

**DEVELOPMENT OF PHYSICAL ACTIVITY CURRICULUM  
AND ITS EFFECT ON ANTHROPOMETRIC BIOMOTOR  
AND PHYSIOLOGICAL VARIABLES OF ELEMENTARY  
SCHOOL STUDENTS**

A Thesis

Submitted in partial fulfillment of the requirements for the  
award of the degree of

**DOCTOR OF PHILOSOPHY**

**In**

**Physical Education**

**By**

**Gaganpreet Sharma**

**41400084**

**Supervised By**

**Dr. Satish Sharma**



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**LOVELY PROFESSIONAL UNIVERSITY  
PUNJAB  
2021**



## **DECLARATION**

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I hereby declare that the thesis entitled “**Development of Physical Activity Curriculum and Its Effect on Anthropometric Biomotor and Physiological Variables of Elementary School Students**” submitted by me under the guidance of Dr. Satish Sharma, Former Head of the Department of Physical Education, Lovely Professional University Phagwara (Punjab) and presently serving as Head of the Department in Physical Education, Government College, Solan (H.P.), for the Doctor of Philosophy in Physical Education degree, is entirely my own work and has not been submitted in part or full for and other degree/diploma at this or any other University/Institution. All idea and references have been duly acknowledged.



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**CERTIFICATE BY ADVISOR**

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I hereby affirm as under that:

1. The thesis presented by Gaganpreet Sharma is worthy of consideration for the award of the degree of Doctor of Philosophy.
2. He has pursued the prescribed course of research.
3. The work is original contribution of the candidate.
4. The candidate has incorporated all the suggestions made by the Department Doctoral Board during Pre-Submission Seminar held on 17-02-2021.



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## ***Abstract***

*In this research study, Physical Activity curriculum was developed and induced/implemented to the experimental group of elementary school students from class/standard Ist to class VIIIth. Study related to the importance of physical activity and sports is highlighted on August 13<sup>th</sup> 2013, where United Nation's General Assembly made the decision to declare 6<sup>th</sup> April as the "International Day of Sports for Development and Peace" because UNESCO understands the benefits of Physical activities, towards health. UNESCO and World Health Organization (WHO) were emphasizing more, to curb modern lazy lifestyle of the next/new generation and realized the importance of introduction of Physical Education at school level. There are sufficient reviews available which highlights the importance of physical activity and sports are useful in keeping peace and to overcome psychological challenges. Recommendations of UNESCO and WHO which clearly states that "Physical Education and Sports should be introduced at school level" was incorporated in this study since this is the only study of its type in India which has worked on the framework, designing and studied possible outcomes of the implementation of physical activity curriculum. Physical activity helps in improving the overall fitness of the body. It also initiates a lot, in the overall growth of the children. Physical activity helps in proper growth of children's muscles, bones and other biomotor abilities. Physical activity aims at overall development of a child. Physical activity curriculum in this research study is contemporary and need of an hour in India. Variables which were considered for the study are anthropometric variables (standing height and body weight), biomotor variables (speed, agility, balance, leg strength and flexibility) and physiological variables (pulse rate and body mass index). Hypotheses of the study were: It is hypothesized that developed curriculum of physical activity will effect standing height, body weight, speed, agility, balance, leg strength, flexibility, pulse rate and body mass index significantly. Statement of the research problem is defined as "Development of physical activity curriculum and its effect on anthropometric, biomotor and physiological variables of elementary school students" Research of such nature maintains good physical, physiological and psychological health of the children. This study will also promote physical activity in the schools at state, national and international level. Physical activity curriculum will also impart*

*knowledge and help in realizing students the importance of physical activity in the schools of Punjab state which may or may not be adopted by the nation. Present study will also provide parameters and methods of evaluation of physical activity in the schools. The study may be helpful to prepare sports policy in schools by comparing performance of school children in different events. Present Research was delimited to elementary school children of state of Punjab which consists of three hundred thirty six students i.e. one hundred sixty eight students of “Central Board of Secondary Education” (CBSE) elementary school students and one hundred sixty eight students of “Punjab State Education Board” (PSEB) elementary school students. Study was delimited for girls and boys from first to eighth standard of selected schools of Punjab state. Research was conducted with the objectives: To develop class wise physical activity curriculum for elementary school students. To study the effect of developed physical activity curriculum on the anthropometric variables which are standing height and body weight is one of the objectives. Besides this study has the objective to find out the effect on biomotor variables i.e. speed, agility, balance, leg strength and flexibility. Present research also investigate the effect on variables which are physiological in nature i.e. pulse rate and body mass index. After through study of review of related literature and recommendations of UNESCO and WHO, curriculum of Physical Activity was designed with consultation of experts. Valuable suggestions of Physical Education experts of various institutions were incorporated. Convenience sampling technique was used for selection of samples from different schools from the state of Punjab. Before testing, investigator scheduled a meeting with the School Principal and Physical Education teachers to ensure proper collection of data. Physical Education teachers were also given the orientation about the procedure of implementation of the physical activity curriculum.*

*All the subjects were given demonstration, prior implementation of start of physical activity curriculum. Pilot study of two weeks and main study of four weeks were conducted under the supervision of qualified physical education school teachers / trainers. Pilot study of two weeks was conducted to confirm and validate proper feasibility/implication of physical activity curriculum. After proper realization of the physical activity curriculum, developed curriculum of physical activity was implemented properly by the school physical education teacher / trainers, during*

