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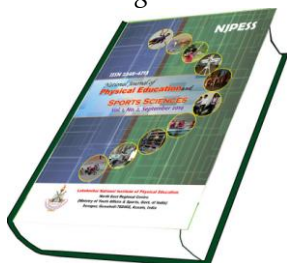
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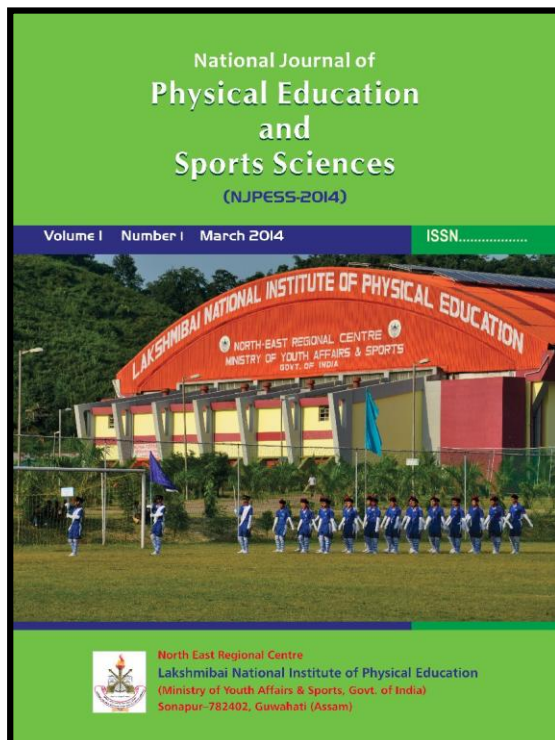
Editorial

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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Relationship of Reaction Time, Agility, Speed of Movement and Flexibility to Oerformance in 110 Meter Hurdles

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Abstract

The purpose of this study was to measure the relationship of reaction time, agility, speed of movement and flexibility to the performance of subjects in 110 meter hurdles event. The subjects for this study were 10 male hurdlers of L.N.I.P.E., Gwalior who have participated in M.P. State Athletic Meet. The age group of subjects was 16 to 25 years. Reaction time was measured by Anand's electronic reaction time apparatus; Shuttle run (4 x 10 yards) was used to access the agility; speed of movement was represented by 50 yard dash test and while sit and reach test was used to check the flexibility of the subjects. The performance of the subjects was also recorded in 110 meter hurdles. The product moment correlation method was used in order to find the relationship between the performance of subjects in the event of 110 meter hurdles and Reaction time, Agility, Speed of movement and Flexibility. The finding of the study revealed that these were insignificant relationship between the reaction time, agility, speed of movement and flexibility to the performance in 110 meter hurdles. The obtained values of correlations were found insignificant at 0.05 level.

Keywords: Reaction Time, Agility, Speed of Movement, Flexibility, 110 MH

Introduction

Hurdling events are dashes in which competitors must clear a series of ten barriers called hurdles, which are made of metal and wood (or metal and plastic). The hurdles are placed at equal distances over the course. The distance from the starting line to the first hurdle and the distance from the last hurdle to the finish line is almost same. The key to success in the hurdles is sprinting smoothly, while skimming just over the hurdles. It is a ground for disqualification if an athlete goes around the hurdle instead of over it, or if an athlete purposely knocks down hurdles. Outstanding hurdlers have included Fanny Blankers Koen of Neitherland, Colin Jackson of the United Kingdom, Lee Calhoun, Glenn Davis, Rodney Milburn, Edwin Moses, Gail Devers of the United

State.

Hurdling as an activity in the Eton School sports dates back to 1843. More specifically the 120 yards or 'high'; hurdles event was introduced at the Oxford University Sports of 1864. The barriers in those early days-Crude Sheep hurdles rigidly staked in the ground were sufficiently fearsome as to discourage contact consequently the hurdling pioneers used an ungainly bent leg clearance style in order to make sure of sailing safely over each obstacle. The times, therefore, were very slow by modern standards but the 16.0 second mark recorded by 19 year old Clement Jackson in 1865, the year before the height of the ten hurdles was standardized at 3 feet 6 inches, must have been a fine performance since it was not bettered anywhere in the world for twenty six years.

Reaction Time

Reaction time is the time elapsing between movement of application of a stimulus and movement response.

Agility

It is defined as the ability of the body or parts of the body to change directions rapidly and accurately.

Flexibility

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 articulation and muscle attachments.

Speed

Speed is the ability of the body to make a rapid movement at the same time in the shortest possible time.

Methodology

The subjects for this study were Ten (10) male athletes of 110 meter hurdlers events, between the age group of 16 to 25 years, who had participated in M.P. State Athletic meets were selected as subjects for this study. Since these Athletes have been trained for a considerable period, they were considered skillful and there technique had stabilized.

To establish the relationship of reaction time, agility, speed of movement and flexibility to performance in 110 meters hurdle, the scores of the following were taken as a criterion measures

Reaction Time was measured in seconds.

- ❖ Agility was measured by shuttle run (4 x 10) yards and recorded to the nearest of 1/10th of a second.
- ❖ Speed of movement was measured by 50 meter run/walk test and recorded to the nearest of 1/10th of a second.

- ❖ Flexibility was recorded with the sit and reach test. The scores were in inches.
- ❖ Performance in 110 meter hurdles was measured in seconds.

Administration of the Test and Collection of Data

In order to assess the reaction time, agility, speed of movement, flexibility and the performance of subjects in 110 meter hurdles event. The following methods were employed:

Reaction Time

- ❖ **Purpose:** To measure the speed of reaction in response to a visual Stimulus.
- ❖ **Equipment:** Electronic Reaction Timer supplied by Anand Agencies, Poona was used.
- ❖ **Description:** There were four wooden boards marked as A, B, C, and D. Out of these, A and B were the starting boards and C and D, were the stepping boards. Subject stood on the starting board putting one foot on each board. After the onset of an auditory stimulus he lifts one of the leg which was pre-determined and which was told to the subject from A and B and step on C and D.

The tester pressed one of the short keys giving the required stimulus (auditory). Short key was a double key which gave the stimulus and also started the chronoscope. As soon as the subject received a stimulus he lifts his foot from the right or left A or B boards and steps on the left or right C or D boards, which stopped the chronoscope and reaction time to the auditory stimulus was recorded.

Scoring: The time out of the best of the three trials was recorded in seconds

Agility Test

- ❖ **Purpose:** To measure the speed in changing body position or direction
- ❖ **Equipment:** Four blocks of wood 2x2x4 inches and a stop watch
- ❖ **Description:** Two parallel lines were marked on the floor ten yards apart. The blocks of wood were placed behind one of the line. The subject started from behind the other lines on the signal 'Ready' 'Go' the subject ran to the blocks, picked one up, ran back to the starting line and placed the block behind the line, he then ran back and picked up the second block which he carried back across the starting line. Two trials were allowed with same test in between.
- ❖ **Scoring:** The time of the better of the two trials to the nearest 1/10th of a second was recorded.

Speed of Movement

- ❖ **Purpose:** To measure speed
- ❖ **Equipments:** On the Institute track a 50 yards was marked with starting

and finishing lines. Two stop watches (one for each time keeper), wooden clapper were used for this test.

- ❖ **Description:** Two subjects ran at a time they took position behind the starting line and on the command 'on your mark', the subject stood with front foot just behind the starting line with "clap" the subjects started the run.
- ❖ **Scoring:** The score was time taken to complete the course to the nearest 1/10th of a second between the starting signal and the instant subject crossed at finishing line.

Flexibility

- ❖ **Purpose:** To measure trunk & hip flexibility
- ❖ **Equipments:** A box and measuring scale
- ❖ **Description:** The subject sat comfortably on the floor with shoes off. Legs extended and feet flat against the sit and reach apparatus. The subject placed one hand on top of the other with fingers pad on finger nails. On the signal the student gradually reached as far forward as possible and hold this position for three seconds until the test administrator placed a mark at the end of the subjects finger tips, subjects were permitted 3 additional attempt to push the mark further.
- ❖ **Scoring:** The farthest point reached in the 3 attempt was recorded

Performance in 110 Meters Hurdles

- ❖ **Purpose:** To measure the performance in 110 Meter hurdles
- ❖ **Equipments:** Starting block, 20 Hurdles, stop watch, clapper, standard track of 110 meters straight.
- ❖ **Description:** Two subjects ran at a time they took position behind the starting line, on the command 'on your mark', the subject attains a stable Position, followed by 'set' command when subjects again attained stationary position the 'clap' was made. With 'clap' the subjects started their run. The performance was recorded as per AFI rules.

