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JOURNAL

OF

EXERCISE & SPORT SCIENCE AND

PHYSICAL EDUCATION

VOLUME VI

NUMBER I

DECEMBER, 2003

**JOURNAL OF EXERCISE & SPORT SCIENCE AND
PHYSICAL EDUCATION**

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**JOURNAL
OF
EXERCISE & SPORT SCIENCE
AND
PHYSICAL EDUCATION**

VOLUME VI

NUMBER I

DECEMBER, 2003

AN ANNUAL PUBLICATION

OF

**EXERCISE AND SPORT SCIENCE PROMOTION GROUP
SANTINIKETAN, WEST BENGAL, INDIA**

FINANCED BY: "PROFESSOR SATADAL MONDAL MEMORIAL FUND"

PRINTED BY: "INFO PUB",

GURUPALLI, SATIKETAN, WEST BENGAL, INDIA, PH: 03463-262339

EDITORIAL

It is the age of collaboration. Each and every subject wants to collaborate with other subjects for their development, improvement and empowerment. Physical education professionals, we have to cross over our own barriers. We have to make a professional link with other professions like Medicine, Management, Technology, Economics etc. We can flourish our subjects in a much higher rate, with very close tie up with the politicians and intellectual bureaucrats, because they are the policy maker in our country. So please realise it and plan for the future.

From this issue our journal will be financed by the "Professor Satadal Mondal Memorial Fund" the money which was given to me by my father for the development of Exercise and Sports Science, definitely it will solve our financial crisis. Hope in future we will find other sponsors by that way we will spread the message of Exercise & Sports Science and Physical education in the society.

Samiran Mondal
Editor-in - Chief

CONTENTS

1. EDITORIAL	
2. DRUG AND SPORT PERFORMANCE	1
PROF. (RETD.) A. K. BHATTACHARYYA	
3. CARDIAC DIMENSIONS OF TRAINING OF ADOLESCENT MALES	5
DR. K. MUKHOPADHYAY	
PROFESSOR A. K. UPPAL	
4. INFLUENCE OF DEFICIENCY IN ONE SENSORY ORGAN ON ANOTHER SENSORY ORGAN IN RELATION TO DISABLED PERSONS	15
DR. PULAK CHAKRABORTY	
SMT. HIRA CHAITOPADHYAY	
5. INJURIES AND INDEGENOUS MEDICINE: A CASE STUDY ON SANTHALS OF BIRBHUM DISTRICT IN WEST BENGAL	20
DR. MANIMROY MITRA	
6. SOMATO TYPE OF BENGALI TRIBES	24
DR. DEBASHISH ROY	
7. HOW CAN YOU DEVELOP YOUR COMPETENCIES AS A TEACHER	28
DR. ATASI MOHANTY	
8. THE FUTURE OF SPORTS MARKETING IN INDIA	30
AMINUL HAQUE	
BOOK REVIEW	
9. AN ENCYCLOPAEDIA IN PHYSICAL EDUCATION	33
APARUP KONAR	
10. IDEAL FOR NET, SLET EXAMINATION FOR PHYSICAL EDUCATION	35
TIRTHA MONDAL	

DRUG AND SPORT PERFORMANCE

PROF. (RETD.) A. K. BHATTACHARYYA

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President, West Bengal Council of Institutes of Physical Education(WBCIPE).

The issue 'Drug and Sports Performance' poses a pertinent question: why are drug and sports together?

While drug is meant for unsound persons needing intake of certain substances to make up for deficiency or malfunctioning or to combat an infection, on the other, sport is rather designed for healthy, strong and enduringly agile persons competing for supremacy in intense physical activity affairs.

For an answer to the poser one has to go into the root cause for creation of the problem. The answer lies in how competitive sports have come to be evolved to attain a gigantic stature, and how drug entered into sports arena to be associated with competitive sports outcomes.

When play was all fun and enjoyment, and games competitions were held amongst equals within the framework of equal opportunities, there was neither any need nor craze for extraordinarily abnormal methods for executing super performance in the athletic arena. Later developments through fast advancements in all spheres including sports ushered in ways and means and allurements to perform miracles.

Time came when simple movement patterns did no longer remain within the precincts of natural play rules, regulations, formality, and element of competition set forth the emergence of the structured form of Game. With this transformation games became repeatable, predictable, and an instrument of comparison.

With the passage of time, games became more complex, more organized, and more competition-oriented. The situation inevitable called for more rigid and institutionalized form, resulting in what is known as Sport. It required elaborate organization and efficient management in order to bring about high proficiency. Teams, coaches, trainers, officials, administrators, sponsors, promoters, government, publicity media, sports-industry and related others became crucially involved.

Although sports were made up of game situations, it involved employment of high level coordinated motor skills for achieving competition outcomes. In order to execute high level of proficiency considerable training and conditioning, specialized skill instruction, tactics and strategy, and other related matters came into the picture. Technology has been employed in involving superior material equipment and other things in the process of executing high level skills.

Gradually sport assumed such a huge stature with an all-pervading influence that it had been reckoned as a strong social force. Ancient Olympic's motto of 'Citius-Altius-Fortius' was translated into actuality in modern world of sports with a sky-high limit. But how fast, how high or how strong? Before declaring that the sky is the limit we have to ponder over the limitations of human musculo-cardio-respiratory mechanism.

Man's natural play movements and pre-techno age games competitions happened with man's natural muscle power until technology entered into the arena. The natural muscle power with the cardio-respiratory support got a tremendous boost when technology was applied in the very many affairs of sports - in equipment and appliances, in surface materials, in sports gears, and even in the sportsperson's own self.

Sports standards reached a soaring height, thread-like differences demarcated performances at the top level; tough competitions became the challenging order to attain the glory of reaching the pinnacle. Under pressure of circumstances sportspersons and their coach-managers, in their craze for super performance, resorted to abnormal ways for achieving success with the super normal effort. Here started the use of performance-enhancing aids in the sports affairs to produce super performance.

Ergo-genic aids of various forms like drugs, vitamins, nutritional substances, hormones, oxygen, blood doping, auto-transfusion etc., etc., are used to improve performance of various types of physical work including sports performance. The course of action of these aids may act directly on the muscle fibre by supplying the required fuel for muscular contraction, increasing the efficiency of the cardio-respiratory mechanism through transport of oxygen, fuel, and waste products - thereby counter-acting fatigue, or by stimulating the central nervous system with the result of increased motor activity.

The word doping is commonly being used to denote all performance-

boosting measures taken in contravention of sport ethics. Use of drugs under medical conditions and supervision for curing infection or correcting functional disorders or augmenting certain deficiency are normal affairs for all persons. Use of drugs by addicts for sheer perverted fun out of frustration and escape from surrounding affairs is an example of asocial and mental depressive behaviour. But any of drugs' exclusive use by any sportsperson with the deliberate intention of boosting performance falls under unethical procedure in sports parlance. Since sports competitions are supposed to be held between equals having equal advantage or disadvantage, such illegal measures come under scrutiny and deterrent punishment.

