EFFECT OF PHYSICAL TRAINING ON FITNESS STATUS, PERFORMANCE AND MOOD STATES OF BADMINTON PLAYERS

Saon Sanyal, Ph.D. Scholar, LNUPE, Gwalior, (M.P.)
Jayashree Acharya, Head of the Department of Sports Psychology, LNUPE, Gwalior, (M.P.)

Received on : 10 Aug 2012
Reviewed on : 25 Aug 2012
Approved on : 05 Sep 2012

Abstract

The present study was sited to detect the fitness status, performance and mood states of selected university level badminton players. It was hypothesized that there would be a significant improvement on the fitness, performance and mood states of badminton players based on the physical training. Fifteen male university level badminton players in the age group of 19 – 24 years with a mean and SD of 20.67 ± 2.11 from LNUPE, Gwalior were chosen for the study. The variables selected for the study were fitness components, performance was measured by singles league matches and mood states was measured with Brunel Mood Scale (BRUMS: Terry, Lane& Fogarty, 2003). The training was given for a total of 6 weeks, 5 days a week for 40-45 minutes with a mixture of fitness training and singles matches in order to improve the playing ability respectively. One sample t-test was applied as the result was tested for significance 0.05 level. The gain score is the improvement score obtained by the difference between the post test and pre test scores. After obtaining the improvement score, significant difference was found in fitness items (1000mts, 30mts, sit-ups, Illinois agility test, medicine ball throw, standing broad jump),performance and mood states(anger, confusion, depression, fatigue, tension, vigour).

Keywords: Training, Fitness, Performance and Matches

Introduction

Training in sports is a process of athletic improvement, which forms its base of the scientific principles through systematic development of mental and physical efficiency, to enable the formation of basic skills or techniques further to produce outstanding and record breaking athletic performances. The individuals' personality develops in accordance with the surroundings or the environment and the standards of the society through a positive approach towards the recent trends of the course of training. The main purpose of training is to develop the athlete in order to achieve the highest level of athletic performances (Deitrich, 1982). Working for the required level of athletic performances through training develops the whole personality as a mental and physical entity. As individuals performance depends upon the combined result of co-ordinated exertion and integration of varied level of functions. The physical fitness at one hand and the psychological pre-requisites at the other are equally important to maintain the equilibrium of the individual (Hussain, 1984).

Peak sports performances are those magical moments when an athlete puts together- both physically and mentally. The performance is exceptional, seemingly transcending ordinary levels of play (Williams, 2000).Sports performance is based in a complex and intricate diversity of variables, which include physical (general and specific conditions), psychological (personality and motivation) and body (body morphology, anthropometry and body composition) factors (Campos, et. al., 2009). Concerning badminton athletes' physical characteristics, several factors contribute to the success in the sport, including technique and tactics, psychological preparation and game strategy (Chint et.al., 1995).

Mood state refers to "a situation specific, somewhat transient, psychological response to an environmental stimulus" (Cox, 2002). Cohen, Kessler, and Gordon (1997) described mood states as illustrations of a process in which an individual attempts to adapt to environmental demands. Murray (1998) defined a mood state as a temporary emotional state that fluctuates depending upon circumstances. Some of the circumstances that affect mood are external, such as weather and physical activity (Guerrero, Andersen, & Trost, 1998), while others are internal, such as our appraisal of events (Murray, 1998). Mood changes have been studied in a variety of settings, and considerable experiential and anecdotal evidence supports the existence of changes in mood states related to exercise. Psychologist and Psychiatrists rate exercise as the most effective technique for changing a bad mood; they are more likely to use exercise than other techniques to energize themselves (Thayer, Newman and McClain, 1994).

