

ANALYSIS OF PHYSICAL FITNESS OF PLAYERS IN DIFFERENT ZONES

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ABSTRACT

The purpose of the study was to analyze the physical fitness of North and East zone players. 30 male Ball Badminton players participated in National Level championship held at Bangalore (Karnatka), were selected as subjects for the study. The Subjects were ranging from 18 to 27 years. AAPHER youth physical fitness test was administered upon the players of North and East zones. All the subjects were tested in pull-ups, bent knee sit ups for one minute, standing broad jump, 50 yard dash, shuttle run and 600 yard run and walk to collect the data for various motor fitness components in players. The level of significance chosen was 0.05. The result of the study showed that North zone players were found to have more physical fitness than their counter parts

Key words : Physical fitness, North- zone, East- zone, Ball Badminton Players.

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INTRODUCTION

Man is always striving for perfection in every area of knowledge and practice. Human is unique product to nature's creation and evaluation. It is because of his highly developed muscular and nervous system, which enables him to think, express and search whatever he wants (Cab, 1988).

A happy child is a pride of nation; children are world's greatest resources. Investment in child's development is an investment in future of nation. Today's child will be tomorrow's leader and scientist, because children are our future and our most precious resources. The quality of tomorrow's world perhaps even its survival will be determined by well being, safety and development of today's children (Landies, 1955)

Man's existence and effectiveness depends upon the physical fitness. Physical fitness really implies more than the ability to do work without much efforts. Physical fitness affects to some degree all of his life activities not only his physical well being but, also mental effectiveness and personal social adjustment as well (Sloan, 1963).

Physical fitness has been acclaimed as one the essential requirement of personality development, it is a quality of men and women athletes in all spheres of life. Throughout the world physical fitness movement has grown in size and it gives special importance to youth. Increasingly, the medical profession generally agrees that proper exercise is highly desirable as an integral part of maintaining health is for more enjoyable than trying to regain it (Fahrner, 1959).

Physical education is one phase of total education process and that is utilize activities derives that are in order to develop a person organically, neuro-muscularly, intellectually and emotionally. Thus outcomes are realized whenever physical education activities are conducted in such place as the playground, gymnasium, track and swimming pool, out of the many outcomes of physical education visualized by professional leaders (Ikeda, 1962).

METHODOLOGY

Selection of the subject:-

For the purpose of the study 30 male players from each north and east zones of ball badminton was selected as the subjects. The age of the subjects was ranging from 18 to 27 years.

Selection of Variables

As the present study was to find the significant difference of physical fitness components of north and east zone players the researcher had selected these variables. Running /chining, jumping and dodging which involves the basic elements of power, strength, speed agility and endurance to implement the study.

Sources of Data

The required data has been collected from north and east zone National level boys players of ball badminton at national level championship Bangalore.

Selection of the Test

The research scholar selected AAPERD Youth Fitness test to measure and analyze the physical fitness of north and east zone players because of its goodness, and easiness. Apart from this equipments required for the test are easily and readily available at the concerned colleges and universities.

RESULTS AND DISCUSSION

The researcher collected the necessary data in the specified scoring tables. The raw data was converted into “t” score and then the “t” score was added to form a composite score for each player. This was the case of single individual. The composite score for all the subjects was calculated. For comparison of physical fitness of the players “t” test was used. For testing the hypothesis the level of significance was set at 0.05 level of significance.

TABLE 1
DESCRIPTIVE STATISTICS PHYSICAL FITNESS COMPONENTS OF NORTH AND EAST ZONE MALE BALL BADMINTON PLAYERS

S.NO.	Variables	North Zone		East Zone	
		M	SD	M	SD
1.	Pull-ups	07.53	2.08	06 .27	2 .77
2.	Sit-ups	26.90	3.90	24 .43	3 .51
3.	Shuttle Run	11.39	0.57	12 .11	0 .87
4.	Standing Broad Jump	75.43	4.52	71 . 67	5 .20
5.	50 Yard Run	07.56	0.63	07. 74	0 .39
6.	600 Yard Run/Walk	191.03	15.94	198 .17	25.57
7.	Composite Score of Physical Fitness	317.50	28.10	282 .49	23.18

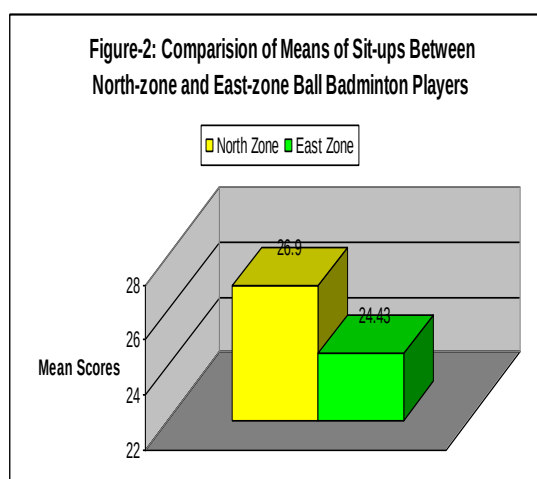
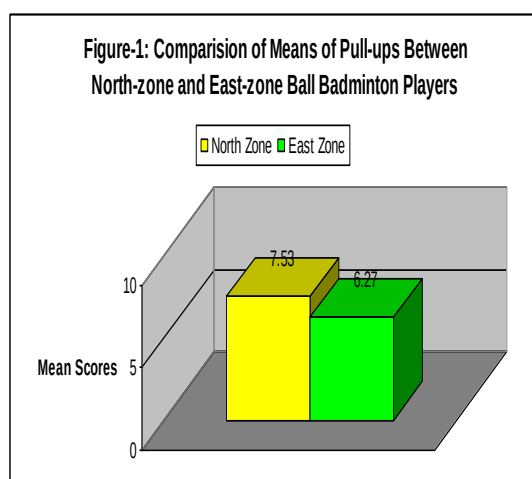


Figure-3: Comparison of Means of Shuttle-Run Between North-zone and East-zone Ball Badminton Players

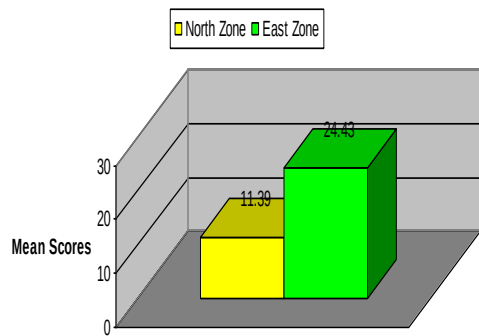


Figure-4: Comparison of Means of Standing Broad Jump Between North-zone and East-zone Ball Badminton Players

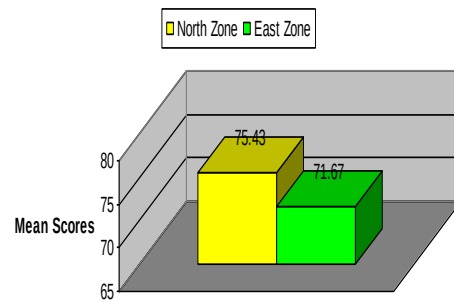


Figure-5: Comparison of Means of 50 Yard Dash Between North-zone and East-zone Ball Badminton Players

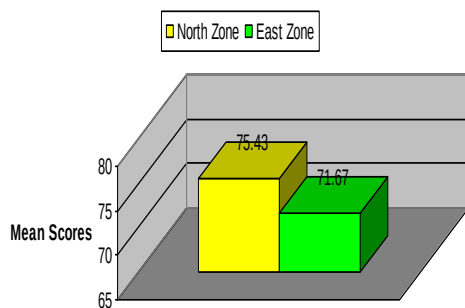


Figure-6: Comparison of Means of 600 Yard Run/walk Between North-zone and East-zone Ball Badminton Players

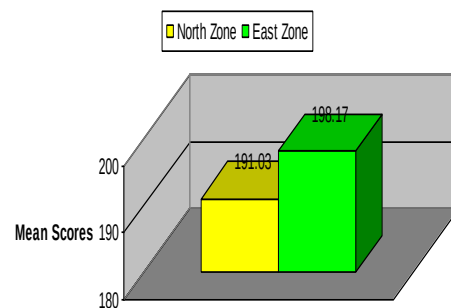


Figure-7: Comparison of Means of Cposite Score Between North-zone and East-zone Ball Badminton Players

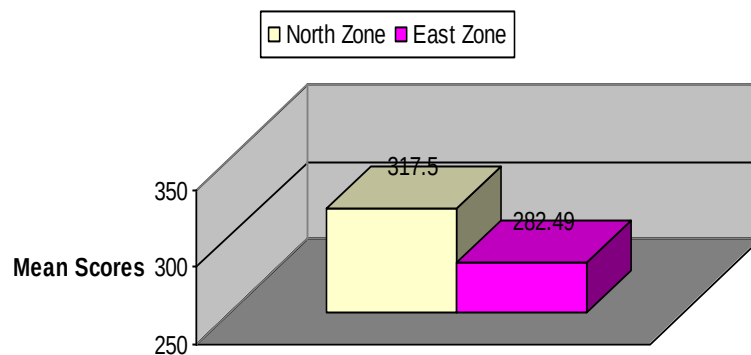


TABLE 2
COMPARISON OF MEANS OF PULL UPS BETWEEN NORTH AND EAST ZONE PLAYERS

S.NO.	Zone	Mean	SD	MD	σ_{DM}	't'
1.	North	7.53	2.08	1.266	0.632	2.00*
2.	East	6.27	2.77			

Significant at .05 level, $t_{.05(58)} = 2.00$

Table 2 revealed that the statistically significant difference existed between North and East Zones male Ball Badminton in their pull-ups, as the obtained t-value of 2.00 was exact as the required value to be significant.