*schools hours on the students from class one to eight of CBSE and PSEB of Punjab state. Developed Physical activity curriculum was specified in Unit third of this research thesis t-test was used as the statistical tools to find out the significance of difference if any at .05 level of confidence. Comparison was drawn between Pre-test and post-test results of experimental group, which are described as follows: On variable, standing height, t-value of standing height in each class was found significant in control and experimental group, which means that height does not depends directly on physical activity. Results also suggests that four weeks of physical activity curriculum does not appear to impair the child's linear growth and may contributes to the ideal shaping of bone and muscle tissues, ensuring possible beneficial effects throughout life, but fact cannot be ignored that height of an individual / children is based on hereditary / genetically or other extraneous factors but not directly affected by physical activity. On variable weight, t-value 2.25 of class IInd, 2.29 of class IVth and 2.68 of class VIIth was found significant at 0.05 level of confidence. On the variable speed, t-value 4.04 of class IInd, 3.23 of class IVth, 4.05 of class Vth, 4.52 of class VIth and 6.06 of class VIIth was found significant at 0.01 level of confidence. On variable agility, t-value except of class Ist was not found significant, whereas t-test value of all the classes was found highly significant at 0.1 level of confidence. On the variable balance, t-value 2.64 of class Ist, 4.02 of class IInd, 9.43 of class IIIrd, 2.64 of IVth class and 4.33 of class VIIth class was found significant at .05 level of confidence. On the variable leg strength, t-value of all the classes from Ist to VIIIth was statistically significant at 0.05 level of confidence. On the variable, flexibility, value of elementary classes were found significant. On the variable, pulse rate mean difference of experiment group 10.57 was the best, which has shown improvement of class IIIrd. On the variable, t-value 3.11 of class Ist, 2.17 of class VIth was found significant. Overall result have proved that developed physical activity curriculum was effective in improving overall performance of elementary school children on selected biomotor, anthropometric and physiological variables. Conclusion: This research study is able to develop a systematic curriculum of Physical Activity which may be implemented in various schools which can also be revised from time to time. Curriculum was effective in the overall development, which*



*comprises of anthropometric, biomotor and physiological variables since t values of were found significant of the treatment group when compared to control group.*

***Keywords:*** *Games, Sports, Physical Activity, Curriculum, UNSECO, WHO, Anthropometric, Standing Height, Body Weight, Biomotor, Speed, Agility, Balance, Leg Strength, Flexibility, Physiological, Pulse Rate, Body Mass Index, Physical Education, Elementary School Students, Punjab State, PSEB and CBSE.*

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Investigator

A handwritten signature in black ink, appearing to read 'Gaganpreet Sharma', with a stylized flourish at the end.

Gaganpreet Sharma

**Date:** October 30<sup>th</sup>, 2021

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### List of Abbreviations

Sr. No.	Abbreviations	Description
1.	BMI	Body Mass Index
2.	BP	Blood Pressure
3.	CBSE	Central Board of Secondary Education
4.	CG	Control Group
5.	CM	Centimetre
6.	CVD	Cardiovascular Diseases
7.	EG	Experimental Group
8.	FT	Feet
9.	HR	Heart Rate
10.	Kg	Kilograms
11.	MAS	Maximal Aerobic Speed
12.	MTRS	Meters
13.	PA	Physical Activity
14.	PAC	Physical Activity Curriculum
15.	PE	Physical Education
16.	PES	Physical Education and Sports
17.	PF	Physical Fitness
18.	PG	Page
19.	PSEB	Punjab School Education Board
20.	PTA	Parents Teacher Association
21.	ROM	Range of Motion
22.	SAQ	Speed Agility Quickness
23.	SD	Standard Deviation
24.	SEDM	Standard Error Mean Difference
25.	SPSS	Statistical Package for the Social Sciences
26.	UNESCO	United Nation Educational Scientific and Cultural Organization
27.	WHO	World Health Organization
28.	WK	Walk

# **CHAPTER - 1**

## **INTRODUCTION**

Education is as old as the humanity. It is a continuous process and it helps in the overall development of an individual. Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, morals, beliefs, and habits. (<https://en.wikipedia.org/wiki/Education>)<sup>1</sup>. Its period stretches from birth to death. Education is the necessary part of everyone's life as it helps an individual to become cultured and civilized part of the society. It is only through education that an individual learns to tackle the problems of life in a more decent manner. Education is very essential for each and every part of human life. Through education, human transform himself into well-educated human beings. Each and every individual learns one or the other thing throughout his career. Complete period of one's life span is learning and teaching. Hence, education is a never ending, continuous and dynamic process. It is concerned with ever-growing process in the modern society. A common saying, "if you take care of the root of the tree, the flowering and fragrance will come by itself". Schooling is also an important part of life of humans as it helps the child to become a civilized part of society. The aim is to guide the learners to adjust and live a fruitful life in a changing society. Education is very important for humans to survive in the society in a more ethical manner. Education gives rise to the feeling of self confidence among the individuals. (<https://examplanning.com/definition-of-education-by-different-authors/>)<sup>2</sup>.

Education is considered one of the pre-requisites to prepare the children for his better future but usually they are bogged down before the ever-changing societal norms and demands. Moreover, to educate a child is not only a long-term investment but also an expensive venture. However, on a positive note, a child should be prepared for his/her life ahead because education has numerous other benefits which helps in curbing poverty, improves equality, curbs crime. (Kapoor &Yadav, Economic Times contributors, Jan 16<sup>th</sup> 2021).Whereas physical activity makes the life healthy.

While at school, it is responsibility of every teacher to provide as many opportunities as possible to the students to explore their potential and to exhibit their

talents. Just keeping children within the four walls of classroom and cramming with lots of information from the textbooks make them boring and monotonous. Besides education, sports are an integral part for wholesome development. Healthy mind exhibits in healthy body which is only possible by participating in physical activities, sports etc.

In one of the recent research studies it was concluded that home-based activities provide an opportunity for people to stay fit and healthy by practicing simple movements while staying at home. Staying at home can lead to a lot of stress, anxiety and mental distress. The best way to overcome these problems is to replace outdoors activities with home-based activities, such as bodyweight training and dance-based aerobic exercise, and if possible, aerobic high-intensity exercise using stationary bikes or rowing ergometers, also with self-paced protocols. (Amri Hammami, Basma Harrabi, Magni Mohr and Peter Krstrup, Physical activity and corona virus disease 2019 (COVID-19), 2020) specific recommendations for home-based physical training. In this study focus is laid on the home based physical activity because due to COVID-19 outdoor movements were restricted, whereas it can be practiced in the school premises as a physical activity curriculum as developed in this study.

