

EFFECT OF SPECIFIC YOGIC EXERCISES ON MORTOR, PHYSIOLOGICAL AND PSYCHOLOGICAL VARIABLES OF SECONDARY SCHOOL CHILDREN

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Abstract

Yoga controls one's senses resulting in an integrated personality. Positive changes in the life style of the people can be brought through yoga during the middle and old age group. Behaviors can also be molded properly leading to balanced personalities. It clearly reveals that there will be a sound mind only in a sound body. To keep our body in a good condition it is essential that the various organs and systems of our body must be in a good condition. Yogic exercises play an important role in the maintenance of the above systems. The practice of yoga not only develops the body but also produces the mental faculties, moreover, the yoga acquires mastery over the involuntary muscles of his organism.

Yoga is one of the finest contributions of ancient India to the World. It is not just some sort of physical activity resulting in physical fitness but yoga in its full sense is a way of life which a person has to adopt. It is a concept based on scientific principles ultimately aiming at realization of a most satisfied, vulnerable and acceptable life, which at the end results in attainment of ultimatum (Moksha). Life as on today is mostly running behind money and pleasures of modernization, in a very short time all these will take us no where and the race to maintain and gain back the health at the cost of anything and everything will become the priority. As on today we all know that time is money and hence we do not find time for most of the things except our job. But, one has to realize the meaning of the famous saying, "If you don't find time to exercise now be ready to spare time for hospitals in future". And with the review of the present scenario of people's lifestyle, nature of job or profession, availability of time, psychological stress etc, one can easily understand that yoga will be the most befitting activity not only to maintain but also gain back the health. Thus yoga is the best remedy that would not only help us to overcome the physical problems but also with mental and social problems. Yoga is a scientific, systematic and readymade solution for human beings, which can be adopted for not only curing and

treating ailments but also to prevent any sort of physical and mental ailments, ultimately resulting in peaceful, successful and healthy social life.

INTRODUCTION

Yoga is India's unique contribution to physical education activities. Yoga is a scientific and systematic discipline of the internal human body with a view to cosmic reality of God. It is the ancient traditional Psycho - Physical culture that creates to the health of a human being.

Yoga has a complete message for humanity, human body, human mind and it has also a message for the human soul. Will intelligent and capable youths come forth to carry this message to every individual, but it is not happening in India, as well as in other parts of the world.

Yoga controls one's senses resulting in an integrated personality. Positive changes in the life style of the people can be brought through yoga during the middle and old age group. Behaviors can also be molded properly leading to balanced personalities. It clearly reveals that there will be a sound mind only in a sound body. To keep our body in a good condition it is essential that the various organs and systems of our body must be in a good condition. Yogic exercises play an important role in the maintenance of the above systems. The practice of yoga not only develops the body but also produces the mental faculties, moreover, the yoga acquires mastery over the involuntary muscles of his organism.

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The term Yoga is derived from Sanskrit word 'Yuj' which means 'to bind'. According to Swami Vivekananda "basically all living beings are divine, to enlighten and realize this inner and outer divine nature through control is the aim of life. By following one or more or all of Karma yoga, Bhakthi yoga, Raja yoga and Jnana yoga one can achieve this aim and attain salvation."¹

According to Pathanjali's yoga sutra "Yogaha Chitha Vruthi Nirodaha", means 'to completely neutralize all those thoughts and imagination arousing in the mind and lead the mind to a peaceful state'.²

Yoga is a vast field, which includes improvement of physical health, mental health and spiritual advancement. For instance, Yama, Niyama purifies our body by cleansing internally and reducing disturbances of mind. Asanas and pranayama give vitality and improve physical health. Dharana, and Pratyahara improve concentration and Dhyana, samadhi improves spiritual capabilities.³

According to Upanishad 'Atmanam Kshetra Adhikritya Yogaha' 'Which means bringing back the mind to the path of spiritual thinking'.⁴