But the problem of properly defining dopes and lack of controlling measures through foolproof procedure make things difficult for strict implementation. Sunita Rani's benefit of doubt escape is one striking example. It is a fact that female athletes' use of oral contraceptives, and some other athletes' taking of drugs having steroid quality for health reasons might surely confuse investigators. The International Olympic Committee and its Medical Commission, all the National Olympic Committees of the World, and the Medical Associations of all countries have banned the use of certain drugs in sports because of their unethical advantage taking and also because of the side-effects and far-reaching consequences on the sportspersons.

Drugs like anabolic steroids, stimulants, and sedatives are often used in boosting human performance. Anabolic steroids promote muscular development in sportspersons engaged in power events. These are generally taken during off-season practice for building musculature and strength; sometimes during mid-season for finishing polish. Anabolic steroids also have the effect of hastening recovery and a feeling of wellness. It has been found that while steroids may help someone in improving performance, the side-effects and the dangerous far-reaching consequences cannot be ignored.

Some drugs are used to improve psychological tone by stimulating the central nervous system to increase motor activity and to delay the onset of fatigue. But their toxic effects have been reported to be detrimental to health, some times dangerous.

Controlled use of the sedatives' de-stimulating action proves to be useful in events like archery, shooting etc. where calmness, precision, and control are important factors.

Blood doping is one of the dangerous doping procedures where blood

is withdrawn from the sportsperson for temporary storing and then re-infusing shortly before competition with the idea of boosting oxygen-carrying capacity of the blood in time for the competition. The procedure is a risky one and does not necessarily improve endurance performance.

Vitamins are indispensable for healthy living, and sportspersons are no exceptions; they are also expected to use the needed vitamins for maintenance of health. But reports suggest that excess vitamins do not produce any improvement in sports performance.

In fine it may be concluded that intake of drug for improvement of performance in sports is not only unnecessary and unethical, its side-effects and far-reaching consequences are fraught with grave dangers. Yet from Ben Johnson to Sunita Rani it is the same sad story of repetition of drug taking, and it is going on and on. Although Sunita Rani has got the benefit of doubt escape due to faulty investigation, it is widely known that sportspersons are indulging in drug taking in pursuit of super performance, whether they are caught or not. Banning by the I.O.C. could not prevent this unhealthy trend. It is therefore an extremely urgent need that awareness about this particular issue has to be aroused amidst the sporting community in the interest of health participation in sports with the spirit of true sportspersonship.

Let us delve deeply into the problem and come out with concrete workable proposals toward eradication of this malaise through a global programme of healthy sport-awareness in the light of a call for developing a sporting society for healthful living.

CARDIAC DIMENSIONS OF TRAINING OF ADOLESCENT MALES

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INTRODUCTION

To calculate the volume of a three dimensional organ, the heart, became possible as early as 1916 with the use of roentgenograms. Since that time the important of determining heart size and heart volume has gained more and more recognition (10). Roentgenography is considered very useful, as the only practical method to evaluating the cardiac morphology of many patient (25). This parameter, was also re-appreciated with the advent of modern sports and high intensive training (1). Of late Echocardiography, instead of Roentgenography has become popular to find out the different kind of hypertrophy in sports discipline. Cardiac volume by Roentgenography was first determined by Rober (22), followed by Danzer (9), Kahlstrof (13), Musshoff and Reindell (15), Pennier et al. (21) and others (14, 18, 23, 24). Cardiac volume has been subsequently found to correlate well with stroke volume, cardiac output, maximum oxygen uptake, total blood volume and total hemoglobin content (2, 21, 25, 29). It was already shown by Kahlstrof (13) that there exists a direct relation particularly between the cardiac volume and the body weight. He found this relation to be 8 and 7 ml per kg body weight for men and women respectively and it does not exceed 11 ml. Later many other authors have shown that this value might be little higher normally in adult life. The cardiac volume/body weight (relative cardiac volume) increases according to the increase in the endurance of the athletes (10, 24). The physical work capacity test (PWC) is a modern approach to measuring physical fitness. Training has got some positive influence on PWC₁₇₀ of children (19, 3, 8).

In India this particular type of experimental work is not much in evidence. Therefore, the purpose of the present study was to investigate the 15 weeks training response of the various dimensions of heart, cardiac volume, relative cardiac volume, and PWC₁₇₀ on adolescent males.

METHOD

8 students of class eight standard whose mean age were 14.83 ± 0.63 years were studied as experimental group and 6 students of the same class whose mean age were 14.72 ± 0.72 years belonged to control group. The mean height of the experimental subjects were 160 ± 6.54 cms and control subjects were 158.4 ± 6.98 cms.

The cardiac dimension was determined by two teleroentgenograms of the chest : a posteroanterior view and a left lateral view. These teleroentgenograms were taken at the end of the midinspiration in recumbent position. A focus of the film distance of 200 cm was constantly maintained to reduce magnification and enhance the sharpness. Cardiac volume was calculated according to the formula of Musshoff and Reindell (16).

Cardiac volume (ml) = $0.4 \times L \times B \times D$

L = Long cardiac diameter in P/A view (in cm)

B = $B_1 + B_2$

B₁ = Greatest cardiac diameter perpendicular to L from Right cardiac border (in cm).

B₂ = Greatest cardiac diameter perpendicular to L from Left cardiac border (in cm)

D = Greatest Horizontal diameter in Left lateral view (in cm).

Relative cardiac volume was determined by a ratio of cardiac volume and body weight and PWC₁₇₀ was determined according to Astrand's nomogram.

TRAINING PROCEDURE

For experimental group 15 weeks training programme was provided. Two types of training was applied, viz. (i) strength training and (ii) endurance training.

(I) STRENGTH TRAINING.

Maximum strength development for first 10 weeks with additional weight and explosive strength development for next 5 weeks.

Method : Repetition

Organization : In Circuit

Load duration : 3 hours, once a week

Intensity : 80% - 90%

Repetition : To complete exhaustion in each set, last 2-3 repetitions were done with external assistance or help.

Set : 3-7

Density of recovery :- 60 - 240 seconds

Speed of movement :- Slow to explosively smooth.

(ii) Endurance training

Basic endurance development for first five weeks, then specific

endurance training for next 10 weeks.

For first 5 weeks continuous slow running for 30-45 minutes with heart rate of 140-160 beats/min. For next 10 weeks the training method was adopted as under:

Method : Interval training method.

Intensity : 60% - 80%

Duration : 70 - 80 seconds, two days per week

Distance : 400 meters

Repetitions : 10 - 25 repetitions

Recovery : Active and incomplete. Next repetition was started when heart rate comes to 120 - 130 beats/min.

STATISTICAL ANALYSIS

Student 't' test were applied to find out the significant difference in pre- and post-training experimental group in comparison to the control group. The level of significant was fixed at .05 level.

RESULTS

All the physical characteristics were presented in the table-I. All the physical characteristics were slightly higher in case of experimental group. The long cardiac diameter (L) of the experimental and control groups were 14.6 ± .36(cm) and 14.68 ± .41(cm) respectively. After training the experimental group showed a significant different (P < 0.05) whereas control group was not significantly differed (Table/II and III). Perpendicular distance to long cardiac diameter from right cardiac border (B₁) was not significantly changed of both the groups. Perpendicular distance to long cardiac diameter from left cardiac border (B₂) was significantly increased (P < .05) in case of experimental group following training (Table-III). No significant different was found in case of control group (Table-II).