Scoring of Data

The performance of subjects in the event of 110 meter hurdles, reaction time, agility, speed of movement was recorded in seconds and flexibility in inches. All the scores of the test items were analyzed statistically.

Analysis of Data and Results of the Study

The Statistical analysis of data collected on 10 male students of LNIPE Gwalior who participated in 110 meters hurdles event of MP State Athletic Meets.

In order to study the relationship of scores obtained from dependent variable namely the performance of subjects in 110 meter hurdles event and independent

variables namely reaction time, agility, speed of movement and flexibility, product moment correlation method was used. For obtaining the coefficient of correlation, the following formula was used:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

The obtained values of coefficient of correlation for selected variables are presented in table 1.

Table 1

Relationship Of Reaction Time, Agility, Speed Of Movement And Flexibility To Performance In 110 Meter Hurdles

S.no.	Variables	Coefficient Of Correlation ' R '
1.	Reaction Time	-0.204
2.	Agility	-0.256
3.	Speed Of Movement	-0.043
4.	Flexibility	-0.0093

The required value of coefficient of correlation for 8 degree of freedom at 0.05 level of significance is .632.

Discussion of Findings

As shown in table 2 that the obtained values of co-efficient of correlation of selected variables such as reaction time, agility, speed of movement and flexibility did not exhibit the significant relationship with the performance of subjects in the event of 110 meter hurdles, since the obtained values were less than the required value of 'r' = .632 for 8 degree of freedom at .05 level of significant. However, the motor qualities like reaction time, agility, speed of movement and flexibility are considered important for the hurdle events. The obtained value of coefficient of correlation was probably due to small size of the sample and the limitation of the studies.

Discussion of Hypothesis

The hypothesis as stated earlier that there would be no significant relationship of reaction time, agility, speed of movement and flexibility with the performance of 110 meter hurdles stands accepted.

Conclusion

Within the limitations of the study the following conclusion may be drawn:

There is insignificant relationship between reaction time, agility, speed of movement and flexibility with the performance of subjects in 110 meter hurdles

events.

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Comparative Study of Psychological Skills At Different Levels of Soccer Players

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Abstract

The purpose of the study was to compare psychological skills of football players through Michale j. Mahoney questionnaire. The subjects were randomly selected. 50 players selected from National school championship, 50 players selected from inter university and 50 players selected from senior national. The subjects were tested on six psychological skills i.e. anxiety control, concentration, self-confidence, mental preparation, motivation, and team emphasis. To compare the football players of three levels i.e. school, college and national level, of psychological skills the one-way analysis of variance (ANOVA) was applied as a statistical procedure. The one-way analysis of variance showed that there is significant difference among the three levels of football players i.e. school, college and national level. However there was significant difference in relation to their psychological skills, as 'f' value was found significant at 0.05 level of confidence. After applying post hoc test it was observed that the mean difference of football players at different levels is 10.42, 29.9 & 19.42 which is significant as the values are greater than the required critical difference i.e. 4.65. So it was concluded that national level players are having high psychological skills in comparison to school and college players.

Keywords:- anxiety control, concentration, self-confidence, mental preparation, motivation, team emphasis.

Introduction

Sports is a medium, which can provide a sense of purpose, a sense of continuous challenges, as well as a range of emotion, which is sometimes difficult to experience elsewhere. It can be a rich and meaningful encounter especially if entered on our terms. There are few occasions where we have such close contact with other people, with our physical environment and with our self, as in

sport. There are numerous opportunities for personal growth and for stretching for the limits of human potential, both physical and psychologically. The participation in modern sports is influenced by various physical, psychological, sociological and physiological factors. During training besides good physique and physical fitness of the athletes, main emphasis laid on development of various types of motor skills involved in the game as well as teaching the strategies, techniques and tactics of the game. The coaches have been playing ineducate attention to the social and psychological factors which although have been prove to contribute in performance in the events in the higher competition sports. It is only recently that sports administrators and coaches have realized the importance of psychological preparation and training of the players enables them to bear the strength, stress inherent sports participation. So now the sports trainers and coaches have started giving more importance to the psychological conditioning on building mental makeup of the players before their contest in the national and international competition Sports psychology as an applied psychology is the greatest blessing of the modern day sports sciences in this age. Within a short span of time, sports psychology has taken giant strides in knowledge all the field of human Endeavour, especially of behavior has expended to such an extent that it is difficult to discuss one aspect of behavior without reference of others.

Methods

For the purpose of this study 50 players selected from National school championship, 50 players selected from inter university and 50 players selected from senior national from only one discipline of football. The minimum level of participation was different for different levels. For school level it is participation in the inter school competition, studying in different schools. For the players of university level it is the minimum level of participation was intervarsity studying in different university. For the national level it was participation in nationals from any state. The subject's age ranged from fifteen through thirty. The data was collected through the administration of the psychological skill inventory for the sports (PSIS) as developed by Mahoney et al., (1987) to the subjects according to their convenience. The PSIS assesses an athlete's psychological skill in the categories of anxiety control (AX), concentration (CC), confidence (CF), mental preparation (MP), motivation (MV) and team emphasis upon team goals (TM).

The data was collected by administering the questionnaire by the investigator himself of course of the cooperation of coaches' managers and consent of athletes was obtained prior to the administration of the inventory. In all cases the athletes were assured.

Analysis of Data and Results of the Study

The present study was conducted on football players on specific psychological skills of football players at three different levels namely school level, college

level and national level. The subjects has been selected randomly at national championship. The statistical analysis of the data collected from one hundred fifty football players from different levels (school level, college level and national level). At each level numbers of subjects were fifty in number. Scoring was done according to the description given in the questionnaire. The comparison among three levels was done with one way ANOVA between three different levels i.e. school level, college level and national level on psychological skills. The level of significance was set at 0.05.

Findings

In an attempt to recognize comparative study of psychological skills between school level, college level and national level football players, the psychological skill inventory by Michael. J. Mahoney was administered to the male athletes belonging to football. The different aspects of sports specific psychological skill inventory namely anxiety control, concentration, confidence, mental preparation, motivation and team emphasis were analyzed for the football players

To find out the significant difference in psychological skill between the three levels (school level, college level and national level) the one way ANOVA was used. The findings pertaining to this have been shown in table 1.

Table –I

Descriptive Analysis Of Psychological Skills Of Football Players At Different Levels

Psychological skills	N	Mean	Standard Deviation
School level	50	78.8600	13.38597
College level	50	89.3400	10.9248
National level	50	108.7600	10.75433
Total	150	92.3200	17.05039

It is evident from table –I that the description analysis in terms of mean and standard deviation on psychological skills of football players of school level is (78.86 ± 13.39), college level (89.34 ± 10.93) and national level is (108.76 ± 10.75).

Table – 2

One Way Anova On Psychological Skills Of Football Players At Different Level

Psychological skills	Sum of squares	Df	Mean square	F	Sig.
Between groups	23016.280	2	11508.140	83.333	.000
Within groups	20300.360	147	138.098		
Total	43316.640	149			

*** Significant at 0.05 level**

Tab f .05 (2,147) =1.98

Table – 2 reveals that f –value is 88.33 which is significant at 0.05 level. It indicates that the mean scores of psychological skills among football players of different level differ significantly. It may therefore be concluded that football players of different level have significantly different psychological skills.

LSD mean comparison among different levels is presented in table-3

Table – 3

Lsd Post Hoc Mean Comparison Of Football Players At Different Levels

School level	College Level	National level	Mean difference	Critical difference
78.86	89.34		10.48*	4.65
78.86		108.76	29.9*	4.65
	89.34	108.76	19.42	4.65

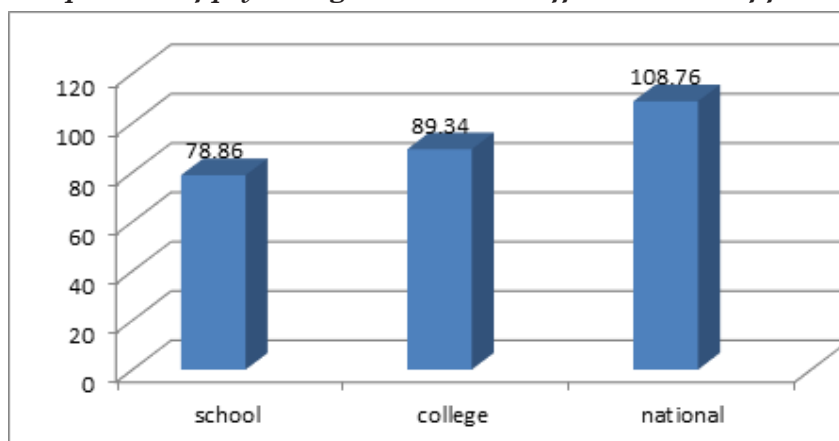
***significant at CD = 4.65**

This table reveals that the mean difference between school & college, school & national and college & national levels is 10.48, 29.9 and 19.42 respectively, which is significant as the values are greater than the required critical difference that is 4.65.