TABLE 3
COMPARISON OF MEANS OF PULL UPS BETWEEN NORTH AND EAST ZONE PLAYERS

S.NO.	Zone	Mean	SD	MD	σ_{DM}	't'
1.	North	26.9	3.9	2.466	0.957	2.57*
2.	East	24.43	3.51			

Significant at .05 level, $t_{.05(58)} = 2.00$

Table 3 revealed that the statistically significant difference existed between North and East Zones male Ball Badminton in their pull-ups, as the obtained t-value of 2.57 was higher than the required value to be significant.

TABLE 4
COMPARISON OF MEANS OF SHUTTLE RUN BETWEEN NORTH AND EAST ZONE PLAYERS

S.NO.	Zone	Mean	SD	MD	σ_{DM}	't'
1.	North	11.39	0.57	0.791	0.1888	4.17*
2.	East	12.11	0.87			

Significant at .05 level, $t_{.05(58)} = 2.00$

Table 4 revealed that the statistically significant difference existed between North and East Zones male Ball Badminton in their shuttle Run, as the obtained t-value of 4.17 was higher than the required value to be significant.

TABLE 5
COMPARISON OF MEANS OF STANDING BROAD JUMP BETWEEN NORTH
AND EAST ZONE PLAYERS

S.NO.	Zone	Mean	SD	MD	σ_{DM}	't'
1.	North	75.43	4.52	3.76	1.257	2.98*
2.	East	71.67	5.2			

Significant at .05 level, $t_{.05(58)} = 2.00$

Table 5 revealed that the statistically significant difference existed between North and East Zones male Ball Badminton in their Standing Broad Jump, as the obtained t-value of 4.17 was higher than the required value to be significant.

TABLE 6
COMPARISON OF MEANS OF 50 YARD DASH BETWEEN NORTH AND
EAST ZONE PLAYERS

S.NO.	Zone	Mean	SD	MD	σ_{DM}	't'
1.	North	7.56	0.63	0.183	0.135	1.35
2.	East	7.74	0.39			

Significant at .05 level, $t_{.05(58)} = 2.00$

Table 6 revealed that the statistically significant difference was not existed between North and East Zones male Ball Badminton in their 50 Yard Dash, as the obtained t-value of 1.35 was less than the required value to be significant.

TABLE 7
COMPARISON OF MEANS OF 600 YARD RUN/WALK BETWEEN NORTH
AND EAST ZONE PLAYERS

S.NO.	Zone	Mean	SD	MD	σ_{DM}	't'
1.	North	191.03	15.94	7.133	5.50	1.29
2.	East	198.17	25.57			

Significant at .05 level, $t_{.05(58)} = 2.00$

Table 7 revealed that the statistically significant difference was not existed between North and East Zones male Ball Badminton in their 600 Yard Run/walk, as the obtained t-value of 1.29 was less than the required value to be significant.

TABLE 8
COMPARISON OF MEANS OF COMPOSITE SCORE BETWEEN NORTH AND EAST ZONE PLAYERS

S.NO.	Zone	Mean	SD	MD	σ_{DM}	't'
1.	North	317.5	28.1	35.00	6.65	5.2*
2.	East	282.49	23.18			

Significant at .05 level, $t_{.05(58)} = 2.00$

Table 8 revealed that the statistically significant difference existed between North and East Zones male Ball Badminton in their Composite Score, as the obtained t-value of 5.2 was higher than the required value to be significant.

DISCUSSION

It was observed that the mean of composite scores of both North and East zone players are 317.5 and 282.49 and mean difference is 35.00. The calculated "t" value of north and east zone players is 5.2 which is greater than the tabulated "t" value 2.002 at 0.05 level of confidence. Hence there is significant difference in composite scores between north and east zone players.

From the discussion it was found that the north zone players have better physical fitness than that of the east zone players, because of good climatic conditions and less pollution in north zone than that of the east zone and because of climbing on hills increase the endurance and strength of north zone players than that of east zone players, the north zone players also takes good balanced diet, that is why north zone players have better physical fitness than that of the east zone players.

On the whole the study shows that north zone players due to their hardship nature and good climatic conditions have better physical fitness than that of east zone players.

CONCLUSIONS

Within the limitations of this study, the following conclusions were drawn from the results:

1. The north zone players have better physical fitness than east zone players.
2. Good environment and good climatic conditions help a man to acquire more physical fitness.
3. Good quality of diet will help a man to acquire good and better physical fitness.

RECOMMENDATIONS

1. The subjects selected where the age group of 18 to 27 yrs and so it is recommended that similar study can be conducted for men of different age groups.
2. It is recommended that similar studies can be conducted on girls and women players.
3. The study can be conducted also on the people living at various climatic conditions.
4. This study can be conducted at different places.

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EFFECT OF SURYA NAMASAKAR ON HEALTH RELATED PHYSICAL FITNESS OF UNDER GRADUATE STUDENTS

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ABSTRACT

In recent times, medical fraternity is attracted towards yoga. Suryanamaskar is a part of yogic practices and is believed to be an all-round exercise. The present study tested efficacy of regular practice of 'Suryanamaskar' in improving the health related physical fitness. The present study was conducted on 40 male subjects studying in undergraduate course in Araria College Stadium, Araria, Ranchi (Bihar). It was observed that 6 weeks of Suryanamaskar practice increases shoulder strength, abdominal strength, flexibility, and cardio-respiratory efficiency. At the same time it decreases the fat body mass and lean body mass, as evaluated by skin-fold caliper in male under graduate subjects. From this study we conclude that Suryanamaskar practice can be advocated to improve health related physical fitness for patients as well as healthy individuals.

Key words : Suryanamaskar , Health related physical fitness, Body composition,

INTRODUCTION

India has a rich tradition of yogic practices. Now-a-days yoga, the ancient practice of postures, breathing and meditation is gaining a lot of attention from healthcare professionals. With increasing scientific research in yoga, its therapeutic aspects are also being explored. Suryanamaskar – The salutation to the God Sun, is also a part of Indian traditional yogic practices. Each cycle of suryanamaskar is a sequence of certain ‘asanas’, performed along with ‘pranayama’ [1]. The sequence of asanas is such that each asana is complimentary to the next. During Suryanamaskar, muscles of the entire body experience stretch and pressure alternately and therefore it is said to give more benefits with less expenditure of time[2]. It is claimed that suryanamaskar practice gives benefits of both- asana and pranayama and improves general health and fitness. Hence, the present study was undertaken to study effects of suryanamaskar practice on cardio respiratory fitness parameters in young, healthy subjects. Staining of cytology smear that is qualitatively as good as standard Papanicolaou stain for screening of cancer.

Yoga is a 5000-year-old Indian philosophy that combines exercise, breathing, diet, relaxation and meditation. It is a combination of physical and mental disciplines which make the body stronger and healthier and the mind calmer and more controlled, helping towards self-realization. It emphasizes the relationship of body, mind and breath, the synchronization of the breath and movement, the use of preparation, counter pose, sequences of linked postures and modification of postures to suit individual needs.

Yoga is the art of skilful living. It has many aspects. It is about getting to know yourself. Integrating the many aspects of ourselves and putting us in control of our minds; the effects are holistic, bringing about health awareness and a change of attitude towards ourselves and the world around us. We cannot practice Yoga without changes happening within ourselves, becoming more aware that it influences our life and the way we live.

The practice can be low impact but it can also be very demanding. The beauty of Yoga is that it is accessible to everyone, as the session can be adapted to each person's level of fitness or state of health. For those who love Yoga, it becomes a way of life. Whether your path is physical, mental, spiritual or a combination, yoga is for everyone. Most Yoga classes are composed of people with all abilities; these are termed as 'mixed ability' classes. There are classes especially for beginners, intermediate and advanced practitioners, enabling teachers to grade their students and plan the lesson accordingly.

Yoga is good for your posture and structural balance (leading to mental balance), it promotes flexibility and suppleness, strength and stamina, tones the internal organs, improves concentration, teaches you how to breathe more effectively, facilitates deep relaxation and calms the mind.

When you breathe slowly and deeply, more oxygen circulates through the blood. During exercise the cells of the body receive a fresh supply of nutrients and oxygen, so increasing energy, vitality and the flexibility of youth.

