moves ahead, forcing the leg into full extension. Once again, strength and flexibility of the hamstrings are important.



After the athlete has reached almost full stretch, a reflex action occurs in the muscle fibres of the hamstring, quickly shortening it and pulling the foot up off the ground. This allows the whole of the limb to swing back a bit further. Hip mobility and the ability to stretch the quads at the front of the leg are also vitally important.

The upper part of the leg is drawn forward by the action of the quads and hip flexors beginning to shorten. The foot continues on an upward curve, with the help of the contracting hamstring and the hinge effect of the knee joint. It swings into the gluteus maximus (backside), so shortening the lever and making it easier to bring forwards.

The thigh continues forward and the swings upwards, the head of the foot drops from its high point and accelerates downwards and forwards. The knee reaches its high point, which is not quite as high as that of a sprinter (i.e. at an angle of around 90 degrees to the rear leg).

The foot ends its swing through at a point just ahead of the knee. The leg maintains a slight angle at the knee (the leg is not straight). Having reached its high point the thigh starts a downward swing; this initiates an acceleration of the foot backwards.

The foot once again strikes the floor in a backward motion, adding to the athlete's forward motion.

5000 M and 10000 M Run are the long distance track events which require runners to balance their energy.These types of races are predominantly aerobic in nature and at the highest level, exception levels of aerobic endurance is required more than anything else. Elite long distance athletes typically train over 100 miles a week.

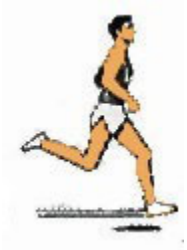
Long distance Running technique.

Guidance on the running technique of the long distance runner is provided in the form of a series of pictures and associated notes that highlight the main technical points.

The foot strikes the ground below the centre of gravity (which is around the central area of the hips) The strike is slightly on the outside of the heel of the foot and the forward movement is then down the outside of the sole onto the ball of the foot. The leg's role is supporting and driving.

As the foot strikes the ground there is also some flexion in the knee. This should not be too excessive so leg strength must be developed to ensure stability in and around the knee. There is also some movement around the hip girdle. This can be excessive, so strength exercises for the whole region, especially abdominal and lower back are required. It is very important that this region is kept stable thus giving a strong platform from which to drive.

As the torso moves ahead of the foot, the drive is initiated and the achilles and calf are placed under great stress. It is therefore important that stretching and strengthening of this area is incorporated into training. Muscle fibres in the calf respond to a reflex action as they are placed in near full stretch and contract quickly, thus apparently straightening the foot, forcing the athlete back up higher on their fore-foot. (This makes the foot a further lever, often forgotten by many runners). The foot "grips" the ground as the torso moves ahead, forcing the leg into full extension. Once again, strength and flexibility of the hamstrings are important.



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The foot once again strikes the floor in a backward motion, adding to the athlete's forward motion.

Kenenisa Bekele of Ethopia is an Ethopian long-distance runners who holds the World record and Olympic Record in both the 5000 Meters and 10,000 Meters. He is the reigning Olympic Champion over 5000 Meters and 10000 Meters and the most accomplished runner with six IAAF World Cross Country Championships titles in 12 KM Run and five IAAF World Cross Country Championships titles in 4 KM run.

AIM: To find out the Aerobic Endurance between Male Middle distance runners and Male Long distance runners.

SAMPLE: The sample for present study consists of 20 Male Middle distance Runners and 20 Male Long distance runners of Hyderabad District.

TOOLS: 12 Minute Cooper Test is used for collection of Data.

PROCEDURE OF DATA COLLECTION: The **Cooper test** is a test of physical fitness. It was designed by Kenneth H. Cooper in 1968 for US military used in the original form, the point of the test is to run as far as possible within 12 minutes.

To undertake this test you will require:

- 400 meter track
- Stopwatch
- Whistle
- Technical Official

Methods of conducting the Test.

This test requires the Middle distance runners and Long distance runners to run as far as possible in 12 minutes.

- The subjects given 10 minutes for warm up.

- The assistant gives the command “GO”, starts the stopwatch and the athlete commences the test
- The Technical Official keeps the athlete informed of the remaining time at the end of each lap (400m)
- The Technical Official blows the whistle when the 12 minutes has elapsed and records the distance the athlete covered to the nearest 10 meters

RESULTS AND DISCUSSION:

The Table No.1 showing the Mean, S.D, Standard Error, t-ratio of Middle distance runners and Long distance runners in Cooper Test.

Table No.1

Results of 12 min Cooper Test	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Middle distance runners	20	3340.00	219.71	49.13	1.69453	38.00	0.10
Long distance runners	20	3240.00	137.71	30.79			

The Middle distance runners Mean Performance is 3,340 Meters and the long distance runners Mean performance is 3240 Meters. There is mean difference of 100 Meters between Middle distance runners and Long distance runners. The middle distance runners are very good compare to long distance runners. The S.D. of Middle Distance Runners are 219.71 and Long distance runners 137.71 and standard error of middle distance runners is 49.13 and long distance runners are 30.79 and t-ratio is 1.69. Hence it is concluded that middle distance runners are good in aerobic endurance than long distance runners.

RECOMMENDATIONS:

1.It is recommended that good Aerobic Endurance must be given to middle distance runners and long distance runners.

2. It is recommended that similar studies can be conducted in any sports and games.

References:

A Duxbury, Andrew (2006-02-28) Water fitness 2008-01-07

Agarwal, J.C. Educational Research ; An Introduction New Delhi : Agar Book Dept., 1975.

Annarino, Antony A. Development Conditioning of Physical Education and Athletics, St. Louis: C.V. Mosby Company Ltd., 1972.

Athletics (Sportz0

Wikipedia Middle distance and long distance running

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp86-88

Effect of physical activity on health related quality of life in retired women in NIOC.

Lila Sabbaghian Rad[1], Seyed Amir Ahmad Mozafari[2], Mahshid Haji Heidari[3]
1,2,3 Department Of Physical Education And Sport Science, Science And Research Branch, Islamic Azad University, Tehran, Iran

Abstract:
The purpose of this study was to investigate the effect of physical activity on health related quality of life in retired women in NIOC. A total 160 retired volunteered women (78 active) and (82 sedentary) participated in this study. Data were collected by using the standard SF-36 questionnaire. Kolmogrov-Smironov test, Levene test, independent t- test is used for analyzing data. Results showed that, health related quality of life in the active group is significantly better than the sedentary group. Quality of life, physical health, mental health, social functioning in active women is better than the sedentary group, and the bodily pain is lower in active women. To have a better quality of life, physical activity including six hours a week low intensive exercise is suggested.

Key words: Physical activity, Health related quality of life, National Iranian Oil Company (NIOC)

Introduction:

Regular physical activity [PA] lowers adult mortality, improves quality of life and is beneficial in chronic heart failure, obesity and diabetes. Several studies have shown that regular PA improves mental health, reduces depression and can improve self-esteem, anxiety, resilience to stress and sleep pattern. The role of exercise training in patients with heart disease is rapidly being accepted. Walking remains the mainstay of exercise prescription for adult cardiac patients as part of home-based programs(1)Physical activity has a beneficial effect on HRQL in patients with depression, intermittent claudication, coronary disease, and multiple organ dysfunctions. In 2001, a review concluded that physical activity, often in the form of endurance and/or resistance training exercise, was positively associated with HRQL, regardless of age, health and activity status, in aging populations the health benefits from physical activity are well-known (2). A recent report found that physical activity was associated with less bodily pain in a carefully selected group of sedentary older adults who had either high normal blood pressure or mild hypertension, but who were free of clinical manifestations of chronic diseases. The lack of association between physical activity and the other domains of HRQL may have occurred due to the narrow range in physical activity level of this sedentary cohort. Thus, studying older adults who are physically active in addition to those who are sedentary may be necessary to delineate the association between physical activity and HRQL .Most conceptualizations of HRQL include physical, mental (including emotional dimensions), and social components (Revicki, 1989). HRQL encompasses the perceived, valued health attributes such as the sense of comfort or well-being, the ability to maintain good physical, emotional, and intellectual functions, and the ability to satisfactorily take part in social activities.(3)
Health is defined as a state of complete physical, mental and social well-being and not only merely the absence of disease or infirmity. Disease does not only affect individual, physically and emotionally, it may also affect his economic capacity, and his religious and political values, so the multidimensionality of the QoL concept has been accepted. The term “health related QOL (HR-QoL)” is used to measure the effects of numerous disorders, short and long term disabilities and diseases in different populations and could be defined as the patients’ evaluation of the impact of a health condition and its treatment on daily life .(4)
Long-term effects of physical exercise trial on QoL in older adults aged 66.7years are partly mediated by intermediate psychological outcomes (Elavsky et al., 2005)(5)
An aerobic exercise program at the intensityof ventilator threshold 1 was found to improve QoL in seniors aged 60–75 years (Antunes et al., 2005)(6)
In an elderly population, physical fitness has similarly been found to be associated with QoL (Chang et al., 2001)(7)

There is some evidence that QOL in older people is affected less by the changes in physical, mental or social health than that in younger people.(8)Successful aging encompasses multiple dimensions of health, including physical, functional, social, and psychological well-being. Maintaining a high level of quality of life into advanced age is a growing public health concern as the older adult population continues to increase .In fact, one of the primary goals of Healthy People 2010 is to improve both the quality and the number of years of healthy life Physical activity has a beneficial effect on HRQL inpatients with depression, intermittent claudication coronary disease, and multiple organ dysfunctions .In 2001, physical activity ,often in the form of endurance and/or resistance training exercise, was positively associated with HRQL. , regardless of age, health and activity status.(9)Having regular physical activity can improve health related quality of life for people and it could be useful for mental health, reduce of stress and bodily pain specially in adults and elders. Quality of life is expressed in below basic items:physical ,mental ,social.(10) According the reports of WHO[1], increasing regular physical activity in society, is useful for physical health ,mental health and reduce for expenditure in treats.(11)
Physical activity can improve the mental problems in elders.(1970-2003)Quality of life and physical health in trained women is better than untrained.(Kolten ,K,F,2001) .Having physical fitness and physical activity is a subject to improve health related quality of life .(Luke 2006).