It may therefore be concluded that the football players of different levels differ significantly in terms of their psychological skills. However, national level football player possess highest psychological skills and school level football players possess low psychological skills.

Figure-1

Mean comparison of psychological skills at different levels of football players.



Discussion of the Finding

Results of the study indicates that the psychological skills of the school level, college level and national level have significant differences in the variables i.e. anxiety, control, concentration, confidence, mental preparation, motivation and team emphasis.

On the basis of the findings it may be concluded that the variables anxiety, control, concentration, confidence, mental preparation, motivation and team emphasis had a significant difference between the three levels i.e. school level, college level and national level, because all these three groups had different levels of participation and exposure to competition accordingly. The difference in experience also plays a major role in the statistical significance of the study. The technical and tactical preparation which leads to a strong psychological base also differed at all these three levels.

Experience of the coach might be the major factor in preparation of players at all these three levels there is a vast difference in the appointment of coach because at the school & college the Physical education teachers are not specialized in every game they have to teach all games to the children this leads to a difference in the psychological skills preparation of the football players at different levels school level, college level and national level. The difference might be also due to the reason that at national level qualified & experience coaches are available to teams whereas at college & school level it is not so.

One of the three most important factors in the psychological preparation is that, school and college level players study & practice side by side, on the other hand the national level players are oriented towards only one goal i.e. playing, which leads to a vital difference in the psychological skills of the football players at

different levels i.e. school level, college level and national level. All concentration is on the skills, team tactics and technique at the school & college level, there is no psychological preparation & training of the players at these two levels. At school & college level the players also don't get sports psychologist in comparison to national players that's why there is a vast difference in the psychological skills of the school, college level and national players.

Conclusion

Within the limitations of the study following conclusions may be drawn:

In relation to school and college level football players, national players possess high psychological skills.

In relation to school level players college level players also possess high psychological skills.

School level football players possess low psychological skill in relation to college & national level football players.

School level players possess low psychological skill in relation to the college level players.

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Impact of Asanas Pranayamas on Body Fat Percentage (%) of School Going Children

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Abstract

The aim of this study was to observe the impact of Asanas Pranayamas on body fat percentage (%) of subjects with the age range 8 to 10 years. For this 30 male subjects were drawn from Muni International School, A-2/16-18, Mohan Garden, Uttam Nagar New Delhi-110059, India by using simple random sampling. Pre post data were collected before and after intervention of Pranayama for 90 days. Body fat was measured by the lunge skin fold calipers and the sum of the skin fold thickness of all the four sites of the body was converted in to percentage by body fat as suggested by Durnin & Womersley. Since calculated value of $t (=0.93)$ is less than tabulated $t_{0.05} (29) (=2.045)$ so no significant result was found. It is concluded that significant improvement was not found in Body fat percentage (%) as a result of the experimental treatment.

Key words: Pranayama, body fat percentage (%).

Introduction

“Children are the wealth of tomorrow- take care of them if you wish to have a strong India”

—Pandit Jawaharlal Nehru

The health of children has become a matter of great concern all over the world and the WHO, UNO as well as UNESCO have been stressing the importance of developing the potential that is there in our greatest resource-the children of the world. The art and science of Yoga has a lot to offer for the children in terms of their health as well as complete well being. Yoga offers us a tool by which we can provide a safe and healthy future for our beloved children. Yoga is both preventive as well as therapeutic for health problems that face children and is also rehabilitative in many situations. It is also important to understand the special needs of the children when teaching them Yoga and methods to create and interest in them for this great jewel of our cultural heritage.

Yoga is appreciated and enjoyed by children of all ages, however a children's

Yoga session is vastly different to an adult's class. The key to being successful when introducing Yoga to children is in the way it is presented to them.

Child care professionals have discovered a new tool in helping calm a roomful of excited children. Introducing yoga benefits children's physical co-ordination, makes them stronger and helps concentration. Yoga is an ancient practice that helps create sense of union in body, mind and spirit. The classical techniques of Yoga date back more than 5,000 years. Yoga is a system of physical and mental exercise which has since spread throughout the world. The word Yoga means "to join or yoke together." Traditionally yoga was passed down from the teacher to the student without records. That is until the great sage Patanjali wrote the first detailed exposition of yoga called the sutras. Yoga is a whole system and is built on three main structures: exercise, breathing and meditation. Regular daily practice of these structures of Yoga produces a clear, bright mind and a strong, capable body. Children can safely practice meditation and simple breathing exercises as long as the breath is never held. These techniques can greatly help children learn to relax, concentrate, and reduce impulsiveness. Children trained in these techniques are better able to manage emotional upsets and cope with stressful events. Yoga helps body awareness and alignment, improves focus and builds strength.

Objectives

This study has aimed to study the impact of Asanas Pranayamas on body fat percentage (%) level of the male school going children.

Hypothesis: Practice of Asanas Pranayamas causes significant decrease in body fat percentage (%) of the all subjects.

Methodology

Sampling

This study was conducted in 30 samples from Muni International School, A-2/16-18, Mohan Garden, Uttam Nagar New Delhi-110059, India. Samples were selected by applying the simple random sampling using lottery method. 30 were males of age range 8-10 yrs.

Research design: pre-post single group

Symbolically, A Q1 X Q2

Where,

A= single group

Q = pre- test

X= Pranayama (45 min. for each morning per day)

Q2= Post-test

Procedures

Body fat was measured by the lence skin fold calipers and the sum of the skin fold thickness of all the four sites of the body was converted in to percentage by body fat as suggested by Durnin & Womersley, Firstly, by using the lence skin fold calipers fat % of each subject was measured and post measurement of fat % for the same subjects were taken after allowing practice of Pranayama for 90 days. The following Asanas and pranayama were perform; in Asanas: Surya Namaskar, Sarvangasana, Matsyasana, Halasana, Bhujangasana, Shalvhasana, Dhanurasana, Chakrasana, Ardha Matsyendrasana, Paschimottanasana, Vajrasana, Yogamudra, Standing kati chakrasana, Tadasana and Shavasana and in Pranayama: Anuloma Vilom and Bhastrika.

Results

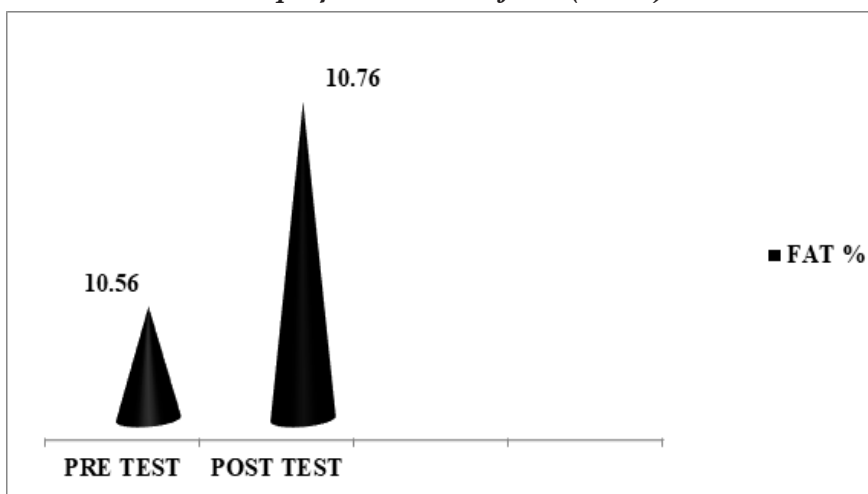
Table -1
Paired Sample Statistics

		Mean	N	S.D	S.E(Mean)
Pair 1	Pre Fat %.	10.56	30	5.05	0.92
	Post Fat %.	10.76	30	4.29	0.78

Table-2
Paired T-Test Table

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	S.D	SE (Mean)	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pre Fat %. Post Fat %.	-0.19	1.16	0.21	-0.63	0.23	-0.93	29	0.35

FIGURE:-1
Graph for Total Subjects (Mean)



Interpretation of Findings

The following interpretation can be made on the basis of the results shown in the above output.