As per Dathatreya Samhitha "Sarva Chintha Parityagam Nischinthyam Yoga Uccayanthe" which explains yoga as the process of exhausting all the materialistic feelings from the mind and enjoying the mental stage of complete satisfaction, under the shelter of God.⁵

"Yogaha Karmasu Koushalam" Bhagavadgitha states "Yoga is skillfully performing ones duty".⁶

According Yogabhavabithi "Manaha Prashamnopayaha, Yogaha Ithyabhi- deyathe" which means the intelligence of consoling (neutralising) the wave of mind is Yoga.⁷

Asanas are body postures in which slow and gradual stretch of muscles group is done to increase their efficiency and elasticity.⁸

Asanas are those which aid body to stay strong, healthy and harmoniously with the nature .⁹

Asanas are the third part of the eight parts of the Ashtanga Yoga which are Yama, Niyama, Asana, Pranayama, Prathyahara, Dharana, Dhyana and Samadhi. These asanas are scientifically, systematically designed postures for realisation of healthy body, mind and spirit.

Yogic asanas can be understood as psycho-physical activities which not only influence physical fitness but also psychological, physiological and sociological concepts. Thus the objective of yogic asana is development of physical, mental, social and spiritual health **Statement of the Problem**

The purpose of the study was to analyze the defect of specific yogic exercises on motor, physiological and psychological variables of secondary school children.

Delimitations

1. The study was consists of fifty girls and fifty boys belong to a Murarji Residential School.
2. Six weeks training program was designed to assess the effect of the selected yogic asanas on motor, physiological and psychological variables.
3. To evaluate motor fitness, test items had been selected from Oregon motor fitness test and Kraus-Weber motor fitness test.
4. For girls arm strength, explosive strength of legs, abdominal strength, lower abdominal strength, upper back strength and lower back strength, for boys, arm strength, explosive strength of legs, agility, lower abdominal strength, upper back strength and lower back strength.
5. The study was further delimited to pulse rate, blood pressure, reaction time and vital capacity physiological variables.
6. The socio-genic need satisfaction scale profounded by Dr. N.S. Chouhan, Dr. U. Dhar and Dr. Y.K. Singh was selected to assess psychological parameters acceptance, cooperation, identification, dominance, rejection, isolation, differentiation and submission.
7. Purposive random sampling method was adopted to select the subjects for the present study.
8. The time selected for training was morning; it was very conducive to enhance the results of the training.

9. Complete diet format that was administered to the subject had also been obtained.

Limitations

1. No effort was made to assess the effect of other activities been performed by these children on the present study was regarded as one of the limitations.
2. Changes in atmosphere pressure, temperature, relative humidity and other meteorological factors during the period of administrating the motor and physiological fitness tests not taken for consideration was also one of the limitations.
3. Whatever answer given by the subjects in the questionnaire for testing selected psychological parameters was considered as truth and no effort was made to find out the authenticity of the answers given by subjects.
4. Only selected motor fitness, physiological and psychological variables were tested.
5. Since the adolescent groups of girls were taken for the training, they had given a break of minimum 3 days during their menstrual cycle.

Hypotheses

Understanding the importance of yoga and its possible effects on motor, physiological and psychological variables and also with in the frame work of the training period and selected subjects for this study .The following hypotheses were formulated.

1. It was hypothesized that the selected yogic asanas with six weeks of training improves the selected motor fitness variables among both girls and boys.
2. It was hypothesized that there will be differences in some of the selected psychological variables among girls and boys.
3. It was hypothesized that there will be an improvement in some of the selected psychological variables after six weeks of training.

4. It was hypothesized that there will be an improvement in the selected physiological variables after the six weeks training.
5. It was hypothesized that the performance before training and after training were considered, there exists significant improvement across some motor, physiological and psychological variables among the selected subjects.