Perpendicular distance from both cardiac border to long cardiac diameter (B) were 9.35 ± .34(cm) and 9.15 ± .56(cm) for experimental and control groups respectively. The greatest horizontal cardiac diameter (D) was slightly higher in case of experimental pretest result (Table-II & III). Cardiac volumes were 428.38 ± 42.18 for control group and 446.11 ± 26.14 for experimental group before training. After training experimental group showed significant difference (P < 0.01) than that of the control counterpart (Table-II & III). Similarly physical work capacity (PWC 170) of experimental group

(Table-II & III) also developed after training. However, no significant development was found in relative heart volume and body weight of the subjects after training (Table-II). The percentage changes of variables are presented in Table-IV.

DISCUSSION

Attributes that have been demonstrated to possess positive associations with success in endurance performance are VO₂ max (6, 30, 29), anaerobic threshold (29, 31) running economy (5, 7) and muscle fiber type (5, 12), as well as those related to physical and body composition characteristics (4, 32). However, effects of training on various diameters, area, and/or volume of the heart on adolescent males has undergone only limited investigation. We attempted to provide quantitative information concerning the usefulness of various cardiac measures for evaluating the training programme, especially endurance type training. The long cardiac diameter or L was .55% increased in case of experimental group and .47% increased in case of control group (Table-IV). The study of Tanaka et al (29) found that mean L of 57 young male runners, whose mean age were 18.5, were 14.54 ± .76, and the study of Ahuja et al (1) found that L value of light weight, middle weight and heavy weight were 13.54 ± 0.88, 15.66 ± 0.79 and 16.58 ± 0.84 respectively. The L value of present study was increased in case of experimental group for endurance training as well as partly for strength training. The B₁ of both the groups showed no significant differences. But in case of experimental group B₂ showed significant differences (P < 0.05) than that of the control counterpart. The B₂ of the experimental group was increased significantly due partly to enlarged left ventricle following training. The B of the experimental subject increased significantly (P < 0.01) (Table-III) following training. This indicates that breath of the heart increased due to training. Before the onset of training the horizontal cardiac diameter from the left lateral view of the experimental and the control subjects were 8.2 ± .35cm and 7.95 ± .29cm respectively. Tanaka et al.(1985, (29) reported that horizontal cardiac diameter of mean 18.5 years old male runners were 9.13 ± .64cms. This is very close to our study. After training the D of experimental group was significantly improved (P < 0.01). This indicates that both horizontal diameters and oblique diameters of the experimental group were proportionately greater than that of control group after 15 weeks of strength and endurance training. 1.58% of D increased in case of experimental group following training whereas 38% increased in case of control group (Table-IV). This is primarily due to the general growth and development of the mid adolescence age.

Shepherd (1982)(26) reported that cardiac volume of 12 - 13 years

old boys were 401 ml. In this study the mean heart volume of the boys before training was 446.11 ± 26.14 ml (experimental group) and 465.91 ± 24.88 ml (control group). The cardiac volume of the experimental subjects of this study significantly improved after 15 weeks of strength and endurance training. Cardiac hypertrophy of endurance athletes consists of an increase in the size of left ventricular wall, with a sustained venous return as a consequence of an imposed large cardiac output; a large preload is placed in the myocardium. In non-endurance athletes (i.e. strength-type activities performer), the cardiac hypertrophy consists of just opposite, i.e. the ventricular wall is thickened while the last ventricular cavity remains normal in size as a consequence of after loading (9, 15, 17, 18, 11).

The study of Spina (1992) (27) also showed that 12 weeks endurance training developed the left ventricular hypertrophy and increased in cardiac output. Heart had been found to be effected by different types of physical training and especially a remarkable change in heart volume was evident after prolonged period of training, resulting cardiac hypertrophy (13, 17, 21, 23).

So the result of the present study is found to be in-agreement with the views of Spina (27), Danzer (9), Karpovich (15), Kahlstroff (13), Medved (17), Mathur (18), Pannier (21) and Roskamm (23).

Body weight of experimental and control groups showed no significant change after 15 weeks of this study. The comparison of body weight between experimental and control groups are presented in the. From Table-4 we can found that body weight of control group after 15 weeks was increased 3.4% whereas experimental group showed 1.7% & increase in body weight after training. No significant difference was found in relative cardiac volume. The largest heart volume measured in relation to body weight was found in a long distance world record holder with a relative cardiac volume of 20.8 ml/kg (14). In this present study relative cardiac volume of experimental group was found 2.56% increase following training. On the other hand, 1.1% increased of relative cardiac volume after 15 weeks in case of control group. Depending upon the results of the present research, it can be easily analyze that the percentage increase of cardiac volume was not proportionate than that of the body weight counter part of the subjects. It is partly due to the adaptation of training loads of the experimental group.

From Table-3 we can found that experimental group showed significant ($P < .01$) increase of PWC₁₇₀ following training. Whereas, control group

showed no significant changes after 15 weeks. Experimental group showed 4.64% increase of PWC₁₇₀ after training. Whereas, control group showed 1.3% change of the same variable after 15 weeks. In this test, the relationship between heart rate, oxygen consumption and work output are taken advantage to evaluate the cardio-respiratory fitness of the individual (28). The changes of oxygen consumption following training may be a result of an increase in strength of the skeletal muscle responsible for ventilation. Studies have been shown that the maximum oxygen intake is from 20-27 percent more than the oxygen intake at a heart rate of 170 (8, 33). Olson (1967) in his study found that endurance training increased work capacity and an increase of 24% O₂ uptake was evident. Therefore, the results of the present study are found to be in agreement with the views of Olson (20), and Astrand (3).

CONCLUSION

Within the limitations of the present study, the following conclusions may be drawn on the basis of the results :

1. After 15 weeks prolonged strength and endurance training the long cardiac diameter of P/A view was developed significantly.
2. Perpendicular diameter from right cardiac border to long cardiac diameter in P/A view was not significantly developed following training.
3. Perpendicular diameter from left cardiac border to long cardiac diameter in P/A view was significantly increased following training.
4. Perpendicular diameter from both the cardiac borders to long cardiac border in P/A view was significantly increased following training.
5. Greatest horizontal diameter in left lateral view was increased significantly following 15 weeks strength and endurance training.
6. After 15 weeks strength and endurance training cardiac volume was increased significantly in case of experimental group.
7. Relative cardiac volume was not changed significantly following training.
8. Body weight of the subjects was not increased significantly following training.
9. PWC₁₇₀ of experimental group increased significantly following 15 weeks strength and endurance training.

Table-1 : Physical characteristics of the subjects

	Experimental group	Control group
Age (Years)	14.83 ± .63	14.72 ± .72
Height (cms)	160 ± 6.54	158.4 ± 6.98
Weight (kgs)	51.87 ± 3.9	49.83 ± 3.54

Table-2 : Statistical data of control group

Variables	Pre test		After 15 weeks		't' ratio
	Mean	S.D.	Mean	S.D.	
L (Cm)	14.68	± .41	17.75	± .33	1.75 NS
B ₁ (cm)	5.73	± .89	5.76	± .9	.6 NS
B ₂ (cm)	3.42	± .43	3.43	± .44	.4 NS
B (cm)	9.15	± .56	9.2	± .59	1.47 NS
D (cm)	7.95	± .29	7.98	± .32	1.15 NS
Cardiac volume(ml)	428.38	± 42.18	434.37	± 43.28	2.38 NS
Relative cardiac volume(ml/kg)	8.55	± .46	8.67	± .51	.11 NS
Body Weight(kg)	49.83	± 3.54	0.50	± 3.74	.82 NS
PWC ₁₇₀ (lit/kg)	2.31	± .26	2.34	± .24	1.89 NS

NS = Non-significant.

