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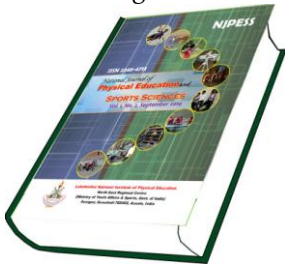
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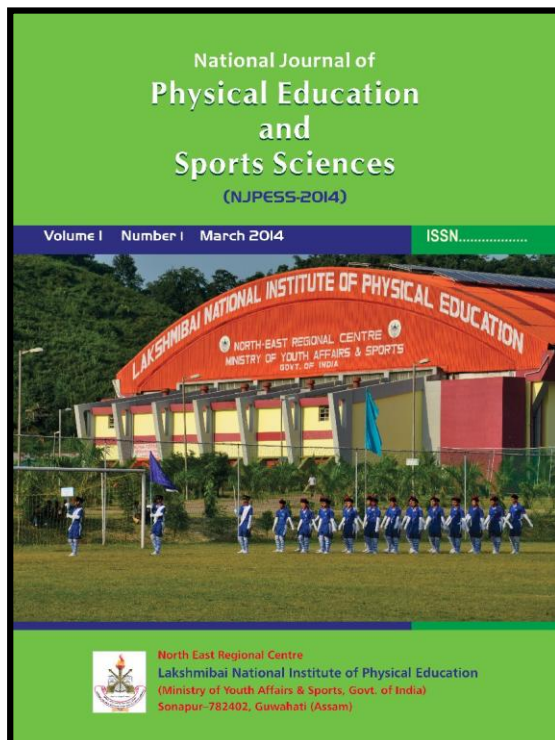
Editorial

Epicenter Voyage of a Myth Institute-Lakshmibai National Institute of Physical Education North East Regional Center



Lakshmibai National Institute of Physical Education, NERC is amongst the most admired centers of world-class education to foster academic excellence, physical fitness and research in sports committed to helping scholars, researchers and sports scientist leap into the 21st century. The present endeavor is a tribute to the holy symbol of Lakshmibai National Institute of Physical Education, NERC as the same was long precious aspiration. The journal shall symbolically signify the essence of quality research thereby appropriate in the ambition of the institute. The journal shall offer a much desired platform to publish quality research being undertaken in the whole world on the area in question. The journal shall bring the academicians and researchers from all over the globe to share their accumulated experiences and perceptions in order to realize new scientific and original innovation focused on aspects of the sports sciences and sports performance.

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Effect of Selected Yogic Practices on Cardiac Efficiency of Female Swimmers

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Abstract

The purpose of study was to find out the effect of Yogic Activities on Cardiac Efficiency of female swimming players. The subject of this study were 40 female swimmers of Government Senior Secondary schools Jalandhar, Punjab were selected. Further swimmers were divided into two groups viz., experimental and control group. Harvard Step Test was applied to assess the Cardio-vascular efficiency of the subjects without any pre information and after conducting the said test two groups were formed viz., Yogic Practitioner Group and Non Practitioner Group. In fact, both the groups constituted of 20 students each from the School. Group A (Yogic Activities group) received Yogic Programme that consists of Asanas, Pranayamas and, Bandhas and Group B (control group) did not receive yoga training during 6 weeks of experimental period. The result as obtained has revealed that there existed a significant difference in Cardiac Efficiency between the women swimmers. The students belonging to Yogic Activity group were found to be significantly higher in their Cardiac Efficiency as compared to Non Practitioner Group mentioned.

Keywords: Cardio-vascular efficiency, Asanas, Pranayamas and, Bandhas

Introduction

Today in the era of sufferings all around, everyone needs peace of mind. Yoga is our traditional heritage which can balance body, mind and soul and bestow peace.

*“Yogen chittasya Padena Vaca
Malam Shrirasya Ca Vaidyakena
Yopakarottam Parvaram Muninam
Patanjali Pranjali Rana tusme*

“I bow before the noblest of sage, Patanjali, who brought serenity of mind by his work on yoga, clarity of speech by his work on grammar, and purity of body by his work on medicine” (Ayurveda).

The word Yoga has been derived from the Sanskrit word Yuj which means to join. The unity or joining is described in spiritual terms as the Union of individual consciousness. But in practical life, yoga is a means of balancing and harmonizing the body, mind and emotions. This is done through the practice of Asanas, Pranayam, Mudra, Bandh and meditation. Yoga is an ancient system of training the body, mind and soul. Its main objective is the development of the whole individual. Yoga was practiced four thousand years ago and “the fact that today Yoga enjoys ever increasing popularity even in the western world, indicates its values. Yoga makes people stronger, healthier and more cheerful. Most of the experiments show that yoga would cause the basal metabolic rate to Increase. Yogasana effectively care-body fat percentage removing deposits of excess fat and redistributing fat over the body in the correct position. However till-date neither any information nor research report on yoga in relation to cardiac efficiency of female swimmers is available. It was therefore desirable to see if yoga can contribute to enhance the cardiac efficiency of female swimmers.

In the age of globalization, the world is going to be a global village with the development of communication and transport. The people of various parts of world are sharing a common platform on many issues. Interestingly the major part of research done in the field of yoga is by foreign scientists. They have already estimated the value of applied aspect of yoga in a big way and at present moment hundreds and thousands of highly strung executives, businessman, factory workers, students and people at large are happily paying to learn the yogic techniques, so that they can avoid physical and mental disorders resulting from the tension generated by affluent and modern living (Manchanda and Keshwani, 1974).

The various relaxation techniques used throughout the world like, Progressive Relaxation, Breath control, Relaxation Response, Autogenic Training, Systematic Desensitization Bio-feed back etc. have more or less yogic elements excluding religious significance. The world of sports has also not remained untouched from the applied aspect of yoga. The research done in various aspects of yoga indicate that yoga can help to improve competitive performance in the sports like Archery, Rifle shooting, Squash, Golf, and other sporting events. Cardiac efficiency is an important quality to be developed by the sportsmen. Health, endurance, nutrition and general well-being, all depend upon a common denominator. The circulatory fitness is the ability of the heart, blood vessels, blood and lungs to bring and deliver oxygen to the body.

Cardiac- efficiency mainly depends on the cardiac output, the pulse rate and the blood pressure. Heart is the vital organ of our body. The muscle of the heart and the blood vessels must be strong enough to send the required amount of oxygen and nutrition, through the blood. So, it can be said that Cardiac efficiency represents one's whole health. Physical fitness is the capability of the heart, blood

vessels, lungs and muscles, to function at operative efficiency (Bud getchell, 1976)

The immediate and long term effects of regular exercise, as outlined, demonstrate why the incidence of cardiovascular disease has consistently has consistently lower in physically active people than those who led more sedentary lives (Franle Vctale,1973) Cardiovascular tests have shown possible relationships, sometimes, with functional manifestations of circulatory respiratory endurance (H. Clarke & D.H. Clarke, 1987).

In activities such as Yogic Practices, swimming, jogging, bicycling, walking which encourage a free flow of blood back to the heart, the contraction of the heart muscle returns large volumes of blood to the heart. As the heart gets stronger, it pumps more blood and aerobic capacity increases. The more blood that flows brings moral oxygen to the tissues; an increase in aerobic capacity and the ability to do more work without fatigue.

Objectives of the Study

More distinctively the objectives of this study were:

- ❖ To study the effect of selected yogic practices on the cardiac efficiency of female swimmers (Experimental group).
- ❖ To study the effect of cardiac efficiency of female swimmers (Control Group).
- ❖ To compare the cardiac efficiency of female swimmers of the experimental and control group.

Materials and Method

Selection of Subjects

40 female swimming players belonging to the 9th, 10th, 11th and 12th standard of Government Senior Secondary School Jalandhar, Punjab were selected on random basis. Out of the 40 subjects, 20 were included in the experimental group and the remaining was studied as the subject of control group. All the subjects explain the purpose of study and urge to put their best during training.

Reliability of Data

To obtain reliable measurement, the instrument/tools which was used for the purpose of present study namely, Harvard Step Test to assess the Cardio-vascular efficiency and Training programme of Yogic Activities consisted of various yogic practices on the basis of standard yogic literature (Kualayananda 1964 & 1966; Iyenger, 1986; Yogeshwar, 1980). No tools are required except mat.

Collection of Data

To collect the required data, the investigator had drawn the sample carefully to represent the population and to check the appropriate tools prior to final administration pre-test and post-test testing and training programmes were conducted on chosen sample.

Test Administered

The Harvard Step Test (HST) was selected to find out the status of the cardio-vascular system (endurance fitness level).