REVIEW OF RELATED LITERATURE

The researcher reviewed the available literature, which are relevant research works, relevant studies, facts and related to the selected problem, the importance of referring related literature is so vital for any study undertaken, this can be better understood by the statement given by J.C. Agarwall¹ “The literature in any field forms the foundation, upon which all future work will be built”. The major source from which the author was able to collect the required literature is confined to the Library of Sri Siddaganga College of Physical Education, Tumkur University, Libraries of Bangalore University (Department of Psychology, Department of Physical Education), Rashthrothana Parishad, Bangalore, Vivekananda Yoga Kendra, Bangalore and internet. The following are some of the literature available for the future research work, which forms the foundation of the study.

According to M.K. Gharote and S.K. Ganguly, the inclusion of yogic exercises in the program of physical activities of the school is suggested for the improvement of minimum muscular fitness among the school children.

Kamlesh³ reports that selected yogic practice is not beneficial if the improvement of cardio-respiratory endurance is the goal sought. However, he analyses that there is basis to believe that the selected yogic practices may assist in the improvement of cardio-vascular status of persons.

Yadav and Dubey⁴ Yoga is recognized as one of the most important and valuable heritage of India. Today the whole world is looking towards yoga for the answer to various physical, mental, psychological and social problems”.

V. Chandramohan⁵ A study on the effects of yogic exercises of psycho physiological functioning on 30 healthy subjects was grouped into yoga and non- yoga groups was carried out at Institute of Aerospace

medicine. After 6 months statistically significant difference in psychological, physiological measures were found in yoga group.

Thaper, C.L.⁶ study emphasizes on simplicity of practices and postural and attitudinal aspects leading to spins offs in flexibility of mind and enhancement of awareness, confidences humility, concentration, relaxation, perseverance acceptance, co-operation and disciplining- basic elements useful for fine tuning of education and development of total personality of the child. The approach they planned resulted in enhanced awareness, involvement, receptivity and discipline among students in all areas of education reducing element 'of mechanistic and tension.'

Dr. Vasudeva Bhatt⁷ A study was conducted to highlight the importance of yogic practices which imbibes self awareness and self esteem among youth by reducing stress and tension. The yogic practice program was given to fifty college students for 8 weeks. A questionnaire was constructed and administered in the beginning and at the end of the program. It was found out that strong self awareness and good managements of stress was associated with youth group who took part in yogic practices.

N.K. Datta, Yogacharya Prabhu,' "Studied the problems faced by some 30 people who were part of the yoga camp and studied the change in the parameters like the blood pressure level, oxygen consumption and breathing rate before and after practicing yoga. The results showed that there was a reduction in the oxygen consumption per minute after practicing yoga. It was also found that the breathing rate had reduced from 13.5 per minute to 10.5 per minute. The basal metabolic rate (BMR) decreased by about 15-18 during the meditation process.

METHODOLOGY

Any scientific study should be methodically framed on logical terms to be successfully accepted by the society. The present study was done basically to elicit the results and the effect of yogic asanas on various selected aspects of an individual's personality on whole and selected variables of motor fitness, physiology and psychology in particular.

The various steps followed are presented here.

» Selection of subjects

« Selection of variables

- Selection of yogic asanas and designing the training program
 - Orientation of subjects
 - Administration of tests and questionnaire
- « Collection of data
- Experimental design and statistical analysis.

Selection of Subjects

Since the study demanded implementation and practice of selected asanas in the morning regularly, Murarji Residential School was purposefully selected, for which prior permission was sort from the administrative officials. Fifty girls and Fifty boys were randomly selected from 8 , 9 and 10 standard.

Selection of Variables

The personality of any individual is multidimensional it involves physical concepts, motor fitness, physiological variables and psychological variables. The investigator has examined the scientific literature pertaining to motor fitness variables, physiological variables and psychological variables from different library sources and also consulted experts of these areas to select the appropriate variables and test items for the present study. Along with the literatures and experts opinion, the administrative feasibility, availability of infrastructures, instruments, time factor and cost factor were also given due consideration while selecting the following variables and test items.