The values of the mean, standard deviation and standard error of the mean for the data on fat % in the pre and post testing are shown in the Table-1. These values can be used for further analysis.

2. It can be seen from Table-2 that the value of t statistic is 0.93. This t value is insignificant as the p value is 0.35 which is higher than 0.05.

For one - tail test, the value of tabulated t at 0.05 level of significance and 29 (N - 1 = 29) df which is 2.045. Since calculated value of t (=0.93) is lesser than tabulated $t_{0.05}(29)$ (=2.045), Hypothesis may not be accepted.

Discussion

In the present study no significant difference was found in case of Body fat percentage (%), after administrating the Asanas Pranayama training programme.

Body fat percentage (%) depends on type of work out, daily fooding habits, personal habits and so many other factors. Duration of the training programme was on the month of august, September, October and November and during those month it was the festival season (like:- Navaratra, Dushehara, Id-Ul-Zuha, Diwali) in India for due to this reason research scholar have no control on the diet pattern of the subjects and on the other hand the Asanas Pranayama training programme progressed traditionally. Due to those reason no significant difference was found in case of Body fat percentage (%). Therefore, proposed hypothesis has been rejected in case of Body fat percentage (%).

Conclusions

Significant improvement was not found in Body fat percentage (%) as a result of the experimental treatment.

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Effect of Intensity Manipulation of Olympic Lift Training on Reaction Time of University Hockey Players

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Abstract

The world of training methodology has crossed many milestones. In modern time athletes are being trained by highly sophisticated means for better achievements in their concerned sports, and greater stress has been laid on the quality rather than the quantity of training. The purpose of the present study was to determine effect of intensity manipulation of Olympic lift training on the performance of University hockey players. The subjects were 30 male hockey players of 18 to 25 years of age group from Gursewak Physical Education College, Patiala (Punjab). The subjects were randomly selected and were assigned to the one experimental group (Intensity manipulation of Olympic lift training) and one control group with 15 subjects in each group. The training was given for a period of 6 weeks. The experimental groups were trained thrice a week, while the control group continued with their daily routine work. The performances of reaction time of the subjects were taken by the Nelson foot reaction test. The Pre and Post test were conducted to collect the data. After the collection of data, the t- test was used to identify any significant differences between the groups. The level of significance was 0.05. The finding have shown the significant value of F- ratio's for selected variables in the experimental group i.e. Intensity manipulation of Olympic lift training programs as compared with the control group. The hypothesis was rejected because of significant differences were observed in the reaction time. On the basis of the findings of the study, the following conclusions are drawn: Six weeks of Intensity manipulation of Olympic lift training exercises are useful program to improve the reaction time of Hockey players.

Introduction

New participants typically make excellent progress over the course of several months when following well- designed strength training program .In many cases, individuals have time constraints that restrict them to relatively brief strength training sessions (e.g., 30to40minutes). They are therefore not in a position to perform more exercises for each muscle group or to

complete more sets of each exercise, many not be possible due to facility/ equipment limitations. An attractive alternative that provides a safe, effective and time-efficient workout for advanced exercisers is known as high — intensity strength training.

High intensity training sessions typically involve 10 to 15 strength exercises, and take about 20 to 30 minutes for completion depending on the techniques utilized. The basic objective of high-intensity training is to make each exercise set more demanding to stimulate greater muscle/ strength development. There are two basic training principles for achieving this objective namely, extending the exercise repetition and extending the exercise set. The muscle training stimulus increase by extending each exercise repetition through slower movement speed. Typically known as super- slows training, this technique requires 14-second repetitions, with 10 seconds for each concentric muscle action (lowering phase).

To reach muscle fatigue within the anaerobic energy system (less than 90 seconds), super-slow training is limited to 4 to 6 repetitions which produce 56 to 84 seconds of high and continuous muscle tension. Due to the reduced role of momentum, weight loads must be initially decreased by 10 to 20 percent to permit proper performance of the exercise. As you become accustomed to the slower movement speed training groups using 7-second repetition.

Methodology

Thirty male Hockey players between the age group of 18 to 25 years of age were selected for this study. All of the subjects played at least Inter College in hockey and none had been trained by means of a six weeks of training programme and not to alter their normal daily exercise routine throughout the duration have been selected for the study. Further the subjects was equally divided in two groups i.e. Group A (N=15) for experimental group, Group B (N=15) control group where the experimental group get the training of Olympic left for six weak. Sunday was the rest day for experiment group. The purpose of the study had been explained to request to put in their best during each attempt For the purpose of the study the selection of subjects have been made from the Gursewak physical education college of Patiala (Punjab). Random sampling technique design was employed in this study. Experimental treatments were randomly assigned to the experimental group. Post test of both the groups was conducted after experimental training period of six weak.

Tools/Equipment

The Nelson Foot Reaction Test

Objective: To measure the speed of reaction with the foot in response to a visual stimulus.

Age And Sex: Boys and girls.

Validity: The validity of the timing device is in - hornet since the earth's gravitational pull is consistent: therefore, the timer falls at the same rate of acceleration each time.

Reliability: A reliability coefficient of .85 was obtained with college men as subjects.

Test Equipment and Materials: Nelson Reaction Timer, table or bench, well space.

Direction: The subject sits on a table (or bench) which is about 1 inch from the wall. With his shoe off, the subject positions his foot so that the ball of the heel resting on the table about 2 inches from the edge. The tester holds the reaction timer next to the wall and the subject foot with the base line opposite the end of the big toe. The subject looks at the timer is dropped, by pressing the stick against the wall the ball of his foot, Twenty trials are given

Scoring: The reaction time for each trial is the line just above the end of the big toe. When the foot is pressing the stick to the wall. The slowest five trails and the fastest five trials are discarded, and the average of the middle ten trials is recorded.

Safety Precautions: None

Additional Pointers: Same as with hand reaction test.

Olympic lift Training Schedule

Subjects were trained thrice a week i.e. on Monday, Wednesday and Friday. The subjects performed Power Clean, Snatch, Push Press, Push jerk and Split jerk. 10-15 repetitions in each of the 3 sets, with 50% weight of 1 repetition maximum and with 3 min recovery period in between each set. After the two weeks 10-12 repetitions in each of the 3 sets, with 60% of 1 R.M. and recovery period was same as it was in first two weeks. Finally for last two weeks the exercises were performed with 70% weight of 1 R.M., 6-8 repetitions in each of the 3 sets with 2 min recovery period in between sets. The detailed weekly Olympic lift training schedule.

Training Protocol

The subjects for the present study was performed the following exercises for Intensity programme

Olympic lift exercise

Power Clean

Snatch

Push Press

Push Jerk

Split Jerk

Pre-Training and Post-Training Testing Procedures

The pre-training testing session and post-training testing sessions will be performed at Punjabi University, Patiala. Standard weight lifting platform and the testing order will be randomized for each hockey players. Data will be collected prior to the eight-week training program. All measurements will be taken on one day for each testing session for all subjects involved. The post-training test session will be completed 96-104 hours after the final training session were completed.

Administration of the Tests and Collection of Data

Prior to the testing and experimental programme the subjects were assembled and oriented regarding the objectives and requirements of the test items. The subjects were requested and motivated for whole hearted participation towards success of the study.

For the administration of tests different stations were formed. Before they were asked to perform the test, the tests were explained and demonstrated by the research scholar. The pre-tests were conducted on the experimental and control groups. On the completion of experimental period the post tests were conducted to check the effect of training programmes. The post test was also conducted for control group.

Statistical Analysis

In order to find out the effect of Intensity manipulation of Olympic lift training of University Hockey players paired t -test was used and level of significance was set at 0.05.

Results of the Study

In order to arrive at pertinent results, the research problem was analyzed in detail to see the effect of training programme on the performance of reaction time of hockey players. The statistical analysis of data on the selected variable reaction time and corresponding finding are presented in this chapter. The t-test was employed to find out the statistical significance of the difference between the group means of pre-test and post test in reaction time.