Procedure

- ❖ For measuring cardio-vascular endurance, the test was conducted as follows:
- ❖ Step up on to a standard gym bench once every two seconds for five minutes (150 steps)
- ❖ Have someone to help you keep to the required pace
- ❖ One minute after finishing the test take your pulse rate (bpm)- Pulse 1
- ❖ Two minutes after finishing the test take your pulse rate (bpm) - Pulse 2
- ❖ Three minutes after finishing the test take your pulse rate (bpm) - Pulse 3

Figure-1
The Step-Up Action



Analysis

Analysis of the result is by comparing it with the results of previous tests. It is expected that, with appropriate training between each test, the analysis would indicate an improvement. Using the three pulse rate your level of fitness can be determined as follows:

$$\text{Result} = 30000 \div (\text{pulse1} + \text{pulse2} + \text{pulse3})$$

Yogic training: Asana/ Pranayamas with Bandhas as experimental treatment.

Procedure

Asana: The Mountain Pose (Tada-asana)

Stand with both feet touching from the heel to the big toe, keeping the back straight and the arms pressed slightly against the sides with palms facing inward. Slightly tighten or flex the muscles in the knees, thighs, stomach and buttocks maintaining a firm posture. Balance your weight evenly on both feet, Inhale through the nostrils and lift the buttocks off the legs arching the back and thrusting the abdomen forward and tilt the head as far back as possible.

Trikona-asana (The Triangle Pose)

Stand with the feet together and the arms by your sides. Separate the feet slightly further than shoulder distance apart. Inhale and raise both arms straight out from the shoulders parallel to the floor with the palms facing down. Exhale slowly while turning the torso to the left, bend at the waist and bring the right hand down to the left ankle. The palm of the right hand is placed along the outside of the left ankle. The left arm should be extended upward. Both legs and arms are kept straight without bending the knees and elbows. Turn the head upward to the left and gaze up at the fingertips of the left hand. Inhale and return to a standing position with the arms outstretched. Hold this position for the duration of the exhaled breath. Exhale and repeat steps 4 - 6 on the opposite side.

Sarvangha-asana

Lie flat on the back in the shava-asana. Inhale through the nostrils. Place the palms face-down on the floor. Keeping the hips on the floor, bend the knees and bring them up toward the stomach while exhaling. Inhale slowly through the nostrils, press down on the hands and lift the torso from the waist up off the floor, arching the spine backwards and straightening the arms. Keep the hips on the floor. Inhale, then while exhaling, raise the legs straight up perpendicular to the floor. You may support your hips with your hands or leave the arms flat on the floor, whichever is most comfortable. The legs should be together with the knees straight and toes pointed straight up. Keep the head straight without turning it to either side. The chin should be pressed against the chest. Breathe gently through the nostrils while the posture is held. Reverse the steps to return to the shava-asana.

Pranayamas:

Bhastrika

Take deep breath and release. Do it effortlessly, fill up your lungs and force the entire breath out. Do it with a rhythm. Imagine that all the energy of the Cosmos is entering into you. Feel that all your poisons are being expelled. Do it for 5 minutes if you are relatively healthy. Repeat for another five minutes if you are ailing, but gradually as you get accustomed. Bhastrika is very important

for all kinds of skin problems, however serious and however strange. Not only leucoderma but also people suffering discoloration due to burns have benefitted from sincerely practising this pranayama everyday.

Kapalbhati




Take in air into your stomach and push it out with a jerk. Only your stomach should move and not your body. Your outbreath should cause the adams apple to move as it pushes through the throat. Normally one should do this for fifteen minutes, five minutes each three times. People with cancers and other chronic diseases should do this twice a day totalling 30 minutes. Swamiji places a great importance on this pranayam which he says will help diabetes, regenerate insulin producing beta cells and also help the organs in the stomach, the lungs and the heart. It will open blocked arteries in the heart.

Anulom Vilom

Another very important pranayam. Sit straight, close the right nostril with your thumb. Place the forefinger on the forehead, then breathe in deeply with the left nostril. Now close the left nostrils with the third and fourth fingers joined together and breathe out through the right nostril. Take a deep breath again through the right nostril, close it with the thumb, release the left nostril and breathe out. This is one cycle. Repeat this cycle continuously for five minutes. In total do it for fifteen minutes five minutes at a time three times. This pranayam recharges the entire body, opens all closed apperatures, sets right the entire flow of energy within the body and activates the chakras.

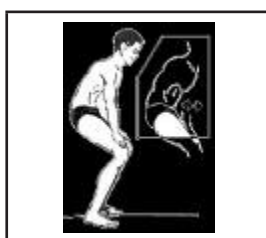
Yogic Training: Asana/ Pranayama/ Bandhas

Asana

Tada-Asana	Trikona-Asana	Sarvanga-Asana
		

Pranayama

Bhastrika	Kapalbhati	Anulom Vilom
		

Bandhas**Figure:1****Data Analysis and Results**

The present study and attempts to analyze and interpret the result obtained from female swimmers of Govt. Senior Secondary School for Girls, Jalandhar after completion of 6-weeks of training programme in Yogic practices.

Table -1

Comparison between pre and post-test data of Experimental Group (Yogic Practitioner) on Cardiac Efficiency

Test	N	Mean	SD	SEM	Df	T
Pre-test	20	64.25	3.64	0.81	38	17.00*
Post-test	20	81.25	2.21	0.49		

*** Significant at 0.01 level**

Tabulated value = 2.02

Table -1
Comparison between pre and post-test data of Experimental Group (Yogic Practitioner) on Cardiac Efficiency

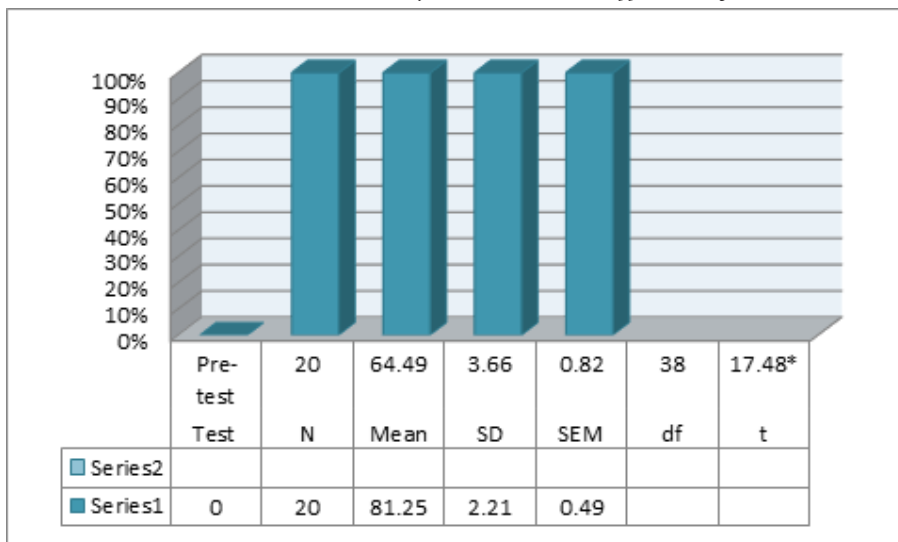
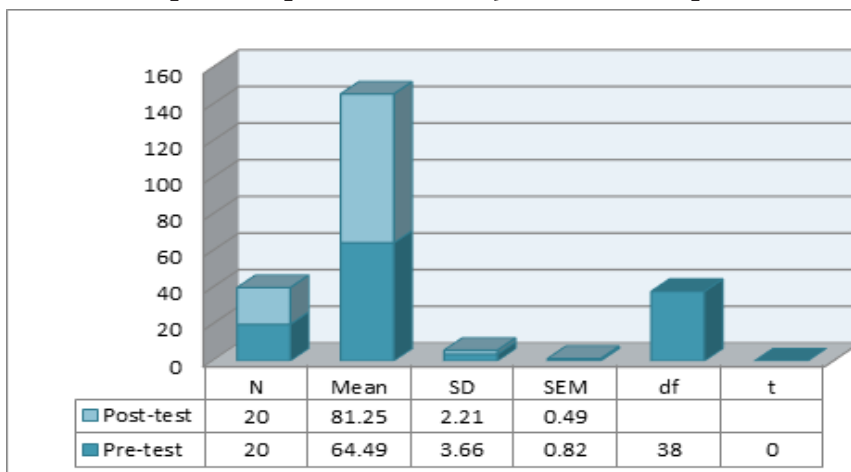


Table-1 revealed that the 't' ratio was 17.00 between pre test and post test of experimental and control group. t-ratio is statistically significant at 0.01 level of confidence. In Yogic Activities group (experimental group) the mean score of post test (M=81.25) is significantly higher than the mean scores of the post test (M=64.25) of Non-Practitioner group. Therefore, the Yogic Activities group players were found to be better in their Cardiac Efficiency after the six week of training programme in their respective activities than the Non-Practitioner group (Fig. 1). Thus it may be concluded that Yogic practitioner have a significant improvement on cardiac efficiency.