Table-3 : Statistical data of experimental group

Variables	Pre test		Post test		't' ratio
	Mean	S.D.	Mean	S.D.	
L (cm)	14.6	± .36	14.68	± .36	* 2.58
B ₁ (cm)	6.00	± .58	6.04	± .614	1.11
B ₂ (cm)	3.26	± .23	3.39	± .21	2.54*
B (cm)	9.35	± .34	9.47	± .38	6**
D (cm)	8.2	± .35	8.33	± .32	4.33**
Cardiac volume(ml)	446.11	± 26.14	465.91	± 24.88	4.86**
Relative cardiac volume(ml/kg)	8.6	± .41	8.82	± .58	1.83
Body Weight (kg)	51.87	± 3.9	52.75	± 3.41	1.63
PWC ₁₇₀ (lit/min.)	2.37	± .23	2.48	± .25	3.92**

N.S. = Non-significant. * = Significant at .05 level. ** = Significant at .01 level.

Table-4 : Percentage change of variables of the subjects.

Variables	% change of pretest and after 15 weeks control group means	& change of pretest and posttest experimental group means
L	.47%	.55%
B ₁	.52%	.67%
B ₂	.29%	3.98%
B	.55%	1.28%
D	.38%	1.58%
Cardiac volume	2.38%	4.44%
Relative Cardiac Volume	.11%	2.56%
Body Weight	.34%	1.7%
PWC ₁₇₀	1.3%	4.64%

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INFLUENCE OF DEFICIENCY IN ONE SENSORY ORGAN ON ANOTHER SENSORY ORGAN IN RELATION TO DISABLED PERSONS

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INTRODUCTION

A citizen of a state has the right to enjoy the minimum facilities and opportunities to lead a life which should be meaningful by human standards and the handicapped are no exception. Opportunities should be provided to them so that they can get proper education, become self-sufficient and self dependent thereby integrating themselves, within their limitations with the mainstream. Their problem and strong points, should be identified as early as possible and alternative educational and other methods should be devised.

It is certainly agreed that handicapped children should have every opportunity to develop physically, mentally and socially to the highest degree possible, within their limitations through the most important media of movement activity and sport.

It is found that though some works have been done with the problems of the handicapped still it demands much more attention of the investigators to reveal various other unknown dimensions about them. The present study was a sincere effort on the part of the investigator to find out whether deficiency in one sensory organ has any positive effect on another sensory organ.

STATEMENT OF THE PROBLEM:

This study was an attempt to find out the effects of deficiency of one sensory organ to other sensory organ/organs.

PURPOSE OF THE STUDY

1. To find out the efficiency of one sensory organ which is not impaired of a handicapped student, in another sensory organ?
2. To find out whether deficiency of one sensory organ increases the

efficiency of other sensory organ/organs than the normal level.

DELIMITATION

As the subjects were of a special type and population of this type was rather limited in number, the investigator selected, randomly only sixteen boys and girls within the age range of 12 to 18 years from two schools situated in the districts of Murshidabad and Nadia in the West Bengal state of India.

- i) all the hearing impaired subjects had to go through vision test.
- ii) all the blind subjects had to go through audiometry test.

LIMITATIONS

For this study when the investigator conducted the tests the subjects were given instructions for the required tests. For this purpose help of their teachers, who could communicate their language, were sought. So, if these be any gap in communication with the subjects it was beyond the investigator's control.

As the subjects (specially blind students of the institution) were from lower economic group and from uneducated family, there was possibility of malnutrition and unawareness of the care of the organs affecting the result of the study. That could not be controlled.

SIGNIFICANCE OF THE STUDY

The handicapped children must be provided with sufficient opportunity to develop themselves as a socially efficient person, so special education for them is essential today. The limitations hindered the education programme of the handicapped children. So the investigator was interested in this study to seek the alternative facility for this handicapping condition.

HYPOTHESES

It was hypothesized that deficiency of one sensory organ increases the efficiency of other sensory organ/organs in the handicapped population.

METHODS

Selection of subjects:

Sixteen plus sixteen handicapped adolescent school boys and girls from specific schools, from the districts of Nadia (Krishnanagar) and Murshidabad (Berhampore) of West Bengal state were chosen at random for the present study. The age of the subjects ranged from 12 years to 18 years, as per their school records.

erect in telling the test. The chart should be illuminated with ten foot-candles of light, evenly diffused over the chart with no glare.

The scoring is in fractions, the numerator being the distance the subject is from the chart (20 feet, usually), and the denominator the number on the chart which indicates the distance that would be read by the normal eye. If the subjects vision is just normal, then his acuteness of vision will equal 20/20. A score of 20/30, 20/40, or 20/50 indicates that the child can just see at 20 feet letters large enough for the normal eye to see at 30, 40, or 50 feet respectively.

Results and Discussion

Presentation and analysis of data:

To find out influence of handicapping on other parameter percentage ratio was employed. The efficiency of selected handicapped adolescents, 16 boys and girls; against each selected variable have been recorded and treated statistically. The percentage of the scores on different variables has been presented in Table-1 and 2.

Table-1 shows the percentage of hearing capacity scores for blind student and table-2 shows the percentage of vision power scores for deaf students.

Table-1

Variable	No. of students	Percentage
M.M.	8	50%
M.Ed.	3	18.75%
N.M.	4	25.00%
N.N.	1	6.25%

M.M. = Mild loss of hearing in both the ears (Mild + Mild).

M.Ed. = Mild loss of hearing in one ear and moderate loss of hearing in the other (Mild+Moderate).

N.M. = Normal in one ear and mild loss of hearing in the other (Normal + Mild).

N.N. = Normal in both the ears (Normal + Normal).

Table-1 indicate that only a small percentage of the blind students possessed normal hearing efficiency, others mildly or moderately in hearing.

Table 2

Variable	No. of students	Percentage
Poor vision	1	6.25%
Normal vision	5	31.25%
Super normal	10	62.50%

Choice of investigating tools:

To conduct the study the investigator tested each subject on two practical tests; audiometry was done to determine the degree of hearing capacity of the subjects and vision test was done to measure the efficiency in vision power of the subjects.

Hearing capacity test:

Hearing capacity was determined by using pure-tone audiometry. The audiometer was designed to test the degree of hearing for specific tones with considerable range in frequency and intensity. Hearing power for each tone was measured in decibels as recorded by the audiometer. For determining the hearing capacity pure-tone audiometry was done by using an audiometer machine, with the help of a technical expert in this field. The operation was done by sending through the audiometer, signals of different frequencies (250HZ, 500HZ, 1000HZ, 2000HZ, 4000HZ, and 6000HZ). Firstly the subject was asked to answer which sound he/she could hear sharply created by a tuning fork and holding its front portion in front ears and back portion on the backbone of the ears. The machine, when switched on, gives a continuous tone output on the head phone attached to the ears of the subject, wherefrom his/her responses to each frequency were recorded.