Table-1:

Mean, Standard Deviation (SD), Standard Error of Mean (SEM) Of Reaction Time of Experimental And Control Group

Group	Number	Mean	S.D.	SEM	't' Value
Experiment (Pre-test)	15	0.221	0.021	0.005	6.259
Experimental (Post-test)	15	0.215	0.019	0.005	
Control (Pre-test)	15	0.183	0.034	0.009	1.739
Control (Post-test)	15	0.185	0.035	0.009	

***Significant at 0.05 level of confidence.**

"t".05 (14) = 2.14

The table 1 represent the number of students in experimental group to be 15. The means of reaction time of pre-test and post test scores of experiment group were 0.22 and 0.21 respectively. The calculated 't' value in case of experimental group is 6.259. The calculated t value was more than the table t value at 0.05 level of significance. $Cal\ t (=6.259) > tab\ t .05 (14) (= 2.14)$, Hence it may be concluded that six week intensity manipulation of Olympic lift training programme showed significant improvement in reaction time. Thus the post-test scores of experimental group were significantly higher than the pre-test scores.

The above table also shows the number of student in control group to be 15. The mean of Reaction time of pre-test and post-test 0.183 and 0.185 respectively. The score of control group were calculated t value in case of control group is 1.739. The calculated t value was less than the table t value at 0.05 level of significance. $Cal\ t (= 0.414) < tab\ t .05 (14) (= 2.14)$. Therefore the calculated t value was not significant. It was interpreted that the mean difference of Reaction time in pre-test and post-test were not significant. Thus there was no effect of intensity manipulation of Olympic lift training on reaction time of control group.

On the basis of the result it was accomplished that intensity manipulation of Olympic lift training had significant impact in increasing the Reaction time of the experimental group. Therefore the hypothesis was rejected. Since there was significant effect of intensity manipulation of Olympic lift training on reaction time.

Discussion of Finding

The findings pertaining to the study resolved significant improvement in reaction time the six weeks intensity manipulation of Olympic lift training programme for the hockey players. The experimental treatment was effective in improving the reaction time of the subjects.

The intensity manipulation of Olympic lift training programme improving the reaction time of the subjects. In reaction time t' test analysis showed an equal improvement due to the intensity manipulation of Olympic lift training programme which reveals that Olympic lift training is for improving reaction time.

The increase in the reaction time as evident from the improvement of reaction time of the subject for reaction time and may be attributing to two inherent properties of the muscle tissue. A muscle possibly stretched prior to a contraction utilizes the stretch reflex to activate the muscle to shorten vigorously, and the elastic nature of the muscle fibres allows the muscle to store energy during negative work or the phase of amortization, to be later released during the overcoming phase or shortening contraction. Therefore, the increased performance in reaction time following the intensity manipulation of Olympic lift training programme may be attributing to utilization of elastic energy and to the stretch reflex potential of muscle.

The ' t' ' test analysis on reaction time demonstrated significant differences between experimental group (table-1) While the control group were not found significantly different on this variable. This indicates that's the regular practice of Olympic lift improve the reaction time which was required for players in Hockey. However, there have been improvements of reaction time although in varying degrees as a result of the intensity manipulation of Olympic lift training. The finding of present investigation is in line with the finding of Singh (2006).

In overall the result shows that a practice of intensity manipulation of Olympic lift training is helpful to improve the reaction time. The results of this investigation on the reaction time was noted up to significant level.

Conclusion

In this study, purpose sees the effect of intensity manipulation of Olympic lift training on reaction time of hockey players. After the six weeks Olympic lift training compare the pre test with post test. The results show that Olympic lift training is more effective.

On the basis of the finding of the study, the following conclusion may drawn The Olympic lift training of six week training duration leads to a significant effect on the reaction time of hockey players. So, in case of reaction time, Olympic lift training was found to effective.

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A Study of Socio-Economic Status of Indian Physically Challenged Swimmers

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Abstract

The purpose of the study was to study the socio-economic status of Indian physically challenged swimmers. For the purpose, seventy male and eighty female swimmers who were suffering from paralysis and poliomyelitis were randomly selected, and hundred and fifty male and fourteen female physically challenged swimmers who were participated in the Third National Swimming Championship for Disabled held at Gwalior, India from 30th October to 1st November, 2002. Questionnaire prepared by Dr. S.B. Kakkar was chosen for collecting relevant data regarding the socio-economic status of Indian physically challenged swimmers. The questionnaires were administered to the subject in groups after each session of the completion of the competition, in the swimming pool of the Lakshmibai National Institute of Physical Education, Gwalior, India. They were asked to sit comfortably and all necessary instructions were given regarding the questionnaire. Research scholar cleared all their doubt. To observe the socio-economic status of Indian physically challenged swimmers; the data gathered by Kakkar socio-economic questionnaire, was treated to frequencies and percentage of various categories of status. Finally to observe significance difference between the obtained frequencies of various status chi-square technique (Garret's formula) was employed. The level of significance was set at 0.05. The conclusion of the present study is that the physically challenged swimmers who had participated in IIIrd National Swimming Championship belong to the below average and average socio-economic status.

Key words: Socio-economic status, disabled, swimming

Introduction

In today's era mankind is standing at the cross road of human civilization. The threat of nuclear war looms and is endangering the very existence of life on the planet. The destruction caused by the atom bombs dropped on Nagasaki and Hiroshima pales into insignificance when we take cognizance of nuclear arsenals presently accumulated by the nuclear power. The Bhopal

tragedy (in 1984, India) has left hundred crippled and maimed. The effect of such tragedies spread over generation thus augmenting the number of the disabled and handicapped. Children with physical disabilities often subjected to various forms of devaluation, stigmatization and discrimination. This social response may contribute to children`s negative self-esteem, low level of perceived mastery, and poor body image. Today, with the change in time and value, the attitude regarding upbringing of disabled population has been changed. It emphasized that the disabled need to be educated and prepared for life with a reasonable level of economic independence, self help, skill and social normalization in the content of modern society. Physical education plays a very important and vital role in the life of the physically handicapped child as in that of his able bodies` peers. Sports have the immense therapeutic values for the physically challenged children. It represents the most natural form of remedial exercise and can be successfully employed as a complement to the conventional method of physiotherapy. Among all physical activities, swimming is considered as one of the most useful activity, because it can be adapted to the need and capabilities of almost every type of disabled. Regardless of persons mental or physical conditions buoyancy of water allows him to move his most useless muscles. Swimming is also very valuable for the physically disabled with its origins in the early use of hydro-therapy in the treatment of paralysis, particularly that resulting from poliomyelitis. An individual socio-economic status may influence his opportunity for participation, his desire to excel, his choice of activity and his success. The disabled population are very much influenced by their socio-economic status. Because they want economic security, social acceptance, and a chance to serve just like anyone else. Despite all this, so far as physical education and sports for disabled in India are concerned very few, research scholar have ventured to explore and developed this field. In fact very little has been done and no concrete steps have been taken to probe this complex and many faceted field.

Objective of Study

The objective of the study is to examine the socio-economic status of Indian Physically challenged Swimmers

Hypotheses of the Study

There will be significant difference obtained between the repose toward the socio-economic status.

Material and Methods

Selection of Subjects

Seventy male and eighty female swimmers who were suffering from paralysis and poliomyelitis were randomly Seventy males and Eighty females physically challenged swimmers who were participated in the Third National Swimming Championship for Disabled held at Gwalior from 30th October to 1st November,

2002.

Tools and Data Collection

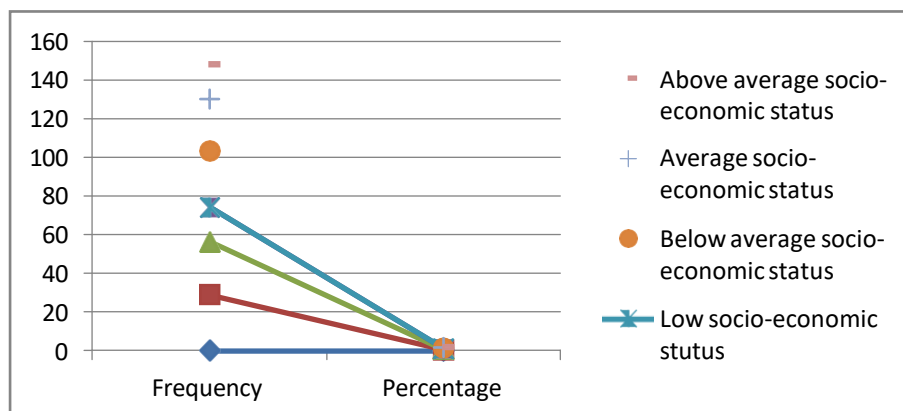
Questionnaire prepared by Dr. S.B. Kakkar was chosen for collecting relevant data regarding the socio-economic status of Indian physically challenged swimmers. The questionnaires were administered to the subject in groups after each session of the completion of the competition, in the swimming pool of the Lakshmibai National Institute of Physical Education Gwalior. They were asked to sit comfortably and all necessary instructions were given regarding the questionnaire. Research scholar cleared all their doubt. To observe the socio-economic status of Indian physically challenged swimmers; the data gathered by Kakkar socio-economic questionnaire.