H Motor fitness variables

S Physiological variables

S Psychological variables

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the mode of analysis of data regarding motor fitness variables scores, physiological variables scores and psychological variables scores of the selected subjects in pre and post-training.

The present study involves four categorized variables namely, the subjects, motor fitness variables, physiological variables and the psychological variables. The first one relates to the subjects fifty girls and fifty boys. The second category was the motor fitness variables. The third category relates to the physiological variables. The last categorized variable related to psychological variables. To find out the effect

of selected yogic asanas on the variables selected in this study, significant difference was established by calculating 't' value between pre and post training scores of the variables.

The data collected on motor, physiological and psychological variables was subjected to the following statistical analysis

1. Mean and standard deviation was calculated for pre and post training scores of all the selected motor fitness variables of girls and boys.
2. The difference between before and after six weeks training program with selected yogic asanas among all the selected motor, physiological and psychological variables were further tested by using 't' test.
3. The t-ratio was established to motor, physiological and psychological variables at 0.05 significant level.

TABLE — 4.1

MEAN, STANDARD DEVIATION AND 'T^s VALUE OF ARM STRENGTH OF GIRLS

Particulars	N	Mean	Standard Deviation	t-score
Pre- training	50	2.30	2.20	1.86
Post training	50	3.38	3.45	

Significance at 0.05 level.

The mean value of Arm Strength among girls in pre and post training with selected yogic asanas are 2.30 and 3.38, the corresponding standard deviation are 2.20 and 3.45 respectively. The t-value as per the t-test is 1.86, since it is lesser than the critical 't' value 2.01, it is not significant at 0.05 level of confidence.

Though there was no significant difference in pre training and post training scores, but the average scores of the arm strength shows a slight improvement in their abdominal strength, which can be attributed to the effect of training with selected yogic asanas.