Table -2
Comparison between pre and post-test data of Control Group on Cardiac Efficiency

Test	N	Mean	SD	SEM	df	T
Pre-test	20	63.36	3.64	0.81	38	0.973
Post-test	20	64.49	3.66	0.82		

Table -2**Comparison between pre and post-test data of Control Group on Cardiac Efficiency**

The pre-test mean scores 63.36 (SD=3.64) and post-test mean scores of 64.49 (SD=3.66) show that there exists no significant difference in the pre-test and post-test cardiac efficiency of control group female swimming players. It is evident that the mean scores of Non Practitioner Group show no remarkable improvement in Cardiac Efficiency. Thus it may conclude that there would be no significant effect on the cardiac efficiency of non-practitioner group.

Table -3:**Comparison between Experimental and Controlled Group on Cardiac Efficiency after test**

Group	N	Mean	SD	SEM	df	T
Control	20	64.49	3.66	0.82	38	17.48*
Experimental	20	81.25	2.21	0.49		

*** Significant at 0.01 level**

Tabulated value = 2.02

Table -3:

Comparison between Experimental and Controlled Group on Cardiac Efficiency after test

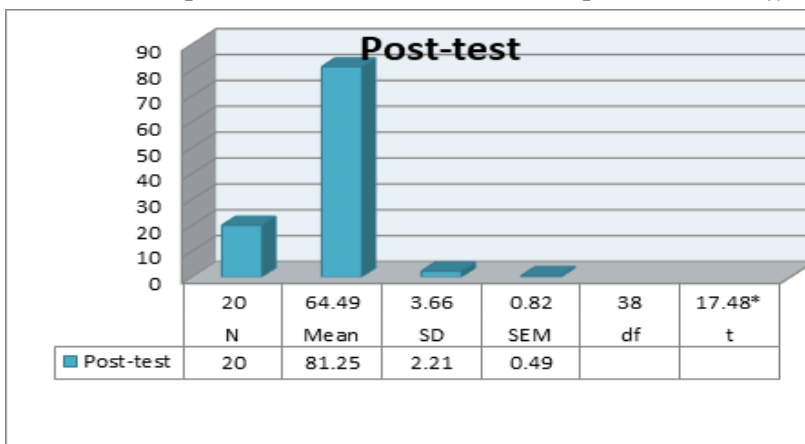


Table-3 reveals that in Yogic Activities group the mean score of post test (M=81.257) is significantly higher than the mean scores of the post test (M=64.493) of Non Practitioner group. Therefore, the Yogic Activities group students were found to be better in their Cardiac Efficiency after the 6-weeks training programme than the Non Practitioner group. The comparative results between the subjects of Yogic practices and Non Practitioner indicate that there would be a significant difference between the post-test cardiac efficiency of Practitioner group and non-practitioner group.

Statistical Technique Employed

The result of Cardio Vascular efficiency of the control and experimental group were equated on the basis of respective mean, standard deviation, analysis of variance between two groups (t test) Statistics were employed as the statistical treatment in order to find out the existence of significance differences if any between the pre-test and post test data of the experimental and control group on Cardio Vascular efficiency.

Discussion

From the results it is evident that the six week of yogic training programme showed significant difference in Cardiac Efficiency between the female swimmers of Govt. Senior Secondary School for Girls, Jalandhar,. The findings is supported by the study conducted by Ganguly and Gharote (1974) Cardiovascular efficiency is influenced by a long term yogic training has shown improvement which is significant at 0.05% level of probability. These results were obtained on the male students of the G.S. College, Lonavala who underwent yogic training for 9 months during which they did not engage in any other vigorous physical activity except yogic routine. Programme of vigorous and resistance exercise is usually advocated for the improvement of cardiovascular efficiency. But yogic training programme which is not a vigorous one, also helps to improve the cardiovascular efficiency is

a new finding. This seems to be a great contribution of yogic practices. Naruka (1983) investigated the effects of pranayama on circulatory and Respiratory variable and found a significant improvement in respiratory function and pulse rate and an increase in vital capacity, breath-holding time and cardio-vascular efficiency. He concluded that pranayama could be a useful method of improving cardio-respiratory efficiency. Daniels (1983) investigated heart rate and respiration functioning and found biofeedback training effective to get the desired patterns of heart rate and breathing, whereas investigators in Yoga also found Yogic training intervening these factors successfully. Research reports by Robson (1973), Bhole and Karambelkar (1972) and Khodeskar (1988) are evident that breath control is increased as a result of Yogic training. Pansare et al. (1986) assessed Cardiac efficiency by Harvard step test in medical Student before and after yoga training and found significant improvement in fitness scoring after yoga. In fact, Yogic training schedule in the present study included such exercise, namely, pranayama in which breath control and breathing patterns are given main emphasis. Therefore, it is likely that this element of Yogic training intervention of the present study might have contributed towards better enhancement in cardiovascular efficiency of Yogic Practitioner group than the Non Practitioner group.

Conclusions

Findings of this exploratory study suggest that the treatment of six week yogic training was found effective in improving Cardiac function. It can be safely being stated that one can efficiently improve cardiovascular condition by participating in Yogic Activities.

References

- ❖ Annakili, C.M (1993). A Comparative study of Yoga Asana and Gymnastic in selected Physical, Physiological and Psychological variables M.Phil. Alagappa University, India.
- ❖ Bera, T.K. (2004). Physical work capacity and oxygen consumption in Exercise and Yoga. Yoga-mimamsa, Vol. 35, No. 3 & 4: 183-192.
- ❖ Chaya, M.S, Nagendra H.R. (2008). Long-term effect of yogic practices on diurnal metabolic rates of healthy subjects. International Journal of Yoga Vol:1, Page :4.
- ❖ Cunningham, D.A., and Hill, J.S. (1975). Effect of Training on Cardiovascular Response to Exercise in Women. J. Applied Physiology, 39:891-895.
- ❖ Ganguly S.K. and Gharote M.L. (1973) Cardiovascular efficiency before and after yogic training. Yoga Mimamsa vol.17 (1) : 89-97.
- ❖ Kvalayananda, S and Vinekar S.L (1963) Yogic Therapy its basic Principles and methods. Central Health Education Bureau P-96.
- ❖ Pansare, M.S. (1986). Yoga and physical fitness study, B.J. Medical College, Research Project.





Effect of Sand Plyometric Exercise on Speed and Strength of Sprinters, Throwers and Jumper

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Abstract

The purpose of this study was to find out the effect of sand plyometric exercises on speed and strength of jumper, throwers and sprinters of male group athletes of B.P.ED students of Lakshmi Bai National Institute of Physical Education, NERC Guwahati. Only 40 athletes, 10 each from sprinters, throwers, jumpers were taken. The study was conducted in control condition. To compare the means, descriptive statistics with ANCOVA was employed. Further if the obtained result is significant the Scheffe's post hoc test was employed. For testing the hypothesis, the level of significance was set at 0.05 level. The Control group of LNIPE, NERC did not show any significant improvement on speed and strength. It was found that the throwers developed a significant improvement on speed comparing with the other Experimental group (Sprinters, Jumper) with adjusted mean of 7.209, 7.227 and 7.247 respectively.

The researcher from the study can also be inferred that sand plyometric training has a huge impact on sports performance when it was compared with the pre & post-test performance on LNIPE athletes.

Keywords: Plyometric, ANCOVA, Scheffe's post hoc test.

Introduction

Plyometric training (PT) is a very popular form of physical of healthy individuals that has been extensively studied over the last decades. Plyometrics also known as jump training is a training technique designed to increase muscular power and explosiveness. Originally developed for Olympic athletes, plyometric training has become a popular workout routine for people of all ages, including children and adolescents.