Hearing power was measured in terms of decibel. Degrees of hearing loss are classified differently by different authors. For the purpose of the present study degree of loss was categorized as mild loss for 25 to 50 decibel loss, as moderate for more than 50 to 70 decibel loss, as severe for more than 70 to 90 decibel loss, and as profound for above 90 decibel loss.

Vision test:

Vision power was determined by using Snellew's letter chart. The chart was placed on a specific distance for specific size of letter to test the vision power. Vision power was measured in terms of fraction as prescribed by Snellew. For testing the vision power of the deaf students Snellew's vision test was used. Equipments used for the test were a measuring tape, letter chart and a chair.

The subject should stand or sit 20 feet from the chart, with the "20-foot line" on the chart approximately level with the eyes. If standing, the child's heels should touch a line drawn on the floor 20 feet from the chart; if seated, the back legs of the chair should touch this line, with the child sitting

It is evident from Table-2 that most of the hearing impaired students possessed above normal vision and a very small portion possessed poor vision.

CONCLUSION AND RECOMMENDATIONS:

1. In the present study only the audiometry for blind students and vision test for deaf students were conducted, some studies may be conducted with other physically handicapped students.
2. In the present investigation, only a small number of subjects were studied, future investigators may profitably attempt for a larger number of handicapped students (from various economic group).
3. Other studies may be conducted considering the degrees of handicapping conditions.
4. Some investigation may be conducted to study the effects of handicapping condition on various human traits such as intellect, personality etc.
5. Some studies may be conducted on exercise sports training and the effect on handicapped condition.

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INJURIES AND INDEGENOUS MEDICINE: A CASE STUDY ON SANTHALS OF BIRBHUM DISTRICT IN WEST BENGAL

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Classified list of Samthal prescription for injuries

1. Banmara

Symptoms : Ascites with thin leg and pain in the joints of the legs.

Medicine

- a) Goe dark peak bondo a paracitical plant found on a dead tree.
 - b) Kantkom janga neheth.
 - c) The roots of viscum attenuatum and Lagjora, Vanda trees.
 - d) Gore chal, the bark of stephegyne.
 - e) Pareiflora, Korth
- Grind these together and smear on.

2. Dorod. Pain in any part of the body.

Medicine

- a) Halim, Lapidium, Sativum, L.
 - b) Dhaka hatkan Leea macrophylla Roxb.
- Grind both and give a leaf cupful to drink and apply some to the seat of the pain.

3. Hade dorod : Muscular pain from over exertion.

Symptoms : If a man works beyond his strength or lift anything very heavy, then he will get this, i.e. his limbs and whole body will ache. One 'authority' says: this commences in the neck. If one carries anything heavy on the head or shoulder a vein is strained or gets stiff. Then the body begins first to shiver

and feel out of sorts i.e. feverish. Then two or three days later one feels shooting pains in the limbs. Then there is a pain in the neck and if you are not soon rolled it will become stiff. Then from this, various complaints may result, e.g. teeth, cough, spleen, convulsions, back pain, intermittent fever, in fact all kinds of disorders may ensue. Therefore they call this the forerunner. And this quite true. If thick vein in the back gets hard and it extends to the neck, there is headache, and if it extends downwards there is pain in the loins. Again there is a small vein in the back that runs to the stomach. If the gates Harde there is feeling of repletion first and the food is not digested.

4. **Mackao: Sprians, strain or nwrenches: Medicine:** or tora se ikir mardae barakelam, sem soso tobak keta, you stretch the parts straight or massage them, or blister by applying the juice of soso semicarpus Anaeardiam L. Var. curifoli.

5. **Danda haso: Pain in the loin:**

Symptoms: This is characterized by a lacerating pain in the loins,

Medicine: Pond Kawet Sakam, the leaves of the white Abrus Precatorium Grind and warm slightly and plaster warm on the loin. The pain will cease after the two or three application.

6. **Tun ghao: Wounds caused by iron implements by stumbling or by arrow.**

Medicine:

- a) Surujmukhi rehet the roots of Helisanthus annuus, wild.
- b) Simkata arak, vilxpenduncularis.
- c) Birjhunka arak, corotalaria calycina, shrnk. Grind together and apply to the wound.

7. **Dad :** One 'authority' says: In this minute pimple appears and spread, which itch excessively, especially when it is cold. Some persons can foretell by this itching when it is going to rain.

Medicine: Kedar sakamse daresudha, the leaves of or the entire Bonnaya vironicaefolia spring. Grind and smear on
d) Dundukit rehet- the roots of Gardinia Turgida, Akaona rehet the roots of calotropis gigantean, R. or C. Procera, R. Procera, Etikarehet, the roots of

Mucuna Pruniens De Katek talan corcorehet, a little of the roots of caseurea tomentosa. Grind these together, Stir in with(sunn) mustard oil, and apply.

If the remedy is for external use or extract is not considered sufficient some thing stranger is wanted, the ingredients are crushed and ground as described, then mixed with a little water as necessary, and placed in a pot which is put over some burning charcoal until the whole is sufficiently heated, that is to say, made just warm enough not to burn. The medicine man then applies the medicine with his left hand.

8. **Ras bat ghao (May be clavus corns)**

Symptoms: This attacks the sole of the foot and the 'sore' as it spreads goes deeper. So cannot walk, only huddle or limp.

Medicine:

- a) Gegeteren- a certain creeping insect that appears in clusters. (Spirocystus cilylindricus, while young) Grind these and give them to be eaten with satu, meal made from roasted grain, or something similar.
- b) Mithi: Trigonella Foenum-graccum simbrit, fresh shoots of Bombay malabaricum, DC.

Sora, Sulhate

Gondhok-sulphur

Tutth sulphate of copper

Grind these, cook in a heated butter or par mustered oil and apply to the cavity.

9. **Sir tingoyenes:**

Crap Medicine: Teriljar, exudation from Deospyros tomentosa. Roxle Loponjer, the exudation from Terminalia bellerica, Roxle Dhura Sarjom Reak, the resin from shorea robusta, Gosm Grind together and let him inhale it.

10. **Sobok Ghao.** Wound from being stabbed or crushed with the point or end of something with forcer(vulvus punctatum).

Medicine:

- a) Kaeru Punge, the young conical as yet unspread leaf f a plantain.
- b) Sikree sakam, the leaves of Lagerstroemia pairflora, Roxl Matlacam dog, the shoots of Bassialatifolia, Roxle. Grind together and apply as plaster.

11. Jangibat:

A. Symptoms: This is when a man has walked very far his thigh become rigid and he is unable to walk any more.

Medicine:

i. Datra-Datura allea, wild or D.Festuosa, wild Adagasthan ghas rehet, the roots of Panicum repens, L Koda benjak rehet. Extra 2 ounces of the juice of each of these, mix them with two ounces of paura, spirits, and give to drink. If after becoming intoxicated he rest less and tries to rise, rub him well with gaigotom, melted butter of cow milk and pain will cease and he will be able to walk. If intoxication continues, give him to drink a mixture of kasmar chal, the bark of Gmelina arborea Sinarak chal, the bark of Bauhonia purpurea. Kanji dak, stale rice, water and it will disappear. In certain cases it will be observed that the person chews the stuff and thereupon spits it out either in a bit of cloth to be used for the application, or directly on the affected parts (such as the eyes or the ear). Sometimes a fowl's feather is used for the application of medicine. When bandaging bone fractures splints are used made of cut pieces and (sacharam sarat) tied together at the ends so as to become stiff length ways and flexible the other way they are unserviceable.