Methods:
A total of 160 subjects (retired volunteered women) between the ages of 50 and 75 years were recruited from advertisements around the NIOC and form informing them by call. Prior to investigation, each subject completed a written informed consent. Women who were 55 years of age and older were included in this study. Participants with a history of overt cardiovascular disease (i.e., myocardial infarction, stroke, congestive heart failure, lower extremity revascularization, and peripheral arterial disease confirmed by an ankle/brachial index < 0.90) or chronic obstructive pulmonary disease were excluded because of the possible confounding influences that cardiovascular diseases may have on both physical activity and HRQL. Data were collected by using standard SF-36 questionnaire.
SPSS version 15 for Windows was used to analyze all data. Independent t-tests were performed on continuous variables to determine differences in HRQL and demographic measurements between the high active and low active groups. Statistical significance was set at P = 0.05. Measurements are reported as mean ± standard deviation (SD).

Results and Discussion:
All domains of HRQL were higher ($p < 0.05$) in the high active group than the low active group (Table 1).
Table 1) Health-related quality of life measures in subjects who have lower and higher levels of physical activity(active , sedentary)

variable		N	t	Asymp.sig (2-tailed)
Quality of life	active	78	19.36	0.003
	sedentary	82		
Physical health	active	78	15.91	0.006
	sedentary	82		
Mental health	active	78	29.45	0.001
	sedentary	82		
bodily pain	active	78	-18.40	0.03
	sedentary	82		
Social functioning	active	78	15.38	0.02
	sedentary	82		

All five domains of HRQL were higher ($p < 0.05$) in the high active group than the low active group. Results showed there is significant different between health related quality of life in active and sedentary women and quality of life, physical health, mental health, social functioning in active women is better than sedentary and the bodily pain is lower in active women.

[1] -World Health Organization

Conclusion:

The results showed that health related quality of life in persons who has physical activity is better than sedentary persons.The retirement community more involved in mental activity, stress, anxiety, depression need to improve their health with physical activity and doing activities with associate in clubs and having regular program for community in sports society .There is significant different between active and sedentary retired women in quality of life. Pinter (2001), Liu Ambrose (2005), Kristin (2009) Jill and Jennifer (2005), Luke and Jessica (2006), Jaspal and Ashley (2010) were agree with this result and Damush (1999), Michael (2010), were disagree with the impact of physical activity on improving the quality of life.Physical health of retired active and sedentary women in this study are significantly different. The result of the finding, Brown (2004), Pinter (2001), David Brown (2003), Liu Ambrose (2005), Stewart (2003), were agree with this result but. The result of the findings Damush (1999) and Sehat (2001) are disagree with our research. Mental health of retired women have a significantly different between active and sedentary .level of Mental health in active women is higher than sedentary women . The result of the findings Asadi (1379), The Singer (2001), Ross and Hayes (2004), Brown (2004), Liu Ambrose (2005), Kristen Dmnt (2009), Jill and Jennifer (2005), Luke and Jessica (2006), Raphael and Bayes (2007), Adrian and Adam Neck (2010) were agree with our result and The result of the findings of Sehat(2001), Torsen (2005), Michael I.(2010) Were disagree with our finding.The bodily pain in sedentary women is higher than active persons.This result is disagree With the the finding of Torsen (2005).but is agree with Patti (2002)liuambrus (2005). There is significant different between the two groups in Social functioning . this result is agree with the finding of Singer (2001), Jennifer (1999 Telepathic (2002), Svalen (2005), Kolten (2001) and disagree with Luke and Jessica (2006) .According to most researches about physical activity ,it recommendation to all people to have exercise in all ages specially old men and women .Olders should have regular program to do physical activity even at least time in a day. Physical activity is very useful item for increase their physical health ,mental health ,quality of life and decrease their bodily pain on their body.

References:

1) Jaspal S .Ashley R.et al ,2010, Exercise training in adults with congenital heart disease :Feasibility and benefits" .International Journal of Cardiology 138 ,196–205.

2)* Rejeski WJ, Mihalko SL: Physical activity and quality of life in older adults. *J Gerontol A Biol Sci Med Sci* 2001, 56:23-35.

* Gardner AW, Killewich LA, Montgomery PS, Katzel LI: Response to exercise rehabilitation in smoking and nonsmoking patients with intermittent claudication. *J Vasc Surg* 2004, 39:531-538.

* Lavie CJ, Milani RV: Effects of cardiac rehabilitation, exercise training, and weight reduction on exercise capacity, coronary risk factors, behavioral characteristics, and quality of life in obese coronary patients. *Am J Cardiol* 1997, 79:397-401.

3) Revicki, D.A., 1989. Health-related quality of life in the evaluation of medical
therapy for chronic illness. J. Fam. Pract. 29 (4), 377–380.

4) Acquadro C, Berzon R, Dubois D, et al. PRO Harmonization Group. Incorporating the patient's perspective into drug development and communication: an ad hoc task force report of the patient-reported outcomes (PRO) harmonization group meeting at the Food and Drug Administration, February 16, 2001. ValueHealth 2003;5:522–31

5) Elavsky, S., McAuley, E.et al., 2005. Physical activity enhances long-term quality of life in older adults: efficacy, esteem, and affective influences.sAnn. Behav. Med. 3,138–145

6) Antunes, H.K., Stella, S.G.,et al., 2005. Depression,anxiety and quality of life scores in seniors after an endurance exercise program. Rev. Bras. Psiquiatr. 27, 266–271

7) Chang, M., Kim, H., Shigematsu, R., Nho, H., Nishijima, T., Tanaka, K., 2001. Functional fitness may be related to life satisfaction in older Japanese adults. Int. J.Aging Hum. Dev. 53, 35–49

8) Butler J, Ciraarcohi J. Psychological acceptance and quality of life in the elderly. Quality Life Res 2007;16:607–15.

9). Luke Acree1, Jessica Longfors1, et al ,2006," Physical activity is related to quality of life.

10) Soroori, Reza ,(2004), A comparison quality of life between trained and untrained Professors in Mashad universities ,MS Islamic Azad University ,Mashad.

11) Eslami,Mansure,(2005), Relationship between Quality of life and stress in Chronic Obstructive Pulmonary Disease (COPD).Al zahra University,Iran.

12)Kolten,K,F,.(2001) ,The association between physical activity and quality of life In older women. women health Issuse,November.11(6) :471-80.

13) Luke S Acree1, Jessica Longfors1 et al.(2006) .Physical activity is related to quality of life in older adults ,Bio med central.

14)David W. Brown,etal, (2003), Associations between recommended levels of physical activity and health-related quality of life Findings from the 2001 Behavioral Risk Factor Surveillance System(BRFSS) survey" Preventive Medicine 37 (2003) 520–528.

15) Damush,T,M,J.G.Damush.Jr,(1999), The effect of stress training on strength and health related quality of life in older adults women" .The Gerontologistvol .Issue 6.705-10.

16)Jill E, Jennifer M Hot man,(2005), Physical activity and health related quality of life among people with arthritis" J Epidemiol Community Health 2005;59:380–385.

17) Michael I, LDS(I), PhD, (2010) Quality of life as an indicator of oral health in older people, *J Am Dent Assoc* 2007;138;475-525.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp89

Plyometric Training in Basket Ball

J. Prabhakar Rao, Head, Department of Physical Education, Osmania University,Hyd
Prof.P.Venkat Reddy, Principal, University College of Physical Education,OU,Hyd

Introduction: Plyometrics can help train explosive strength by shortening the time taken to switch from an eccentric action (such as landing) to the concentric action (such as jumping). You're basically training the muscle fibres and motor neurons to work more quickly and in synchronization with each other. It follows therefore that the jumps and drills you should use are those that train the actions and timing required in your sport.Plyometric training which includes hopping,bounding,jumping are very essential for the basket ball players to improve the performance.

Plyometric drills in Basket Ball:

1.Depth jumps near the basket ball rim, jumping off and catching ball from team mate. Ball should be thrown into the air to force maximal height. This is a strength/power drill with the aim the basket ball player catches the ball with the attention of team mates.
2. Repeated jumping to touch basket ball rim with 1,2 or 3 defenders holding their hands above head of jumper. The purpose is the discovery of movement patterns that allow successful rebound attempts. The aim should be to perform two jumps quickly in succession and attention should be on touching the rim. This drill helps with landing techniques for injury prevention in a crowded area.
3. Defender works on 2 versus 1 to improve visual scanning skills and reactivity of jumps, looking at cues for shooting and passing. Attackers only perform one set attack at a time, but vary the angles and timing of shots. The defender jumps with the aim of blocking the shot. Attention should be on movement mechanics of attackers and how they prepare to shoot.

Practice of Plyometric in Basket Ball:
1.Land techniques should be taught before jumps are introduced, the athlete should be able to land with control on each leg and both legs together.
2.A variety of jumps and action should be included in the training programme, although weighted jumps do not appear to have any added benefit. Drop jumps do not have to be from a great height – 20 cm is adequate and allows more repetitions to be performed.
3.To increase your vertical jump, a programme lasting more than 10 weeks with a minimum of 20 sessions and 50 jumps per session is optimal.
4.Progression and variety is essential to help with injury prevention.
5.Athletes should concentrate on the speed and quality of movement, rather than the force or volume.
Conclusions:
Plyometrics are an effective tool for increasing vertical jump height. If the sessions are planned and the initial training level of the athlete is taken into account, they can be used for most athletes, including young athletes. Once the basic landing and jumping techniques have been learned and can be performed effectively.then the correct mechanics for that sport should be taught, and rehearsed in situations that require decision making.
Recommendations:
It is recommended that the Plyometric training program will be included for the basket ball players for improving the performance in basket ball.
References:
1.Bompa. T.Periodization, Champaign,II:Human Kinetics (1999)
2.Jamesh Marshal, Runs Exclsior, a sports training company.
3. Am J sports Med. 2005

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp90-91

Motivation in Sports

Dr.I.Balram Reddy, Associate Professor,Department of Physical Education, O.U.Hyd
Prof.K.Surender Reddy, Director of Physical Education, O.U. Hyd

Introduction: Sports psychology is often quoted as being making the difference between someone who is good and someone who is a champion, giving you that little extra edge to put you ahead of your opponent. All good sporting performances come from being well prepared, mentally as well as physically. To be the best requires you to use the skills that you have as effectively as possible. Often athletes who are fit and talented do not achieve their best possible performances because they have not developed the necessary mental skills. Maybe their concentration lapses at vital moments, they lack motivation or find it hard to perform under pressure. Sport psychology is about helping athletes tap their potential and achieve the performances they dream about. Setting goals is an important starting point. All good athletes set goals and develop targets and plans to achieve their goals. Effective goal setting comes from making your goals positive, specific, actionable and flexible.