On 13<sup>th</sup> August 2013, the General Assembly of the UN made the decision to declare sixth April as the “International Day, of Sports for Development and Peace”. Whereas World Health Organization also discussed the report, which was presented by secretariat and owned the responsibility to finalize a proposal related to physical activity and diet, to prevent and control non-communicable diseases. Report was approved by the Assembly to globalize the plan and to develop physical activity and diet plan. As mentioned above, the reports of UNESCO and WHO were given due consideration while framing and finalizing the present research problem. Hence physical activity curriculum was designed and then effects were studied on elementary school children. (<http://www.unesco.org/new/en/unesco/events/prizes-and-celebrations/celebrations/international-days/international-day-of-sport-for-development-and-peace/>)<sup>3</sup>.

It is understood that a nation’s future depends upon the quality of its youth so government has to take some strict actions to ensure quality education to the children.

It is the Government duty to provide exciting platforms to the youth of the country so they can become sincere part of the nation. Youth is the defined future of every country so they should be provided with the proper training and education.

A rumination of intellectual factors reminds the necessity of giving more and more attention towards the individual differences of the children and of providing them with proper flow of the energies by providing them with the stable, exciting and more platforms. For implementing these activities in a more effective form one has to adopt the new education system i.e. learning by doing practical instead of cramming the things, a learner should be inspired to learn the things in a practical by performing once and which enables an individual to learn it forever.

Education is not confined to a particular age, one learns new things from the new experiences, its rightly said by Rabindranath Tagore “that life is an education and education is life.” ([https://en.wikipedia.org/wiki/Rabindranath\\_Tagore](https://en.wikipedia.org/wiki/Rabindranath_Tagore))<sup>4</sup>. As we all know that children are the future of the nation so it is essential to look after their current requirements and try to full-fill them all, as they are going to become the guardians of the nation in future. If education system is in an appropriate manner it provides proper knowledge, trained skill, positive attitude and it helps an individual to become a responsible member of the society by performing its duties. It gives the inner strength to face oppression, humiliation and inequality.

The process of education is a continuous process it keeps on going from birth till death; it is a continuous and lifelong endeavour, it also includes academics and co-curricular activities. Education is not simply concerned with reading and writing only. It also includes physical activities, cultural activities and many more concerned with the complete development of the individual. It is significant for schools to provide well defined curriculum for the entire personality growth of an individual. Schools should take care of their curriculum and all the activities that have to be taken place in the schools, so that students can become keenly interested in the school based activities and can become an active member of the society.

Maria Montessori felt that, “It’s useless to impart knowledge if the individual’s total development pauses or stagnated at one point?” and total development includes academics, co-curricular activities, physical education and sports whereas team sports should be mostly offered for the more learning as preferred by the senior age group.



Natagmah (1982) studied the nature of physical education programmes implemented in Iowa high schools, which are preferred by seniors recommended by profession is Iowa educational institutes. After analysing the data researcher analysed that there is no positive relationship between activities offered and activities preferred by seniors. Senior preferred to have team sports emphasized most.

Planned curriculum is equally educational as those based on the textbooks and syllabi for academic achievements. If all learning activities are enriching and enjoyable and lead to mastery of the areas covered, it would seem better than covering the entire syllabus. In those schools where syllabi are fully covered, but there is very little difference between what the children know in the beginning of the academic session and what they can do by the end of the academic session, then schooling has not been an effective experience for them. Dissimilar activities that allow students partake from within as well as without the school are amongst the manifold situations or mediator that is able to have an outcome on these ideas.

Keeping this concept in mind physical education now days has a variety of activities, so it has become more interesting part of the curriculum, if added. Introduction of different games and sports to students at childhood can help students, to choose their game according to their interest which will help them in their adulthood and it will become easy for them to continue their interests in future without any kind of hesitation and fear. PE also helps the students to reduce the stress and there is a need for teachers to use traditional methods of stress reduction like yoga and deep breathing which helps in increasing the comfort level of the students. A well balanced curriculum of physical education along with the school curriculum would help the child in developing a human in healthy being. Numbers of sportsperson showing in advertisements of many products encourage the people towards them. They earn name and fame as well as lots of money. Sportspersons have become the role model of many students and young people, their parents wish to make their children the next Virat Kohli, Usain Bolt and alike. The curriculum of physical education should be organized according to the logical developments of its subject matter & human movement (Messmer 2018).

In the developed countries like:- America, U.S.A, England etc. the physical education curriculum is designed in such a way that pupils get a variety of modern

learning and dozens of sports and hundreds of carefully reviewed drills and exercise, curriculum is so nicely arranged and even implemented in such a way that it makes students getting automatically interested. PE in these countries is an essential part of the curriculum of the schools and is compulsory for each and every student to take part in these activities. Physical education curriculum in any nation aids the students to practice at least lesser exposure to the subsequent categories of activities such as training activities, aerobics, individual sports, group sports, musical exercises and also aquatics. By this kind of curriculum students even gets encouragement for taking part in other activities in which they are least interested. It helps them to explore each and every aspect of Physical Education.

District schools should have a sequential and comprehensive as well as written curriculum on physical education and its outcome comes should be based on national and state level standards for better result of Grades K-12. (Lonsdale et al. 2012)

As these are developed countries, their curriculum is also planned in such a way that it helps in the development of the students. This helps the students of grade sixth onwards to deal with teamwork, fitness, leadership and sports to make them ready for their middle school and higher schools. United States house in year 1975 voted for the physical education as a regular subject for both genders.

Many schools have the physical education in their curriculum but they have the activities and games divided according to the sex of an individual which leads to the higher level inequality among the individuals like hard games and activities are kept for males and light activities marked for the females which leads to the sensation of inequality among females as they are considered weak. So physical education and activities should be same for the both without giving rise to inequality.

### **Positive outcomes of Physical Education**

Physical education must be designed to full-fill all kind of needs of an individual like: emotional needs, health based needs, weight issues etc. Some of the positive outcomes which can be achieved through proper implementations of the physical activities are:-

**Minimize heart related disease:** Physical activities can prevent the risk of heart failure. It also helps to regulates blood pressure.