Plyometric training enhance tissues abilities and train nerve cells to stimulate a specific pattern of muscle contraction so the muscle generates as strong a contraction as possible in the shortest amount of time (Blattner et. al., 1979). A plyometric contraction involves a rapid muscle lengthening movement (eccentric phase) first, followed by a short resting phase (amortization phase), then an explosive muscle shortening movement (concentric phase), which enables muscles to work together in doing the particular motion (Such L. V., 2012). Strength alone is a good indicative of speed. Although muscle strength is correlated to sprint performance, research has shown that combining both resistance training and plyometric training will have better effects on training. While plyometric assists in rapid force development (power), weight training assists in maximal force output (strength) (Fatouros et. al., 2000). The purpose of plyometric is to emphasize speed-based power. One activity that requires speed-favoured power is high jumping: ultimately, jump height is determined by how fast one is moving once one's legs have left the ground (Gollnick et. al., 1981). Good jumpers may not have exceptional leg strength, but they can produce it at exceptional speeds. Studies have shown that training a plyometric activity such as drop jump allows the athlete to increase the pre-activation and pre-stretch of the muscles and allows the coach to assess landing techniques that are vital to the production of force. With the increase of force production, an athlete becomes more powerful explosive and stable when performing tasks decreasing risk of injury and increasing overall performance on the playing field (Hedrick et al 1996). Plyometric training (PT) is a technique used to increase strength and explosiveness. It consists of physical exercises in which muscles exert maximum force at short intervals to increase dynamic performances.

Methodology

Only 40 athletes, 10 each from sprinters, throwers, jumpers ,male group athletes of B.P.ED students of Lakshmibai National Institute of Physical Education,NERC Guwahati served as a subject for the study. Researcher used standing broad jump and 50 m. Dash as a tool for research study.

Administration of Test

Standing Broad Jump

- ❖ **Purpose:** The aim of this test is to measure the power of leg in jumping horizontal distance.
- ❖ **Equipments:** Floor mat/ long jump pit may be used, measuring tap, marking tap/chalk or page.
- ❖ **Test Administration:** A demonstration of the standing board jump is given to a group of subjects to be tested. The subject is asked to stand behind the starting line with the feet parallel to each other. The subject is instructed to jump as faster as possible by bending knees and swings arms to take off for

the board jump in the forward direction. The subject is given three trails.

- ❖ **Scoring:** The distance between the starting line and the nearest point of landing provides the scores of the test. The best (maximum distance) trail is used as the final scores of the test.

50 M. DASH

- ❖ **Purpose:** The aim of this test was to determine speed.
- ❖ **Equipments:** Area of desired length preferably on an athletic track, playground of football field with a marked starting line and a finish line of 50 m., two stop watches Measuring tape, cone markers. A thorough warm up was given, including some practice starts and accelerations.
- ❖ **Test Administration:** The tester should give in advance, instruction to a group of 10-15 subjects as follows “You are required to take any position behind the starting line. Wait for the start signal. On receiving the command go! You are to start running as fast as possible till you reach the finish line. Warm up just before the sprint test”

Administration of Training Programme

The details of the training programme administered to the subjects are briefly described as follow;

- ❖ Four days a week training session.
- ❖ Every day training session for 45 minutes.
- ❖ Total training programme duration of 8 weeks.

In order to find out the effect of sand plyometric exercise on speed and strength of sprinters, throwers and jumpers, One-way analysis of covariance (ANCOVA) was applied. For testing hypothesis the level of significance was set at 0.05 level.

Training

Table No.4: 8 week training program of sand plyometric for Sprinters, Throwers, and Jumpers.

Training weeks	Plyometric drills	Sets x Repetitions	Training intensity
1.	Side to side lateral jumps (single, double)	2 x 15	Low
	High knee	2 x 15	Low
	Power skips	2 X10	Low
	Standing broad jump	2 x 6	Low
2.	Step ups	2 x 15	Low
	Box side shuffle	2 x 15	Low
	Forward leaps	3 x 10	Medium
	Standing broad jumps	2 x 8	Medium
3.	Side to side ankle hops	2 x 12	Low
	squat with jumps	2 X 7	Low
	front cone hop	2 x 12	Medium
	lateral cone hop	2 x 12	Medium
4.	Standing long jumps	2 x 12	Low
	Single leg bounding	2 x 15	Medium
	Lateral jump over barrier	3 x 12	Medium
	Front box jumps	2 x 12	Medium
5.	Single leg bounding jump to box	3 x 12	High
	Double leg hops	2 x 10	Low
	Lateral cone hops	3 x12	Medium
	Lateral jump over barrier	3 x 12	High
6.	Jump to box	2 x 10	Low
	Double leg hops	4 x 5	Medium
	Lateral cone hops	2 x 10	Medium
	Front box jump	3 x 12	High
7	Single leg bounding	2 x 10	Low
	Jump to box	2 x12	Medium
	Double leg hops	4 x 5	Medium
	Multiple box jumps	4 X 6	High
8.	Jump to box	2 x 11	Low
	Depth jump	4 x 5	Medium
	Double leg hops	3 x 6	Medium
	Pyramiding box jumps	3 x 5	Medium

Result of the Study

50 m. dash was used to measure Speed. Hence the data related to comparison of adjusted mean scores of speed of Experimental group and Control Group by considering Pre- Speed as covariate were analyzed by one-way analysis of covariance (ANCOVA) and the results are given in Table 5.

Table 5:

Summary of One Way ANCOVA of Speed of Sprinters, Throwers, Jumpers and Control Group by considering Pre-Speed as covariate

Source of Variance	df	ssx.y	Mssy.x	fy.x-Value	Significant Value	Effect Size
Training group	3	0.571	0.190	7.405*	0.01	0.388
Error	35	0.899	0.026			
Total	40	2136.143				

***Significant at 0.5 level. The table value required at 0.5 level with df 3 & 35 is 2.87**

From the Table 5, it is evident that the adjusted F-value of Speed of Experimental Group is 7.405*, which is higher than the table value is 2.87 with df 3 and 35 required for significant at 0.05 level. Since the value of F-ratio is higher than the Table Value it indicates that there was significant difference among the adjusted mean scores Speed of Sprinters, Throwers, Jumpers, and Control Groups differ significantly when Pre-Speed was taken as covariate. Thus the null hypothesis there is no significant difference in adjusted mean scores of Speed of Sprinters, Throwers, Jumpers and Control Groups by taking their Pre -Speed was taken as covariate is rejected.

Table 6: Group-wise adjusted mean, SE and significance of difference between adjusted means scores of Speed of Sprinters, Throwers, Jumpers and Control Groups

Groups	Adjusted mean	SE	Thrower Group	Jumper Group	Control Group
Sprinter Group	7.227	0.051	0.018	0.020	0.291*
Thrower Group	7.209	0.051		0.038	0.309*
Jumper Group	7..247	0.062			0.271*
Control Group	7.518	0.055			

***Significant at 0.05 level**

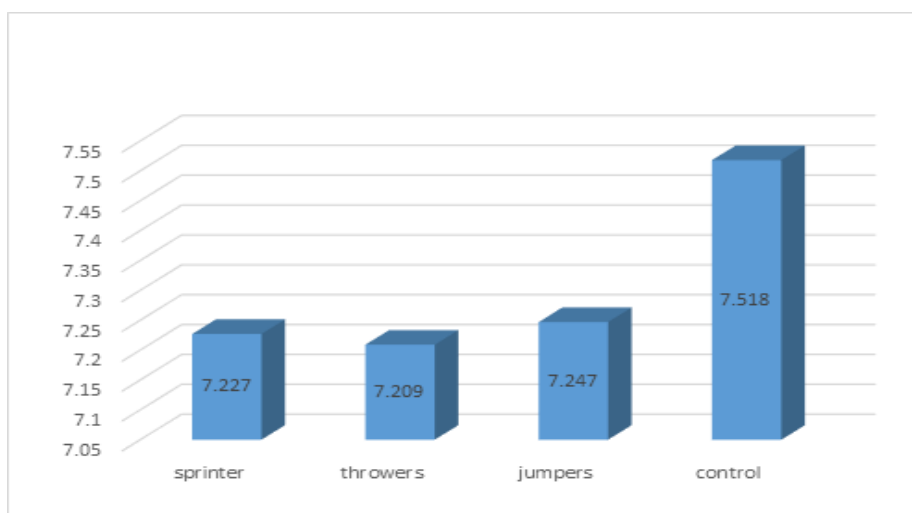


Figure 1: Adjusted mean scores of Speed of Sprinters, Throwers, Jumpers and Control Groups

Table No. 7: Summary of One Way ANCOVA of Leg-Strength of Sprinters, Throwers, Jumpers and Control group were Pre- Strength as covariate

source of variance	df	SSx.y	MSSy.x	Fy.x-Value	Significant Level	Effect Size
Training Groups	3	0.105	0.035	7.984	0.000	0.406
Error	35	0.154	0.004			
Total	40	229.936				

Table No. 8: Group-wise adjusted mean, SE and significance of difference between adjusted means scores of leg strength of sprinters, throwers, jumpers and Control Group

Groups	Adjusted mean	SE	Thrower Group	Jumper Group	Control Group
Sprinter Group	2.412	0.021	0.019	0.040	0.101
Thrower Group	2.393	0.021		0.059	0.082
Jumper Group	2.452	0.021			0.141
Control Group	2.311	0.021			