The game badminton has proved as a most outstanding, crowd drifting individual racket sport. In this competitive world, badminton occupies a significant place in the competitive sphere due to

interest and participation in large number by different leading countries like Indonesia, China, Korea, Japan, Denmark. The game of badminton requires physical and mental attributes to tackle the eventualities in the match as the match can only be won with the complete association of the components like physical conditions or skills, the mental attitude, intelligence, experience and tactical aspect of the player. As the performance is determined by factors such as physical fitness, techniques and tactics, through their relative contribution which of course varies from sports to sports. In addition to these, the psychological traits have immense influence on the physical status, the techniques acquisition and the tactical capabilities of the player (Wright, 1979).

Keeping this in view the purpose of the present study was sited to detect the effect of physical training on fitness status, performance and mood states of selected university level badminton players. It was hypothesized that there would be a significant improvement on the fitness status, performance and mood states of badminton players.

Methods

Fifteen male university level badminton players in the age group of 19 – 24 years with a mean and SD of 20.67 ± 2.11 from Lakshmibai National University of Physical Education, Gwalior, India were chosen for the study. The variables and instruments selected for the study were fitness components (endurance, speed, agility, strength) tested by a modified physical fitness test (1000mts run/ walk test, 30mts sprint, sit-ups, push-ups, Illinois agility test, medicine ball throw and standing broad jump); to assess the performance it was the point scored (winners-2 & losers-0) based on the singles league matches and to assess their mood states The Brunel Mood Scale (BRUMS: Terry, Lane, Lane & Keohane, 1999; Terry, Lane& Fogarty, 2003). The training was given for a total of 6 weeks, 5 days a week for 40-45 minutes with a mixture of fitness training and singles matches in order to improve the playing ability respectively.

Results

For the purpose of the present analysis t-test was applied as the result was tested for significance 0.05 level along with descriptive statistics (SPSS 19 version was used).

Table 1

Pre-Test and Post-Test Mean and SD Scores of Badminton Players in different variables

S. No	Test Items	Pre-Test (N=15)		Post Test (N=15)		't' Value
		Mean	SD	Mean	SD	
1	30mts	4.72	0.16	4.65	.13	2.19*
2	SBJ	2.19	0.21	2.23	0.16	1.60
3	Sit-ups	31.40	2.99	33.06	2.66	4.18*
4	Push-ups	16.24	24.46	8.85	18.00	1.39
5	Medicine Ball	9.87	1.80	10.10	10.11	1.38
6	Agility Test	16.05	0.51	16.06	0.52	0.13
7	1000mts	3.98	0.29	.3.82	0.31	3.27*
8	Playing Ability	13.73	9.09	15.20	7.92	2.75*
9	Anger	5.33	2.66	3.80	2.39	5.99*
10	Confusion	5.60	3.24	3.93	2.93	5.22*
11	Depression	5.07	2.94	4.00	2.42	2.77*
12	Fatigue	8.93	3.96	7.13	3.68	10.31*
13	Tension	5.87	2.75	3.87	2.09	3.87*
14	Vigour	7.73	2.18	10.93	2.12	10.26*

Significant at 0.05 level of Significant $t_{(14)(0.05)} = 2.15$

Table 1 shows the descriptive statistics and t- value of various variables tested on the samples, significant difference is seen in 30mts sprint, sit-ups, 1000 meters run/walk test (.15±.195), playing ability, anger (1.53±.99), standing broad jump (.01±.01),), medicine ball throw (.40±.39), Illinois agility test (.12±.16), confusion (2.93±3.03), depression (1.47±1.06), fatigue (1.80±.68), tension (2.13±1.85), vigour (3.20±1.21) as calculated 't' value were 3.05, 3.46, 4.09, 4.06, 4.00, 2.85, 3.67, 5.99, 3.74, 5.36, 10.31, 4.48, 10.63 respectively which were much higher than the tabulated 't' value 2.145 with 0.05 level of significance at 14df. In push-ups (9.86±20.30) there was no significant difference found as the calculated't' was lesser than the tabulated 't' at 0.05 level of significance. The mean scores of the variables are illustrated below in figure 1.