**Improves overall fitness:** A good program of physical activities helps in improving the overall fitness of the body of children. It also initiates a lot in the overall growth of the children. It helps in proper growth of muscles and bones.

**Stronger bones:** It helps in developing stronger bones and also helps in improving the density of the bones in an individual.

**Weight management:** A Physical activity helps in managing the weight of the children as well as of adults. Nowadays weight management is the biggest curse among individuals. Proper physical activity will help an individual to overcome his problem in a very effective manner with positive outcomes.

**Psychological development:** Quality physical education helps in the psychological development of an individual it also helps to tackle stressful situations in an effective manner.

**Self-discipline:** By adopting any kind of physical activity on daily basis or by adding it in their daily routine one becomes self-disciplined by following the rules and regulations of that activity and becoming responsible for their own fitness.

**Skill development:** Physical education helps an individual to develop skills related to different games it also helps an individual to show their inbuilt talents. Physical education develops a skill which makes an individual more conscious about their performance and it generates the sense of getting rewards and appreciation.

**Socialization:** Physical education helps the children to socialize with others and become a responsible member of the society. It helps an individual to interact with others in a society in a better manner. It is a socialized process.

**Improves self-confidence and self-esteem:** Physical education helps an individual to become more confident and self-esteemed. By taking part in any physical activity helps an individual to become fit and fitness increases the confidence level among the individuals. Physical education generates the sense of self confidence among the children they become more independent. It helps the children to interact with higher officials in a more ethical form.

**Stress reduction:** Stress is reduced through Physical education it also improves mental health as well as spiritual. Physical activities help to reduce the stress and the level of anxiety which is nowadays is very much common among teenagers. It helps

in releasing the strain, pressure, tension, tightness which is present in everyone's life due to adverse or over demanding circumstances.

**Active lifestyles:** It promotes activation in the lifestyles of the individual. By doing the physical activities in daily life provides more energy to participate in creative and one can become an active member of the society.

### **Benefits of Physical Education at Elementary Stage**

#### **Physical Health**

Physical education should be a compulsory part of curriculum at elementary stage itself. There should be a proper calendar based activities to be held in the schools at daily basis. Physical education at elementary stage helps to overcome many common issues like: - obesity, stress, depression, sleeps disorders. It also helps to become a responsible part of society. If physical education and the activities becomes a part of one's curriculum at the early stage of life itself, it will help the individual to become more healthy and knowledgeable adults who will help them to overcome problems or different issues of future (Harold W Kohl 2013).

#### **Academic Performance**

Physical Education helps in the academic performance of the students if it should be implemented in schools in a proper and appropriate manner. Many of the schools do not add the subject of physical education in their curriculum on daily basis as they think PE to be the wastage of time but the schools have to understand that PE highly contributes to improve academic performance. Regular activities during the school days on daily basis will help to maintain higher concentration levels among the students, different kinds of recreational activities should be held in the school it will help the students to overcome their level of stress and also decreases the burden of studies among the students and also helps the weak students to show their talent in different games and can help them to recognize themselves in the games rather than in studies. It can be the best platform for the weak students to recognize themselves spending more and more time in the classrooms and studying spontaneously gives rises to stress, anxiety and depression among the student so implementation of PE should be mandatory in the schools to improve the physical fitness and academic performance as well.

### **Social Assimilation**

Physical activities give rise to the leadership qualities among the individuals. It helps in making an individual cooperative and teaches the individuals to interact in a better manner in the society. Implementation of PE teaches the individuals to deal with the awkward and violent situation in a more endurance ways. PE must be added in the curriculum to make individuals responsible member of the society from very young age itself.

### **Intellectual Development**

Physical Education helps in the intellectual and mental development of the student. PE also helps in the improvement of the individual's mental health as it gives exposure to the creative ideas that produces in the children's brain. Regular physical activities help in the intellectual growth among the student at elementary stage.

### **Physical Activity**

World Health Organisation (WHO) says physical education and activity includes activity undertaken while playing, working and carrying out daily house works, engaging in fun and recreational activity. (<https://www.who.int/news-room/fact-sheets/detail/physical-activity>)<sup>5</sup>.

Physical activity or exercise of any kind maintains the overall health and wellness. It also prevents ageing and helps in overcoming many diseases like heart disease, high blood pressure, obesity etc. Physical exercise is any activity that includes body that helps in maintaining the overall fitness and health. It is performed by different people for different reasons. It is performed by children for increasing the growth. Adults perform physical activities to prevent ageing it also helps a lot in weight loss for everyone. Some people do it for enjoyment. Physical exercises help a lot in the weight loss for everyone (Espanol 2020).

Daily physical exercises devolves and boost immune system of the body and helps to cure from certain diseases like coronary heart diseases, type 2 diabetes and obesity. Physical Exercises also cure the physical stress and depression and increase the immunity level and makes a person stress free which ultimately leads to better sleep at nights. It treats diseases such as insomnia. It promotes and maintains self-confidence, it leads to rise of positivity in one's mind and it improves mental health helps in solving digestion like problems and treats constipation and gas regulates

fertility and also helps in making an individual's attractive sex appeal and body image which increases the level of confidence among individuals. As now a day's obesity is very much common among everyone especially in children. Obesity has become global concern due to wrong eating habits and children do not takes part in any kind of physical activities as they are stick to gadgets.

Obesity in children which is a concerned issue nowadays can be controlled if obsessed children can be involved in different physical activities. We should make the physical activities should be made a compulsion in their daily routine for the sake of the fitness and wellbeing of the children. Children are provided with the variety of activities and try to make the activities more interesting for them so they can get encouraged to take part in the activities and reward should be kept for the appreciation. Moreover, physical activity helps the children to interact in the society with others (Mary and Gavin 2018).

Physical exercises are of many types, generally grouped into 3 types, depending upon the overall fitness of body i.e. aerobic, anaerobic and flexibility exercises.