A good number of other injuries with their indigenous method of treatment in regard to present study are also available. These are varying useful method of treatment, which bring no harmful effect on human body. So it is suggested that any can may try this medicine as an immediate remedy to get rid off many injuries.

SOMATO TYPE OF BENGALI TRIBES

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ABSTRACT

The purpose of the study was to determine the somato type and its dispersion distance of the Bengali adolescent boys. Three hundred boys of tribe and non-tribe community of Murshidabad district of West Bengal were the subjects of the present study. Somato type was determined by standard method and compared between tribals and non-tribals. Analyzing the data a unique growth style of tribals and non-tribals was found.

INTRODUCTION

Unity in the diversity is the main feature of the society in India. A high degree of intermingling between the ethnic and cultural groups took place in India from ancient time in different phases, due to their immigration, settlement and later movement within the country. Among these ethnic groups the tribes hold a significant position in Indian population. They are giving vigorous labour for earning money from dawn to dusk; but they are too backward in respect of their socio-economic condition. This living style perhaps normally resulted in the high working capacity and physical ability of the tribal people. Different researcher at different times tried to describe the existing working capacity and physical ability of the tribals and compare those with non-tribals. But studies in the area of somato type of tribals are very scanty. Individuals differ in many ways in their external body form. The variation in physical outlook of humans is an interesting aspect, which has an impact on sports performance. In this juncture the researcher is intended to find out the actual level of numeral ratings of somato type.

MATERIALS & METHODS

Subject of the present study were 300 (three hundred) teenager tribal and non-tribal boys age 14 through 17 years from Murshidabad district of West Bengal, randomly selected in proportion to the population from tribal dominated area.

The selected anthropometrical measurements were taken following the standard techniques (Weiner & Lourie, 1969).

Somato type was computed by Carter(1980) equation determining Endomorphy, Mesomorphy and Ectomorphy components through computer analysis.

For the purpose of visual inspection of somato type of the subjects the researcher had plotted the mean of the somato type components in the are-shaped somatochart having super imposed grid.

RESULT & DISCUSSION

Table 1 shows the mean and SD of standing height and weight of tribals and non-tribals in different age groups along with observed 't' values. Analyzing the data, it was observed that non-tribals are taller than tribals in every age group. The significant differences of height were found to be 't' = 4.12 and 't' = 3.61 at the age of 16 and 17 years respectively which were significant at .01 level. It was also observed that the height of both tribals and non-tribals is increased every year; but his increment is greater in case of non-tribals and it is best at the age of 16 years. On the other hand tribals gain best height at the age of 15 years. The stagnation in height gain comes later in case of non-tribals.

In body weight non-tribals are always heavier than tribals in all calendar age. The significant difference of weight was found to be 't' = 1.79, 3.49, 4.11 and 3.90 at the age of 14, 15, 16 and 17 years respectively, which were significant at .01 level except in the age of 14 years. Interestingly it was observed that tribals were loosing weight during the age of 16 years whereas non-tribals at 17 years. The gain in weight of tribals were 4.66, -.93 and .32 kg and of non-tribals were 4.99, .09 and -.3 kg at the age of 15, 16 and 17 years respectively. In both cases the weight gain occurred during the age of 15 years; but the tribals loosing in 16 years whereas non-tribals loosing at the age of 17 years.

Table 2 shows the mean and SD of somato type components of tribals and non-tribals in different age groups along with observed SDD values. Analyzing the values of somato type components it was found that, at the age of 14 years the tribals were mesomorphic ectomorph. On the other hand in this the non-tribals were balanced mesomorph and SDD was found to be 4.94. At the age of 15 years it was also found that the tribals were mesomorphic ectomorph, on the other hand the non-tribals were balanced mesomorph and SDD was found to be 5.27. At the age of 16 years it was found that the tribals were mesomorphic ectomorph but the non-tribals were ectomorphic mesomorph, and the SDD was found to be 4.48. Khanna & Saha (1992) found mesomorph

ectomorph in 12 years junior national male swimmers. At the age of 17 years it was found that the tribals were mesomorph ectomorph and the non-tribals were ectomorphic mesomorph and the SDD was found to be 2.99. It is to be noted that the mean values of endomorphy and mesomorphy components of non-tribals were greater than tribals in all age group; here it may be explained that the non-tribals are fed nutritionally better so that their muscular growth is better and some depot fat is there as they are not exerting vigorous physical labour. Debnath & Bawa (1991) found mesomorphic ectomorph in 17 years national level junior male gymnasts and balanced mesomorph in mediocre performers. On the other hand the mean values of ectomorphy component of tribals was greater than non-tribals in 14, 15, and 16 years of age; it may be due to exertion of labour for their livelihood. But at the age of 17 year non-tribals were superior in ectomorphy component because the tribals suffer from malnutrition resulting improper growth of bone maturation.

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HOW CAN YOU DEVELOP YOUR COMPETENCIES AS A TEACHER

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"Teacher competence" is to be an effective teacher depending on the factors such as teaching context, type of the institution and the learners' characteristics. It can differ from culture and community to community as it is more judgemental and value oriented in its approach. The teacher's competency (both proficiency & skill) mainly depends on his multifaceted roles or what he/she is expected to perform both inside and outside the class-room and even outside the institution. Inside the class room the teacher has to take care of two aspects i.e., social and academic; that is to create a conducive atmosphere under which learning can take place and to adopt different teaching strategies for imparting knowledge/instruction, to make learning effective. For this the teacher has to acquire both the 'managerial' as well as 'instructional' skills. The 'managerial' function requires the teacher to organise and control the learning group, maintain the discipline in the classroom, motivate the students towards learning and at the end evaluate their performance, progress and diagnose the learning difficulties. Classroom interaction shows the teacher's managerial skill and the bond he has established with the students. By using different techniques i.e., feedback, positive attitude, cooperative-cum-competitive learning environment, flexible approach, positive reinforcement such as praise, encouragement, meaningful experience etc., teacher can create a conducive atmosphere and motivate the students towards learning. The 'instructional' function includes various skills i.e., thorough knowledge of the subject matter, planning of the learning content including teaching strategies, teaching materials, presentation and communication skills (e.g. lecturing, explaining, eliciting response, questioning, discussing, dramatizing, reading, demonstrating, using audio-visual aids etc.). Teacher should act as an agent of transmitting knowledge and interpreting it effectively for future benefits. After presenting and communicating the information skillfully it's the task of the teacher to evaluate the students' achievement of a prespecified objective. He has to observe them objectively in various situations, judge their ability at different ends i.e., entry behaviour, terminal behaviour etc; measure their aptitude, interests, personality traits through different standardized tools and tests; guide them towards success in respective fields which matches to their potentialities, so that the

Table-1: Mean and SD of height (cm) and weight (kg) in different age groups of Tribal and Non-tribal boys along with the observed 't' values.