Motivational techniques for coaches and athletes

1. Goal setting

- Athletes should be encouraged to set a few ambitious but achievable long-term goals; perhaps to represent their country in a major championship in three or four years. Through empowering athletes to set their own goals, they are more likely to accept the challenges that lie ahead and pursue the goals with enthusiasm.;
- To keep athletes on track with their long-term goals, they should also set appropriate medium-term goals. For example, following a bronze medal-winning performance at the 2004 Athens Olympics, UK heptathlete Kelly Sotherton set herself the medium-term goal of winning the 2006 Commonwealth title in Melbourne (which she achieved) en route to pursuing her long-term goal to be crowned Olympic champion at the 2008 Beijing Games;
- By far the most important goals in practical terms are those for the short-term, as it is these that keep athletes focused on the checkmarks which are seminal to achieving superior performance. Therefore, short-term goals should be predominantly process-oriented. For example, when Manchester United's Wayne Rooney injured a metatarsal six weeks before the start of the soccer World Cup, he set a series of process goals in his race to regain full fitness. These included daily physiotherapy sessions, remedial exercises in an oxygen chamber, non weight-bearing aerobic activities, monitoring of nutritional intake and so on;
- Goals need to be monitored and revised on a regular basis. One of the biggest mistakes that coaches make in setting goals is that they are often too rigid in their approach. The goal setting process works best when there is some flexibility and the individual athlete or team take ownership of each goal. Thus, coaches and managers are better off exercising some democracy when setting goals, particularly if working with more experienced athletes.

2. Using extrinsic rewards

According to SDT(1), the key aspect in using extrinsic rewards effectively is that they reinforce an athlete's sense of competence and self-worth. Thus, a reward should be informational in nature rather than controlling. If a reward comes to be controlling, it can significantly undermine intrinsic motivation. For a reward to be informational, it is advisable that it has relatively little monetary worth (ie it is a token reward), such as a 'woman of the match' or 'athlete of the tour' title. Also, the reward should be presented to an athlete in front of all potential recipients with some emphasis placed on the prestige associated with it. Other popular ways of using token rewards include etching athletes' names on annual honours boards for their contributions, or awarding a special item of clothing.

3. Motivational music

A particularly good way to motivate athletes in training and prior to competition is through the use of music they perceive to be inspirational. Sydney Olympics rowing gold medallist, Tim Foster, now a respected coach, uses music to punctuate all of the indoor training sessions that he leads. Specifically, during circuit training or rowing ergometer intervals, he puts on loud/fast music, while during *recovery* periods he plays soft/slow music. Therefore, work and recovery times are regulated by music. Research from Brunel University indicates that this approach increases work output, reduces perceived exertion and improves in-task affect – the pleasure experienced during the activity(14,15).

4. Positive self-talk

Positive self-talk is a technique that can be used to enhance motivation across a wide range of achievement domains. It makes use of an athlete's powerful inner voice to reinforce their self-esteem or important aspects of their performance. With appropriate repetition, self-talk can positively alter an athlete's belief system. I use three types of self-talk in my work with athletes and will illustrate each with an example to assist you in coming up with your own.

Summary

Each and every one of us has an untapped energy source that can be drawn upon to bring about superior results. Enhancing motivation is fundamentally about a change of attitude, developing a positive 'can do' mindset and engaging in systematic behaviours – the short-term process goals – that facilitate improvement. If you have a leadership role in sport you will have considerable influence on how motivated your athletes or team might feel. You can instil a good work ethic, recognise individual effort and instigate transparent reward structures that reinforce people's sense of competence. To work best, the techniques mentioned in this article need to be moulded around specific circumstances and the needs of individual athletes. Always strive to be original and innovative in the application of motivational techniques.

References

1. Deci E, Ryan R (1985) Intrinsic Motivation and Self-determination in Human Behavior, New York: Plenum
2. J Personality Social Psych 1987; 53:1024-1037
3. AmPsych 2000; 55:68-78
4. Csikszentmihalyi M (1975) Beyond Boredom and Anxiety, San Francisco, CA: Josey-Bass
5. Csikszentmihalyi M (1990) Flow: The Psychology of Optimal Experience, New York: Harper and Row
6. J Sports Sci 2001; 19:397-409
7. Brit J Educ Psych 1994; 64:253-261
8. Proceedings of the 2001 World Congress on Sport Psychology, Skiathos, Greece 2001; 3:321-323
9. J Sport Exerc Psych 2004; 26:396-411
10. Psych Sport Exerc 2004; 5:183-200
11. Res Quart Exerc Sport 2000; 71:387-397
12. Vlachopoulos S and Karageorghis C (under review)
13. Advances in Sport Psychology (2nd ed), Champaign IL: Human Kinetics, 2002: 459-499

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp92-93

Physical Conditioning in Foot Ball

Prof.L.B.Laxmikanth Rathod,Secretary,I.U.T.O.U. Hyderabad

G.P.Param Jyothi, Research Scholar, Osmania Univeristy,Hyd

Introduction:

The strength and strength training, especially in the legs and trunk, are important for footballers who want to improve kick performance and reduce the risk of injury. To increase general strength, a workout consisting of leg press, leg extensions, leg curls, bench press, lat pull downs, abdominal and lower back exercises, would be ideal. This can be done with multi-gym equipment, which is also safe and easy to use. In my experience, some professional players use the club's gym equipment to perform this kind of workout after their official training session. Reilly found that players who voluntarily performed extra strength training were the ones who suffered the fewest muscle injuries. Therefore, since maintaining a fully fit squad can be a big problem, it makes sense for clubs to encourage or schedule general strength training for all players.Another piece of research - by Taiana and colleagues in France - showed that a 10-week leg-strength training program for footballers improved their 10m and 30m sprint times and their vertical jump performance.

As with strength training the value of good sprinting speed for footballers is well supported by research. Ekblom (1986) found that the absolute maximum speed shown during play was one of the parameters that differentiated elite players from those of lesser standard. This is supported by a study with German division-one players by Kollath and Quade (1993) They showed that professionals were significantly quicker than amateurs over 10m, 20m and 30m. The acceleration difference to 10m was especially significant. This suggests that better players need superior acceleration and maximum speed to play at a higher level. Interestingly, the 30m speed was similar for the German professionals regardless of position.

The training regimes of footballers must therefore reflect this need for good acceleration and maximum speed. Apor (1998) suggests, in making fitness recommendations for footballers; that players need to develop the musculature of a sprinter. I have already mentioned the benefit of maximum leg-strength training with heavy resistances for developing acceleration and speed. Taiana says that the players he trained for maximum leg strength were able to play at the weekend without detriment if the strength workout was on Tuesday. This once-a-week routine was still found to be beneficial. However, this type of training should be used with caution. Two or three sessions a week during the off-season would bring about much greater gains in maximum strength. Taiana therefore recommends that this type of training should be used in the off-season and then maintained with one workout per week once the competitive season has started.

Important Methods of Training.

Step by step

Another point to remember is that maximum strength training should be a progression from general strength training with submaximal loads. Heavy maximal resistance exercise, while very effective, is for advanced strength trainees only. Zatsiorsky recommends that good abdominal and lower back strength are essential if heavy lifting exercises are to be used. Thus, the first step for improved sprint speed is ensuring a good basic level of strength. American trainers George Dintiman and Robert Ward recommend that an athlete should be able to perform one maximum leg press of at least 2.5 times body weight, and have a hamstring to quadriceps ratio of least 75-80%. Both these measures can be tested on

the standard gym machines. Good abdominal and lower back strength are also essential for sprinting speed, as the trunk muscles are required to stabilise the sprinting movement.

Hop, bound and jump

Plyometric exercises are another proven training method that enhances leg power and sprinting speed. McNaughton (1998) cites soccer as one of the many games where short, explosive power is required, and that plyometric training is a useful complement or alternative to strength training to achieve this. Once the players are used to it, plyometrics may be more convenient than weights for speed development in terms of scheduling during the season.Plyometric exercises are typified by hopping, bounding and jumping movements. These exercises demand a high force of contraction in response to a rapid loading of lengthening muscles. For this reason, they should be more accurately called reversible action or rebound exercises. The training effort increases the force production in the muscles, but the movements are performed at faster speeds than weight-training exercises. Thus rebound exercises are more specific to the sprinting and jumping movements in football. These exercises should be done in 3-5 sets of 8 repetitions for each leg, with at least one minute's rest between sets. The quality and speed of the movement is the priority. The other training element that is required for improving sprinting speed is sprinting itself. This should be done with maximum efforts over 30-60m. Again, at least one minute's rest between runs should be allowed so that quality can be maintained. Remember, with this kind of training the aim is to develop the maximum speed; endurance should not become a factor. Sprinting done uphill, with weighted jackets, or towing weights is also useful because it adds resistance to the sprint movement, placing greater load on the muscles in the most specific manner. Again, short distances with long rests are recommended..Plyometrics and sprint training are usually performed when fresh. However, as it is a requirement of football to be able to sprint when fatigued, one could argue that sprint work should be done after a training session. One answer could be a short but high-quality hopping, jumping and sprints workout after a skills session. For example, 3x8 squat jumps, 3x8 skips for height, 3x8 hops for distance each leg, 3 x 30m towing runs and 5 x 40m sprints would be a short but useful workout if performed once or twice a week throughout the season. Scheduling strength-training workouts is more difficult. If the program is weekend matches only, then players could do a general strength-training workout on a Monday and Wednesday afternoon, leaving plenty of time to recover for the weekend match.

Conclusions;

1. General strength training to help prevent injuries, improve kicking performance and provide the basis for good sprinting speed
2. Maximal leg-strength training, which is a progression from general strength training for advanced trainees only, but one that is extremely useful for developing speed and power
3. Plyometric training exercises, which complement strength training as an effective alternative
4. Maximum sprint running over short distances with or without added resistances

References:

1. Jumping ability but how do you fit it in? *Peak Performance*, 87, p. 6-8
2. REILLY, T. (1990) Football. In: REILLY, T. et al. (eds) *Physiology of Sports*, London: E. and F. N. Spoon
3. APOR, P. (1998) Successful Formulae for fitness training. In: REILLY, T. et al. (eds) *Science and Football*, London: E. and F. N. Spoon
4. EKBLOM, B. (1986) Applied physiology of football. *Sports Science*, 3, p. 50-60
5. KOLLAT, E. and QUADE, K. (1993) Measurement of sprinting speed of professional and amateur soccer players. In: REILLY, T. et al. (eds) *Science and Football*, London: E. and F. N. Spoon

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp94

EXERCISE FOR CHILDREN

Dr.B.Sunil Kumar,Chairman,Board of Studies in Physical Education, OU

Y.Emmanuel Shashi Kumar, Chairman, Indian Federation of Computer Science in Sports

Introduction: Like adults, kids need exercise. Most children need at least an hour of physical activity every day. Regular exercise helps children

- Feel less stressed
- Feel better about themselves
- Feel more ready to learn in school
- Keep a healthy weight
- Build and keep healthy bones, muscles and joints
- Sleep better at night

As kids spend more time watching TV, they spend less time running and playing. Parents should limit TV, video game and computer time. Parents can set a good example by being active themselves. Exercising together can be fun for everyone. Competitive sports can help kids stay fit. Walking or biking to school, dancing, bowling and yoga are some other ways for kids to get exercise.