Yoga can help a whole range of ailments including asthma, high blood pressure, lower back pain, arthritis, ME, menopausal changes, menstrual problems, stress, anxiety and depression. Yoga movements stretch all the major muscle groups and release built up tension. Through posture work, as the body's circulation increases and bones are properly aligned, age related rheumatism and arthritis can be alleviated.

You should not expect immediate results as Yoga is a gradual, progressive process. However, some people may find instant benefit after their first session. Yoga is not a 'cure all' treatment and care should be taken to find the right teacher and class if you have any medical condition. For some conditions it may be advisable to seek advice from your doctor before commencing a yoga class. It is important that the teacher knows about your condition prior to the practice (all information is confidential).

MATERIALS AND METHODS

In the present study, under graduate students, 40 in number belong to the Araria College Stadium, Araria, Ranchi (Jharkhand) participated voluntarily. Subject were selected randomly. Their age ranged between 18 to 28 years. They all were informed regarding the nature of the study and written consent was obtained. The Following data was collected for all the subjects from the different parameters of health related physical fitness.

Muscular strength was measured by Chin-ups, Muscular endurance was measured by bent knee sit-ups, Cardio-respiratory capacity was measured by 1 minute walk/run, Flexibility was measured by sit and reach test and Body composition was measured by Skin-fold caliper.

Horizonital Bar, Carpet, 400 Meter Track, Paper, Whistle, Flexibility Measurement Scale, Skin Fold Caliper, Stop Watch and Score Board etc. means were used to conduct the test for health related fitness of the concerned respondents.

The training program for Surya Namaskar was implemented upon all the selected subjects for six weeks. Training program for six weeks have been presented as below:

Exercise	Intensity	Repetition	Time	Recovery	Volume
<u>Ist & IInd Week</u>					
SURYA NAMASKAR	50%	07	15 Min.	5 Min.	20 Min.
<u>IIIrd & IVth Week</u>					
SURYA NAMASKAR	55%	15	30 Min.	10 Min.	40 Min.
<u>Vth & VIth Week</u>					
SURYA NAMASKAR	60%	20	45 Min.	15 Min.	60 Min.

RESULTS AND DISCUSSION

To find out the significant difference between pre-test and post-test of health related physical fitness tests of undergraduate male students, Means, Standard deviations and t-ratios were computed and data pertaining to this have been presented in Table 1-7 and depicted in figure 1-6

TABLE 1

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE TEST AND POST –TEST OF CHIN UPS

Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	6.18	0.83	0.7	0.20	3.5*
Post-test	6.88	0.93			

*Significant at 0.05 level , $t_{.05(39)} = 2.021$

It evident from Table 1 that the statistically significant difference was observed between pre-test and post-test means of students in chin-ups test of health related physical fitness , as the obtained t-value of 3.5 was higher than the required $t_{.05(39)} = 2.02$.

TABLE 2

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE TEST AND POST – TEST OF SIT UPS

Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	27.25	5.40	2.48	1.20	2.07*
Post-test	29.73	5.31			

*Significant at 0.05 level

$t_{.05(39)} = 2.02$

It evident from Table 2 that the statistically significant difference was observed between pre-test and post-test means of students in sit-ups test of health related physical fitness , as the obtained t-value of 2.07 was higher than the required $t_{.05(39)} = 2.02$.

TABLE 3

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE TEST AND POST –TEST OF SIT AND REACH

Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	23.35	5.88	2.6	1.24	2.10*
Post-test	25.95	5.16			

*Significant at 0.05 level

$t_{.05(39)} = 2.02$

It evident from Table 3 that the statistically significant difference was observed between pre-test and post-test means of students in sit and reach test of health related physical fitness , as the obtained t-value of 2.10 was higher than the required $t_{.05(39)} = 2.02$.

TABLE 4

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE-TEST AND POST-TEST OF 1 MILE RUN/WALK.

Test	Mean	S.D.	MD	σ DM	t-ratio
Pre-test	526.12	71.43	65.4	13.47	4.86*
Post-test	460.72	46.37			

*Significant at 0.05 level

t .05 (39) = 2.02

It evident from Table 4 that the statistically significant difference was observed between pre-test and post-test means of students in 1 mile run/walk test of health related physical fitness , as the obtained t-value of 4.86 was higher than the required t .05 (39) = 2.02.

TABLE 5

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE-TEST AND POST-TEST OF FAT WEIGHT.

Test	Mean	S.D.	MD	σ DM	t-ratio
Pre-test	13.93	3.81	0.64	0.75	0.85
Post-test	13.29	2.90			

Insignificant at 0.05 level

t .05 (39) = 2.02

It evident from Table 5 that the statistically significant difference was not found between pre-test and post-test means of students in fat weight, as the obtained t-value of 0.85 was lesser than the required t .05 (39) = 2.02.

TABLE 6

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE-TEST AND POST-TEST OF LEAN BODY WEIGHT

Test	Mean	S.D.	MD	σ DM	t-ratio
Pre-test	51.10	7.39	0.65	1.62	0.40
Post-test	50.45	7.09			

Insignificant at 0.05 level

T .05 (39) = 2.02

It evident from Table 6that the statistically significant difference was not found between pre-test and post-test means of students in lean body weight, as the obtained t-

value of 0.40 was lesser than the required $t_{.05(39)} = 2.02$.

TABLE 7

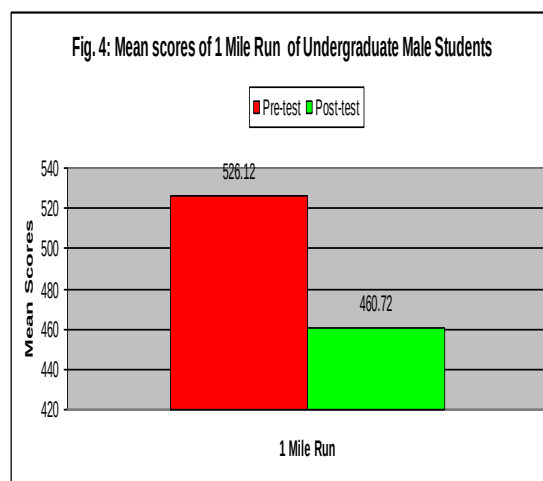
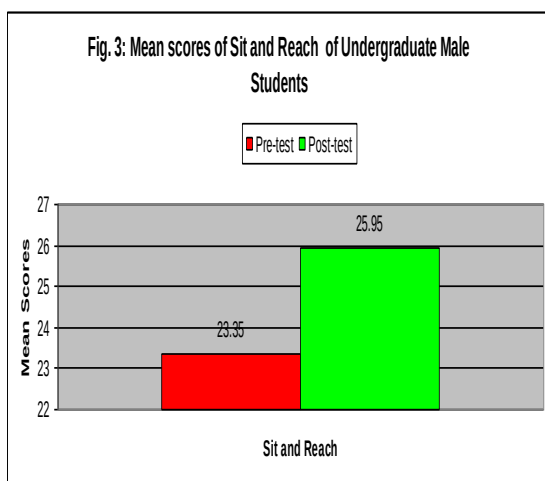
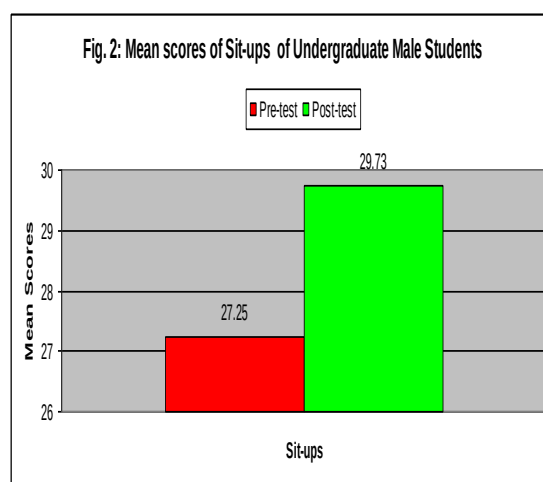
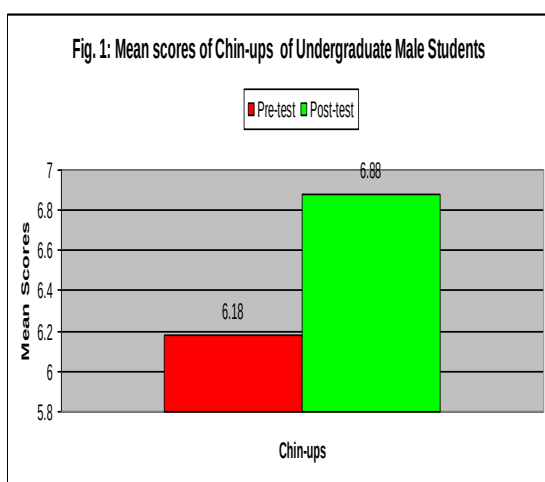
SUMMARY OF MEAN, STANDARD DEVIATION AND T-RATIO OF PRE-TEST AND POST-TEST OF COMPOSITE SCORE .