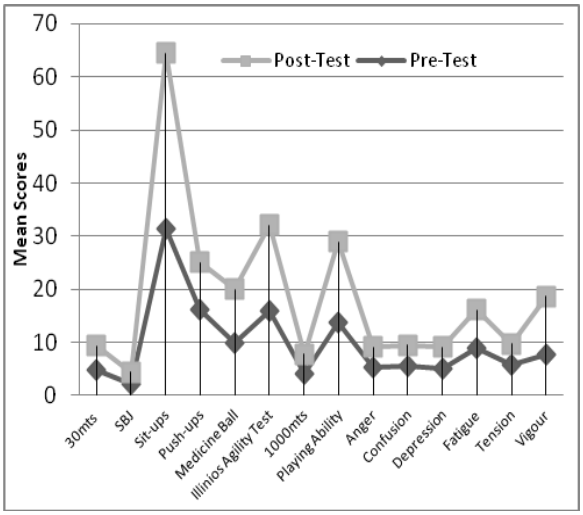

Fig. no.1: Pre and Post-Test Means Scores of Badminton Players in Different Test Items

Conclusion:

After obtaining the improvement score, significant difference was found in the physical components such as 30mts, sit-ups and 1000mts, This clearly indicates that the training imparted had the bearing on speed and endurance . In one of the factor that is, there was no improvement, which may be contributed to the length of the training as this component requires more time. Where in push-ups, Illinois agility test, medicine ball throw, and standing broad jump no significant difference were found. This may be owing to the reason that these are mainly of explosive strength, which requires more time and the time period which was taken into consideration in the present study may not be sufficient . Further in performance where playing ability was considered, which is a combination of physical, technical and tactical aspects where the improvement was seen. There is no doubt that to give better performance all these qualities are required as they are interlinked phenomenon. Finally in the psychological components of mood states such as anger, confusion, depression, fatigue, tension, vigour significant differences were seen. It was seen that in the negative moods such as anger, confusion, depression, fatigue and tension, there was decrese from pre to post training period .. Where, as there was improvement in the mood states vigour which indicates positivity aspect of traininig.

References:

Ashley E. Stirling and Gretchen A. Kerr (2006) Perfectionism and Mood States Among Recreational and Elite Athletes University of Toronto Copyright 2006 Athletic Insight, Inc. ISSN 1536-0431.

Campos Fabio Angioluci Diniz ; Daros Larissa Bobroff; Mastrascusa Vera; Dourado Antonio Carlos; Luiz Claudio Reeberg Anthropometric Profile and Motor Performance of Junior Badminton Players Original Paper (Artigo Original) Brazilian Journal of Biomotricity, Vol. 3, N. 2, p. 146-151, 2009 (ISSN 1981-6324).

Chint M; Wongt A; Sot R; Siu O; Steininger K; Sport Specific Fitness Testing of Elite Badminton Players Br J Sports Med Vol. 29, p. 153-157, 1995.

Cohen S.; Kessler R.C. and Gordon, L.U. (1997) Strategies for Measuring Stress in Studies of Psychiatric and Physical Disorders in Cohen, Kessler, & Gordon (Eds.) measuring stress: A guide for health and social scientists (pp.2.28) New York: Oxford University Press.

Cox R.H. (2002) Sport psychology: Concepts and Application 5th ed. Missouri, Columbia: McGraw Hill.

Guerrero; L. K., Andersen P. A. and Trost, M. R. (1998) Communication and Emotion: Basic Concepts and Approaches in P. A. Andersen & L. K. Guerrero (Eds.) Handbook of Communication and Emotion: Research, Theory, Applications and Contexts (pp. 3-27). San Diego: Academic Press.

Jean M. Williams (2000) Applied Sports Psychology: Personal Growth to Peak Performance, 4th edition, Mayfield Publishing Company Mountain Veiw, California.

Murray J.F. (1998) Mental Equipment Smart tennis: How to play and Win the Mental Game (pp.127-159) San Francisco, California: Jossey-Bass Publishers.

Khan Hussain Ahmed (1984) Utility of Psychological Assessment in Selection of Top Level Sportsperson and Sportswomen, SNIPES Journal 7 (July 1984):21.