Years	Height		Df	't'	Weight		Df	't'	Df
	Mean	SD			Mean	SD			
14 TB=34	157.18	9.04	66	.34	43.01	8.04	1.79	66	
34 NTB=34	157.74	2.90			46.51	8.05			
15 TB=41	159.81	7.06	76	1.31	47.67	5.27	3.49*	76	
NTB=37	161.57	4.64			61.50	4.43			
16 TB=39	161.32	4.94	81	4.12*	46.74	5.76	4.11*	81	
NTB=44	165.66	3.64			51.59	4.84			
17 TB=36	162.51	4.62	69	3.61*	47.06	4.83	3.90*	69	
NTB=35	165.97	3.38			51.29	4.29			

*Significant at .01 levels

Table 2 : Mean and SD of somatotype components in different age groups of Tribal and nontribal boys along with observed SDD values

Year	Endomorphy		Mesomorphy		Ectomorphy		SDD
	Mean	SD	Mean	SD	Mean	SD	
14 TB=34	2.231	.750	3.371	1.156	4.451	1.137	4.94
NTB=34	3.337	.712	5.447	.781	3.744	1.826	
15 TB=41	2.347	.603	3.333	.891	4.047	1.124	5.27
NTB=37	3.484	.578	5.554	.926	3.365	1.347	
16 TB=39	2.177	.662	3.045	1.044	4.554	1.566	4.48
NTB=44	3.221	.567	5.108	.604	4.050	1.016	
17 TB=36	2.019	.661	3.607	.857	3.875	.949	2.99
NTB=35	3.039	.583	5.683	.629	4.163	.891	

THE FUTURE OF SPORTS MARKETING IN INDIA

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INTRODUCTION

Today we are living in the age of marketing, which is fast-paced, aggressive and ruthless. The success stories of multi-million dollar projects, down to consumer products and individual have been largely due to an effective and attractive strategy.

Sports also has a vast marketing potential in India waiting to be exploited. The countries one billion plus population is a marketing heaven from both the national and international point of view. The Indian population specially the younger generation is very conscious about the leisure time and this phenomena is catching up in all sections of the society. This indicates that the masses are ready to accept invigorating events which will ease their daily tension and bring in case and come within them.

Sports is best media to achieve the above goal hence sports marketing has a vast potential. Sports marketing can be done:

- **Identification of star performer:** To attract star performer who will be able to get attention of the people with his athletic prowess. The burning examples are Sachin Tendulkar, Sourav Ganguly, Bhanu Prakash, Anju Bobby George.
- **Projection of the icon:** when star performer do well, the star becomes icon of million region and are utilised by marketing agencies to gain mileage. However in India, there are very few stars at the moment available in various sports.
- **Encouragement of professionalism:** Professionalism means proper attitude, proper sense of work and proper foresight towards future happening. Professionalism need to be brought in other games so that many stars could be brought into limelight. Professionalism will evolve with the help of innovative electronic media exposure which resulted in improving the standard of the game. In Indian sports field, what is lacking today is professionalism hence very few stars are born.

gap between aspiration and achievement can be filled up with adequate effort. All these activities need competency on the part of the teacher to counsel the students in the right direction. Being a teacher in an academic institution in order to improve the competencies, the teacher must do 'self-evaluation'. It is the key for 'self-monitoring' and 'self-correction'. There are also some standardized, techniques i.e., Flander's interaction analysis, micro-teaching and competency-based teacher education through which self-rating and self-appraisal can be done. Through these techniques teacher's teaching is being observed in the actual situation, or in a stimulation situation, or can be recorded through a video camera which can be observed and assessed later on by the teacher himself or his/her colleagues. However, the teacher's first job is to ensure his/her own accountability. Self-appraisal and assessment can be done through getting the feedback directly from the students or peer rating. The teacher's self-motivation should be improved through increasing the achievement motivation for professional development. For this he/she has to engage herself actively in research, paper publication, paper presentation in seminars, conferences, writing monographs, books etc; participating in various in-service orientation programmes, workshops and refresher courses for updating the knowledge. Teaching should be his/her first choice. She/he should possess self-reliance, confidence and mastery in her subject. She/he should develop a thorough understanding of the students' problems in the teaching-learning situation, an objective and scientific attitude in every action and thought. UGC is there to give us all the guidelines and the teacher should stick to the principles and norms of UGC. At the same time she/he should raise the voice against the irregularities and dishonesty. She/he should adopt better strategies for self-expression and communication; comprehend and foresee the hurdles in practical field, apply and utilise the knowledge and resources to get success. As a part of his/her duty towards society she/he should give continuous feedback from time to time to the higher authorities/statutory bodies/govt. regarding quality of teaching-learning process and institutional effectiveness. It has also been suggested by Brookfield (1990) that "An educational activity is successful to the extent that it encourages people to think critically". Hence, our teacher education faculties must model and encourage critical and reflective thinking and the use of strategies and assignments promoting critical analysis and thus accelerate the professional development.

Reference

Brookfield, S. (1990). *The Skillful Teacher*, San Francisco: Jossey-Bass.

- **Innovative Marketing:** Innovative marketing idea will also play a key role in marketing of the sports. it includes –

- **Proper packaging to attract sponsorer:** companies are not going in for sponsorship out of charity or love for any particular sports discipline. The main reason for a company coming forward to sponsor a particular sport or a person are to be able to connect in way of reaching out to million of consumers. Secondly, the company associates with a valuable product to enhance the company image and finally for the good will.

- **Identification of appropriate segment and target markets:** Includes which type of sports you are going to market whether it is general sports, competitive sports or adventure sports and which region, which are the target market.

- **Involvement of sponsorer:** In order to attract the Sponsorer, the sports should be more attractive and marketable. In order to achieve this, they have to enhance their sports base by developing more infrastructure, training of a longer pool of meritorious sports person so as to improve the quality by improving the performance of the sports person in the particular discipline and build stars. Once the star performers are available, organising competition in large scale will lead to excellent sports marketing.

Having huge consumer market, the potential for sports marketing is immense in India. In order to fully realise the potential of sports marketing-

- **The national sports federation should adopt a thoroughly professional attitude in development of their sports.**
- **The federation management should include both media and marketing professional who should invigorate and speed up the growth of the sport to make it popular and marketable.**
- **More exposure-** The marketing potential of sports in the country will be increase by giving more exposure to sports through media. not only should the quantum of events covered live be increase but efforts should be made to give public exposure to our sports persons by telecasting various competitions. so that viewership will enhance. It is only possible by improving the quality if the competitions.

- **Frequent use of Electronic Media-** Electronic media can play a pivotal role in popularising the game and evolve a strategy of sports marketing.

For over all promotion of sports, Public and Private sector to come forward and contribute to the government effort to develop sports and sports excellence in the country. if both the Government and the non government sector pool their efforts in developing sports in the country, it will ultimately result in a scenario where sports will become more attractive and many national and international star performer will be available in several sports discipline. India will have its champions and the sponsorer and Federations will be able to exploit to the maximum the marketing potential of sports in India.