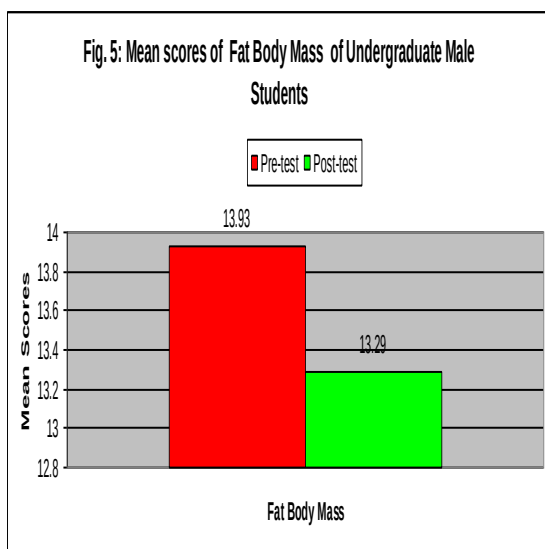
Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	286.13	25.55	27.02	5.23	5.17*
Post-test	313.15	20.98			

*Significant at 0.05 level

$t_{.05(39)} = 2.021$

It evident from Table 7 that the statistically significant difference was observed between pre-test and post-test means of students in composite score of health related physical fitness , as the obtained t-value of 5.17 was higher than the required $t_{.05(39)} = 2.02$.





DISCUSSION

As shown in table 1 to 4 the shoulder strength, abdominal strength and endurance and flexibility among undergraduate male students show statistically significant improvement with regular practice of suryanamaskar. Yogic practices also improve respiratory muscle endurance (Madan & Thombre, 1992). I mile run/walk test for endurance, which also showed statistically significant improvement, indicates better respiratory endurance in male undergraduate students after regular practice of Suryanamaskar. Statistically significant reduction in fat body mass and lean body mass after regular practice of suryanamaskaras is attributed to decreased body weight. As a whole, the high statistically significant improvement was observed among undergraduate male students after regular practice of Suryanamaskar.

CONCLUSION

1. Significant difference was observed between pre-test and post-test means of students in their chin-ups, sit-ups, sit and reach, 1mile run/walk and composite score of health related physical fitness.
2. Under Graduate students did not differ significantly in their fat body mass and lean body mass.
3. Similar body composition was found among under Graduate students of Ranchi.
4. Effect of Surya Namaskar was observed among under Graduate students of Ranchi.

RECCOMENDATIONS

1. The present study though preliminary suggests that regular suryanamaskar practice improves cardiopulmonary efficiency in healthy adolescents and is beneficial exercise for male students. Such yogic practices can be advised to those interested in improving cardiovascular efficiency but cannot undergo strenuous physical exercise. Further research with larger sample size and for varied age groups is required for applying these results to the population in general.
2. Health related fitness can be maintained through Surya Namaskar program during vacation.
3. Similar study may be replicated on different age category students of Schools.
4. Surya Namaskar program may help to promote the physiology of human of unhealthy persons.

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LEADERSHIP BEHAVIOUR PATTERN AMONG MALE AND FEMALE GYMNASTS

Dr. Rajkumar Sharma*

ABSTRACT

The purpose of study was to examine and compare the leadership behavior of male and female gymnasts. Seventy nine (Males=43, Females=36) national school level elite male and female gymnasts representing their respective state school teams in National School Games, 2009-10 and who volunteered to participate in this study, were randomly selected to serve as subjects for this study. Their age ranged from 17 to 19 years. The Leadership Scale for Sports developed and prepared in 1994 by Chelladurai was used to measure the five dimensions of leader behaviour as preferred and perceived by male and female involved in Artistic Gymnastics. Means, standard deviations and t-ratio were computed to establish the significance of differences between National School level elite male and female Gymnasts regarding the five dimensions leader behaviour of preferred and perceived leadership. The level of significant was set at $p < 0.05$ level. The data analysis revealed that male and female gymnasts did not differ significantly in all the dimensions of preferred leader behavior except positive feed back dimension and . TI, AB and SS dimensions of perceived leader behaviour. Male gymnasts preferred a greater degree of preferences and perceptions for coaching behavior from their coaches than their counter parts. The discrepancy was not observed between preferred and perceived leader behaviour of male and female gymnasts from their coaches on five leader behaviour dimensions. Further, both sex gymnasts preferred and perceived more of training and instruction and least autocratic leader behaviour from their coaches.

Key words: Preference, Perception, Coach leadership, Elite gymnasts

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INTRODUCTION

One of the main goals in sports is to create a sense of accomplishment and satisfaction among fellow athletes. In order to accomplish this, one must understand that there are several dynamics that come into play that influence the athletes' way of thinking when it comes to success and their experiences in sports. The importance of the coach in determining the quality and success of an athlete's sport experience, surprisingly, has seen little research that identifies optimal coaching behavior and factors that influence the effectiveness of particular behavior.

Leader ability, relative to the ability of members, influences actual behavior. Leader ability consists of group-task and process knowledge, problem solving capacity, and interpersonal skills. Leader experience influences actual behavior through confidence and self-esteem development in the leader and athlete, perhaps making less preferred behaviors more acceptable for the athlete. Vast technique and tactical knowledge held by the coach and shared among athletes may result in athletes' acceptance of autocratic leader behaviors. Situational characteristics and members' preferred behaviors also influence actual leader behavior include various individual, team, and entire organization rules, regulations, and goals [2].

An individual's perception of another's behavior is more important than the behavior itself in determining one's feelings or actions toward the other person has suggested by Shaver [15]

Multidimensional model of leadership focuses upon three states of leader behavior. Actual coaching behavior describes what is done or can be done to influence athletes. Required behavior describes behavior prescribed by the situation. Preferred behavior describes the type of behavior student-athletes would like from their coaches [3].

Preferred leader behavior describes the type of behavior athletes would like from their coaches. The preferred behavior influences actual leader behavior, perhaps as a result of situational requirements such as organizational rules, regulations, and goals and influenced by member characteristics of personality, ability, attitude toward authority, attitude towards individualism, self-esteem, and need for independence [4] .

Erle [10] revealed that male athletes gave higher ratings to training and instruction leader behaviors. Terry [16] found that male elite athletes had a significantly stronger preference for autocratic leader behavior than did their female peers. He also found that males to prefer more autocratic behavior, but not less democratic behavior, than females in a sample of competitive elite athletes. Conclusions Based on the results of this study, the following conclusions were reached: Chelladurai & Saleh [5] found a significant relationship between longer tenure in sport and university and elite athletes' preferences for social support leader behaviors. Chelladurai and Carron [6] revealed a significant relationship between longer tenure in sport and preferences for social support leader behaviors. They also found a significant relationship between longer tenure and university individual and team sport student-athletes' preferences for training and instruction leader behaviors. Cheng [9] studied 800 athletes from colleges, junior high schools, and senior high schools, finding that male athletes have a higher preference for autocratic behavior than do female athletes. Chang [7] indicated that athletes' preferred significant autocratic behavior proved effective in athletes;

thus, the means of males are higher than females in social support, positive feedback, training and instruction, democratic behavior.

Wu, Pender and Noureddine [17] further found that the girls' deficiencies created greater barriers than their male complements, indicating lower benefits and self-efficacy for physical activity. However, these girls reported higher levels of social support, modeling and norms from their parents

The athlete represents an equally important member of the sport leadership dyad, but has largely been ignored in the research. This is unfortunate because investigations determining athlete preferences for and perceptions of coaching behavior may lead to uncovering important leadership variables in sport. The types of leadership behavior styles athletes prefer from their coach and whether differences in these preferences exist between athletes engaged in team versus individual sports, male versus female athletes, participating at different competition levels appear appropriate areas of investigations.

This study examined the preferred and perceived leadership behavior of National level elite male and female gymnasts of India. The study also examined the congruence's between preferences and perception of both gender. Therefore, the purpose of this study was to explore (a) hypothesis stating that there will be no significance difference between genders in the preferred and perceived leadership behavior of their coaches, and (b) hypothesis stating that there will no significance difference between gender in their preferences and perceptions from their coaches.

MATERIALS AND METHODS

Samples

Seventy nine (Males=43, Females=36)) national school level elite male and female gymnasts representing their respective state school teams in National School Games (Gymnastics) Championships, 2009 and who volunteered to participate in this study, were selected to serve as subjects for this study. The subjects were in age group of 17 to 19 years. The subjects were randomly selected from amongst the total male and female gymnasts, who have qualified for the apparatus event final, team event final and all around event final during the National School Games (gymnastics) championships, 2009. held at Sports Stadium, Agra (U.P.) and organized by State Education Department of Uttar Pradesh.