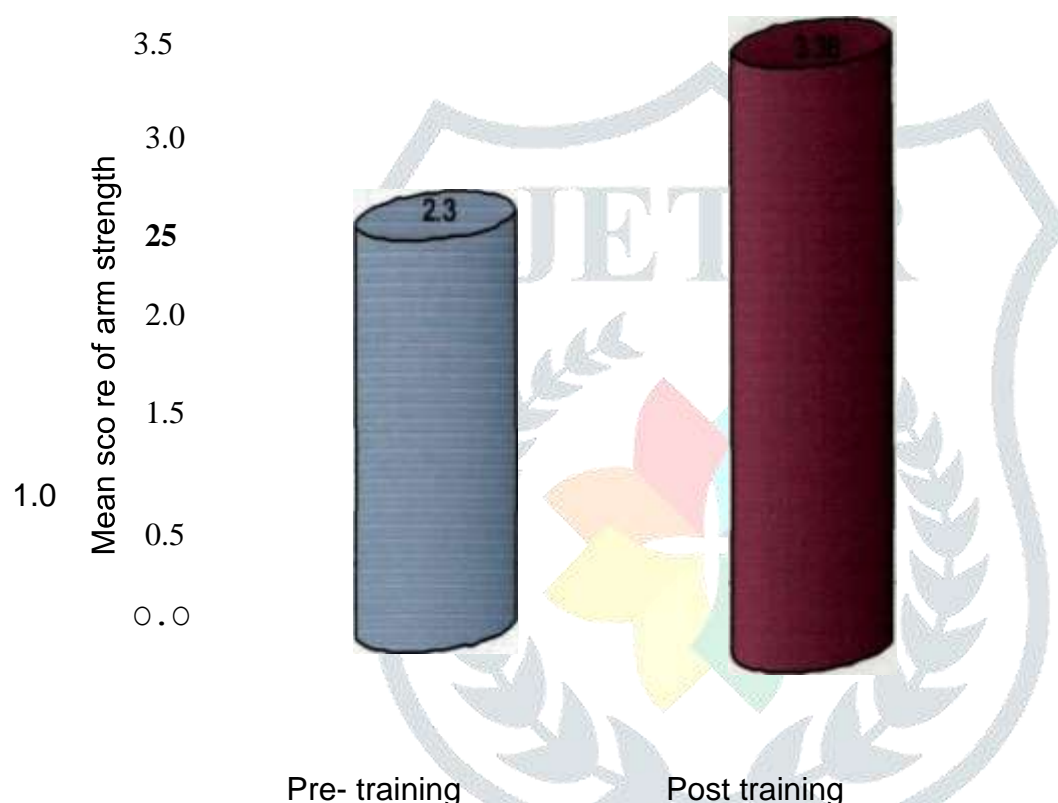


Fig. 4.1. Comparison of mean values of arm strength of girls

TABLE — 4.2

MEAN, STANDARD DEVIATION AND 'T' VALUE OF EXPLOSIVE STRENGTH OF LEGS AMONG GIRLS

Particulars	N	Mean	Standard Deviation	t-score
Pre- training	50	2.12	2.45	2.41*
Post training	50	3.64	3.76	

Significance at 0.05 level.

The mean value of explosive strength of leg among girls in pre and post training with selected yogic asanas are 2.12 and 3.64, the corresponding standard deviation are 2.45 and 3.76 respectively. The t-value as per the t-test is 2.41*, since it is more than the critical 't' value 2.01, it is significant at 0.05 level of confidence.

There was significant difference in pre training and post training scores. The average scores of explosive strength of legs show an improvement, which can be attributed to the effect of training with selected yogic asanas.