***Significant at 0.05 level**

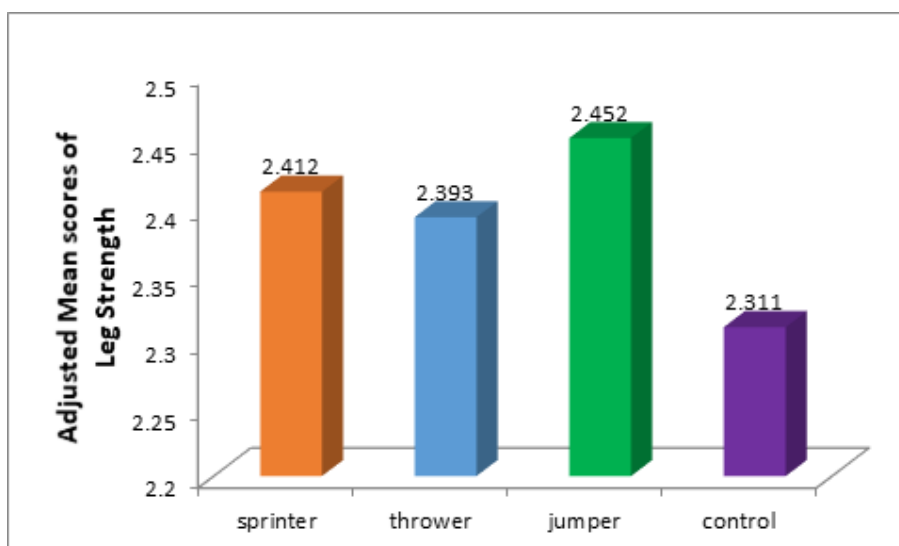


Figure 2: Adjusted mean scores of leg Strength of sprinters throwers, jumpers and control groups

On the whole it may be said that Subjects of Sprinters, Throwers, Jumpers Group were found to have significantly higher Leg Strength as compared to Control Group.

Discussion of Finding

Further the findings of the current study revealed sand plyometric exercises training program was more effective for speed and leg strength because adjusted mean scores value of experimental group was found greater than control group. It may be attributed due to the fact that sand plyometric exercise program consisted of hops, jumps, depth jumps, bound activated body parts and resulted better speed and strength of experimental group.

The present result of the study stated the three experimental groups had significant improvement on speed and strength of leg when comparing to the control group due to eight weeks of sand plyometric exercise training.

Conclusions

- ❖ The Control group of LNIPE, NERC did not show any significant improvement on speed and strength.
- ❖ The Experimental group (Sprinters, Throwers and Jumpers) had shown significant improvement on speed and strength of the LNIPE NERC athletes after 45 days of Sand Plyometric training.
- ❖ It was found that the throwers developed a significant improvement on speed comparing with the other Experimental group (Sprinters, Jumper) with

adjusted mean of 7.209, 7.227 and 7.247 respectively.

- ❖ It was found that the jumpers developed a significant improvement on leg strength comparing with the other Experimental group (Sprinters, Thrower) with adjusted mean of 2.452, 2.412 and 2.393 respectively.
- ❖ The researcher from the study can also be inferred that sand plyometric training has a huge impact on sports performance when it was compared with the pre & post-test performance on LNIPE athletes.

References

- ❖ Aalizadeh, A., Shirkhani, S., & Foroughi Borazjani, A. (2015). The effect of Short-term Plyometric Training Program on Sprint, Strength, Power and Agility Performance in non-athletic Men. *Biosciences Biotechnology Research Asia*, 12(2), 1389-1395.
- ❖ Arabatzi, F., Kellis, E., & De Villarreal, E. S. S. (2010). Vertical jump biomechanics after plyometric, weight lifting, and combined (weight lifting+ plyometric) training. *The Journal of Strength & Conditioning Research*, 24(9), 2440-2448.
- ❖ Arazi, H., Coetzee, B., & Asadi, A. (2012). Comparative effect of land and aquatic based plyometric training on the jumping ability and agility of young basketball players. *South African Journal for Research in Sport, Physical Education and Recreation*, 34(2), 1-14.
- ❖ Mohamad H. Ramlan, P. P. (2018). Effect of plyometric training on grass surface and concrete surface on jumping performance among volleyball athletes. *Malaysian journal of movement health & exercises*, vol. 7 no. 2.





Critical Analysis of Ncert Class 9th Health and Physical Education Curriculum and Suggested Reforms

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Health and Physical well-being especially of children and youth has been one of the core curricular concerns of school education in India since long. The importance of Health and Physical Education has been realized not only as a means to ensure physical fitness and well-being of students but also as a significant concern to be made an integral part of school education curriculum. . However, an attempt to look into the process of evolution of this area indicates varied perceptions about its nature, scope, its educational implications and modalities of its inclusion in the school education system. The themes and sub themes set for the curriculum were:1)Human body: illness and disease, communicable and non communicable diseases, growth and development. 2)Orientation to physical education & sports education: physical education, objectives of physical education, warming up and cooling down, physical fitness, measurement of growth, sports training, excellence in performance, fatigue, load and adaptation, relaxation, knowledge and proficiency in sports and motor skill acquisition, physical, psycho-social development, ethics in sports, yoga.3) We and environment: waste segregation and management.4)Food and nutrition: dietary requirements of human body, dietary requirements with special reference to sports participation, malnutrition.5) Safety and security: protection of self and others, sexual harassment, 6) Social health: social customs, protection of natural resources for health, community education.7)Consumer health and sports services: rights and responsibilities for health, agencies promoting sports.

Introduction

Health and Physical well-being especially of children and youth has been one of the core curricular concerns of school education in India since long. The importance of Health and Physical Education has been realized not only as a means to ensure physical fitness and well-being of students but also as a significant concern to be made an integral part of school education curriculum. . However, an attempt to look into the process of evolution of this area indicates varied perceptions about its nature, scope, its educational implications and modalities of its inclusion in the school education system. Over the years not only newer dimensions have been added to this area but it has also been

undergoing epistemological reconstruction. This curriculum area adopts a holistic definition of health within which physical education and yoga contribute to the physical, social, emotional and mental development of a child. The precondition for all development is healthy physical growth of all children. This requires that the basic needs in terms of adequate nutrition, physical exercise and other psychosocial needs are addressed. Participation of all children in free play, informal and formal games, yoga and sports activities is essential for their physical and psychosocial development. Simple adaptation of playgrounds, equipment and rules can make activities and games accessible to all children in the school. Children can achieve high levels of excellence in sports, athletics, gymnastics, yoga and performing arts such as dance. When the emphasis shifts from enjoyment to achievement, such training can make demands of discipline and practice that can create stress at this stage. The more recent addition to the curriculum is yoga. As per NCF-2005, the entire group comprising health, physical education and yoga must be taken together as a comprehensive health and physical education curriculum, replacing the fragmentary approach current in schools today. As a core part of the curriculum, time allocated for games and for yoga must not be reduced or taken away under any circumstances. Given the multidimensional nature of health, there are many opportunities for cross-curricular learning and integration. Activities such as the National Service Scheme, Bharat Scouts and Guides, and the National Cadet Corps are some such areas.

NCERT curriculum for class 9 is broadly divided into 7 units and sub themes as follows:

Human body: illness and disease, communicable and non communicable diseases, growth and development

Analysis: NCERT curriculum has suggested causes of illness and procedure to deal with various kinds of illnesses. I suppose this is a disease oriented model of introducing human body to the students besides the students are already learning about diseases in science. Instead the unit in question should have been only limited to non-communicable and lifestyle disease/disorders (cancer, diabetes, heart problems etc.) because they need to understand the fitness related factors affecting health in physical education and need not necessarily learn about managing various illnesses that seems to be more of a first aid practice or the one that is provided by medical practitioners. This sub theme can be done away with in future. Introduction to drugs and doping can be added.

Suggested activities/processes: the activities should be specific to our objectives like there is a recreation game using test tubes filled with water and water plus chemical that if added to water is not visible but affects the quality of water. The students holding the pure water test tubes and contaminated water test tubes then meet each other and transfer some drops from their test tube into

the other person's test tube. After about 10 minutes, the test tubes are tested for contamination using a blotting paper that changes color if infected and we see that how fast HIV/AIDS spreads if we take it casually. Plastic bottles and cancer, using gaming cards, worksheets etc. Students can then be encouraged to share their experiences through discussions and explanation.