Aerobic exercises starts from lower to higher intensity according to the energy of an individual. These exercise helps in the reduction of overall weight from the body as it includes highly intense exercises. Aerobic exercises are very much effective and give results very soon. It helps to maintain overall fitness of the body and it is the highly effective weight management programme. These exercises are essential for individuals who are being tired off from weight issues.

Anaerobic exercise, are those exercises which includes strength, power as it consists of the exercises related to heavy weight training, cycling, jumping, sprinting etc. which includes strength and resistance training. It helps in the strengthening of the muscles and helps in toning of the body.

Flexibility exercises helps in increasing the strength of the individual and reduces the risk and chances of injury. This exercise helps to make the joints strong as it increases the intensity of joints and muscles. Physical exercise can also include training that focuses on speed, power, accuracy and agility.

### **Significance of Physical Activity**

Various sports are the modified form of play and socially organized activities. In the modern and civilized world, the needs of every individual are increasing day by day. So to meet these requirements extra money is required and to earn that every individual has to work more and more. The extra burdens of work or worries in the life create tension in the life of people and gradually it result into many psychosomatic diseases. In this situation to earn the fun of life and to overcome the psychosomatic diseases of some or other form, playing games or sports are necessary.

Now it is the present trend of rapid industrialization and urbanization that people are migrating in large number into cities and factory centres where hours of work are strictly controlled ample leisure will be available to them. Many a times such leisure creates a problem both for individual and community, because it tends to be misused in anti-social ways or in ways greatly detrimental to the health and happiness of an individual or his family. In this situation participation in games and sports brings in many types of satisfaction i.e. emotional, physical and mental.

Many researchers carried out concerned outcomes of participation in various games and sports which have proved that. Games and sports improve and maintain our health. It develops our mental power. It helps us to control our emotions, feelings and shine our personality. It provides recreation, fun and leisure time activity and develops various leadership qualities in us.

On realizing the outcomes of sports from the past few decades, many foreign countries have introduced physical education and sports as one of the important and compulsory subject in curriculum of the educational systems and they are promoting the sports elsewhere in their countries. As a result we see that in recent year's countries like Indonesia, Thailand, Japan and Korea etc. are having big numbers of International medals and progressing day by day (Harold W Kohl 2013).

### **Prominence of Physical Activity Curriculum in Student's Life**

In India more population is becoming highly inactive with the more bole phones are coming in use. This is becoming a concern for the individual himself, parents and the local bodies because it's dragging individual towards more physical and medical ailments, hence it is advised to indulge oneself in more and more physical activity in a day.

Regular physical activity if added helps a lot in the overall fitness. Physical activity is must not necessary to have the intense exercises it can be the moderate one which will helps in the individual's health related issues. Physical activity is very good for the health and it also helps an individual to get rid of diseases like high blood pressure, diabetes etc. It helps the students to make more active and fast (WHO 2020).

The good exercises and physical activities help the students to make their future bright. They formulate them as psychologically attentive and bodily muscular. Supplementary to it, superior health is the most imperative benefits of body activity and sports. The students become skilled at how to handle their complicated situations in an improved way. By showcasing their skills in front of numerous audiences, they can triumph over their anxiety. Physical activities are also good distractions, giving them vigor to gain knowledge of their curriculum. It gives the essential interval from the daily routine life. Physical activity, games and sports helps in building a sense of cooperation and team-spirit in an individual. Children are suggested to actively participate in the physical education and sports to avoid sickness, tiredness and laziness because physical activities improve their level of blood circulation and their physical fitness. Sports and games make the students confident and help them to choose their profession in future life.

At present in the schools; teachers and management are thinking that physical education is less important than education. This is very wrong because physical education is most important in present scenario. So we cannot neglect the importance of physical education and physical activities. Students learn so much from the educational institutions as well as from the social institutions. It is right that educational activities are very important but if we are not physically fit we cannot understand and learn our educational activities. So physical education is must in school education and in the higher education curriculums.

Many schools in the Punjab region think of the physical education and physical activity as a boring and burden so they are not serious about it. Many schools give approximately one or two periods in a week to the students. But in my opinion one period is must for every class in each day, because it helps the students to take off their burden in playing manner.



Many students do their homework during free periods. There are no play grounds in many schools and no sports equipment. At the time of admission, schools collect many types of funds from students like sports funds etc.

The parents of students give their suggestions every time in PTA meeting for this matter. But the schools take no step. It is also bad that many parents think that sports are not very important and students always lose their precious time in the sports and physical activity. These types of parents are forgetting the real happiness of their children.

In the ancient time when the subject of physical education was started in the schools, it was only for health, but now it has become a major part of our educational system. Physical education has become a compulsory subject of the education. It is not only for our physical growth but also for mental development, emotional development and moral development. When the students take part in sports and physical activities they become useful members of our society. The personality of a sportsman is different from others. That is why the subject of physical education should become a necessary part of our schools curriculum.

When a physical education department makes a curriculum for a particular class, they should keep the age level, mental level and physical level of the students in their mind. In this curriculum teacher must teach the student about the basic skills and rules of the particular sports or other physical activity. In the school when a physical education teacher teaches their students in the class room or in the playground, he must keep in mind the age level of the students and gives no over burden to them. If he thinks like this, he can win the confidence of students and the students gets encouraged towards sports and physical activities. The facilities and other opportunities make the students very confident and self-dependent. While preparing the curriculum for schools we must keep in our mind the interest of the students. Curriculum should focus on all aspects may it be physical, physiological, psychological, anthropometric etc. in the present study different aspects are considered which are as follows 1) Anthropometric 2) Biomotor 3) Physiological variables, which are explained as follows:-

### **Anthropometric Variables**

The word “anthropometric” is used for proportional dimensions of the human body parts. It is used to measure the nutrition level among the individuals. Nutrition is very much essential for everybody for the growth of the body. Nutrition level should be up to the mark in each and every individual as it will help in the proper growth of infants, children and even adults. Deficiency of nutritional values in the body give rise to the diseases in the individuals.