Instrumentation

Leadership Scale for Sports (LSS) by Chelladurai [8], has five-factor solutions with 40 items describing the most salient dimensions of coaching behavior, selected as the most meaningful. The LSS consists of two decision-style factors (Democratic--9 items and Autocratic Behavior--5 items) with a total of 14 items, two motivational factors (Social Support--8 items and Positive Feedback--5 items) with a total of 13 items, and one direct task factor (Training & Instruction) with 13 items. Although there are three versions of the original questionnaire (i.e. athlete preference and athlete perception and coach's perception), the athlete preference version and athlete perception version were used in the current study. The items have a five-point Likert response-format ranging from "never" (1) to "always" (5). The scoring of each item is as follows: 1= Never; 2= Seldom; 3= Occasionally; 4= Often; 5= Always. In the present study, scoring was reversed, as the data were considered more easily interpreted with a score of 5 as "high" and a score of 1 as "low".

This research study was conducted during the National Schools Game, 2009-2010 in Agra (U.P.) from November 28 to December 2, 2009. The author gave the survey instruments to the coaches, who distributed them to the gymnastic team members. Gymnasts were asked to fill out the survey questionnaire (LSS) before the games started or after they finished.

Statistical Analysis

To assess the preferred and perceived leadership behaviour of National School level elite male and female Gymnasts, means and standard deviations were computed. The t-ratio was computed to find out the significant difference between National School level elite male and female Gymnasts on five dimensions of preferred and perceived leader behaviour. The data pertaining to this are presented in Table 1 to 4.

RESULTS AND DISCUSSION

The descriptive statistics of preferences and perceptions on five dimensions of leader behaviour of national level elite male and female gymnasts is shown in Table 1. The mean scores of five dimensions of leader behaviour as preferred and perceived by elite male and female gymnasts of National School level are shown in figures 1 to 2.

TABELE 1

DESCRIPTIVE STATISTICS OF PREFERENCES AND PERCEPTION ON FIVE DIMENSIONS OF LEADER BEHAVIOUR OF ELITE MALE AND FEMALE GYMNASTS OF NATIONAL SCHOOL LEVEL

S. N0.	Leader Behaviour Dimensions	Preferences				Perceptions			
		Male		Female		Male		Female	
		M	± SD	M	± SD	M	± SD	M	± SD
1	Training & Instruction (TI)	4.124	± 0.521	3.973	± 0.563	4.071	± 0.524	4.036	± 0.369
2	Democratic Behaviour (DB)	3.901	± 0.594	3.694	± 0.594	3.819	± 0.549	3.431	± 0.633
3	Autocratic Behaviour (AB)	3.394	± 0.894	3.274	± 0.542	3.414	± 0.732	3.314	± 0.664
4	Social Support (SS)	3.773	± 0.601	3.696	± 0.541	3.771	± 0.521	3.691	± 0.566
5	Positive Feedback (PF)	3.983	± 0.752	3.680	± 0.488	3.963	± 0.574	3.508	± 0.573

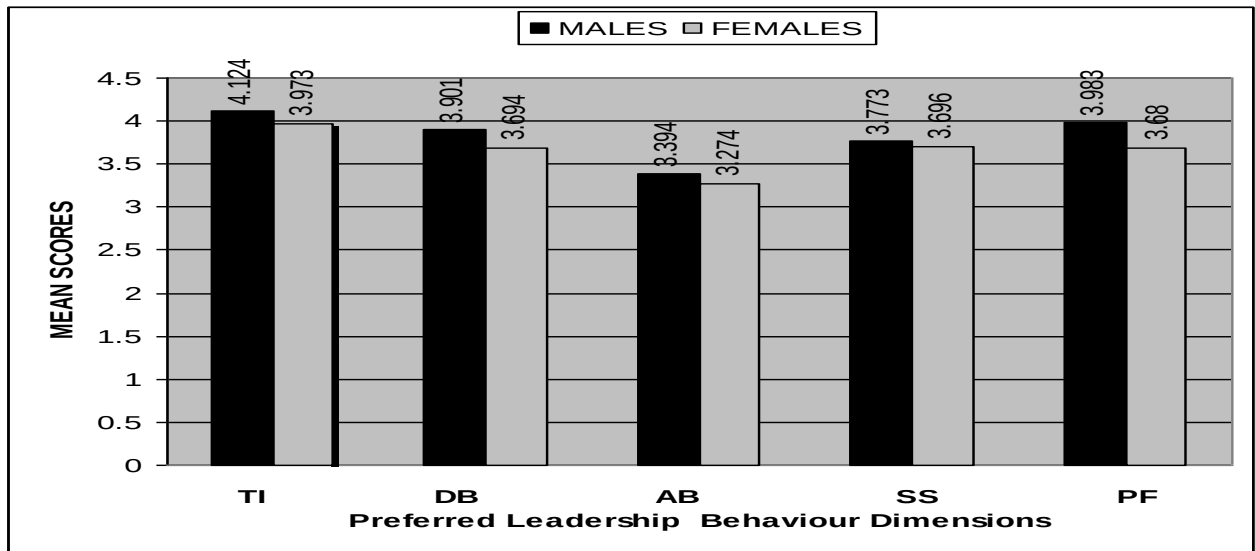


Fig. 1 : Mean Scores of Five Dimensions of Leader Behaviour as Preferred by Elite Male and Female National level School Gymnasts of India.

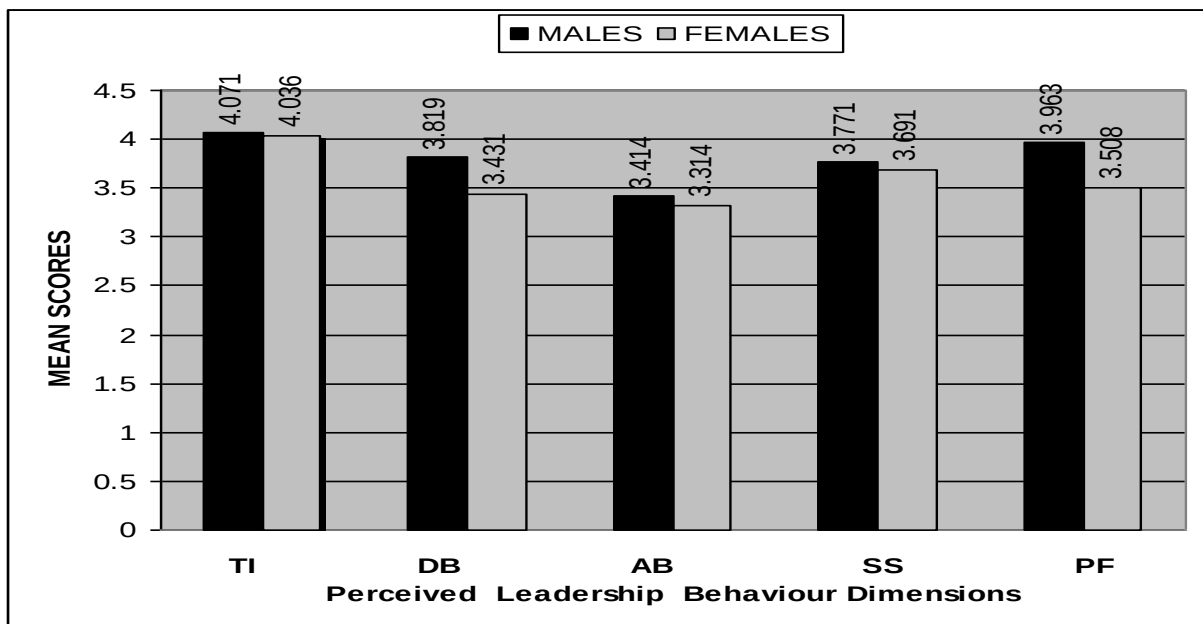


Fig. 2 : Mean Scores of Five Dimensions of Leader Behaviour as Perceived by Elite Male and Female National level School Gymnasts of India

For the purpose of the comparison between elite male and female gymnasts, t-ratio with independent factors with five dimensions of preferred leader behaviour was applied as a set of dependent variables. The data pertaining to this are presented in Table 2

TABELE 2

SIGNIFICANCE OF DIFFERENCES BETWEEN MEAN SCORES OF NATIONAL SCHOOL LEVEL ELITE MALE AND FEMALE GYMNASTS ON LEADER BEHAVIOUR DIMENSIONS OF PREFERRED LEADERSHIP

Leader Behaviour Dimensions	Sex	Mean	MD	σ DM	t-ratio
Training & Instruction (TI)	Male	4.124	0.151	0.123	1.23
	Female	3.973			
Democratic Behaviour (DB)	Male	3.901	0.207	0.135	1.53
	Female	3.694			
Autocratic Behaviour (AB)	Male	3.394	0.120	0.189	0.63
	Female	3.274			
Social Support (SS)	Male	3.773	0.077	0.131	0.59
	Female	3.696			
Positive Feedback (PF)	Male	3.983.	0.303	0.147	2.05*
	Female	3.680			

*Significant at .05 level, $t_{.05}(76) = 1.99$

As can be seen from Table 2, that the significant difference was observed between the preferences of national school level elite male and female gymnasts on positive feedback dimension of preferred leadership only. But, they did not differ significantly on rest of the dimensions of preferred leadership i.e. TI, DB, AB and SS.