Why is exercise or physical activity important for the child: Increased physical activity has been associated with an increased life expectancy and decreased risk of cardiovascular disease. Physical activity produces overall physical, psychological and social benefits. Inactive children are likely to become inactive adults. And physical activity helps with

- controlling weight
- reducing blood pressure
- raising HDL ("good") cholesterol
- reducing the risk of diabetes and some kinds of cancer
- improved psychological well-being, including gaining more self-confidence and higher self-esteem

Start Exercising

Healthier Kids

Conclusions: Exercise helps children to develop social skills such as sharing, taking turns, cooperating and learning about winning and losing.It helps children to develop physical skills such as running,eye hand coordination and ball skills. Exercise is also a good stress reliever.

References:
Medline Plus Exercise for Children

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp95-99

Sport Person Performance up to Adroit through Technology

By

Dr.Md.Yousuf Khan, Principal, Polytechnic, Hyd. Maulana Azad National Urdu University, A.P.India

Md.Omar, Asst. Professor of I.T. Polytechnic, Hyd.Maulana Azad National Urdu University,India

Mohammad Amjad Khan, Bachelor of Physical Therapy

Introduction

To start a life of a Sport Person, many things have to be considered, such as how well he is fit, personality, ability to achieve target because Sport Persons of today, whether recreational or elite, throw farther, run and swim faster and making records higher than their competitors from the past. These rapid improvements have been attributed to several factors related to smarter nutrition; a greater understanding of biomechanics of sport movement advances in psychological support, well training techniques, and Technologies and coaching education. efforts to extend laboratory research into the sport-specific field setting have resulted in the identification of several variables deemed necessary for successful performance in several sports.[7,11,28,38] Sport Person performance up to adroit through Technology specifies sport person performance can be made up to adroit (perfection) but there are many reasons which come in between. Typically, sport performance testing has been expensive and limited to facilities at the elite levels of sport, generally out of the general public's reach and the everyday coach's budget. However, major intention is how well we can prevent injuries and on enhancing performance at the initial levels of game, the opportunity to combine cutting-edge sport science technology with the traditional field and court assessment has never been easier, and is much more readily accessible to today's progressive thinking coach.

Adroit measure through Biomechanical way

One area of major concentration over the past few years is that of biomechanical analysis. Coaches and Sport Persons have traditionally used video cameras and videocassette recorders (VCR) to scrutinize and improve their performances. Today, computers and high-tech devices are available to retrieve, analyze, replay, edit, and print the desired performance into a three-dimensional (3D) stick figure image that is analyzed from different angles without the need for a VCR. Biomechanical Analysis of Fundamental Human Movements begins with a discussion of the principles of biomechanics and then continues into more advanced study involving the mechanical and mathematical bases for a range of fundamental human activities and their variations, including balance, slipping, falling, landing, walking, running, object manipulation, throwing, striking, catching, climbing, swinging, jumping, and airborne maneuversv[51]. An endless number of Sport Person movements can be digitally assessed in the indoor, outdoor, or underwater environment. This PC-based program and display gives the coaching staff another way to examine objectively stroke patterns, center of mass, reaction/response time, change of direction, stance, symmetry of gait, and optimal angles and velocity of movement from module systems consisting of multiple cameras, synchronized force platforms, and electromyography (EMG) analysis. The key is the ability to merge both the experience of the coach with the objectivity of the analyzed sport movement to create a plan for Sport Person enhancement. As well as enhancing sports performance, these computer-generated figures can be used to analyze how injuries occur and, most importantly, how sport trauma can be minimized.

METHOD

Assessment of Sport Performance

One of the relationships to performance enhancement is that of sports person physiology/exercise performance testing. To be competitive, the key is to select tests that provide information specific to the particular sport, position, or event.[35] Coaches should consider important test components including indirect calorimetry, anaerobic testing, body composition assessment, range of motion (ROM) testing, pulmonary function evaluation, nutritional analysis, electrocardiographic work-up, and total blood chemistry as adjuncts to the training regimen and weight room assessment.

Indirect calorimetry involves the athlete running on a treadmill during respiratory and metabolic gas analysis, with results providing information on an athlete's peak aerobic power (VO2peak), endurance capacity, anaerobic threshold (AT), and ventilatory response. Anaerobic testing provides information on an athlete's peak power (PP), mean power and capacity to maintain a workout load (MP), and the rate of decline in power, also referred to a fatigue index (FI) during a competitive challenge. Since decreased muscular strength and excess body fat has been shown to compromise health,[1] and decrease performance in many sports requiring endurance, quickness, flexibility, and agility, [16,19,29,34] body composition assessment can provide feedback on lean body mass (LBM) and percent body fat. Range of motion (ROM) testing, typically reserved to injury rehabilitation, is especially useful prior to the season to obtain information on an athlete's degree of flexibility, to detect any deficiencies in bilateral symmetry, and to identify musculoskeletal restrictions that could lead to injury.

Services that are readily attracting coaches are the evaluation of pulmonary function, nutritional analysis, electrocardiographic work-up, and total blood chemistry. Pulmonary function analysis can provide information on the athlete's lung capacity, ventilatory efficiency, and the potential for pulmonary obstruction such as asthma. Computerized nutritional analysis allows the sport scientist to recognize over 2,000 foods grouped into 22 categories that an athlete may consume during any season. A simple 3-day written recall provided by the athlete allow food portions to be entered using an unit of measure, and can succinctly provide feedback on the athlete's caloric intake, quality of the diet, nutritional excesses and deficiencies, and recommended daily allowance (RDA) for vitamins and minerals. A simple, preseason 12-lead electrocardiographic work-up involves checking the activity of the athlete's heart at rest, during a running challenge, and throughout recovery. Results provide information on status of cardiac conduction, assist in identifying cardiac abnormalities, and aid in determining the health risk status of the athlete's heart. Total blood chemistry can detect anemia, electrolyte imbalances or underlying preventable health problems.

By defining these parameters, one can make some predictions regarding performance capabilities, assess an athlete's predisposition to injury, critically review the effect of current training protocols, and provide the coach with additional insight and a competitive edge over those programs relying primarily on subjective criteria.[37] These tests are supervised by sports medicine physicians, sport physiologists and other sport science personnel, and are generally available from exercise and sport science programs on most university campuses to assist coaches from the collegiate to youth sport levels of competition.

Sport Psychology Assessment

Kubler-Ross proposed that when an individual suffers a significant loss such as death of a family member, the individual will typically proceed to through five stages of grieving. The stages are denial, anger, bargaining, depression and acceptance. Writers in sports psychology have adapted this model to sport where parallels of loss and trauma exist[49,].

Peretz Model of loss: loss of mobility, opportunities, finances and possibly self-confidence. Peretz defines loss as “A state of being deprived of or being without something one has had”[49]

One of the focuses for the future in sport psychology will be the increasing use of Sport Person personality profiling.[26,48] Sport Persons involved at all levels of sport experience unusually high levels of expectations and physical challenges within a short span of time. The psychological stress is exacerbated with the need to learn play systems quickly, move up on the depth charts, and establish themselves with the coaches and teammates going into the competitive season.[32] Significant life-changes and continual daily stress of this magnitude have been linked to sport injury in both contact and noncontact activities.[2,15,20,21,27,47] As the stress mounts during practice, an athlete loses the ability to think clearly. This may result in irrational risk-taking, inadequate attention to coaching, and inattention to fundamental skills required to perform successfully and safely during competition.[6,47]Various psychometric instruments such

as the Sport Person Coping Skills Inventory (ACSI), 44 the Profile of Mood States (POMS), [31] and the Sports Inventory for Pain (SIP) [33] have been utilized by an increasing number of sport scientists, medical personnel, and coaches to assess coping skills, motivation, self-esteem, precompetitive anxiety, and mood relevant to sport. In regards to sport trauma and rehabilitation, coaches and Sport Persons have consistently mentioned a strong relationship between level of pain and physical/psychological dysfunction in several studies.[4,10,12,17,23,45] Others have reported that strategies for coping with pain (i.e., diverting attention, ignoring pain) were associated with the ability to function physically and psychologically.[9,18,22,42] Therefore, an athlete's attitude toward pain and the strategies he or she uses while experiencing sport pain may subsequently be reflected in his or her level of Sport Person performance and adherence to prescribed medical care.[8,32,33] A coach taking a proactive approach through psychological assessment to better understand an athlete's response to injury prior to actual trauma, rather than simply attributing physical trauma to the inherent nature of contact sports, would enhance the opportunity to avoid risk factors to Sport Persons. Although the use and validity of such instruments for use in Sport Person selection have been questioned in the scientific literature, it appears that a consensus is growing supporting the successful utilization of these instruments under certain conditions to predict Sport Person performance and avoid injury.[5,32,40,43,48] Numerous studies have indicated several areas that would benefit both athlete and coach as a result of utilizing sport psychology assessment. These include substantiating an athlete's present mind-set to maintain areas of success and focus on areas to improve,[3,26,48] identification of potential overtraining, [46] assessing response to sport injury, and monitoring psychological demands of injury rehabilitation.[33] Other benefits include allowing for more effective teaching of anxiety management, mental preparation, stress relieving and other coping skills, [25,48] and to steer Sport Persons clear of maladaptive behaviors such as feelings of helplessness, pessimism, self-destruction, or avoidance through substance abuse, doping and taking opponent in a manner like a enemy rather than a sport collegue.[13,30,33]

Testing Considerations

In order to utilize effectively the available sport science support, coaches should keep several things in mind. Communicate with the sport science staff and select testing variables that are relevant to your particular sport. The mode of testing, the rate of motion, the physical resistance selected, the specific muscles used, and the range of motion experienced by the athlete should closely imitate the actual sport [35] Tests should be challenging, but not to the point where test termination is effected by excessive body temperature, dehydration, or fuel depletion. Select testing techniques that are valid and reliable, rather than based simply on familiarity or tradition, [39,48] and insure that tests are conducted in a safe and productive atmosphere to optimize player safety, concentration, and instruction. In addition, both the coach and the sport science staff must ensure that valid and appropriate feedback is provided the athlete is in a timely manner by those he/she trusts. Finally, the human rights of all Sport Persons during testing must be respected.