Anthropometric measurements which are used for grown-ups/adult usually include height and weight. After taking the measurements it can be compared with standard reference calculate proportionate status of the body weight and the probability of the disease. In adults these measurements help to overcome any kind of disease. So this type of measurement is necessary among the individuals. So that one can be aware about one’s well-being.

### **Biomotor Variables**

Biomotor aspects are essential elements for healthy life; in this study biomotor abilities considered are as follows:

#### **Speed**

Speed is the capacity in which a person is able to complete his task. Speed is defined as the distance covered in per unit time. Speed is the necessary part of many of the games. One has to be speedy and active both physically and mentally to play any kind of game or to perform any kind of physical activity.

#### **Agility**

Agility is the biomotor ability which helps an individual to turn its position in air quickly or to think quickly without any kind of formal training. Agility is also an important part of any kind of game and physical activity. As each and every game needs a concentration and faster thinking process, one has to think or move quickly during the game for any kind of a move.

#### **Balance**

Balance is the position of the body at the position of equilibrium. State of balance can be at stationary/static or moving/dynamic position. Static balance means that the athlete is at the stable position and not moving, example when an athlete performs a handstand. Dynamic balance is the ability in which a sportsperson

maintains equilibrium when in moving position, for example as in rhythmic gymnastics.

### **Flexibility**

Flexibility is that ability of an individual to stretch their muscles or joints up to an extent during a game. It is one's ability to bend without breaking it is also a necessary part of every game. One has to be flexible to perform any kind of game in a better manner. Flexibility helps an individual to become stronger player of the game.

### **Strength**

It is the quality of an individual's state of being physically strong. Strength is the one's ability to perform any of the activity for the longer time it also includes the stamina of an individual to perform any kind of physical activity.

### **Physiological Variables**

#### **Pulse Rate**

Beats of heart per minute is called pulse rate, its range is from seventy to hundred. Person having lesser beats are more fit. Olympic level athletes having a normal heart rate closer to 40/per minute. To measure a person's heart rate, one has to use medical device called stethoscope. Heart beat can be measured by using fingers over the wrists. When he feels his pulse tell him to, count the number of beats in 60 seconds. Many factors can influence heart rate, including physical activity, capacity of a person to perform task without fatigue, environment, psychological effects and health problem.

Normal high rate and lower rate varies from person to person. So, one should consult his doctor if one's heart rate is continuously going above hundred beats per minute or if it is below sixty beats per minute and one is not a trainer or an athlete and following the symptoms like:- dizziness, fainting etc.

#### **Body Mass Index**

Formula to calculate body mass index is  $\text{Body weight in kgs} / \text{height in (m)}^2$ . A value of BMI is compared by chart (Appendix No. E Pg. 438) which depicts: As per table, person is considered underweight if the value is less than 18.5, person is said to be normal if value is between: 18.5 to 25, if the value is between twenty five to thirty, it is considered as overweight and it is considered as obese if value is above thirty.

### **1.1 Significance of the Study**

Physical activity curriculum was formulated and developed, which was first of its type in the country. “The goal of a successful educational program should emphasize to come across the essentials and existing demands of the nation, the culture and the prospects of the inhabitants being obliged” (Alsubaie 2016). Therefore “curriculum development and the reforms in the educational reforms should remain in continuity which should be re-evaluated and re-formulated from time to time” (Johnson 2001). This curriculum adopted and implemented by various state and central school boards of India. Study will be useful to promote physical activity in various schools of Punjab state. Curriculum will give knowledge and value of physical activity in the schools of Punjab state. Health and fitness standard of Punjab state schools students will be increased for sure, because physical activity curriculum was developed for elementary school students. There will be improvement in sports and fitness performance. This research will help Physical Education teachers and trainers in planning physical education program for school children. This research will also provide base for the parameters and methods of evaluation of school children. The study may be helpful to prepare sports policy in schools by comparing performance of school children in different events. Physical Activity level of similar students will also be enhanced.

### **1.2 Statement of the Problem**

“Curriculum is a critical factor in student academic success” (Steiner 2017). Punjab has produced many National and International level players. But now a day standard of sports is decreased in schools and root cause behind this problem is because schools do not have any kind of physical activity curriculum. Therefore the problem is stated as “Development of physical activity curriculum and its effect on anthropometric, biomotor and physiological variables of elementary school students”.

### **1.3 Objectives of the Study**

1. To develop class wise physical activity curriculum for elementary school students.
2. To study the effect of curriculum (physical activity) on the anthropometric variables which are standing height and body weight of elementary school students.

3. Study has the objective to find out the effect on biomotor variables i.e. speed, agility, balance, leg strength and flexibility of elementary school students.
4. Present research also investigate the effect on variables which are physiological in nature i.e. pulse rate and body mass index of elementary school students.

#### **1.4 Hypotheses of the Study**

##### **Anthropometric variables**

1. **H<sub>(1)</sub>**: It is hypothesized that developed curriculum of physical activity will effect standing height significantly.
2. **H<sub>(2)</sub>**: Developed curriculum of physical activity will also effect body weight significantly.

##### **Biomotor Variable**

3. **H<sub>(3)</sub>**: Speed will be significantly effected by the implementation of the designed curriculum.
4. **H<sub>(4)</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum.
5. **H<sub>(5)</sub>**: Balance ability will also effected significantly by the execution of the physical activity curriculum.
6. **H<sub>(6)</sub>**: Significant effect of physical activity curriculum of leg strength is hypothesized.
7. **H<sub>(7)</sub>**: Flexibility will also enhanced with the application of physical activity curriculum.

##### **Physiological variable**

8. **H<sub>(8)</sub>**: Pulse rate will be significantly effected.
9. **H<sub>(9)</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity.

#### **1.5 Operational Definitions**

**Physical Activity:** Physical activity is defined as the movement produced by the body, affecting skeletal muscles and utilizes the energy. (<https://www.google.com/search?q=Physical+activity>)<sup>6</sup>. In the present study physical activity means different bodily movement /play or exercises which are included in the curriculum.