For the purpose of the comparison between elite male and female gymnasts, t-ratio with independent factors with five dimensions of perceived leader behaviour was applied as a set of dependent variables. The data pertaining to this are presented in Table 3

TABELE 3

SIGNIFICANCE OF DIFFERENCES BETWEEN MEAN SCORES OF NATIONAL
SCHOOL LEVEL ELITE MALE AND FEMALE GYMNASTS ON LEADER
BEHAVIOUR DIMENSIONS OF PERCIEVED LEADERSHIP

Leader Behaviour Dimensions	Sex	Mean	MD	σ DM	t-ratio
Training & Instruction (TI)	Male	4.071	0.035	0.105	0.33
	Female	4.036			
Democratic Behaviour (DB)	Male	3.819	0.388	0.133	2.89*
	Female	3.431			
Autocratic Behaviour (AB)	Male	3.414	0.100	0.158	0.63
	Female	3.314			
Social Support (SS)	Male	3.771	0.080	0.123	0.65
	Female	3.691			
Positive Feedback (PF)	Male	3.963	0.455	0.131	3.48*
	Female	3.508			

*Significant at .05 level
t.05 (76) = 1.99

As can be seen from Table 3, that significant difference was found between the perceptions of national school level elite male and female gymnasts on democratic behaviour and positive feedback dimensions of perceived leadership. But, But, they did not differ significantly on rest of the dimensions of perceived leadership i.e. TI, AB and SS.

To observed the discrepancy between perceived (actual) and preferred leader behaviour of national level elite male and female gymnasts from their coaches t-ratio with independent factors with five dimensions of perceived and preferred leader behaviour was applied as a set of dependent variables. The data pertaining to this are presented in Table 4

TABELE 4
SIGNIFICANCE OF DIFFERENCES BETWEEN MEAN SCORES OF NATIONAL SCHOOL
LEVEL ELITE MALE AND FEMALE GYMNASTS ON LEADER BEHAVIOUR
DIMENSIONS OF PREFERRED AND PERCIEVED LEADERSHIP

Leader Behaviour Dimensions	Sex	Mean		MD	σ DM	t-ratio
		Preference	Perception			
Training & Instruction (TI)	Male	4.124	4.071	0.053	0.113	0.47
	Female	3.973	4.036	0.063	0.114	0.56
Democratic Behaviour (DB)	Male	3.901	3.819	0.082	0.123	0.67
	Female	3.694	3.431	0.263	0.147	1.79
Autocratic Behaviour (AB)	Male	3.394	3.414	0.020	0.176	0.11
	Female	3.274	3.314	0.040	0.167	0.24
Social Support (SS)	Male	3.773	3.771	0.002	0.121	0.02
	Female	3.696	3.691	0.005	0.132	0.04
Positive Feedback (PF)	Male	3.983	3.963	0.020	0.144	0.13
	Female	3.680	3.508	0.171	0.127	1.35

Non-significant at .05 level, $t_{.05}(84) = 1.99$ (Male), $t_{.05}(68) = 2.00$ (Female).

It is evident from table 4, that the national school level elite male and female gymnasts did not differ significantly in their preferences and perceptions for the set of five dimensions of leader behaviour.

DISCUSSION

Researchers have found similar leadership preferences between national level elite male and female Gymnasts. This may be due to similar cultural background, sports ideologies and competitive environment. But they were differing only in positive feedback dimension of preferred leaders behaviour. It indicates that the positive feedback is contingent and limited to athletic context. In case of perceptions, they were also similar in three dimension of perceived leadership behaviour, but differ in democratic behaviour and positive feedback leader behaviour. The national level elite male gymnasts preferred and perceived more training and instruction, democratic and autocratic behaviour, social support and positive feedback. than their counter parts. This was partially supported by other researchers Terry [16].

When the school national level elite male and female gymnasts were compared on preferred and perceived leadership, It revealed that significant differences in preferences and perceptions based on gender were not found. It clearly revealed that they were satisfied with the actual and expected behaviour of coaches, which confides with the other research by Terry and Howe [12], Beam [1] & Sharma [14]. The findings were attributed to a proposed shrinking gender gap that may have resulted due to increased participation opportunities for females in sports as expressed by Lopiano [11]. Further, it indicates that no discrepancy was observed between perceived (actual) and preferred behaviour of national level elite male and female gymnasts from their coaches.

The preferences and perceptions expressed by the gymnasts are not in congruence with

above cited studies. It seems that national level elite male and female gymnasts included in the study are more serious about their performance and are more goal- oriented. The coaches of these should aim at improving the athlete's performance by emphasizing and facilitating hard and strenuous training, instructing the athletes in skills, techniques and tactics of sport. They should recognize the decision making style and reward to their good performance. This contrasting result may be attributed to the fact that these gymnasts might not have been trained seriously and regularly by a qualified coach. Indian culture and sporting environment may also be one of the possible reasons for these leadership preferences and perceptions. Riemer and Toon [13] suggest that situation differences between sports might determine saliency of leadership behaviour and leadership would be divergent among nations.

CONCLUSIONS

Within the limitation of the study, the following conclusions were drawn:

1. Significant difference was found between the elite male and female gymnasts in their positive feedback dimension of preferred leader behaviour. Elite male gymnasts preferred a greater degree of preferences for coaching behaviors from their coaches than their counter parts.
2. There were significant mean differences between elite male and female gymnast's perceptions in Democratic behaviour and positive feedback. Elite male gymnasts perceived a greater degree of perceptions for coaching behaviors from their coaches than their counter parts.
3. There were no significant mean differences between elite male and female gymnasts in their TI, AB and SS perceived leadership behaviour.
4. There was no discrepancy between preferred and perceived leader behaviour of elite male and female gymnasts from their coaches on five leader behaviour dimensions.
5. There were significant mean differences among elite male and female gymnasts of national school level in their preferences and perceptions on five leader behaviour dimensions
6. Male and female gymnasts preferred and perceived more of training and instruction and least autocratic leader behaviour from their coaches.

PRACTICAL APPLICATION

Coaches should try to eliminate the difference between real leadership and athlete's expectation. Moreover, they should adjust the real needs according to athlete's background and real situation. Coaches should give athletes more autocratic training schedule.

Because of lack of research evidence in regard to sports specific leadership in Indian sports scenario there is ample scope for researchers to address number of potentially important areas

SUGGESTION FOR THE FURTHER RESEARCH

Further research on sports leadership should address the factors that affect performance such as age, training age/ experience, level of participation, ability, gender etc. along with characteristics of the coach because coach has greatest influence on the player's performance

The research is mainly focus on domestic athletes, so the further research can consider about comparing with international athletes of schools.

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RELATIONSHIP OF MENTAL IMAGERY BETWEEN RUNNERS AND SWIMMERS

Nairit Roy * R. S. Pawar** B. John***

ABSTRACT

The purpose of this study was to find out the relationship between some mental imagery aspects of runners and swimmers. 25 players from each individual sports (runners and swimmers) randomly selected on the basis of simple sampling method. The age ranged of the subjects was 18 to 27 years. Runners and swimmers who have taken part in inter collegiate competition (W. B.) were selected as subjects. The necessary data were collected by administering questionnaire (test items) for mental imagery visual, auditory, and tactual items components of runners and swimmers. The criterion measures for the study were standard questionnaire prepared by Dr. M. Raja mamik chand. To establish the relation in between the variables product moment co-relation method was employed. The significance was set at 0.05 level of confidence. Results of study concluded that was a significant relationship was found between auditory – visual; visual - touch variables among swimmers. But insignificant relationship was observed between auditory - touch among swimmers. Insignificant relationship was also observed between auditory – touch; visual- touch; auditory - visual among runners. Insignificant relationship was also existed between runner and swimmers in their visual, auditory and touch items of mental imagery.

Key Words: Runner, Swimmer, Imagery, Auditory, Touch, Visual.

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INTRODUCTION

Imagery is generally stated as imageries in plural form in literary works for symbolic representations. Imagery means images in groups. When we wanted to state images collectively, we state it by the concept imagery. Therefore, a group of collective images is called imagery. Imageries are the materials involved in the general process of imagination. Imagery is the distinctive type of mental images formed by a particular individual. Psychologically, imagery also refers to the mental experience of something that is not immediately present to our senses. The objects of past sensory experiences exist in the memory. A series of mental images may be also called as imagery such as visual images, auditory images, olfactory images, gustatory images, tactual images and so on. It becomes a mental image drawn from our memory. We are forming images of persons, objects, places, events and experiences. Apart from what we have already experienced about many things, we are also experiencing everyday many new thing.

Psychologically, imagery also refers to the mental experience of something that is not immediately present to our senses. The objects of past sensory experiences exist in the memory. A series of mental images may be also called as imagery such as visual images, auditory images, olfactory images, gustatory images, tactual images and so on.

A mental image is a personal experience of a person about a person, an object or an event that he has formed. These mental images may be referring to visual, auditory, olfactory, gustatory sensations or the sensation of touch. Apart from what we have already experienced about many things, we are also experiencing everyday many new things (Manickam, 1985) .