Orientation to physical education & sports education: physical education, objectives of physical education, warming up and cooling down, physical fitness, measurement of growth, sports training, excellence in performance, fatigue, load and adaptation, relaxation, knowledge and proficiency in sports and motor skill acquisition, physical, psycho-social development, ethics in sports, yoga.

Analysis: introduction to Physical Education at this stage would be more appropriate sub-theme because it will am apt interface for next higher classes where the meaning, importance and objectives of physical education are being covered adequately in the syllabus. Sub theme 1 and 2 can therefore be clubbed together. Warming up and cooling down seems to be out of context here because these are specific terms for professional preparation of coaches. Meaning and concept of physical fitness is recommended. "What are the effects of Physical fitness on our human body?" is a form of question that should not be used in a curriculum document besides use of poor English language. Importance of physical fitness is more appropriate. Drawing of fixtures at this stage is too technical and is of no use because no student is given any such responsibility at this stage. A class nine student can be at best asked to keep a record of the results, announce the results.

Suggested activities/processes: it is important to give students a wholesome experience rather than testing their fitness at this stage. Games like "langdee taang" (hopping on one leg and chasing to tag) tests the lower leg strength, balance and coordination. "vish amrit" (tag to freeze and tap to unfreeze") tests ability to run fast and slow, change direction while running. Circle/modified kho-kho is good for strength endurance, anticipation and reaction abilities besides developing physical fitness. A check list of observations during play can be a good idea to identify talent. "Sports training, load and adaptation sub themes are too technical at this stage. We can have biographies of renowned persons (excellent performers) instead of "performance excellence" which will not be of much interest to most of the class. It is unfair to recommend "marching" as suggested activity to teach ethics and morals in sports. Ethics and moral values are something that is imbibed and observed by the teacher rather than taught in a regimental manner. So this may done away with because fellow feeling and brother hood are outcomes and not to be taught but demonstrated by a physical education teacher. What is moral in one community could be immoral in other, so the teacher and student need to have a better understanding and there is less likelihood of ethics being taught at this stage. Yoga asana for physical development should be specified keeping in mind contra indications at adolescent age of boys and girls of this age. Healthy habits

could be a better alternative here.

We and environment: waste segregation and management.

Analysis: waste segregation, recycling, waste management is out of context for a physical education teacher to handle and learn appropriately by students in a physical education class. EVS teachers, science teachers are much better equipped to handle this topic and its related activities. Less said the better.

Suggested activities/ processes: Like other teachers, a physical education teacher can contribute in such topics by suggesting resource persons, not to litter during sports programs, distributing refreshments without using poly bags etc.

Food and nutrition: dietary requirements of human body, dietary requirements with special reference to sports participation, malnutrition.

Analysis: “Dietary requirements for pregnant and lactating mothers” appears to be too specialized for a class 9 student. Preparing dietary requirements at this stage is going to encourage cut and paste type of assignments without proper understanding. The emphasis is repeatedly on “eating more” rather than eating healthy. “Sports diet” can be replaced with “introduction to sports nutrition for young sports persons” or “components of a healthy diet”. Suggested activity “preparing check-list for various sports and games” is out of contest here.

Suggested activities/ processes: picture games, identifying and importance of eating different color foods, importance of fruits for a sports child, gather information about eating habits of your family members. Identify what is missing in their diets are some thought provoking topics.

Safety and security: protection of self and others, sexual harassment

Analysis: safety education and first-aid are different themes/sub themes and should be mixed up. “Fire injuries” is no term. It is either “burns” or “fire safety”. “Coping with accidents” is like mixing “mentos” with “soda”. Coping is a psychological term, whereas accident is something that requires safety and first aid. “first aid in case of drowning, water” is a meaning less sentence. It can be replaced with first for wounds, first aid for fainting, safety measures in swimming pool so and so forth. “Asking students to assimilate materials required to make a first- aid box like bandage, gauge, and crepe bandage, few medicines, gentian, biolet.....” meaning is not clear and why to name the branded medicines? “Sexual harassment” should be covered in social health and with related subject and not in safety and security.

Suggested activities/processes: taping and bandaging, demonstration of use of first-aid items, first aid for common injuries like nose bleed, cuts, fainting, epilepsy, heat stroke etc. are appropriate. Sprain and strain are more technical in nature to identify, understand and them manage by a ninth class student. Instead we can talk about “ankle sprain”, steps and procedures for R.I.C.E., CPR.

Social health: social customs, protection of natural resources for health, community education.

Analysis: Social health issues can be merged with health and fitness whereas others can be taken care of in “effect of culture on diet and nutrition and growth and development”. Topics like “age at marriage breast feeding, practices, family size, son performance...” are either irrelevant and out of context or not properly explained (in NCERT curriculum) to be dealt in a physical education class. “Protection of natural resources” is irrelevant to physical education and sports topic. “Performing the art of communication, demonstration and presentation of knowledge for healthy living” seems ambiguous and misleading hence it should be done away with.

Suggested activities/processes: none during the physical education class because the students are coming to the class with different intention and not to learn about social and natural resources. Yes some games can be advised in an EVS class for fun learning and teaching like quizzes, cross words etc. but not the other way round.

Consumer health and sports services: rights and responsibilities for health, agencies promoting sports.

Analysis: “Consumer rights” is not the physical education class forte. The topic should be dealt with in a social science class through extension lectures and activities as per social science curriculum. “Health services” component here is out of context. “Health and technology including telemedicine is “vague and inappropriate for a physical education class curriculum. Agencies promoting sports can be expanded to include specific bodies working in this field and their origin and history is vast enough to be fairly included but not under the heading “Consumer health and sports services”.

Suggested activities/ processes: history of various sports promotion schemes like “Army Boys Company”, “pay and play”, “Rajkuamari Amrit Kaur coaching scheme”, contemporary issues like media in sports, women in sports, organization set up of Sports Authority of India”, Indian Olympic Association are more relevant topics on which quizzes, interactions will be more fruitful.

Supplementary Observations

It is high time that NCF-2005 and HPE curriculum be revised as early as possible to make it more and more comprehensive and relevant. Unlike current practices, it is pertinent to understand the needs and capabilities in an inclusive health and physical education classroom with special reference to children with special needs. Apparatus and equipment improvised and activities modified accordingly. It is suggested that Yoga education should be an integral part of health and physical education at the secondary stage because both are activity oriented and philosophical and spiritual aspects of yoga and physical education

are being adequately addressed at higher stage of learning. There is an impetus from the government by making health and physical education mandatory at secondary stage that is a commendable effort in giving this subject its due place.

References

- ❖ Annual Report 2009-10, MHRD Govt. of India. 2011.
- ❖ Census of India 2011.
- ❖ Govt. of India. 2003. Draft of Inclusive Education Scheme, MHRD. Govt. of India. 2010.
- ❖ Kohama, A. 2012. —Inclusive Education in India: A Country in Transition. An Undergraduate Honors Thesis Presented to the Department of International Studies at the University of Oregon.
- ❖ NCERT. 2006. —Position Paper National Focus Group on Educational of Children with Special Needs. New Delhi: NCERT.
- ❖ Rao, I. 2003. —Inclusive Education in the Indian Context.” NCERT, 16-17 September 2003, New Delhi.
- ❖ Singh, J. P. 2006. —Need for Training Teachers in Inclusion. New Delhi: SSA
- ❖ SSA. 2006. Education of Children with Special Needs in SSA, Confluence Concept and Meaning of Inclusion. Vol. (1) New Delhi: SSA.
- ❖ SSA. 2013. ssa.nic.in/pab/pab-minutes-2012-13/chattisgarh/Annexure-%20II.pdf





A Personality Trait Profile Study of Various Age Group of Tennis Ranking Players

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Abstract

For the purpose of the present study a total of Fifty (n=50) i.e., twenty five (n=25) Under 16 and twenty five (n=25) under 18 boys tennis players and had represented state level tennis championship during 2018-19 were selected purposively from Assam Tennis Association. For the study Big Five Inventory questionnaire was used which contain 44 items selected to compare the personality profile of ranking tennis players of various age group (i.e., Under 16 and Under 18). To compare the mean score and standard deviation of personality trait U 16& U 18 age group ranking tennis players Independent 't' test was used and level of significance was set at 0.05

Keywords: Personality, Tennis Players,

Introduction

The world of games and sports has crossed many milestones, as a result of different achievements in general and their application in the field of sports in particular. Scientific investigation into performance of sportsman has been playing an increasingly importance role to attain excellence of performance in different sports. Now the sports-man have been able to give outstanding performance because of involvement of new scientifically substantiated training methods and means of execution of sports exercise such as sports techniques and tactics, improvement of sports grass, and equipment, as well as other components and condition of the system of sports training (Powel 1983).