BOOK REVIEW

ESSENTIALS OF PHYSICAL EDUCATION

Dr. Ajmer Singh, Dr. Jagdish Bains, Dr. Jagtar Singh Gill, Dr. Rachhpal Singh Brar, Dr. Nirmaljit Kaur Rathee
Kalyani Publisher, Ludhiana. Rs. 300.00

AN ENCYCLOPAEDIA IN PHYSICAL EDUCATION

Aparup Konar

Lecturer (Part-time)

Department of Physical Education

Rabindra Mahavidyalaya

Chandernagore, Hooghly

This book is a very valuable source of professional literature and it appears that everything about physical education as much as possible. There are 13 Units in this book.

The chapters of Unit - I is excellent. In Unit - II is very good. But at the chapter - 9 (Muscular System), it would be better if every phase of Sliding Filament Theory like Rest, Excitation coupling, Contraction, Recharging and Relaxation are explained briefly and in chapter - 14 (Nervous System), it would be very clear if neural control of muscular movement and propagation of nerve impulse are included i.e. Resting Membrane Potential, Depolarization, Action Potential & Repolarization. In chapter - 15 (Excretory System), the skin, liver, lung and Gastro-intestinal-tract should be incorporated in the main organs of Excretory System.

In Unit - III is unique one. In my opinion at chapter - 17 (Psychological Basis), it would be more acceptable if Sports Behaviour, Emotion, Tension, Stress etc. are suggested. In Unit - IV is nice, but at chapter - 24 (Nutrition), types of carbohydrate i.e. Polysaccharide, Monosaccharide & Disaccharide should be expressed, at chapter - 25 (Personal Hygiene), community hygiene should be attached and at chapter - 28 (Communicable Disease), it would be very helpful if Cholera, Pox & Cough are specified.

In Unit - V is super but in chapter - 30 (Physical Fitness), under motor fitness, Conditional & Coordinative components should be indicated and under Physical Working Capacity, Cardio-respiratory Endurance, Muscular Strength, Muscular Endurance and Body Composition should also be specified.

At chapter - 33 (Training Method), it would be fruitful if added Load Factor, Over Load, Normal Load & Crest Load. In Unit - 6 at chapter 39 (Biomechanical Concepts), Projectile should be mentioned, at chapter - 40 (Posture and Postural Deformities), Knock knee should be supplemented and at chapter - 41 (Sports Injuries), muscle & Nerve injuries and their management should be plugged. At chapter - 42 (First Aid), it would be better if wound/bleeding is focused and at chapter - 44 (Physiotherapy and Therapeutic Exercise), other method of physiotherapy like Thermotherapy, Cryotherapy, Hydrotherapy & Electrotherapy should possibly discussed. At the chapter - 45 (Massage), it would be effective if Effleurage & Kneading are recommended.

The chapters of Unit - VII, VIII, IX, X, XI, XII and XIII are rich source to gather knowledge in the field of Physical Education and exercise & Sport science. I will eagerly wait for the next book from this learned group of authors.

CALENDAR OF INTERNATIONAL CONFERENCES

March 1-2: Sports Economics and Sports Marketing, Athens, Greece. Information from Gregory T. Papanikos, 12 Solomou Street, Athens 106 83, Greece, telephone (30) 210383 – 4227, FAX (30) 210384 – 7734, e-mail atiner@otenet.gr. Website www.atiner.gr.

August 6-11: 2004 Pre-Olympic Congress (Theme: Sport Science Through the Ages), Thessaloniki/Hellas, Greece. Information from Pre-Olympic Congress, Symvoli Ltd., telephone 302 310425 159, FAX 302310425169, e-mail preolympic2004@symvoli.com.gr, website www.preolympic2004.com.

November 17-20: 10th ICHPER.SD Europe Congress (Theme: Improving Standards of Life in the Technical Age Through). Information from Turkish Sciences Association, 10 Anadoluhisari, Istanbul, Turkey, telephone 90 (216) 572-06-17, FAX 90 (216) 573-19-79, e-mail spinar@eurocing2004.org.

Source : The official magazine of the International Council for Health, Physical Education, Recreation, Sport and Dance, Vol. XXXIX, No. 3, Summer-2003.

PLEASE SEND INFORMATION ABOUT NATIONAL AND INTERNATIONAL PROFESSIONAL ACTIVITIES FOR CALLENDER TO THE EDITOR

BOOK REVIEW

Comprehensive Physical Education

Dr. G. P. Gautam, Vikram Singh
B. R. International Publishers, Delhi

Ideal for NET, SLET Examination for Physical Education

Tirtha Mondal

Teacher, Physical Education
Sudhir Memorial Institute
Dum Dum, Kolkata

The quality of teaching and research depends largely upon the quality of teachers and researchers in every sphere of educational process. UGC in the form of National Eligibility Test (NET) and in the state in the form of State Level Eligibility Test (SLET) have been introduced one decade ago for identifying competent teachers and researchers in the colleges and universities level. Before this book, no specific literature was available to assist the would be teachers and researchers in physical education. This book comprehensively cover all areas and units included in the NET / SLET examination in physical education. This is unique book, first of its kind, which will be an asset to the professional physical educationist. This book is very valuable treasure of professional knowledge for the libraries of the college of physical education and department of physical education in all the universities in India, besides every one associated with exercise and sports science teaching and research etc. This book will be very usefull in the profession of physical education , exercise & sport science. Hope this authors will continue their efforts for the development of our subject.

AVAILABLE FELLOWSHIP

SCIENCE-BASED PHYSICAL EDUCATION

Conduct research as a research assistant on a \$1 million grant at the University of Maryland (USA), to design, implement and assess new elementri curricula in urban schools. Graduate Research Assistantships available for M.A. and Ph. D. in Physical Education Curriculum, Teaching and Instructional Technology. Assistantships are 9 month position with optional summer hourly work available. Tuition remission for out-of-sate and international strudents, health benefits and stipend are included in the assistantship package. Graduate programme is competitive: GRE scores required. Programme and job descriptions available on line at <http://www.hhp.umd.edu/KNES>, or contact Dr. Catherine D. Ennis at cde@umd.edu

Source : The official magazine of the International Council for Health, Physical Education, Recreation, Sport and Dance, Vol. XXXIX, No. 3, Summer-2003.

Congratulation

For Ph. D. and Research Work

1. **Dr. Manimoy Mitra**, Head and Director, Physical Educaion, Visva-Bharati University.
Guide : Prof. Onkar Prasad, Visva-Bharati
2. **Dr. Ashok Kumar Goon**, Sr. Lecturer, Dept. of Physical Education, Visva-Bharati.
Guide : Dr. H. L. Adhikari, NBSSM, Burdawan University.
3. **Dr. Ziaul Alam**, Kalyani
Guide : Prof. Alok Bannerjee, Deptt. of Physical Educaion Kalyani University
4. **Dr. Jonmenjoy Konar**, District Officer (In-Charge) Physical Education and Youth Welfare, Midnapur
Guide : Prof. Alok Bannerjee, Deptt. of Physical Education Kalyani University
5. **Dr. Bhupen Biswas**, Teacher, Goyaspur Highschool, Nadia
Guide : Prof. Alok Bannerjee, Deptt. of Physical Educaion Kalyani University

Well Wishes to

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AND

WEST BENGAL PHYSICAL EDUCATION STUDENTS AND PROFESSIONAL FORUM
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FROM

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