Anderson (1980) stated the propositional theory is currently the most popular in terms of understanding the representation of imaginable information in memory, it too is not without its critics. The major question appears to be whether human memory is exclusively propositional or if it is possible that three separate codes exist. Weinberg(1981) explained that mental imagery gets the musculature into action and can prepare an athlete for the actual physical competition. These mental preparations can be helpful to a wide range of sport activities, especially for elite athletes who seem to engage in a great deal of mental imagery before competition. Mantens (1982) reviewed the imagery research related to sport and motor behaviour from 1970 to 1982. He concluded that imagery is an effective technique to improve performance and documented improvement in the following sport skills through imagery practice, basketball free throw shooting, football place kicking, swimming starts, drat throwing, alpine skiing, karate skills, running technique etc. Clark (1994) compared the effect of mental practice with that of physical practice in learning of the pacific coast one hand basket ball foul shot. showed that mental practice was almost as effective as physical practices was far superior to mental practice for the beginners. Housner(1984) provided support for the that visual imagery may play a role in the recall or modeled motoric stimuli. Coffins (1987) analyzed functional characteristics of mental imagery, in which the question is whether the format for the majestic representation is pictorial or sentential. I offer an account of imagery and cognition as an important aspect of the theory of mental representation, one which serves as a test for prevalent views of the nature of explanation in cognitive science. Olia (1986) examined the influence of mental imagery in the individual learner's field

dependent/field independent cognitive style. The statistic revealed a high degree of significance in the three main effects. However there was no significant interaction effect among the three factors. Ragle (1985) studied importance of imagery as a vital concomitant of the learning process in the developing psyche has largely been ignored by present-day educators. Nevertheless, it was believed by the investigator that relaxation methods, guided imagery and dream work as regular. Duane (1986) determined the effects of mental imagery practice upon the improvement of pitching skills. He indicated that all three practice groups made significant improvement between the pre-test and post-test scores at the .05 level. However, the analysis of variance yielded data that found no group significantly superior to the other groups.

MATERIALS AND METHODS

The test was administered on all selected subjects for the study after seeking permission from the manager and coach of the participating teams as well as team members were requested to cooperate with the investigation for the study. The questionnaires were distributed to the subjects. Necessary instructions were provided before the administration of the test for all the subjects. The purpose of the study was clearly explained to understand the player's mental imagery.

The subjects were asked to respond as quickly as possible without brooding over any questions and statement, once the instructions were understood clearly by them, None of the subjects encountered any serious problem in understanding the questions/statements which were invariably in English. The mental imagery questionnaire contained 45 items and assess the auditory, touch, visual components of mental imagery.

Total number of subjects were fifty (Runners=25, Swimmers= 25). The age ranged of subjects was 18 to 27 years. Mental imagery questionnaire prepared and validated by M. Rajamaniekam (1985) was used for the purpose of data collection from the runner and swimmers. Simple random sampling method was employed for selection of subjects. After collection of data Pearson's Product Moment Co-efficient of correlation was employed. The following formula of Pearson's moment coefficient of correlation is employed

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

Scoring: This test items were visual, auditory and tactual. The norms of collecting information were selected are as follows.

No.	Range of Scores	Degree of Mental Imagery	Weight
A	67.5 – 75.0	Very clear & vivid image	5
B	52.6 – 67.5	Fairly vivid image	4
C	37.6 – 52.6	Just clear image	3
D	22.6 – 37.6	Some what clear image	2
E	7.6 – 22.5	Dim image	1
F	0 – 7.5	No image	0

RESULTS AND DISCUSSION

On the basis of the norms established by Dr. M. Rajamaniekam, the responses were compiled and tabulated accordingly to find out the percentage of responses and as a whole. The responses were also taken into consideration to find out its relationship by using Product Moment Correlation and data pertaining to this have been presented in Table 1 to 3.

TABLE 1
RELATIONSHIP BETWEEN THE SELECTED VARIABLES OF THE SWIMMERS

Variables correlated	coefficient correlation
Auditory V/S Visual	0.618*
Auditory V/S Touch	0.184*
Visual V/S Touch	0.658*

Table 1 reveals that the significant relationship was found between auditory – visual; auditory – touch and visual - touch components of mental imagery among swimmers, as the obtained Correlation Coefficients (r) values of .618, .184 and .658 respectively were higher than the required value to be significant.

TABLE 2
RELATIONSHIP BETWEEN THE SELECTED VARIABLES FOR THE RUNNERS

Variables correlated	coefficient correlation
Auditory V/S Visual	0.011*
Auditory V/S Touch	0.146*
Visual V/S Touch	0.298*

Table 2 reveals that the significant relationship was also found between auditory – visual; auditory – touch and visual - touch components of mental imagery among runners, as the obtained Correlation Coefficients (r) values of .011, .146 and .298 respectively were higher than the required value to be significant.

TABLE 3
RELATIONSHIP BETWEEN THE SELECTED VARIABLES FOR THE SWIMMERS AND RUNNERS

Variables correlated	Coefficient correlation
Runner visual V/S swimmer visual	0.169*
Runner auditory V/S Swimmer auditory	0.099*
Runner touch V/S swimmer touch	0.070*

Table 3 reveals that the significant relationship was found between runners and swimmers in their visual, auditory, and touch components of mental imagery, as the obtained Correlation Coefficients (r) values of .169, .099, and .070 respectively were higher than the required value to be significant.

CONCLUSIONS

It was concluded that the significant relationship was found between auditory and visual variables of mental imagery among runners and visual and touch variables of mental imagery aspect among swimmer. Insignificance relationship was found between runners and swimmers in their visual, auditory and touch aspects of mental imagery.

RECOMMENDATIONS

Mental imagery may be used by the coaches and the trainers as prerequisite quality among players in selected sports. The study of similar nature may be undertaken by selecting the subjects of national levels. The similar study may be undertaken with the larger sample size. The similar study may be undertaken by selecting the subject of different age groups and different level of performance. The similar study may be undertaken by selecting subjects from both the sexes.

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INVESTIGATION OF PHYSIOLOGICAL AND PHYSICAL FITNESS OF SPORTSPERSONS AND NON-SPORTSPERSONS

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ABSTRACT

The purpose of the study was to investigate the physiological and physical fitness of sportspersons and non-sportspersons studying in C.B.S.E. Schools of Bilaspur district. One hundred male (Sportspersons = 60, Non-sportspersons = 40) children were selected for the purpose of investigation. Data was collected randomly from male sportspersons and non-sportspersons. Euro-fit test battery consisted of eight tests of fitness i.e. The Queen's College Step Test (Cardiovascular endurance), Standing broad jump (Explosive strength of leg), Grip strength of Right & Left arm (Explosive Strength of arm), Bent arm hang (Arm and Shoulder strength), Sit-Ups (Muscular strength & endurance of Abdomen and back), Sit and reach test (Abdominal strength endurance), Shuttle run (Speed and agility), and Flamingo Balance (Total body balance) were carried out along with the weight and height to determine the body mass Index (BMI). To find out the significance of differences between male sportsperson and non-sportsperson in their physiological and physical fitness variables, means, standard deviations, and t-ratios were computed. Results of study concluded that the sportsperson and Non-sportsperson did not differ significantly in their heart rate, cardiovascular endurance, BMI variables of physiological fitness. Sportsperson and non-sportspersons exhibited the similarity in their Explosive strength of leg, arm and shoulder strength, flexibility, agility, total body balance and , Explosive Strength of arm except Muscular strength & endurance of Abdomen and back parameters of physical fitness, when they were compared each others.

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INTRODUCTION

Participation in sports is one of the common traits of human character and it starts to develop from the very beginning of childhood. But, with the development of age, some people participate in recreational sports or amateur sports whereas very few individual dedicate themselves to become true sportspersons by regular practice and training which enable them to improve their psychological adjustments towards their goal. The characteristics of an athlete mainly depend upon physical fitness, having components like muscular strength and endurance, cardio- respiratory endurance, flexibility, speed, power, agility, balance etc. But, these components, may vary in sportspersons involving different sports activities.

Children who participate in physical fitness programs are reported to have higher self-concepts than those who are inactive although not all studies have reported positive relationships between fitness and childhood self-esteem. Despite these inconsistencies, a recent review on this topic suggests that children who participate in appropriately prescribed aerobic exercise programs have the potential to increase their self-efficacy, creativity, self-esteem, internal locus of control, test scores on cognitive functioning and classroom behavior.