RESULTS & DISCUSSION

Realities of Testing

As with any test, the reality is that there is no perfect test or physical challenge. There will always be limitations in predicting Sport Person performance. Although an athlete may give 100% during laboratory testing, there is no substitute for the actual competitive environment. Again, information derived from the sport science laboratory should be an adjunct and, if performed accurately, should be an important piece of your decision making process in evaluating an athlete. Test results should never stand alone when dealing with the complex environment of sport competition.[41,48]

On the other hand, many field tests results are often not as reliable as laboratory testing, or may not be as specific in isolating certain indices such as anaerobic threshold, aerobic capacity, symmetry of gait, or stroke patterns. Determining the proper blend of physical and psychological tests to compliment existing coaching preferences can be challenging. Situations such as time of season, coaching dynamics, and available staffing may limit the opportunity for obtaining a comprehensive environment. And lastly, predicting 'heart' or "will" in an athlete with any test can be elusive until “the whistle blows and the game starts.[11]

Elucidation

If any area is of major concern after reliability and validity of a test, it is the elucidation of the data. Final interpretation of an athlete's efforts should be grounded in a thorough knowledge of all factors and demands that contribute to the specific performance.[35] The status and performance of the athlete at the time of testing (i.e., preseason, off-season, injuries) can influence results. It has been reported that variation in Sport Person performance may range from 15-20%.[24] An awareness of psychological and social influences such as an athlete's prior history and experience with the testing environment, his/her potential loss of self-esteem, and the athlete's concern with any breach in confidentiality of results must be taken into consideration. And finally, coaches should strive to broaden their understanding of normal sport-specific physiological and psychological response at their level of competition.[35] Remember that due to an athlete's genetic predisposition, level of physical and emotional maturity, and training status, there can be a wide range in normative values.

ICT techniques in sports

In addition to this using the techniques of Information, Communication and Technology (ICT), has proven to be of great value in developing skills and target oriented approach in sports persons. ICT is becoming the most important part of this fast track word. It also brings revolution in the world of sports. With the use of new technologies in sports it become very easy to give the exact results and also the best result outcome from the players[50.]And many more factors where ICT is used in the sports. Examples are the new technologies like Hawk-Eyed technology in cricket, tennis, snooker, photo-finish cameras, pc, videos, i -pods, Speedo LZR racer swimsuit, digital score boards ect [50].In short we can say that use of ICT is very useful for the development of the sports. It works as a revolutionary tool in sports and its development in allfactors[50].

Conclusion: Over the years, sport science has mainly been viewed by coaches as inaccessible, too technical, or in many cases, non-applicable to the actual sport setting. The field to training sport person up to perfection has gone through multidisciplinary and would benefit from the services that sport science has to offer to optimize the Sport Person environment in which he lives. These brief sport-specific instruments with the help of Information Technology would allow coaches and Sport Person departments to make Sport Person Performance up to Adroit through Technology and have a healthier career.

References

1. American College of Sports Medicine. ACSM=s Guidelines to Exercise Testing and Prescription. Fifth edition. Philadelphia, PA: Lippincott Williams & Wilkins, 1995.
2. Anderson MB, Williams JM. A model of stress and Sport Person injury: prediction and prevention. Journal of Sport and Exercise Psychology 1988; 10: 294-306.
3. Anshel MH. Qualitative validation of a model for coping with acute stress in sport. Journal of Sport Behavior 2001; 24(3): 223-246.
4. Anshel MH, Russell KG. Effect of aerobic and strength training on pain tolerance, pain appraisal and mood of unfit males as a function of pain location. Journal of Sport Sciences 1994; 12: 535-547.
5. Beedie CJ, Terry PC, Lane AM. The Profile of Mood States and Sport Person performance: two meta-analyses. Journal of Applied Sport Psychology 2000; 12: 49-68.
6. Bramwell ST, Masuda M, Wagner NN, Holmes TH. Psychological factors in Sport Person injuries: development and application of the Social and Sport Person Readjustment Rating Scale. Journal of Human Stress 1975; 1: 6-20.
7. Coyle EF. Integration of the physiological factors determining endurance performance ability. Exercise and Sport Science Reviews 1995; 23: 25-64.
8. Crossman J. Psychological rehabilitation from sports injuries. Sports Medicine 1997; 23: 333-339.
9. Ebata AT, Moos RH. Coping and adjustment in distressed and healthy adolescents. Journal of Applied Developmental Psychology 1991; 12: 33-54.
10. Egan S. Acute pain tolerance among Sport Persons. Canadian Journal of Sport Sciences 1987; 12: 175- 178.
11. Goreman K. The use of talent-predictive factors in the selection of track and field Sport Persons. In Gambetta V (Ed.), The Sport Person Congress's Track and Field Coaching Manual. pp. 31-36. Champaign, IL: Leisure Press, 1989.
12. Gauron EF, Bowers WA. Pain coping techniques in college-age Sport Persons. Psychological Reports 1986; 59(3): 1163-1169.
13. Gould D, Finch LM, Jackson SA. Coping strategies used by national champion figure skaters. Journal of Sport and Exercise Psychology 1993; 15: 134-159.
14. Groppel JL, Roetert EP. Applied physiology of tennis. Sports Medicine 1992; 14: 260-268.
15. Hardy CJ, Riehl RJ. An examination of the life stress-injury relationship among noncontact sport participants. Behavioral Medicine 1988; 14: 113-118.
16. Hergenroeder AC, Klish WJ. Body composition in adolescent Sport Persons. Pediatric Clinics of North America 1990; 37: 1057-1083.

17. Iso-Ahola SE, Hatfield B. Psychological characteristics and pain tolerance of successful Sport Persons. In Iso-Ahola SE, Hatfield B (Eds.), Psychology of Sports. pp. 151-176. Dubuque, IA: William C. Brown, 1986.
18. Jensen MP, Karoly P. Control beliefs, coping efforts, and adjustments to chronic pain. Journal of Consulting and Clinical Psychology 1991; 59: 431-438.
19. Katch FI, McArdle WD, Czula R, Pechar GS. Maximum oxygen intake, endurance running performance, and body composition in college women. Research Quarterly 1973; 44: 301-312.
20. Kelly MJ. Psychological risk factors and sport injuries. Journal of Sports Medicine and Physical Fitness 1990; 30: 202-221.
21. Kerr G, Minden H. Psychological factors related to the occurrence of Sport Person injuries. Journal of Sport and Exercise Psychology 1988; 10: 167-173.
22. Kobasa SC. Stressful life events, personality, and health: an inquiry into hardiness. Journal of Personality and Social Psychology 1979; 37: 1-11.
23. Kremer E, Atkinson JH. Pain measurement: construct validity of the affective dimension of the McGill Pain Questionnaire with chronic benign pain patients. Pain 1981; 11: 93-100.
24. Koutedakis Y. Seasonal variation in fitness parameters in competitive Sport Persons. Sports Medicine 1995; 19(6): 373-392.
25. Kronhe HW, Hindel C. Trait anxiety, state anxiety, and coping behavior as predictors of Sport Person performance. Anxiety Research 1988; 1: 225-234.
26. LeUnes A, Burger J. Profile of Mood States research in sport and exercise psychology: past, present, and future. Journal of Applied Sport Psychology 2000; 12: 5-15.
27. Lysens R, Vanden Auweele Y, Ostyn M. The relationship between psychosocial factors and sports injuries. Journal of Sports Medicine 1986; 26: 77-84.
28. Mahood NV, Kenefick RW, Kertzer R, Quinn TJ. Physiological determinants of cross-country ski racing performance. Medicine and Science in Sports and Exercise 2001; 33(8): 1379-1384.
29. McCleod WD, Hunter SC, Etchison B. Performance measurement and percent body in the high school athlete. American Journal of Sports Medicine 1983; 11: 390-397.
30. McCrae RR. Situational determinants of coping. In Carpenter BN (Ed.), Personal Coping: Theory, Research, and Application. pp. 65-76. Westport, CT: Praeger, 1992.
31. McNair DM, Lorr M, Droppleman LF. Manual for the Profile of Mood States. San Diego, CA: Educational and Industrial Testing Services, 1971.
32. Meyers, MC, Bourgeois AE, LeUnes A. Pain coping response of collegiate Sport Persons involved in high contact, high injury-potential sport. International Journal of Sport Psychology 2001; 32: 29-42.
33. Meyers, MC, Bourgeois AE, Stewart S, LeUnes A. Predicting pain response in Sport Persons: development and assessment of the Sports Inventory for Pain. Journal of Sport and Exercise Psychology 1992; 14: 249-261.
34. Meyers MC, Sterling JC. Physical, hematological, and exercise response of collegiate female equestrian Sport Persons. Journal of Sports Medicine and Physical Fitness 2000; 40: 131-138.
35. Muller E, Benko U, Raschner C, Schwameder H. Specific fitness training and testing in competitive sports. Medicine and Science in Sports and Exercise 2000; 32(1): 216-220.
36. Reeds GK. The relationship of personality and anxiety to performance among elite male and female gymnasts. Canadian Association for Health and Physical Education Record Journal 1985; 51: 5-7.
37. Roetert EP, Piorkowski PA, Woods RB, Brown SW. Establishing percentiles for junior tennis players based on physical fitness testing results. Clinics in Sports Medicine 1995; 14(1): 1-21.
38. Schabort EJ, Killian SC, St. Clair Gibson A, Hawley JA, Noakes TD. Prediction of triathlon race time from laboratory testing in national triSport Persons. Medicine and Science in Sports and Exercise 2000; 32(4): 844-849.
39. Semenick D. Anaerobic testing: practical applications. National Strength and Conditioning Association Journal 1984; 6(5): 45, 70-73.
40. Silva JM. Personality and sport performance: controversy and challenge. In Silva JM, Weinberg RS (Eds.), Psychological Foundations of Sport. pp. 59-69. Champaign, IL: Human Kinetics, 1984.
41. Singer RE. Psychological testing: what value to coaches and Sport Persons? International Journal of Sport Psychology 1988; 19: 87-106.
42. Skirka N. The relationship of hardiness, sense of coherence, sports participation, and gender to perceived stress and psychological symptoms among college students. Journal of Sports Medicine and Physical Fitness 2000; 40: 63-70.
43. Smith RE, Christensen DS. Psychological skills as predictors of performance and survival in professional baseball. Journal of Sport & Exercise Psychology 1995; 17: 399-415.
44. Smith RE, Schutz RW, Smoll FL, Ptacek JT. Development and validation of a multidimensional measure of sport-specific psychological skills. Journal of Sport and Exercise Psychology 1995; 17: 379-398.
45. Sternbach RA, Timmermans G. Personality changes associated with reduction of pain. Pain 1975; 1: 177-181.
46. Terry P. The efficacy of mood state profiling with elite performers: a review and synthesis. The Sport Psychologist 1995; 9: 309-324.
47. Van Mechelen W, Twisk J, Molendijk A, Blom B, Snel J, Kemper HCG. Subject-related risk factors for sport injuries: a 1-year prospective study in young adults. Medicine and Science in Sports and Exercise 1996; 28: 1171-1179.
48. Vanden Auweele Y, De Cuyper B, Van Mele V, Rzewnicki R. Elite performance and personality: from description and prediction to diagnosis and intervention. In Singer RE, Murphy M, Tennant LK (Eds.), Handbook of Research on Sport Psychology. pp. 257-289. New York, NY: MacMillan Publishing, 1993.
49. Introduction to sports medicine Sikkim manipal university of health science.