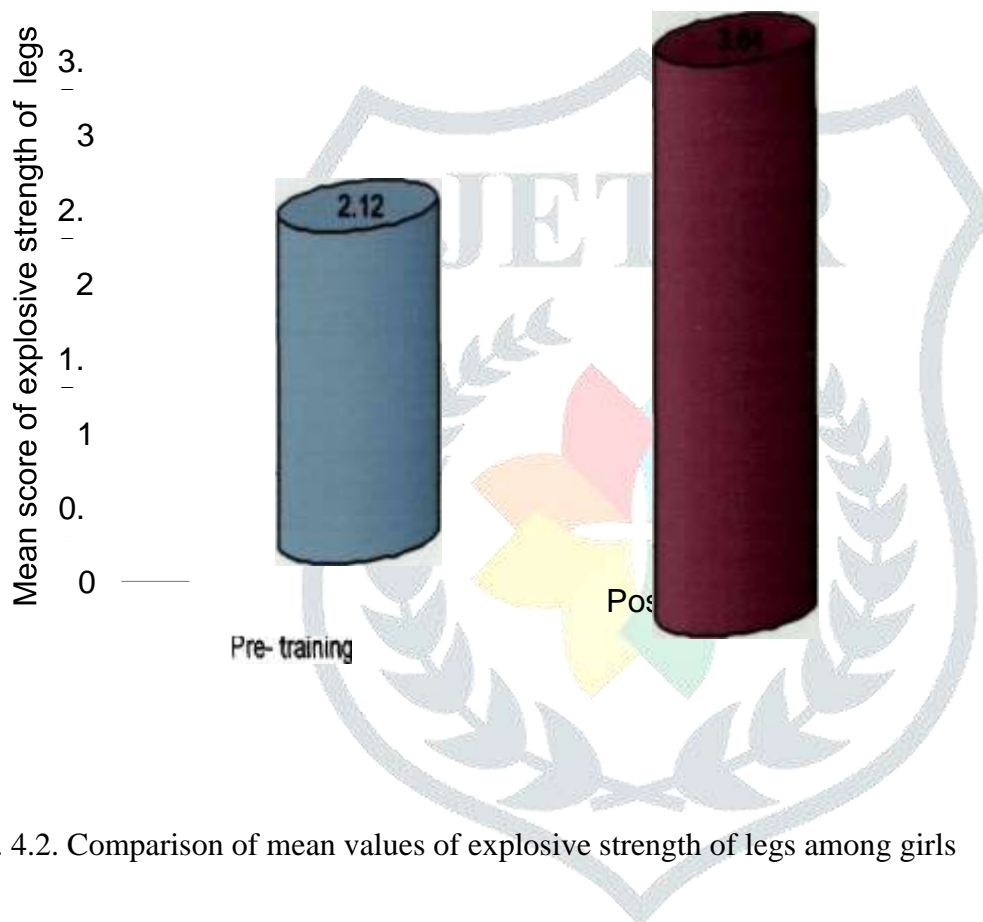


Fig. 4.2. Comparison of mean values of explosive strength of legs among girls

TABLE — 4.3

MEAN, STANDARD DEVIATION AND 'T' VALUE OF ABDOMINAL STRENGTH AMONG GIRLS

Particulars	N	Mean	Standard deviation	t-score
Pre- training	50	2.54	2.68	1.94
Post training	50	3.84	3.91	

Significance at 0.05 level.

The mean value of abdominal strength among girls in pre and post training with selected yogic asanas are 2.54 and 3.84, the corresponding standard deviation are 2.68 and 3.91 respectively. The t-value as per the t-test is 1.94, since it is lesser than the critical 't' value 2.01, it is not significant at 0.05 level of confidence.

Though there was no significant difference in pre training and post training scores, but the average scores of the abdominal strength show an increase in their abdominal strength, which is because of the effect of training with selected yogic asanas.