**Curriculum:** The term curriculum refers to the lessons and academic content taught in a school or in a specific course or program (<https://www.edglossary.org/curriculum/>)<sup>7</sup>. In the present research, Curriculum of physical activity is developed and implemented in the specified schools to verify the effects if any, which can be modified as per the need of an hour.

**Elementary:** In the present study elementary level comprises of classes/grades from first to eighth standard. (<https://www.google.com/search?q=elementary+means>)<sup>8</sup>.

**Anthropometry:** The study of human body measurements especially on a comparative basis. (<https://www.merriam-webster.com/dictionary/anthropometry>)<sup>9</sup>.

In the present research following measurements were considered as the anthropometric variables.

1. **Standing Height:** The measurement of individual/samples from head to feet.
2. **Body Weight:** Body weight is the measurement of physical material frame of students as determined by means of weighing machine.

**Biomotor Abilities:** There are five basic biomotor abilities and these are strength, endurance, speed, flexibility and coordination. (<http://coachr.org/fitness.htm>)<sup>10</sup>

In the present research following biomotor variables were considered for the study:

1. **Speed:** Minimum time taken to complete 20mtrs straight distance.
2. **Agility (Part of coordination):** Ability to change directions fast and control body movements.
3. **Balance (Part of coordination):** State of stability i.e. ability to stand on one leg for maximum duration.
4. **Leg strength:** It is defined as the force that leg muscles exert by sit-ups.
5. **Flexibility:** Maximum range of movement around joints of the students.

**Physiological terms/variables:** Study of the function of one or more living organisms and their parts. The branch of biology dealing with the functions and activities of living organisms and their parts, including all physical and chemical processes. (<https://www.dictionary.com/browse/physiology>)<sup>11</sup>. In the present study pulse rate and body mass index were considered as the physiological variables.

1. **Pulse rate:** Measurement of the beating of heart per minute.
2. **Body mass index:** It is the lean body mass or body mass with free from fats, it is the product of division of Body weight by Height in meter square.

### **1.6 Delimitations of the Study**

1. Elementary school students were considered as the sample in the study.
2. The study was delimited three hundred and thirty six student's i.e one hundred sixty eight CBSE elementary school students and one hundred sixty eight PSEB elementary school students.
3. Study is delimited to selected anthropometric (standing height, body weight), biomotor (speed, agility, balance, leg strength, flexibility) and physiological (pulse rate, body mass index) variables.
4. Study was delimited to investigate four weeks of effect of Physical Activity Curriculum on elementary school children.
5. Two board namely CBSE and PSEB were selected for the purpose of study.
6. Study was delimited for the students from first to eighth standard in the selected schools of Punjab state.

### **1.7 Limitations of the Study**

1. Researcher has to depend on school Physical Education teachers/Fitness trainers for the implementation of the curriculum and collection of the data.
2. Diet was not controlled of the samples/students.
3. Pre and post schools activities of the elementary school children were not controlled.
4. Research have ensured that only proper implementation was done of the Physical Activity during the schools hours by the means of Physical Education teachers/Fitness trainers

## **CHAPTER - 2**

### **REVIEW OF LITERATURE**

Related literature is reviewed to glance over the research conducted previously. It gives us the direction to carry out the research in a particular way. The research studies associated with this study has been reviewed for developing a systematic procedure and to reveal a proper prospective of this study. These studies have been presented in the following five sections.

- 2.1 Studies pertaining to Physical Education Curriculum
- 2.2 Studies pertaining to Physical Activities
- 2.3 Studies pertaining to Anthropometric Variables
- 2.4 Studies pertaining to Biomotor Variables
- 2.5 Studies Related with Physiology Variables

#### **2.1 Studies Pertaining to Physical Education Curriculum**

**Vergheese C. (1952)** conducted a study on the physical education curriculum for higher secondary schools in Mysore state. On the basis of the finding, he proposed some recommendations to the education department of the governor Mysore state (now known as Karnataka) for the compulsory inclusion of curriculum related to physical education, in the schools, standards related to play areas, equipment leadership and development of inexpensive fitness test. A curriculum that he recommended for standards IX, X and XI was taken up as planned guide for physical education teacher.

**Margaret and Bawer (1993)** studied the effect of inventive movement procedures in evolving the motor movements of 4th grade students of Physical Education. Evolved motor movements with difference, improvising and composing from the process dimension of the purpose process curriculum frame work were used to plan instructions for developing new motor movements. A modal was developed for Planning instruction for the creative movement processes approach, including three steps, starting, and objectives. Planning modifications of activity content and planning feedback. Conclusion drawn from the study was: there is improvement in the movement procedures which resulted in elevated performance of motor creativity skill



ability which promotes positive effective social and skill learning behaviour of the student.

**Kaste (1995)** conducted the research by collecting the data of various degrees in which health tutoring program have been distributed and implemented. Categorizations were delimited to acclimatize climate of school, employee's growth, health tutoring and training, it was implemented for the period of three and four years, enhancements were observed in the numeral schools which reported performances in culture/climate of school and health tutoring and training. Performances of the employees' progress diminished; nevertheless, five out of seven actions taken in this classification were being utilized by mainstream schools. Rising developments incorporated management teams executing actions in each and every grouping, possession of scheme actions being accepted by other staff, dispersal of actions from one medium of division to a different one, amplification of incorporated health curriculum in all areas of subjects and a variety of forms of link utilized to expand resourceful means of endorsing all-inclusive health tutoring to students and staff.

**Lopez (2009)** studied the effects of curriculum of physical education after preparation, research was focused on the strategic information. The theoretical basis and focus of research that has probed shift in education crossway games and sports was studied. Particular researches are methodically examined in relation to the exacting aspect of shift observed and proofs produced to sustain a case for programme development to be grounded upon relocation. In reference to the conclusions arrived to date, it is debatable that programme planning in physical education ought to center the code of relocation. Valuable suggestions were given for further expansion of the research study.