Table 1.

Frequency and percentage of responses of socio-economic status questionnaire

Socio-economic status	Frequency	Percentage
Low socio-economic status	0	0%
Below average socio-economic status	29	36.25%
Average socio-economic status	27	33.75%
Above average socio-economic status	18	22.50%
High socio-economic status	6	7.50%
Total	80	100%

Figure 1. Graphically represents Frequency and percentage of responses of socio-economic status questionnaire



The result of the study shows that zero percent of physically challenged swimmers belongs to low socio-economic status; 36.25% of swimmers belong to below average socio-economic status; 33.75% of swimmers come from average socio-economic status; while 22.50% of them have above average socio-economic

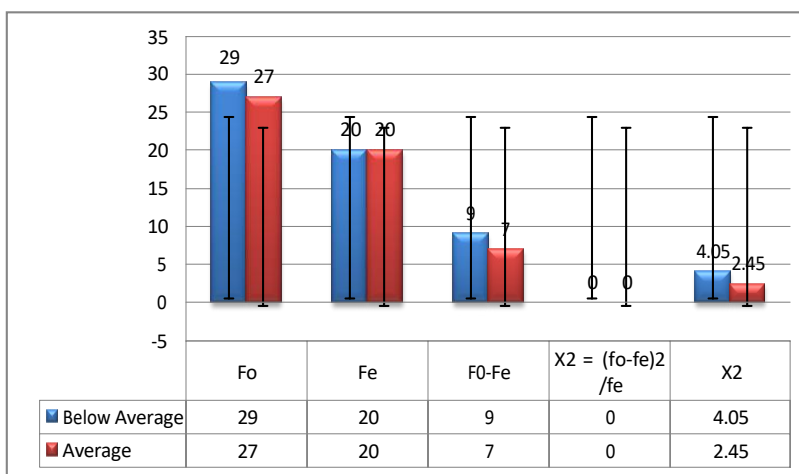
status. Only 7.50% swimmers belong to a high socio-economic status.

Table 2.

Divergence of observed frequency and their percentage in rating of socio-economic status Socio-economic status

	Below average	Average	Above average	High
Fo	29	27	18	06
Fe	20	20	20	20
(fo-fe)	09	07	02	14
$X^2 = (fo-fe)^2 / fe$	81/20	49/20	4/20	196/20
X2	4.05	2.45	0.20	9.80

Figure 2. Graphically represents the divergence of observed frequency and their percentage in rating of socio-economic status



Cal $x^2 = 16.50$

Tab. $x^2 = 7.82$

Table -2 reveals that the calculated value of chi-square is more than tabulated value of chi-square (7.82) so, that there is significant difference obtained between the repose toward the socio-economic status when obtained chi-square value at 0.05 level.

Thus, the result shows that most of the Indian physically challenged swimmers belong to the Below Average and Average socio-economic status category.

Results

The scoring of compelled questionnaire was done as per the method mentioned in the manual with the help of using key. In order to determine the socio-economic status of Indian physically challenged swimmers, the data gathered by Kakkar socio-economic questionnaire, was treated to frequencies and percentage of various categories of status. finally to observe significance difference between the obtained frequencies of various status chi-square technique (garret`s formula) was employed. The data pertaining to frequency and percentage of responses of socio-economic is presented in table-1 and the data for divergence of observed frequency and their percentage in rating of socio-economic status is presented in table-2. The graphical representation of frequency and percentage and divergence of observed frequency and their percentage in rating of socio-economic status is presented in figure-1 and figure-2 respectively.

Statistical Analysis

To observe the socio-economic status of Indian physically challenged swimmers; the data gathered by Kakkar socio-economic questionnaire, was treated to frequencies and percentage of various categories of status. Finally to observe significance difference between the obtained frequencies of various status chi-square technique (Garret`s formula) was employed. The level of significance was set at 0.05.

Conclusions

The conclusion of the present study is that the physically challenged swimmers who had participated in IIIrd National Swimming Championship belong to the Below Average and Average Socio-economic Status.

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Comparison of Skill Performance among Women Soccer Players

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Abstract

The purpose of this study was to find out that in which situation skilled test is more reliable and valid for soccer players. For the purpose of this study 25 female soccer players from the Lakshmibai National University of Physical Education, Gwalior were selected as subjects who had adapted soccer as their match practices. The selected objective skill tests for the presented were McDonald Soccer Test and Johnson Soccer Test. The pertaining to the selected objective skill tests of soccer were collected in the Soccer Field and Gymnastic hall of Lakshmibai National University of Physical Education, Gwalior for the purpose of study both the test were administered to all the subjects as per their prescribed procedure. To compare the rating on the two selected test “t” test was applied on the level of significance set at 0.05 levels. The findings of the study show significant difference of McDonald and Johnson test in the indoor and outdoor conditions.

Keywords: Mc Donald soccer skill test, Johnson soccer skill test.

Introduction

Soccer is not just a game; it's a passion, hope and religion for its lovers. Soccer has become very popular game in the world; all the most nation play soccer, both of enjoyment and competitions. The spectators and players enjoy the games of soccer with the great amount of merriment. Soccer is a game which causes for strenuous continuous thrilling actions and therefore, appeals to the youth the world over.

The history of soccer is in fact is untraceable. But one will admit that interest in soccer among the people the world was found, long back. The birth of modern Soccer is in England. The rules of Soccer were codified in England by the Soccer Association in 1863. The ever increasing popularity of soccer has created demand to put a game in all better scientific thought. Therefore the coaches and teachers have endeavor red each and coach the participants with methods and materials which would enable them to play the game with more enjoyment win the game for

assessing their general soccer ability and predicting their performance a definite and appropriate evaluating procedure is needed.

McDonald Soccer Skill Test is to measure general soccer ability among High school through college going. It needs 3 soccer balls and stopwatch. A restraining line is marked 9 feet from a wall, 30 feet wide and 11.5 feet high. A soccer ball is placed on the restraining line. On the signal, "Go," the test performer kicks the ball against the wall as many times as possible in 30 seconds. Two soccer balls are placed 9 feet behind the restraining line in the center of the test area. In the event of a wild kick, the test performer may retrieve the original ball or use one of the two additional balls. The hands may be used to retrieve a ball. Any type of kick may be used but all kicks must be kicked from the ground behind the restraining line. Four trials are administered. The number of legal kicks in each 30 second period is recorded. The test score is the highest total of any four trials.

Johnson soccer skill test is to measure general soccer ability among college level women. Needs 3 soccer balls, stop watch and backboard 24 feet wide and 8 feet high are required. This target has the same dimensions as a regulation soccer goal. A restraining line is marked 15 feet from the wall. A ball box for spare ball is located 15 feet in back of the restraining line. The subject holds a soccer ball while standing behind the restraining line. On the signal to begin. The subject kicks the ball against the backboard as many times as possible in 30 sec. The ball must be kicked from the restraining line. If subject loose the ball he can either take the spare ball or continue with same ball. Three trail with duration of 30 second each. The score were the highest number of legal kick in any of the trail.

Procedure

Twenty five women's soccer players of L.N.U.P.E Gwalior, who were regularly reporting for soccer practice during the coaching Period, were selected randomly as subjects of the study. Their ages ranged between 18 and 25 years according to the college records. All the subjects were residing in the college hostels and undergoing the same programme of instructions in the theory and sports activities except for individual food preferences and voluntary recreational habits.

The research scholar reviewed the available scientific literature and internet sources to the McDonald and Johnson test from various Journals and Websites.

Criterion Measures

Following were the criterion measure;

1. Mc Donald soccer test: the score was the maximum kicks in 30 seconds.
2. Johnson soccer test: the soccer was the maximum in 30 seconds.

The pertaining to the selected objective skill tests of soccer were collected in the Soccer Field and Gymnastic hall of Lakshmibai National University of Physical Education, Gwalior for the purpose of study both the test were administered to all

the subjects as per their prescribed procedure.