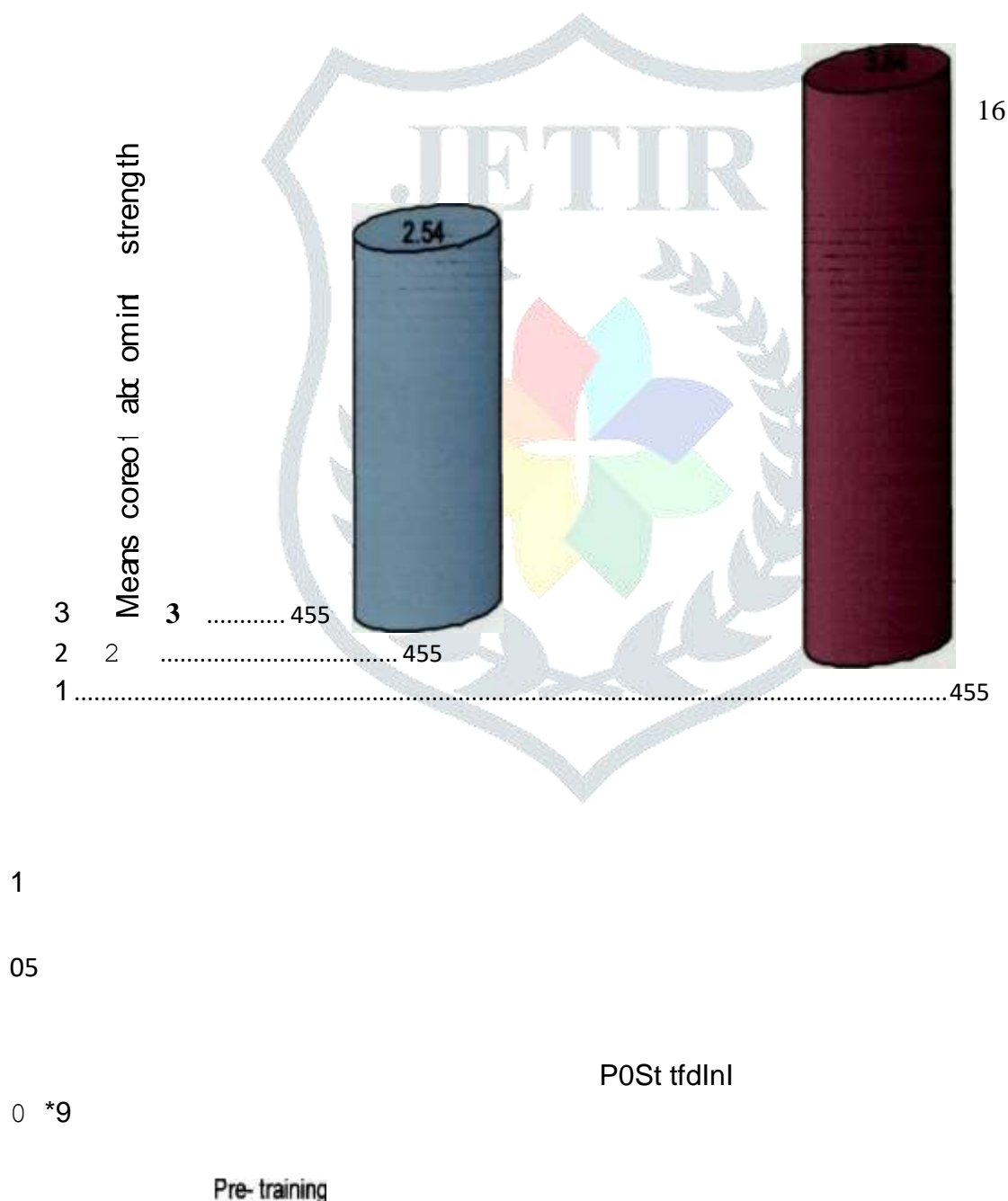


Fig. 4.3. Comparison of mean values of abdominal strength scores of girls

Discussion on Findings

The results of the study “Effect of specific yogic exercises on motor, physiological and psychological variables of secondary school children” have been discussed in this chapter. As stated above, the purpose of the study was basically to analyze the benefits of selected yogic asanas could bestow on the motor, physiological and psychological variables of the selected secondary school children. Innumerable studies in relation to the benefits that people can derive through the practice of yogic asanas have already been done and few of those relevant to the present findings were also been discussed.

The first hypothesis according to the study is that “the selected yogic exercise with six weeks of training improve the selected motor variables among boys and girls.”

Previously various studies have also indicated that practice of yogic asanas would contribute for the enhancement of fitness components. In the Study of Indranil Manna results revealed that yoga practice helps to improve the reaction time and increases flexibility and thus it helps to keep the body fit. A study conducted by Dr. V. Jayaveeran Pandian reveals that the yogic practices evidenced significant effect on abdominal muscular endurance and flexibility than physical exercises. The results of the study conducted by Urmila Raut, N.B. Shukla on one hundred students undergoing yoga training stated that there were significant differences in fitness components among the students who were undergone training with yoga.

The results obtained in the present study after statistical analysis of the data shows that there is an improvement in the average scores of all the selected motor variables such as arm strength, explosive strength of legs, abdominal strength, agility, lower abdominal strength, upper back strength and the lower back strength among boys and girls after six weeks training with the selected yogic asanas. Hence the first hypothesis that the selected yogic asanas with six weeks of training improves the selected motor variables among both girls and boys may be accepted.

The second hypothesis states that there will be differences in some of the, selected psychological variables among girls and boys. A study by Jim Sidanius and others suggests that males were more anti-egalitarian than females, and that the male and female difference in social and group dominance orientation tended to be largely invariant in cultural, situational, and contextual boundaries. In a study conducted by Serge Guimond it reviewed that a body of cross-cultural evidence showing that it is precisely in the Western countries that women and men differ the most in terms of personality, self-construal values and emotions. Boys have greater psychological well-being than girls, due to better physical self-concept.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The present study was conducted to find out the effect of specific yogic asanas on selected motor, physiological and psychological variables of secondary school children. For the purpose of this study one hundred students were randomly selected from Mur@i residential school among them fifty girls and fifty boys of 8th to 10th grade with the age group from 13 to 15 years. Six weeks training program was framed with selected yogic asanas as suggested for the secondary school children by D.S.E.R.T in its 'sadhanapatha' program.