Physical education is an integral part of education which gives instructions in the development and care of the body ranging from simple callisthenic exercises to a course of study providing training in hygiene, gymnastics and the performance and management of athletics games. Physical education and training, is an organized instruction in motor activities that contribute to the physical growth, health and body image of the individual. Physical Education means the education

through physical activities for the development of total personality of the child to its fullness and perfection in body, mind and spirit. The concept of physical education is generally understood as organization of some games, sports or physical education activities in schools. There are schools where specific periods are allocated for this subject in the time table. It has been noticed that during such periods, most of the students are either left on their own to play the games in a way they like or they are taken to the field where they engage themselves in different sports without the guidance or supervision of teachers. In some schools, selected students play games like football, cricket, volleyball, hockey, basketball, and so on. Annual sports are organized, but again in such activities only a few selected students participate. All these experiences taken together provide a basic understanding of the physical education as a concept. However, when we go into details of the aims, objectives and concepts of physical education, we learn that they go beyond these traditional beliefs.

Tennis is a racket sports and also known as Royal sports from ancient times.

Human organism is an extremely complex structure with unimaginable complex functions. Nowadays more and more emphasis is being laid on the study of psychological factors, which control, condition and modify human behaviour. Psychologists from all over the world are critically and enthusiastically examining psychological aspects of sports, applying research from related areas to athletic situations, and attempting to make sense out of sparse factual material, considering the popularity of sports, its length of existence and its impact in society, relatively little research has been done with athletes. Consequently how much is really known about aspects of psychology as they related to sports. In fact, a sport, in the wider perspective means pleasure as well as competition. As in other fields of human activity, competition has become very intense and all individuals and nations are striving very hard to gain supremacy over others. Olympics and other world competitions may stand testimony this fact.

Sports psychology is an application of principles, methods and techniques of analysis, appraisal and enhancement for optimizing human sport or human athletic behaviour. Sports psychology as an area of study involves many individuals of diver backgrounds with a common interest that of knowing more about athlete and sport. News paper accounts reflect psychology employed prior to or during competition and radio and television sports announcers and analysts delve in to the mysteries of explaining unexpected athletic performances. Coaches and athletes do likewise as do sports fans. But the major direction of the intellectual pennant, sport psychology has led to the recognition of the science of “human behaviours” as a replacement for practices, heretofore based on common sense, popular belief and half-truths.

The study of personality and the role it may play in performance has interested sports psychologists for decades. Perhaps this is because contributions that enhance our understanding of personality have the potential to be more than passing academic interests considered that many individuals involved in the sport environment have written and spoken about “born winners” and “born losers”. Such statements imply that in addition to physical talents there is a certain psychological mix – a chemistry– that successful athletes have and unsuccessful athletes do not.

Personality

Personality has been derived from the Latin word “persona” which means “mask” used by the actors to change their appearance. It is the combination of an individual thoughts, characteristics, behaviors, attitude, idea and habits.

Methodology

Selection of Subjects

For the purpose of the present study a total of Fifty (n=50) i.e, twenty five (n=25) Under 16 and twenty five (n=25) Under 18 boys tennis players who had represented state level tennis championship during the year 2018-19 were selected purposively from Assam Tennis Association.

Selection of Test Items

Big Five Inventory developed by Goldberg, 1993 which contain 44 items was selected to find out the personality profile of ranking tennis players of various age group (i.e., Under 16 and Under 18)

Administration of Questionnaire

Before distributing the questionnaire all the subjects were explained and instructed about the purpose and technique of attempting the questionnaire. After receiving the questionnaire every subjects did go through the questionnaire and the options of answers given and attempted accordingly. The scores of questionnaires for this study were recorded as per the norms

Description of Questionnaire

Total 44-item Inventory that measures an individual on the Big Five Factors (dimensions) of personality (Goldberg, 1993). Each of the factors is then further divided into personality facets. The Big Five Factors are (chart recreated from John & Srivastava, 1999):

Big Five Dimensions Facet (and correlated trait adjective)

- ❖ Extraversion vs. introversion Gregariousness (sociable)
- ❖ Assertiveness (forceful)
- ❖ Activity (energetic)

- ❖ Excitement-seeking (adventurous)
- ❖ Positive emotions (enthusiastic)
- ❖ Warmth (outgoing)

Agreeableness vs. antagonism Trust (forgiving)

- ❖ Straightforwardness (not demanding)
- ❖ Altruism (warm)
- ❖ Compliance (not stubborn)
- ❖ Modesty (not show-off)
- ❖ Tender-mindedness (sympathetic)

Conscientiousness vs. lack of direction Competence (efficient)

- ❖ Order (organized)
- ❖ Dutifulness (not careless)
- ❖ Achievement striving (thorough)
- ❖ Self-discipline (not lazy)
- ❖ Deliberation (not impulsive)

Neuroticism vs. emotional stability Anxiety (tense)

- ❖ Angry hostility (irritable)
- ❖ Depression (not contented)
- ❖ Self-consciousness (shy)
- ❖ Impulsiveness (moody)
- ❖ Vulnerability (not self-confident)

Openness vs. closeness to experience Ideas (curious)

- ❖ Fantasy (imaginative)
- ❖ Aesthetics (artistic)
- ❖ Actions (wide interests)
- ❖ Feelings (excitable)
- ❖ Values (unconventional)

Collection of Data

Data for this study was collected by administering the Big Five Inventory (Goldberg, 1993) which contained 44 items amongst different age groups ranking tennis players when they have enough time to spare for responding the questionnaire. Further, all the necessary instructions related to the administration of questionnaire were given and understood the subjects before the administration of questionnaire. Subject were also assured that the data collected from them will

be kept confidential and used only for interpreting the results of the present study

Statistical Technique

For analyzing the data and to find out the different psychological profile between different age groups ranking tennis players descriptive statistics and 't' test technique were used at 0.05 level of significance

Analysis of Data And Results of the Study

For the analysis of the present study, data was collected on personality traits which had been described in this chapter. In order to analyze the personality trait, Independent 't' test was employed at 0.05 level of significance to assess the results of the Under 16 and Under 18 tennis players. Sample of 50 tennis players from under16 & under18 age group were purposively selected. 25 subjects were selected in each age group. The variable selected for analysis was personality. In order to test the hypothesis, the independent t- test was employed at 0.05 level of significance.

Table 1

Descriptive Statistics of Personality Factors between U 16 and U 18 Tennis Players

Variables	Groups	N	Mean	Std. Deviation
Extraversion	U-16	25	27.08	3.99
	U-18	25	25.96	3.55
Agreeableness	U-16	25	30.88	6.43
	U-18	25	33.08	5.56
Conscientiousness	U-16	25	31.48	6.06
	U-18	25	32.76	5.54
Neuroticism	U-16	25	21.44	5.24
	U-18	25	23.96	4.76
Openness	U-16	25	33.08	6.13
	U-18	25	35.80	4.33

Table 1 shows the mean and standard deviation of personality factors between U 16 and U 18 Tennis Players age groups.

In Under 16 age group, Openness sub factor of personality mean scores of 33.08 and standard deviation values of 6.13 was found to be highest in comparison to all other sub factor of personality. The second highest sub factor of personality was Conscientiousness having mean scores 31.48 and standard deviation values 6.06. The third highest sub factor of personality was Agreeableness having mean scores 30.88 and standard deviation values 6.43. The fourth highest sub factor of

personality was Extraversion having mean scores 27.08 and standard deviation values 3.99. The lowest sub factor of personality was Neuroticism having mean scores 21.44 and standard deviation values 5.24.

Similarly in Under 18 age group, Openness sub factor of personality mean scores of 35.80 and standard deviation values of 4.33 was found to be highest in comparison to all other sub factor of personality. The second highest sub factor of personality was Agreeableness having mean scores 33.08 and standard deviation values 5.56. The third highest sub factor of personality was Conscientiousness having mean scores 32.76 and standard deviation values 5.54. The fourth highest sub factor of personality was Extraversion having mean scores 25.96 and standard deviation values 3.55. The lowest sub factor of personality was Neuroticism having mean scores 23.96 and standard deviation values 4.76.

The mean scores of the personality factors personality factors between U 16 and U 18 Tennis Players age groups represented in figure 1.