50. Asian journal of Physical Education and Computer Science In sports.july – dec.2009

51. Biomechanical Analysis of Fundamental Human Movements By Arthur Chapman Biomechanical Analysis of Fundamental Movements presents a clear introduction to the elements of biomechanical analyses and the principles that underlie all human motion. © 2008 Hardback Book 320 pages ISBN-13: 9780736064026

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp100-101

Motivation for Children

Dr. V.Satyanaryana Associate Professor, Dept. of Physical Education,OU

S.R.Prem Raj Director of Sports, Greater Hyderabad Muncipal Corporation

Introduction: Children's mind are often compared to balls of clay that can be molded into anything, but a without molding hands, the clay will remain a ball. Many factors affect those hands, both external and internal. One of the most influential internal factors is the child's motivation. This motivation can be in two forms: intrinsic or extrinsic motivation. Intrinsic motivation refers to motivation that comes from inside an individual rather than from any external or outside rewards, such as money or grades. The motivation comes from the pleasure one gets from the task itself or from the sense of satisfaction in completing or even working on a task .An intrinsically motivated person will work on a math equation, for example, because it is enjoyable. Or an intrinsically motivated person will work on a solution to a problem because the challenge of finding a solution is provides a sense of pleasure. In neither case does the person work on the task because there is some reward involved, such as a prize, a payment, or in the case of students, a grade. Intrinsic motivation does not mean, however, that a person will not seek rewards. It just means that such external rewards are not enough to keep a person motivated. An intrinsically motivated student, for example, may want to get a good grade on an assignment, but if the assignment does not interest that student, the possibility of a good grade is not enough to maintain that student's motivation to put any effort into the project. Extrinsic motivation refers to motivation that comes from outside an individual. The motivating factors are external, or outside, rewards such as money or grades. These rewards provide satisfaction and pleasure that the task itself may not provide .An extrinsically motivated person will work on a task even when they have little interest in it because of the anticipated satisfaction they will get from some reward. The rewards can be something as minor as a smiley face to something major like fame or fortune. For example, an extrinsically motivated person who dislikes math may work hard on a math equation because want the reward for completing it. In the case of a student, the reward would be a good grade on an assignment or in the class. Extrinsic motivation does not mean, however, that a person will not get any pleasure from working on or completing a task. It just means that the pleasure they anticipate from some external reward will continue to be a motivator even when the task to be done holds little or no interest. An extrinsically motivated student, for example, may dislike an assignment, may find it boring, or may have no interest in the subject, but the possibility of a good grade will be enough to keep the student motivated in order for him or her to put forth the effort to do well on a task.

Developing Motivation :Newborn infants are born with a tremendous amount of intrinsic motivation. This motivation is aimed toward having some visible effect on the environment. When infants can actually see the results of their actions as a reward, they are motivated to continue those actions. These attempts toward control are limited within the young child, and include crying, vocalizations, facial expressions and small body movements. Toys that change or make sound as the child moves them are therefore strong motivators.As infants grow and continue to mature (9-24 months), more voluntary, purposeful movements are possible. This gives them more control of their environment. This wider range of control allows children to feel that they are successful. Success leads to higher self-efforts. Preschoolers (age 3-5 years) are beginning to be more involved with verbal problem solving skills. They direct their own learning through speech and use vocal communication to direct their own behavior to solve problems. Young

children are often heard talking themselves through a series of actions that lead to the solution of a problem. As children get older, this "talking out loud" will become an internal monologue. This newly developing ability to problem solve is the basis for motivation at this stage. Having the self confidence to know that one can solve a problem motivates the learner to accept other new and challenging situations, which in turn lead to greater learningesteem and feelings of self-worth,

Enhanching Motivation:

For parents of young children, the goal should be to appropriately support the development of motivation so that there is a proper foundation for optimal educational growth. Parents should be very cautions about the use of many extrinsic rewards, as this can severely interfere with the child's motivational development. Praise for an accomplishment is appropriate, but be sure that your child is doing a task because she is interested, not because she thinks it will bring praise from you.

Difficulties arise when adults or others within the child's environment enforce external standards and replace the internal reward system with one that depends upon outside forces to supply all of the rewards (candy, money, excessive praise). Children then begin to feel successful only if *someone else* rewards them for accomplishments. They lose their intrinsic motivation and may only feel success when someone else judges them as successful. In such situations, children may not develop feelings of self-worth, and will judge their own value by someone else's standards. Your child should never need to ask, "Did I do well?" She should know and be confident in her own successes.

Conclusions:

The world through a child's eyes is an awesome place. Allow children to explore and discover their world. Around every corner is an experience just waiting to surprise and excite young growing minds; all they need is a small amount of direction and a large amount of freedom. It is not necessary to praise and reward children for their own actions as they attempt to control their environment. The feelings of accomplishment they gain from results of those actions will be reward enough. Providing excessive praise and rewards is unnecessary and can actually be harmful to children's motivation and desire to learn. Remember, the habits and attitudes toward learning that are formed in these early years set the mood for all future learning.

References:

Brophy, Jere (1997). *Motivating students to learn*. Guilford. CT: McGraw-Hill. (ISBN: 0070081980).

Einon, D. (1999). *Learning early.* Checkmark Books. ISBN**:** 0816040141

Lew, A. & Bettner, B. (1996) *A parent's guide to understanding and motivating children*. Sheffield, UK: Connexions Press. (ISBN: 0962484180).

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp102-104

Comparative study of Body Composition, Flexibility and Muscular Endurance between Bodybuilders and Weight Lifters

Dr.Kaukab Azeem*Lecturer, Physical Education Department,

King Fahd University of Petroleum & Minerals, Saudi Arabia

Dr.Abdulhameed Al Ameer Associate Professor, Physical Education Department**
King Fahd University of Petroleum & Minerals, Saudi Arabia

Abstract

Introduction: In the present modernized society the importance of sports is well understood and given a very high response. Body composition can be measured in several ways, through caliper to measure the thickness of subcutaneous fat in multiple places on the body. These measurements are then used to estimate total body fat with a margin of error of approximately four % points (Voorhees, 2007).Flexibility is the range of motion around a joint , high flexibility helps in lowering the injuries in all stages of life (Uppal, 2004). Muscular endurance is the ability of the muscles to continue to perform with out fatigue (Hardayal Singh, 1991). The purpose of this present study was to compare the body composition (percentage of body fat), flexibility (hip & trunk flexibility), and muscular Endurance (sit-ups test) between state level Bodybuilders and Weight Lifters. .**Method**: Sixty (60) males participated at state level, Bodybuilders (N=30) and weight lifters (N=30) ranging between 18 to 22 years were selected randomly from different colleges of Osmania University, Hyderabad, India for this study. To compare the mean differences between the state level bodybuilders and weight lifters, t-tests were computed using Statistica Software. **Results and Discussion**: Body composition (percentage of body fat), Flexibility (hip & trunk flexibility), and muscular endurance (sit-ups test) were found to be statistically significant. The mean and S.D between the bodybuilders and weight lifters for body composition are (11.40, 1.92) and (14.43, 2.82) respectively. Regard to flexibility the Mean and S.D between the bodybuilders and weight lifters are (23.32, 5.48) and (17.10, 1.86) respectively Mean and S.D between the bodybuilders and weight lifters regard to muscular endurance are (26.47, 4.87) and (17.23, 2.71) respectively.**Conclusion:** It is concluded that there is a significant difference in body composition of bodybuilders and weightlifters. The trunk & hip flexibility of bodybuilders and weight lifter differ significantly. Further more lastly regard to muscular endurance between both the groups showed significant difference.

Key words: Body Fat, Flexibility, Muscular endurance, Body composition.

Introduction: In the present modernized society the importance of sports is well understood and given a very high response. Research in sports sciences played an important role enhancing the techniques, and performances in various sports. Sport has acquired an immense popularity due to Asian, world and Olympic Games, these apart it has become a worldwide phenomenon. The physique or body composition, including the size, shape of the muscle, plays an important role in the sports. Body composition makes an important contribution to an individual's level of physical fitness performance, particularly in activities that required one to carry, one's body weight over distance, will be facilitated by large proportion of active tissue muscles in relation to a small proportion of inactive tissue 'fat'. Body composition can be measured in several ways, through caliper to measure the thickness of subcutaneous fat in multiple places on the body. These measurements are then used to estimate total body fat with a margin of error of approximately four % points (Voorhees, 2007). Flexibility is the ability of an individual to move the body and its parts through as wide a range of motion as possible without undue strain to the articulations and muscle attachments. A high level of flexibility helps in saving energy during vigorous movement because of the full range of moment of the joint and muscles, the individual may be less prone to injury. Flexibility for sports is more than the maximal lengthening of soft tissues and it is not a posed,

static position. Flexibility is the range of motion around a joint , high flexibility helps in lowering the injuries in all stages of life (Uppal, 2004). It is a very important component of sports performance that can be significantly improved if approached correctly. Muscular endurance is also plays an important role in the performance of individuals in various sports and games. Muscular endurance is an important fitness component and helps individuals in performing high performance.. Muscular endurance is the ability of the muscles to continue to perform with out fatigue (Hardayal Singh, 1991).