McDonald Soccer Skill Test

Purpose – to measure general soccer ability.

Age & sex- college level women.

Validity – 0.94

Equipment and material – a wall or backboard and 11.1/2 feet height is needed. A restraining line is drawn 9 feet from the wall. A stopwatch and three soccer ball properly inflated and in a good condition are required.

Direction – At the signal” go” they had began kicking the ball from behind the 9 feet restraining line against the wall as many times as possible in 30 second. The subject may kick it on the fly or in the bounce. He might retrieve the ball using his hand or by kicking but all the kicks were be made from behind the restraining line. If the ball gets out of control. The subject had to option of playing one of the spare balls instead of restraining the loose ball. He might use his hand in getting all spare balls in position. The spare ball were placed 9 feet behind the restraining ling four trail were allowed.

Scoring- The score were the highest number of legal kick in any of the trail.

Johnson soccer skill test

Purpose – to measure general soccer ability.

Age & sex- college level women.

Validity – 0.98

Reliability – 0.92

Equipment and material – Soccer ball, stop watch and backboard 24 feet wide and 8 feet high are required. This target has the same dimensions as a regulation soccer goal. A restraining line is marked 15 feet from the wall. A ball box for spare ball is located 15 feet in back of the restraining line.

Direction – The subject hold a soccer ball while standing behind the restraining line. On the signal to begin. The subject kicks the ball against the backboard as many times as possible in 30 sec. The ball must be kicked from the restraining line. If subject loose the ball he can either take the spare ball or continue with same ball. Three trail with duration of 30 second each.

Scoring: The score were the highest number of legal kick in any of the trail.

Delimitations

- ❖ The study was delimited to the skill performance women soccer players in outdoor and indoor situation.
- ❖ The study further delimited to age group of 18 to 25 years and on undergraduates and postgraduate students of L.N.U.P.E only.

- ❖ The study was further delimited following selected skills- McDonald soccer skill test and Johnson soccer skill test.

Limitations

- ❖ During the administration of the test no external motivation was provided to the student and differences in performance of subjection the various test conducted due to the lack of motivation was identified as the limitation of this study
- ❖ The quality and type of the shoes with the subjects were wearing was of their own choice.

Results

The statistical analysis of data pertaining to the performance on two selected objective skill tests of soccer collected on 25 female soccer players have been presented in here. To compare the rating on the two selected tests, individual ‘t’ test was applied on the level of significance set at 0.05 level.

The findings of the study have been presented in table- I and table- II

Table- I

Comparison of Mc Donald skill test performance in outdoor and indoor situation.

Performance compared	mean	Standard deviation	Mean difference	Degree of freedom	,t value
indoor	13.88	3.32	9.96	48	11.793 *
outdoor	23.84	2.60			

Tab't' 0.05=1.671

An examination of table- I clearly show the skill performance asses through Mc Donald test in different situations is significantly different, since the obtain t, value 11.79 is much greater than the tab t, value 1.671 . These findings implied that skill performance under Mc Donald test in outdoor condition is better significantly than the indoor condition.

Table- II

Comparison of Johnson skill test performance in outdoor and indoor situation.

Performance compared	mean	Standard deviation	Mean difference	Degree of freedom	,t value
indoor	12.92	3.91	4.56	48	4.965*
outdoor	17.48	2.40			

Tab't' 0.05=1.671

An examination of table- II clearly show the skill performance asses through Johnson test in different situations is significantly different, since the obtain t, value 4.965* is much greater than the tab t, value 1.671 . These findings implied that skill performance under Johnson test in outdoor condition is better significantly than the indoor condition.

Discussion of the Findings

Within the limitations of the present study and on the basis of the findings the following conclusions were drawn.

Mc Donald and Johnson skill test were to be useful for evaluation.

Significant difference of McDonald and Johnson test in the indoor and outdoor conditions.

(It may be due to different playing surfaces, types of shoes, mental preparation and environmental condition.)

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Comparative Study of Blood Pressure and Pulse Rate Between High Achieving and Low Achieving National Level Footballers

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Abstract

The purpose of the study was “comparative study of blood pressure and pulse rate between high achieving and low achieving national level footballers”. The subjects for this study were male national football players. One hundred forty four subjects were selected for the study. Seventy two were those high achieving national level footballers and seventy two were those low achieving national level footballers. The age group of footballers was ranged between 19 to 28 years. To determine the comparative differentials of blood pressure and pulse rate between high achieving and low achieving national level footballers, the test of significance (*t*-ratio) was employed. Further, the level of significance was set at 0.05 level of confidence. The findings of the study reveal that there was significant difference was found in case of systolic blood pressure and pulse rate between high achieving national level footballers exhibited better systolic blood pressure and pulse rate in comparison with the low achieving national level footballers. the study also shows that there was no significant difference in diastolic blood pressure between high achieving and low achieving national level footballers may be due to the reason that the players were almost of the same standard with a similar kind of experience which must have been a probable cause.

Keyword: blood pressure and pulse rate.

Introduction

From its very simple form, sports has emerged into highly organized activity of human society. Sports is highly organized form of play and play is a general innate tendency. Play is very important for preservation, growth and development of organism. Sports is as old as the human society and it holds a prominent place in the modern life. Millions of people participate in sports activities, watch and read about them and spend billions of dollars annually on sports activities and equipment. It now enjoys a popularity which outstrips any other form of social activity. It has become an integral part of the educational process as physical education and sports have been included in the regular curriculum. The students are taught various games and sports in a systematic

manner. Besides teaching, the students are evaluated in their performance. Many people participate in games and sports for deriving physical, mental, social and emotional benefits. Competitive element is inherent in sports, as now sportsmen participate to win and achieve laurels for them as well as for their country contrary to earlier philosophy of participation in sports competition for sake of participation, In other words, competitive sports has come to be valued in society. Towards the attainment of top performance, the physical educationists and coaches are trying to bring the new innovations as they are deeply involved in the preparation of sportsmen for present and future. The modern trend in preparation of sportsmen is to proceed in a scientific manner and take its help of allied sciences to achieve a top level performance.

Objectives

To compare the blood pressure of High Achieving and Low Achieving National Level Footballers.

To compare the pulse rate of High Achieving and Low Achieving National Level Footballers.

Hypothesis It was also hypothesized that there may be significant difference in Blood Pressure and Pulse Rate between High Achieving and Low Achieving National Level Footballers.

Methodology The study was confined to One hundred forty four Senior Level Footballers .Seventy two High Achieving and Seventy two Low Achieving National Level Footballers were selected (age group of 19 to 28 years). The data was collected in the 68th Shantosh Trophy National Football Tournament held Kanchanjangha Stadium Siliguri from 24th February to 9th March 2014. One hundred forty four subjects by administering the tests for the selected test items on the different National level football players.

Sampling The subjects for this study were male National Football players, One hundred forty four subjects were selected for the study. Seventy two were those High Achieving National Level Footballers and Seventy two were those Low Achieving National Level Footballers. The age group of footballers was ranged between 19 to 28 years.

Procedures

Blood pressure was measured by Sphygmomanometer and stethoscopes. Pulse Rate was measured by stopwatch.

Statistical Procedure

To determine the comparative differentials of Blood pressure and pulse rate between High Achieving and Low Achieving National Level Footballers, the test of significance ('t'-Ratio) was employed. Further, the level of significance was set at 0.05 level of confidence.

Results

Table – 1

Significance Of Difference Between High Achieving And Low Achieving National Level Footballers On Pulse Rate In Numbers Of Beats

Variables	M-1	M-2	MD	SE	't' Ratio	Required 't' Ratio
Pulse Rate	67.53	69.40	01.87	00.53	03.53*	01.98

** Significant at 0.05 level of Confidence*

M1 = Mean of High Achieving National Level Footballers

M2= Mean of Low Achieving National Level Footballers

From the above table 1, it is revealed that there was significant difference in case of Pulse Rate Test as calculated 't' value (03.53) was more than tabulated 't' value (1.98) at 0.05 level of significance with 142 degree of freedom. Thus, it may be concluded that there was significant difference between High Achieving and Low Achieving National Level Footballers related to Pulse Rate Test, in which mean Pulse Rate Test is significantly lower for High Achieving National Level Footballers than Low Achieving National Level Footballers at 0.05 level of significance. The findings of the table 1 are presented in figure 1.