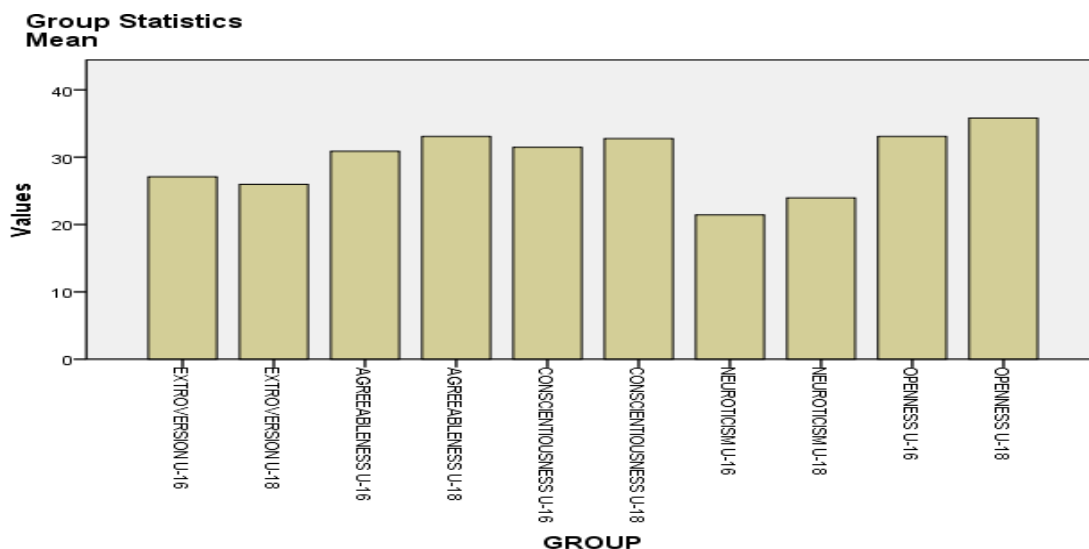


Figure 1: Mean Scores of the personality factor of under 16 & under 18 ranking tennis players.

Table 2
Independent t- test Analysis of Personality Factors between U 16 and U 18 Tennis Players

T		T-test for equality of means						
		Df	Sig. (2-Tailed)	Mean difference	Std. Error difference	95% Confidence interval of the difference		
						Lower	Upper	
Extroversion	Equal variances assumed	1.047	48	.300	1.120	1.070	-1.031	3.271
	Equal variances not assumed	1.047	47.343	.300	1.120	1.070	-1.032	3.272
Agreeableness	Equal variances assumed	-1.293	48	.202	-2.200	1.701	-5.621	1.221
	Equal variances not assumed	-1.293	47.034	.202	-2.200	1.701	-5.622	1.222
Conscientiousness	Equal variances assumed	-.779	48	.440	-1.280	1.644	-4.585	2.025
	Equal variances not assumed	-.779	47.626	.440	-1.280	1.644	-4.585	2.025
Neuroticism	Equal variances assumed	-1.778	48	.082	-2.520	1.417	-5.370	.330
	Equal variances not assumed	-1.778	47.565	.082	-2.520	1.417	-5.370	.330
Openness	Equal variances assumed	-1.811	48	.076	-2.720	1.502	-5.740	.300
	Equal variances not assumed	-1.811	43.151	.077	-2.720	1.502	-5.749	.309

***Significant at 0.05 level**

Table 2, revealed that there no significant difference was found between U16 and U18 tennis ranking players in extraversion sub factor of personality as the obtained 't'= 1.047 < tabulated 't'= 2.011at 48 degree of freedom. No significant difference found between U16 and U18 tennis ranking players in the factor of agreeableness as the obtained't'= -1.293 < tabulated't'= 2.011at 48 degree of freedom. No significant difference found between U16 and U18 tennis ranking players in the factor of conscientiousness as the obtained't'=-.779< tabulated't'= 2.011at 48 degree of freedom. No significant difference found between U16 and U18 tennis ranking players in the factor of neuroticism as the obtained't'= -1.778 < tabulated't'= 2.011at 48 degree of freedom. No Significant difference found between U16 and U18 tennis ranking players in the factor of openness as the obtained't'=-1.811 < tabulated't'= 2.011at 48 degree of freedom.

Discussion of Findings

Table 1 revealed that U 16 players and U 18 players have similar level of daring and imaginative, welcomes change and challenges attributes as Openness to Experience was found highest in both the groups in comparison to other personality traits. A relatively high value of openness to experience found in tennis players show that their interest in modern training including mental training and high submissiveness to coaches. Further in other remaining personality traits some difference were observed on the basis of mean values between U 16 and U 18 tennis players. High scores on Conscientiousness in comparison to Neuroticism means that both group players set more goals and follow through more on the goals they set. High Neuroticism athletes may take a risk to attain the goal by doping or antisocial behavior and present study both groups have low Neuroticism. Both age group players show higher Agreeableness which reflects warmth, compassion, cooperativeness, and friendliness at the individual level.

It is evident from Tables 2 that no significant difference was found between U 16 and U 18 tennis players in sub factors of personality i.e. Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness players at 0.05 level of significance. On the basis of finding of this study it may be said that U 16 and U 18 tennis ranking players having personality traits up to the same extent.

It may be attributed due to the fact that both the Groups tennis players were from the same background and also have almost similar ranking at same level of tournament. Their maturity level may be similar as there is no big difference in their age group. Eysenck (1967) has recommended that the neuroticism, constancy dimension is more related with the hypothalamus. Both age group tennis players were from Assam therefore their living style, practice and training environment were similar. In addition, the period from young adulthood to middle adulthood is associated with increases in Conscientiousness and Agreeableness and decreases in Neuroticism, Openness, and Extraversion that may be one reason for insignificant difference. Research in Big Five traits in American and Flemish teens showed similar changes in personality from ages 12 to 18 years (McCrae et al. 2002). Kovacs (2008) study findings stated association between conscientiousness and sport ranking in football players.

Sports performance has been found to be connected to some personality variables such as Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness etc. which influence sports performance in addition to many other personality variables. Extraversion has been found to be highly related or supportive to dominance and sociability in athletes and sports participants by Sperling (1942), Tillman (1964), Ruffer (1965), Whiting & Stenbridge (1965), Wernet and Gottheil (1966), Bruner (1969), Kane (1970) and Ikegami (1970). Tennis success is characterized not only by the level of sport skills of athletes and their professional sports readiness, but also by a number of factors influencing an individual behavior such as emotional control, focus on action, independence, or

responsibility of tennis players (Wagstaff, 2014; Wilson, 2001).

Discussion of Hypothesis

It was hypothesized that there will be no significant difference of psychological profiles between various age groups of tennis ranking players; however in the present study findings hypothesis was accepted at 0.05 level of significance .So the hypothesis as stated earlier is accepted.

Conclusion

On the basis of findings, the following conclusions were drawn: In sub factor Extraversion of personality no significant difference was found between the Under 16 & Under 18 tennis ranking players. In sub factor Agreeableness of personality no significance difference was found between the Under 16 & Under 18 tennis ranking players. In sub factor Conscientiousness of personality no significant difference was found between the Under 16 & Under 18 tennis ranking players. In sub factor Neuroticism of personality no significant difference was found between the Under 16 & Under 18 tennis ranking players. In sub factor openness of personality no significant difference was found between the Under 16 & Under 18 tennis ranking players

References

- ❖ Alloy, L.B., Abramson, L.Y., & Francis, E.L. (1999). Do negative styles confer vulnerability to depression? *Current Directions in Psychological Science*, 8, 128-132.
- ❖ Allport, G.W. (1937). *Personality*. New York: Holt
- ❖ Allport, G.W. (1965). *Patterns and growth in personality*. New York: Holt.
- ❖ Alvaro, Q.B., Jennifer, R.L., Bobby, L.S., Albert, K.L., & John, C.B. (2000). Cognitive distortions and problem behaviours in adolescents. *Journal of Crime Justice and*
- ❖ Andrews, B., & Wilding, J.M. (2004). The relation of depression and anxiety to life-stress and achievements in students. *British Journal of Psychology*, 95, 509-521.
- ❖ Bagby, R.M., Psych, C., Quilty, L.C., & Ryder, A.C. (2008). *Personality and Depression*. *Canadian Journal of Psychiatry*, 53, 14-25.
- ❖ Barnes, G.E., & Prosen, H. (1985). Parental death and depression. *Journal of Abnormal*
- ❖ Psychology, 94, 64-69.
- ❖ Beck A.T., Rush, A.J., Shaw, B.F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford press.
- ❖ Beck, A., Steer, R., & Brown, G. (1996). *The Beck Depression Inventory – Second Edition*
- ❖ Beck, A.T. (1967). *Depression: Clinical experimental and theoretical aspects*. New York: Harper Beck, A.T. (1967). *Depression: Clinical experimental and theoretical aspects*. New
- ❖ York: Harper & Row. Beck, A.T., Emery, G., & Greenberg, R.L. (1985). *Anxiety disorders and phobias: A cognitive perspective*. New York: Basic. Books.