Method: In this study, a sample of 60 male participants (thirty bodybuilders and thirty weight lifters) who had participated at the state level competition from Hyderabad during the year 2010-2011 were randomly selected as subjects. The age was ranged from 18-22 years. To compare the mean difference between the bodybuilders and weight lifters with regard to body composition (% of body fat) were considered, and for hip & trunk flexibility (Sit and Reach Test) was employed, and regard to muscular endurance (sit-ups test for 30 sec) was considered. Body composition was assessed by taking the skin fold measurement at four sites namely biceps, triceps, subscapular, and suprailiac (Durnin & Womersley, 1974). The Lange Skin fold Caliper was used to assess percentage body fat. The Sit and Reach Test was used to measure flexibility. Sit-ups test was employed to measure muscular endurance of the participants. 't'-test was employed with the help of statistica software . The level of significance was at 0 .05.

Results: The below tables from 1 to 3 shows the analysis of data.Table -1

Sl. No.	Body composition	No. of Subjects	Mean	SD	't' Value
1	Bodybuilders	30	11.40	1.92	10.33
2	Weight lifters	30	14.43	2.82	

P-value=0.00, 't'-test for dependent samples marked difference are significant at p< 0.05

Table-1*:Body composition Results:*The mean, S.D and t-test of the body composition between bodybuilders and weight lifters. Mean and S.D between the bodybuilders and weight lifters are (11.40, 1.92) and (14.43, 2.82) respectively. The data clearly shows that the bodybuilders are having less fat percent than the weight lifters, which is significant at (p<0.05) :**Table -2**

Sl. No.	Flexibility	No. of Subjects	Mean	SD	't' Value
1	Bodybuilders	30	23.32	5.48	8.58
2	Weight lifters	30	17.10	1.86	

P-value=0.00, 't'-test for dependent samples marked difference are significant at p< 0.05

Table-2*: Flexibility (hip & trunk) Results*: The mean, S.D and t-test of the flexibility between bodybuilders and weight lifters. Mean and S.D between the bodybuilders and weight lifters are (23.32, 5.48) and (17.10, 1.86) respectively. The data clearly shows that the bodybuilders are having greater flexibility than the weight lifters, which is significant at (p<0.05)

Table-3

Sl. No.	Muscular Endurance	No. of Subjects	Mean	SD	't' Value
1	Bodybuilders	30	26.47	4.87	12.09
2	Weight lifters	30	17.23	2.71	

P-value=0.00, 't'-test for dependent samples marked difference are significant at p< 0.05

Table-3*:Muscular Endurance Results* The mean, S.D and t-test of the muscular endurance between bodybuilders and weight lifters. Mean and S.D between the bodybuilders and weight lifters are (26.47, 4.87) and (17.23, 2.71) respectively. The data clearly shows that the bodybuilders are par excellent in muscular endurance (sit-ups test for 30 seconds) compare to the weight lifters, which is significant at ($p<0.05$).

Discussion: From the results of the study, the above tables showed that there was a significant difference in body composition between the bodybuilders and weight lifters. Regard to the flexibility (hip& trunk flexibility) between bodybuilders and weight lifters the data speak greater performance from the bodybuilders. In case of flexibility which is an important for the bodybuilders and weightlifters respectively. Bodybuilders need lot of strength, muscular endurance, and cardio-vascular endurance apart from flexibility, to compete against opponents on stage by displaying their muscles to the judges for the comparison. Weight lifters also need lot of power, strength, speed, muscular endurance apart from flexibility to compete against their opponents. When exercising snatch & Jerk and clean & press the weight lifters need lot of skills, flexibility, power, speed, muscular endurance to perform well. From the analysis, it revealed that there is a significant difference on body composition (percentage of body fat) between bodybuilders and weightlifters. Lastly both the groups regard to muscular endurance (sit-ups for 30 sec) differ significantly. The bodybuilders had shown greater performance compare to their counter parts weight lifters. Bodybuilders regularly includes sit-ups exercises in their schedule, this is one of the reason that they had perform well in sit-ups test. Abdominals are the essence of bodybuilding game, that's the reason all the bodybuilders gives lot of importance for abdominals. For weight lifters abdominals are not merely necessary as bodybuilders.

Conclusion: It is concluded that there is a significant difference in body composition of bodybuilders and weightlifters. The trunk & hip flexibility of bodybuilders and weight lifter differ significantly. Further more regard to muscular endurance between both the groups showed significant difference. Interestingly in overall comparison in all variables bodybuilders had shown par excellent performance.

References

Baungartner. T .A and Jackson, A.S., Measurement for Evaluation in Physical Education and Exercise Science,(3rd Ed.) , Dubuque, Iowa: W.MC. Brown publishers, 1987,P14.

Clayne R. J. & A. Garth Fisher. Scientific Basis of Athletic Conditioning, Lea & Febiger:Philadelphia,. (1979).

Davis, E.G. and Logan, G.A. Biological Values of Muscular Activity with Implication for Research, IOWA: W.M. Brown Company Publishers,(1961).

Garrow JS, Summerbell CD. Meta-analysis: effect of exercise, with or without dieting, on the body composition of overweight subjects. Eur J Clin Nutr 1995; 49:1—10.

H. E. Leady et al. Relationship between Physical Performance Items and Body Composition, Research Quarterly, (1965), 36:158.

Han TS, Tijhuis MAR, Lean ME, Seidell JC. Quality of life in relation to overweight and body fat distribution. Am J Public Health 1998;:1814—19.

Scott K. P., Edward T. H.. Exercise Physiology, Theory and Adaptation to Fitness and Performance, Brown and Benchmark Publishers.For to cite this article, (1997).

Svendsen OL, Haarbo J, Hassager C, Christiansen C. Accuracy of measurements of body composition by dual energy X ray absorptiometry in vivo. Am J Clin Nutr 1993; 57: 600–608.

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp105-106

Health and Physical Fitness

G.Venkatnarayana, Physical Director, Mohammedia Institutions, Khammam
P.Ravi Shankar, Archery Coach, A.P.Sports School
Bikash Karar, Treasurer, Indian Federation of Computer Science in Sports
Sunil Dutt, Physical Fitness Trainer, Athletics Coaching Academy

Introduction:

Health is defined in the WHO constitution of 1948 as a State of Complete Physical, Social and Mental well being and not merely the absence of disease. Public health has been described as "the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals. It is concerned with threats to the overall health of a community based on population health analysis. The population in question can be as small as a handful of people or as large as all the inhabitants of several continents (for instance, in the case of a pandemic). Public health has many sub-fields, but typically includes the interdisciplinary categories of epidemiology, biostatistics and health services. Environmental health, community health, behavioral health and occupational health are also important areas of public health.The focus of public health interventions is to prevent and manage diseases, injuries and other health conditions through surveillance of cases and the promotion of healthy behaviors communities and environments Its aim is preventing from happening or re-occurring health problems by implementing educational programs, developing policies administering services, and conducting research.

Public health also takes several actions to limit the health disparities between different areas of the country continent or world The great issue is addressing access of individuals and communities to health care, in terms of financial, geographical or socio cultural constraints in access to and use of services. Applications of the public health system include areas of maternal and child health, health services administration, emergency response, and prevention and control of infectious and chronic diseases.

Physical fitness comprises two related concepts: **general fitness** (a state of health and well-being) and **specific fitness** (a task-oriented definition based on the ability to perform specific aspects of sports or occupations). Physical fitness is generally achieved through correct nutrition exercise and enough rest

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. These days, *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.

The benefits of exercise extend far beyond weight management. Research shows that regular physical activity can help reduce your risk for several diseases and health conditions and improve your overall quality of life. Regular physical activity can help protect you from the following health problems.

- Heart Disease and Stroke Daily physical activity can help prevent heart disease and stroke by strengthening your heart muscle, lowering your blood pressure, raising your high-density lipoprotein (HDL) levels (good cholesterol) and lowering low-density lipoprotein (LDL) levels (bad cholesterol), improving blood flow, and increasing your heart's working capacity. Optimizing each of these factors can provide additional benefits of decreasing the risk for Peripheral Vascular Disease

- High Blood Pressure. Regular physical activity can reduce blood pressure in those with high blood pressure levels. Physical activity reduces body fat, which is associated with high blood pressure.

- Noninsulin-Dependent Diabetes By reducing body fat, physical activity can help to prevent and control this type of diabetes.

- Obesity. Physical activity helps to reduce body fat by building or preserving muscle mass and improving the body's ability to use calories. When physical activity is combined with proper nutrition, it can help control weight and prevent obesity, a major risk factor for many diseases.

- Back Pain. By increasing muscle strength and endurance and improving flexibility and posture, regular exercise helps to prevent back pain.

Conclusions:
It is concluded that regular activity has a number of proven, positive health effects, especially on heart health. Vigorous exercise strengthens the heart as a pump, making it a larger, more efficient muscle. Even moderate activity can boost HDL (good) cholesterol, aid the circulatory system and lower blood pressure and blood fats. All these effects translate into reduced risk for heart disease, heart attack and stroke. Exercise can also offer other benefits, including strengthened muscles, increased flexibility and stronger bones, which can help ward off the bone-thinning condition called osteoporosis. Regular activity also promises mental health benefits, like relieving stress and anxiety. It can help you sleep better and renew your energy.

References:

1. C.-E. A. Winslow. 1920. “The Untilled Fields of Public Health,” *Science,* n.s. 51.
2. Association of Schools of Public Health. *What is Public Health?* Retrieved 2010-06-24

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.3, No.1. pp107-110

A STUDY ON THE ANAEROBIC POWER AND BODY COMPOSITION OF ATHLETIC TRAINED VEGETARIANS AND NON-VEGETARIANS

Prof,Syed Ibrahim, King Fahd University, Saudi Arabia

ABSTRACT

The purpose of the present study was to find the anaerobic power, percentage Body fat and Body surface area of trained vegetarian and non-vegetarian college girls. The subjects selected for the study were 30 vegetarian (n=30) and 30 non-vegetarian (n= 30) athletic trained girls whose age ranged between 16 and 20 years. They were randomly picked up from different girl's degree colleges of Osmania University . The height and weight were measured to calculate the body surface area by using the Monsteller body surface area chart and four locations skin fold thickness were measured to find percent body fat. Vertical jumping ability and body weight were also measured to find out the anaerobic power by using Lewis Nomogram (Fox & Mathews, 1981). Mean, Standard Deviation, 't 'ratio and Pearson product Moment Correlation were used as the statistical tools for the study. The level of confidence set for the significance was 0.01 level (Clarke & Clarke, 1990).The results of the study showed that the non-vegetarians have more body surface area, percentage of body fat and aerobic power than the vegetarians. From these results it is concluded that non-vegetarians are dominating in body surface area, percentage of body fat and anaerobic power when compared to the vegetarian subjects.