Physical fitness is a dynamic construct and is continually growing in importance to everyday life and health. Although being an attribute that has a genetic basis, it is also sensitive to changes in type and amount of physical activity, especially as people age. It is important to measure fitness both as an outcome of physical activity and as a mediator of physical activity's effect on disease morbidity, mortality and injury. The measurement of fitness should become an important part of surveillance systems that track physical activity and risks for disease or injury (Dishman, Washburn & Heath, 2004:42). Physical fitness is a complex term that cannot be captured in one definition. The World Health Organisation (WHO) has defined fitness as "the ability to perform muscular work satisfactorily." While this may be an acceptable definition of the construct of physical fitness, the definition does not specify the ways that physical, social and psychological circumstances can vary to determine what is satisfactory, nor does it acknowledge that several abilities exist, rather than a single overall ability. Physical fitness is better understood by defining the specific components that can be measured and the circumstances in which those components relate to bodily function and health or reduced disease. The United States of America, Centres for Disease Control and Prevention defined physical fitness thus: "The five health-related components of physical fitness are more important to public health than are the components related to athletic ability. Operational definitions of physical fitness vary with the interest and need of the investigators." This definition of physical fitness focuses on the difference between health-related physical fitness and athletic ability physical fitness. From the perspective of the health of the nation, the health-related components are more important than those related to athletic ability (or are skill-related or performance-related components) (American College of Sports Medicine (ACSM), 2005:3). The distinction between the health-

related versus the athletic ability components of physical fitness is in

Physical fitness is the sum total of five components namely Strength, Speed, Endurance, Flexibility and Coordinative abilities, these five motor abilities and their complex forms (e.g. Strengths-Endurance Explosive strength etc) are the basic pre-requisites for human motor action therefore the sports performance in all sports depends to a great extent on these abilities. The improvement and maintenance of Physical fitness or condition is perhaps the most important aim of Sports training. Each Sport requires a different type and level of Physical condition (Specific fitness/condition) and as a result different type of fitness training is required for different sports. Some sports like distance running require a very high level of endurance but a low level of other motor abilities. Sports like shooting and Archery do not require a high Physical condition (Singh, 1991).

Physical fitness is the capacity to do prolong hard work and recover to the same state of health in short duration of time. Physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to engage in leisure pursuits and to meet emergency situations. Physical fitness is the capacity to do prolong hard work and recover to the same state of health in short duration of time. This is the result of the degree of power, agility, strength, speed, flexibility and endurance one possesses. Physical fitness is the capacity to meet the present and potential physical challenges of life with success (Clarke & Clarke, 1987).

Chand (1977) concluded that offensive players were faster and had more endurance than defensive players. There was no significant difference between offensive and defensive players in agility. Kaur (1988) revealed that the physical fitness level of public school students was better than that of high school students. Sidhu (1991) investigated that the rural girls were superior in flex arms hang shuttle run, 50 yard dash and 60yard endurance than urban girls. Das et. al. (2007) indicated that among the physical fitness components only leg power showed significant higher value in sprinters than football players.

This study compared the physical and physiological fitness of male sportspersons and non-sportspersons studying in secondary school of education of Bilaspur district.

METHODOLOGY

Selection of Subject

One hundred male (Sportspersons = 60,Non-sportspersons = 40) children were selected for the purpose of investigation. All the respondents belong to C. B. S. E recognized schools running in Bilaspur region and data was collected randomly from male children studying in C. B. S. E recognized schools.

Instrumentation

Euro-fit test battery consisted of eight tests of fitness i.e. The Queen's College Step Test (Cardiovascular endurance), Standing broad jump (Explosive strength of leg), Grip strength of Right & Left arm (Explosive Strength of arm), Bent arm hang (Arm and Shoulder strength), Sit-Ups (Muscular strength & endurance of Abdomen and back), Sit and

reach test (Abdominal strength endurance), Shuttle run (Speed and agility), and Flamingo Balance (Total body balance) were carried out along with the weight and height to determine the body mass Index (BMI). Euro-fit test battery is a valid and reliable method for collecting data. This battery test measured the health related fitness in children.. List of the tests, parameters and their criterion measures are given in Table 1.

TABLE 1**PARAMETERS AND THEIR CRITERION MEASURES**

S. NO.	Test	Parameters	Criterion Measure
1.	The Queen's College Step Test	Cardiovascular endurance	Recovery Heart rate-Beats/minutes.
2.	Standing broad jump	Explosive strength of leg	recorded to the nearest 0.01 cm
3.	Grip strength (Right & Left)	Explosive Strength of arm	recorded to the nearest 0.1 kg
4.	Bent arm hang	Arm and Shoulder strength	Time recorded in seconds
5.	Sit-Ups	Muscular strength & endurance of Abdomen and back	Count maximum umber of sit-ups in 30 seconds
6.	Sit and reach test	Abdominal strength endurance	
7.	Shuttle run (10 x 5 Meter)	Speed and agility	Time recorded in seconds
8.	Flamingo Balance	Total body balance	Number of losses of balance IN 60 seconds

RESULTS AND DISCUSSION

The statistical analysis of data on Queen's college step test, standing broad jump, right and left grip strength, bent arm hang, sit-ups, sit and reach test, shuttle Run, and flamingo balance test collected of one hundred male sportsperson and Non-sportsperson studying in C.B.S.E recognized schools of Bilaspur region was employed by using S.PSS 16.0 version., In order to find out the significance of differences between male sportsperson and non-sportsperson in their physiological and physical fitness variables, means, standard deviations, and t-ratios were computed. To check the obtained t-ratio, the level of significance was set at .05 level and data pertaining to this have been presented in Table 2 to 3 .

TABLE 2
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF HEART RATE,
PREDICTED VO₂ MAXIMUM AND BMI OF MALE SPORTSPERSON AND
NON-SPORTSPERSON

Variables	Category	Mean	MD	σ DM	t-ratio
Heart rate	Sportsperson	139.09	8.45	3.04	2.78*
	Non-sportsperson	147.54			
Predicted Vo ₂ max.	Sportsperson	43.49	2.37	2.21	1.07
	Non-sportsperson	41.12			
BMI	Sportsperson	22.25	1.22	0.69	1.76
	Non-sportsperson	21.03			

*Significant at .05 level, t.05 (98) = 1.98

It is evident from Table 2, that there was no statistically significant difference was found between the means of heart rate of male sportsperson and Non-sportsperson, as the obtained t-value of 2.78 was higher than the required value of t.05(98)=1.98. In case of cardiovascular endurance (Vo₂ max.) and BMI variables of physiological fitness, statistically significant difference was not found between male sportspersons and non-sportspersons, as the obtained t-values of 1.07 and 1.76 respectively were less than the required value of t.05(98)=1.98.

TABLE 3
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF PHYSICAL
FITNESS COMPONENTS OF MALE SPORTSPERSON AND
NON-SPORTSPERSON

Variables	Groups	Mean	MD	σ DM	t-ratio
Standing broad jump	Sportsperson	1.72	0.87	0.78	1.15
	Non-sportsperson	2.59			
Bent arm hang	Sportsperson	15.68	2.39	2.08	1.49
	Non-sportsperson	13.29			
Sit-ups	Sportsperson	20.76	2.62	0.98	2.67*
	Non-sportsperson	18.14			
Sit and reach	Sportsperson	17.51	2.15	1.11	1.93
	Non-sportsperson	15.36			
Shuttle run	Sportsperson	19.35	0.36	1.27	0.28
	Non-sportsperson	18.99			
Balance	Sportsperson	1.27	0.91	0.78	1.16
	Non-sportsperson)	2.18			
Right grip strength	Sportsperson	22.12	0.77	1.39	0.55
	Non-sportsperson	22.89			
Left grip strength	Sportsperson	18.11	0.13	0.99	0.13
	Non-sportsperson	18.24.			

*Significant at .05 level, $t_{.05(98)} = 1.98$

It is evident from Table 3, that the statistically significant difference was found between the means of sit-ups of male sportspersons and non-sportspersons, as the obtained t-value of 2.67 was higher than the required value of $t_{.05(98)}=1.98$. In case of standing broad jump, bent arm hang, sit and reach, shuttle run, balance, right grip strength and left grip strength components of physical fitness, statistically significant difference was not found between male sportspersons and non-sportspersons, as the obtained t-values of 1.15, 1.49, 1.93, 0.28, 1.16, 0.55 and 0.13 respectively were less than required value to be significant.

DISCUSSION

The findings of this study relate to some physiological and physical fitness parameters. and demonstrate that Indian children living in Bilaspur are in some aspects similar to other populations studied. The high prevalence of normal weight found in this study has implications for the children's growth and development. The maximum oxygen uptake and heart rate of male sportsperson and Non-sportsperson were also investigated to ascertain whether this phenomenon is linked with health status of school children.

CONCLUSIONS

1. Significant difference was not found between sportsperson and Non-sportsperson in their heart rate, Cardiovascular endurance, BMI variables of physiological fitness.
2. Sportsperson did not have significant difference in comparison of non-sportspersons in their Explosive strength of leg, arm and shoulder strength, flexibility, agility, total body balance and , Explosive Strength of arm except Muscular strength & endurance of Abdomen and back parameters of physical fitness

RECCOMENDATION

1. It is recommended that growth and development profile should be established for children from different regions within each country
2. It is also recommended that the Central board of secondary Education Board, India should streamline action on the teaching of physical education and sports practice in schools. This will reinforce the children's behaviour towards physical activity and sports. The modification of the behaviour risk lifestyle among children and youth can help foster a healthier future for an entire generation of people.

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