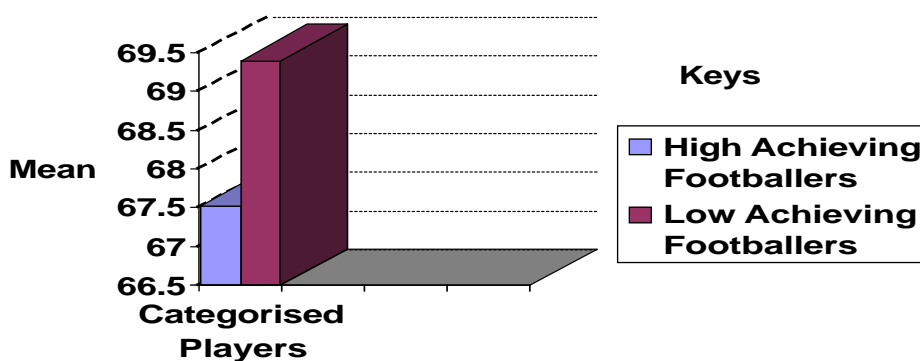


Figure 1: Graphical Depiction of Mean values of Pulse Rate test between High Achieving and Low Achieving National Level Footballers.

Table – 2

Significance Of Difference Between High Achieving And Low Achieving National Level Footballers On Systolic Blood Pressure In Numbers Of Beats

Variables	M-1	M-2	MD	SE	't' Ratio	Required 't' Ratio
Systolic Blood Pressure	124.62	140.24	15.62	3.97	3.93*	1.98

**Significant at 0.05 level of Confidence*

M1 = Mean of High Achieving National Level Footballers

M2 = Mean of Low Achieving National Level Footballers

From the above table 2, it is revealed that there was significant difference in case of Systolic Blood Pressure Test as calculated 't' value (03.93) was more than tabulated 't' value (1.98) at 0.05 level of significance with 142 degree of freedom. Thus, it may be concluded that there was significant difference between High Achieving and Low Achieving National Level Footballers related to Systolic Blood Pressure Test, in which mean Systolic Blood Pressure Test is significantly lower for High Achieving National Level Footballers than Low Achieving National Level Footballers at 0.05 level of significance. The findings of the table 2 are presented in figure 2.

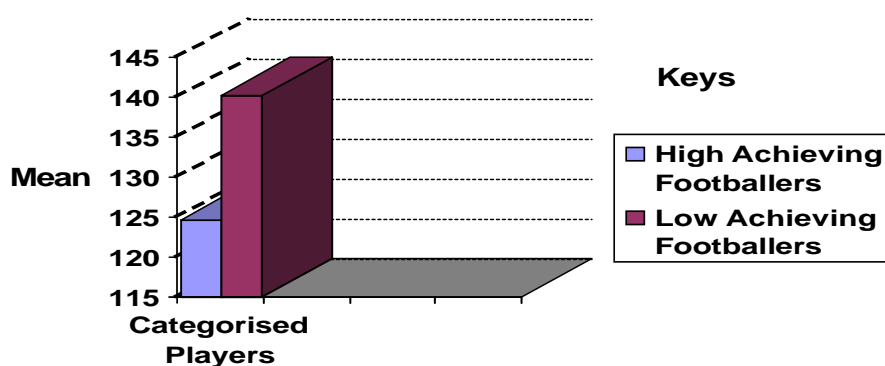


Figure 2 : Graphical Depiction of Mean values of Systolic Blood Pressure test between High Achieving and Low Achieving National Level Footballers.

Table – 3

Significance Of Difference Between High Achieving And Low Achieving National Level Footballers On Diastolic Blood Pressure In Mm. Gh.

Variables	M-1	M-2	MD	SE	't' Ratio	Required 't' Ratio
Diastolic Blood Pressure	81.67	82.14	00.47	01.12	00.42	01.98

**Significant at 0.05 level of Confidence*

M1 = Mean of High Achieving National Level Footballers

M2= Mean of Low Achieving National Level Footballers

From the above table 3, it is revealed that there was insignificant difference in case of Diastolic Blood Pressure Test as calculated 't' value (00.42) was less than tabulated 't' value (1.98) at 0.05 level of significance with 142 degree of freedom. Thus, it may be concluded that there was insignificant difference between High Achieving and Low Achieving National Level Footballers related to Diastolic Blood Pressure Test, in which mean Diastolic Blood Pressure Test is insignificantly lower for High Achieving National Level Footballers than Low Achieving National Level Footballers at 0.05 level of significance. The findings of the table 3 are presented in figure 3.

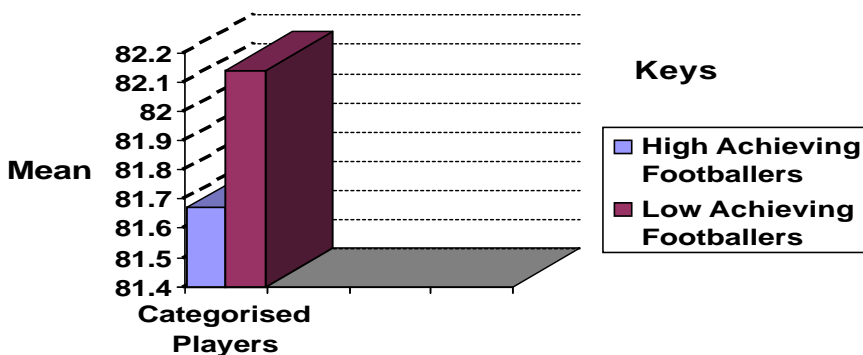


Figure 3: Graphical Depiction of Mean values of Diastolic Blood Pressure test between High Achieving and Low Achieving National Level Footballers.

Discussion

The findings of the study reveal that there was a significant difference in Pulse Rate between High Achieving and Low Achieving National Level Footballers. It may be due to the reason that in Pulse Rate where the subjects who were in the High Achieving National Level Footballers had pulmonary circulation blood leaves the right ventricle via pulmonary artery. The pulmonary artery is divided into two branches for left and right lungs. Within the lungs arteries are divided from arterioles to which further divide into capillaries. As the subjects had undergone systematic training programme the ability of the wall of capillaries might have increased the oxygen absorption ability during inhalation. As the capillaries unite to form veins and veins where by the blood leaves the lungs via pulmonary veins emptying the left atrium of the heart. This would have influenced the heart to function even after circulating required amount of blood to the working muscles and as the subjects were hyper tensed due to the effect of pollution the systematic pranayama practices might have improved the working condition of heart reducing the pulse rate.

The findings of the study reveal that there was a significant difference in Systolic Blood Pressure between High Achieving and Low Achieving National Level Footballers. It may be due to the fact that in systolic blood pressure where the subjects who were in the High Achieving National Level Footballers had undergone practices of different training have improved and influenced higher function of central nervous system thereby improving the working ability of sympathetic and parasympathetic nervous system. Another reason of decrease in systolic blood pressure may be due to the improvement in the elasticity of blood vessels which otherwise might have contracted.

The study also shows that there was no significant difference in Diastolic Blood Pressure between the study shows that there was no significant difference in Diastolic Blood Pressure between High Achieving and Low Achieving National Level Footballers. It may be due to the fact that two categories Footballers like High Achieving and Low Achieving National Level Footballers were undergoing almost similar type of training programme. It may also be the reason that both groups were almost equal in experience and competition.

Further, it is also a known fact that motor skills and large muscle psychometric ability are far more specific. In addition, it is a known fact that it may be a matter of chance that an individual who is highly coordinated in one type of performance will be excellent or clumsy in co-ordination in other sports. Successful patterns of specific traits are generally not the same for all sportsmen. Usually the sportsmen have some common characteristics and the pattern of these characteristics varies from sportsman to sportsman and a successful sportsman may be low on a particular trait but may compensate for strength in another. It has been observed that there

are few extraordinary individuals in the field of physical education whose ability to acquire skills in different games and sports is comparatively faster than others and hence they score better in practical than others. Probably, the reason behind their quick pick-up of skills may lie in the abundance of different variables and their combination of Physiological Abilities.

Conclusions

There was significant difference was found in case of Pulse Rate where High Achieving National Level Footballers exhibited better Pulse Rate in comparison with the Low Achieving National Level Footballers.

There was significant difference was found in case of Systolic Blood Pressure where High Achieving National Level Footballers exhibited better Systolic Blood Pressure in comparison with the Low Achieving National Level Footballers.

There was insignificant difference was found in case of Diastolic Blood Pressure where High Achieving National Level Footballers exhibited better Systolic Blood Pressure in comparison with the Low Achieving National Level Footballers.

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