The first variable represents the single experimental group adopted for the study upon which the pre-designed training programs with selected yogic asanas were administered. The second variable represents the subjects (fifty girls and fifty boys) selected from Murarji Residential School for the present study. The third categorical variables were the selected motor, physiological and psychological variables to be tested with the selected single group of girls and boys.

Data of the selected motor, physiological and psychological variables were collected before and after the completion of six weeks training with selected yogic asanas. The data collected was treated with the 't' test statistical technique to find out :

The effect of six weeks training program with selected asanas on the selected **motor** variables among girls and boys.

1. The effect of six week training program with selected yogic asanas on the selected physiological variables among girls and boys.
2. Result of six weeks training program with the selected yogic asanas on the selected psychological variables among girls and boys.

Conclusions

The data obtained regarding the effect of six weeks training with selected yogic asanas on motor,

physiological and psychological variables among girls and boys was statistically analyzed and on the basis of the results obtained following conclusions were drawn.

1. There is an improvement in all the motor variables selected for this study after the six weeks training with selected yogic asanas.
2. There is an improvement in all the psychological variables representing the socio- genie need satisfaction, after the six weeks training with selected yogic asanas.
3. There is no observable difference in the physiological variables- pulse rate, systolic and diastolic blood pressure. But there is reduction in reaction time and increase in vital capacity implies that the training with selected yogic asanas also has positive influence on some of the physiological variables.
4. There exists difference across the selected psychological variables among the **girls** and boys. The influence of the **training was also** different **among** the girls and boys as far as the psychological variables are considered.
5. There is significant improvement at 0.05 level of significance across the motor variables explosive strength of legs, lower abdominal strength, upper back strength and lower back strength among girls after six weeks training with selected yogic asanas.
6. There is significant improvement, across the motor variables arm strength, explosive strength of legs, lower abdominal strength, upper back strength and lower back strength among boys after the six weeks training with selected yogic asanas.
7. There is no significant improvement been observed across any of the selected physiological variables among both boys and girls after the six weeks training with selected yogic asanas.
8. There is significant improvement across the psychological variables of positive need satisfaction dominance among girls after the six weeks training with selected yogic asanas.
9. There is no significant improvement at 0.05 level of significance across the psychological variables of positive need satisfaction among the boys after the six weeks training with selected yogic asanas.
10. There is significant decrease in the psychological variables of negative need satisfaction-rejection, isolation and differentiation among girls after six weeks training with selected yogic asanas.

11. There is significant decrease across all the psychological variables of negative need satisfaction, rejection, isolation, differentiation and submission among boys after the six weeks training with selected yogic asanas.

Recommendations

1. Based on the results obtained by the study, the school authorities may make yoga as compulsory in schools, which could help the students to improve physically, physiologically and psychologically.
2. Authorities may take measures to include yoga in school curriculum for all-round development of a child.
3. Physical education teachers may realize and include of yogic asanas as a part of their academic curriculum with an aim of enhancing physical, physiological and psychological fitness of children.
4. Similar study may be conducted on the various age groups of students.
5. Similar study may be conducted on people belong to different profession.
6. This helps not only for physical education teachers, but also sports coaches and trainers to include yogic asanas in their training schedule to reap the highest performance.
7. Similar study may be conducted on students belonging to other types of schools which were not considered for the study.
8. Similar study may be conducted on college students.
9. Similar study may be conducted on physically and mentally challenged students.
10. Similar study may be conducted on sports person and non sports person and the results may be compared to attain good performance.
11. Similar study may be conducted to compare effect of yogic asanas and other physical fitness activities.
12. The same study may be conducted on the students belong to different geographical conditions.

13. The similar study may be conducted on rural and urban students.

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