Key Words: *Anaerobic power, Percentage of body fat, Body surface area.*

INTRODUCTION

Sports are replete with nutritional faddism and misinformation propagated by coaches, athletes and the media. A well balanced diet should provide all the nutritional and caloric needs of an individual. Since an athlete is constantly burning up calories and breaking down tissues, the food that he or she needs is the food that supplies all the nutrients necessary for repair, growth and energy (Steven & Irwin, 2003). The emphasis of diet should be on so called "live" or 'vital" foods. Fresh salads, fruits, vegetable juices , whole grain food, wheat germ, soya beans, oat flakes, fresh milk, cheese, yoghurt, raw meat are examples of vital food(Peter Konopka, 1998). Most fats whether in the form of butter, margarine, salad dressings, shortenings or natural fasts contained in the meal or other natural sources are digested at about the same slow rate. The athletes' diet should contain a normal amount of fat but not so much that it causes overweight or replaces the essential amount of carbohydrate and protein. Only small amounts of fat should be consumed during the day of competition (Jenson & Fisher, 1999).

Men are stronger and better on a vegetarian diet. Recently in many athletic contests, the vegetarians have proved themselves the strongest and most enduring than the non-vegetarians. In the cycling races held in Germany, the top honours taken were all vegetarians (Leadbeater, 2006). High intake of animal protein is largely responsible for more saturated fat and cholesterol. The biologic value of food refers to the competence with which the food supplies essentials amino acids. Food of high quality protein is largely of animal origin whereas most vegetable proteins are incomplete in terms of one or more essential amino acids and thus have a relatively lower biologic value. All of the essential amino acids can be

obtained by consuming a variety of vegetable foods, each with different quality and quantity of amino acids (Ardle, et.al., 1998).

There are however champion athletes whose diet consists predominantly of nutrients from varied vegetable sources as well as some dairy products. In fact two thirds of the people in the world are adequately nourished on essentially vegetarian diets using only small amounts of animal protein. With few exceptions, a strict vegetarian's nutritional problem is one of getting sample high quality proteins (Ardle, et.al., 1998).

From observing athletes in practice it would be seen that they mostly behave correctly quite spontaneously; but there are also so many errors that lead to deficiency states. There are situations especially during intensive training programmes there is a loss of appetite and the athlete does not feel hungry just when his body needs a large intake of nutrients (Konopka, 1998). The body composition and energy turnover are highly inter-related and closely linked with the functional capacity of the organism. Therefore, evaluation of one's body composition is considerably useful for the understanding of the functional aspect of the children as well as adults. In adults there is a very close relationship between lean body mass and maximal oxygen consumption both absolutely and per kilogram of body weight (H.S.Sodhi, 1991).

Power is the functional application of both strength and speed (Jenson & Garth, 1977). It is an integral part of the training programmes, for most of the sports activities and much more difficult component to measure. Several field tests of power have been devised , including the vertical jump, standing long jump and softball throw for distance and these tests are repeatable and reliable (Wilmore, 1977). Exercise physiologists and dieticians have different opinion with regard to vegetarian and non-vegetarian diet and their effects on the physical and physiological performance. In this study body composition and anaerobic power were assessed and compared between athletic trained vegetarian and non-vegetarian college girls. This study may conclude the facts of the contribution of the vegetarian and the non-vegetarian diet towards the under investigated variables.

METHODOLOGY

For this study thirty vegetarian (n=30) and thirty non-vegetarian (n=30) active girl athletes from different women degree colleges of Osmania University were selected as subjects. The age of the participants ranged between sixteen and twenty years. The subjects were actively participating in the physical activities, inter-collegiate, university, interuniversity and state level competitions. The variables of Body surface area – in square meters (M^2), Percentage Body Fat – in percent (%) and Anaerobic Power- in kilogram-meters/seconds (Kg-m/sec) were measured. By using steadiometer and weighing machine , the subjects height and weight were measured and to calculate the body surface area Dubois Body surface area chart was used (Fox & Mathews, 1981) Skin fold caliper was used to measure the skin fold thickness in the Biceps, Triceps, Sub scapular and Supra illac locations. Percentage of body fat was calculated by using percentage of Body fat (Monsteller, 1987). Vertical jumping ability and body weight were also measured to find out the anaerobic power (Fox & Mathews, 1981). Skin fold caliper was used to measure the skin fold thickness of Biceps, Triceps, Subscapular and Supra illac locations. Percentage body fat was calculated by using percentage of body fat (Four locations) chart for women (Monsteller, 1987). Vertical Jumping ability and Body weight were also measured to find out the anaerobic power. The Lewis Nomogram was used to determine the anaerobic power (Fox & Mathews, 1981).

For the two tests, nine subjects were taken to determine the reliability of the measurements and correlate the data used in the study. Tester's competency was evaluated by determining reliability of the tests, height, vertical jump, percentage of body fat were measured twice and Pearson Product Moment

Correlation was computed between the two SD measures on each test and the reliability coefficient were tabulated below in Tabl-1. The coefficients of reliability were significant at 0.01 levels for all the tests under investigation (Clarke & Clarke, 2003).

Table – 1

Reliability Co-efficient of Test Retest Scores

Test	Co-efficient of Reliability N = 9
Body Surface Area	.962
Percentage of Body Fat	.958
Anaerobic Power	.896
For df = 7, 'r' required for significance at .01 level = 0.798	

For the purpose of the testing the validity of these groups and to test the significance of difference between the means of the vegetarians and non-vegetarians groups't' ratio was calculated. The level of confidence set for the significance was 0.01 levels (Clarke & Clarke, 2003).

RESULTS

The data was analyzed using the statistical tools which give a clear picture of the results of the study and is represented in the Table-2

Table- 2

Mean, Mean Difference, Standard Deviation and't' Ratio of Body Surface Area, Percentage of Body Fat and Anaerobic Power of Vegetarians and Non-Vegetarians

Variable	Mean & S.D. Vegetarians	Mean & S.D. Non-Vegetarians	Mean Difference	't' Ratio
Body Surface Area	1.34± 0.12	1.49 ± 0.12	0.15	4.50**
% of Body Fat	24.42 ± 2.85	27.57 ± 3.94	3.15	3.53*
Anaerobic Power	47.0 ± 8.63	55.67± 9.17	8.67	3.79*

*p < 0.01 ** p < 0.05

In table -2 the result of the body surface area has shown a mean of 1.34 for vegetarians and the non-vegetarians mean is 1.45 and the difference of the mean is 0.15. The't' ratio obtained is 4.50 which is significant at 0.05 level of confidence. The results points that the non-vegetarians have more body surface area than the vegetarians. The mean with regard to the percent of body fat for the vegetarians was 24.42 and that of the non-vegetarians was 27.57 with a mean difference of 3.15 and the calculated't' ratio was 3.53 which is significant at 0.01 level of confidence confirming that the non-vegetarians have high percentage of body fat than the vegetarians. The results of the anaerobic power shown in the table -2 had a mean value of 47.00 kg.m/sec for vegetarians as compared to 55.67 kg.m/sec for the non-vegetarians. The mean difference was 8.67 kg.m/sec. and calculated't' ratio was 3.79 which was significant at 0.01 level of confidence between the two groups which shows that the non-vegetarians have more anaerobic power than the vegetarians.

DISCUSSION

The study revealed that the non-vegetarians have more body surface area when compared to the vegetarians. The area of research has no scientific evidence to support this finding. The increase in the above variable may be due the reason of the dietary life style and the type of routine physical activities of the non-vegetarians.

Further with regard to the percent of body fat the results have indicated that non-vegetarians had a high amount of body fat than the vegetarians. According to Nieman (1989) the vegetarian women tend to have less body fat and mid upper arm muscle than the non-vegetarians. When healthy vegetarians are compared with closely matched non-vegetarians peers, the vegetarian diet is associated with several benefits, primarily lower blood lipid levels. Sodhi (1991) says that athletes who had substantial amount of adipose tissue have permanently increased energy demands owing to the inert fat. The body composition and energy turnover are highly inter-related and closely linked with the functional capacity of the organism. Polumin (1981) opined that vegetarians can have several advantages over those who eat meat dishes and their diet is often lower in saturated fats and higher in fiber. Hence many investigators have found that the non-vegetarians take a high saturated fat in their food, which may be the reason for the presence of more fat in the boy of non-vegetarians.The results of the anaerobic power showed that the non-vegetarians had greater significance than the vegetarians. According to Wilmore (1977), power is the functional application of both strength and speed. Bunn on the other hand stated that in Sargent jump the stronger the mind, the greater the crouch to obtain greatest height in jump and the effective angle at which the muscle operates is solely dependent on the strength of the muscles. Apart from this there is no evidence which will scientifically support the above results However, based on this results non-vegetarians dominate vegetarians in anaerobic power.

CONCLUSION

In the end, on the basis of the above discussion it is concluded that the non-vegetarians were dominating in all the three variables which were investigated. However there is no scientific proof to support these findings. Besides it is important to specify that further research may be conducted to draw a firm conclusion.

REFERENCES

Ardle Mc. William D., Katch I. Frank and Katch, Victor L. (1998). *Exercise Physiology, Energy, Nutrition and Human Performance.* 2nd edition. Philadelphia: Lea & Fibiger.

Clarke, H. Harrison. (1990). *Application of measurements to health and physical education.* Englewood Cliffs: Prentice Hall, Inc.

Clarke, H.H., & Clarke, D.H. (2003). *Research Process in Physical Education, Recreation and Health.* New Edition, Englewood Cliffs, NJ: Prentice Hall.

Fox, Edward L. & Mathews, Donald K. (1981). *The Physiological Basis of Physical Education and Athletics.* 3rd. ed. Philadelphia: Saunders College Publishing.

Jenson, R. Clayne & Fisher A. Garth (1989). *Scientific basis of Athletic Conditioning.* Philadelphia: Lea & Fibiger.

Konopka, Peter. (1998). Correct diet means better performance, 19 springs.

Leadbeater, C.W. (2006). *Vegetarianism and Occultism.* 3rd ed. The Theosophical Publishing House, Madras.

Monsteller, R.D. (1987). Simplified Calculation of Body Surface Area. *N.Engl. J.Med.*

Nieman et al., (1989). Hematological, Anthropometric and metabolic comparisons between vegetarians and Non-vegetarian elderly women. *International Journal of Sports Medicine*.

Polunin, Miriam, (1981). *The Health and Fitness Hand Book.* Francis Lincoln Limited.

Roy, Steven & Irwin, Richard. (2003). *Sports Medicine-Prevention, Evaluation, Management and Rehabilitation.* New Jersey: Prentice Hall Inc.

Sodhi, H.S. (1991). *Sports Anthropometry.* Mohali: Anova Publications.