**Donnelly, Greene, Gibson and Smith (2009)** have conducted in depth study of physical education across the programme. Research and his team studied three-year cluster randomized, controlled trial to endorse physical program and reduce augment in overweight, and obesity in elementary school children. Twenty-four of the elementary schools were cluster randomized to the physical movement athwart the programme involvement or supplied as control. The Curriculum recommended nine run and walk which restrained to forceful amount of physically vigorous educational lessons which were deliberated by physical education teachers. Body

Mass Index was the main result; each day Physical action and educational learning were derived as the results. Body mass index was effected and changed after three years induced physical education training and the changes were 2 plus minus 1.9 in the control group and 1.9 plus minus 1.9 in the control group, respectively. Body mass index have been changed considerably as it is induced with physical activity curriculum. Those schools who have performed more Physical activity i.e. more than seventy five minutes have increased body mass index significantly whereas those with less than seventy five minutes activity have shown superior changes in the physical activity and educational grade scores. Seventy five minutes of physical activity have significantly increased body mass index.

**Clapham Sullivan and Ciccomascolo (2015)** studied the effect of supportive curricula of physical education equipment used for the recording the values were technological devices, heart rate monitor and pedometer. Samples which were analysed were one hundred and six of sub urban area of 4<sup>th</sup> and 5<sup>th</sup> graders. Research design used for the study was A B A B in order to study the participation level. Curriculum also focussed on the pedagogy and the use of technological devices. Results have shown significant development in the learning of the technology and have also shown developed physical activity.

**Packhamand Street (2019)** have studied the outcomes of physical education on adolescents. For the conduct of the research middle school children with low income schools were considered. It is proved in his study that physical education has no effect on the overall improvements in the fitness of students. These fitness includes cardio endurance, strength and flexibility. Programme was unable to change the composition of the children's body whereas obese children were reduced in numbers. For the classes of 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> there seems no improvements in the academic scores neither there seems any enhancement in their attendance. The positive outcome of the research is that disciplines have been increased among the middle school children.

## **2.2 Studies Pertaining to Physical Activities**

**Morton, Taylor, Snidersa and Huang (1993)** collected samples of one hundred fifty seven students in twenty schools out of three hundred and fifty elementary schools in Texas state were carefully served throughout physical education classes. On an

average the student spends 8.5 percent of class time in self-possessed manner to the essential and mandatory physical activity, 23.3 percent in negligible activity and 68.1 percent in static mode or sitting activity. None of the schools averaged 20 percent of class time in reasonable to forceful physical activity. The phases of physical activity experimented are considerably lower than the stages called for in national health goal.

**Willmore and Jack (1996)** in this research study presented an impression of the role of physical movement/action in the prevention of overweight and obesity and for the sake of cure of overweight and obesity amongst people. A subsequent emphasis of his research was on the prospective strategies accountable for necessary changes in the body composition, successive to physical activity. The engagement of the term 'physical activity' is preferred to the term 'exercise' to enhanced reflection and a wider range of movement, not delimited to formal exercise systems. A concise re-examination of potential research that examined changes in body composition subsequent to physical activity alone was provided, along with a conversation of the sway of genetics, macronutrients in the diet and descriptions of exercise programs on the degree of alterations viewed in these researches. This follows a reconsideration of the precise role of chronic physical activity on energy ingestion. Resting metabolic rate, the result of food consumption and the type of activity plays vital role to avoid over weight and obesity and the most suitable use of exercise in the management of overweight.

**Kohl, Fulton and Casperson (2000)** scrutinized the precise calculation of physical activity amongst children and an adolescent child is a challenge. Researcher have used minimum six categories of methods which have been utilized to measure the rate/quality of physical activity among children and adolescents, the research consists of self-report, electronic monitoring, mechanical monitoring, direct observation, indirect calorimetric especially labelled water and direct calorimerty. Every single methodology type of technique which is followed transmits convinced strength and weakness. The intention of this research is to re-examine and produce existing proof dependability and to find out the method of strengthening of physical activity curriculum and the parameters to find the evaluation method used for children and adolescents. The option for use of exacting scheme of activity appraisal amongst children and adolescent depend mainly on the design of the research and the age of

the applicants. Greater endeavour toward generating an unswerving paradigm of measure is essential to create prospective progression in recuperating the precision of physical activity evaluation among children and adolescents. Further more information pertinent to girls and ethnic minority children was the immediate requirement of the study.

**Ball and Elizabeth (2001)** have successfully conducted the research which deals with the facts of the current universal supplement in the prevalence of childhood obesity which may be the cause of a decrease in children's physical activity phases. This research study have examined the children before puberty concentrated upon 1) determination of total energy expenditure by utilization of the particularly labelled water method, 2) confirms the amount of total expenditure of the energy which was in relation to physical activity, 3) studies the relations with in the measure of physical activity and body fatness, and 4) examining probable gender dissimilarity in these relations. The DLW strategy was utilized to determine total energy expenditure for ten days in one hundred and six healthy children which were fifty two boys aging between seven point eight and nine years for fat free mass. Result has shown average growth of energy expenditure among boys and girls was found statistically significant difference as shown from the WHO. Whereas dissimilarity was not found in the level of physical activity between girls and boys. When body mass index was compared with physical activity level, it was found that in boys, body mass index was inversely correlated with Body Mass Index body fat percentage in boys was inversely connected with physical activity level, whereas it was not found significant among girls. Participation in physical activities was one aspect which is considered as the cause of the presence of body fatness in boys, but supplementary factors may influence the size of the fat stores in girls. There are extensive ranges of studies relating intercession techniques to facilitate employees to deal with traumatic experiences. In 1992, Francis and Penne Bakarintensively studied that when university employees were given the chance to inscribe about alarming or traumatic experience there were significant decrease in risk factor of blood pressure and related diseases.

**Twisk, Kemper and Mechelen (2002)** evaluated the connection amid activity of the body as well as physical fitness in adolescence of the age group 13 and 16 years as

well as the cardio-vascular ailment risk features at the age of 32 years for adults. The successive cardio-vascular ailment risk features were calculated at the lipo-protein levels i.e. whole serum cholesterol; soaring thickness of lipo-protein cholesterol also the high density lipoprotein; the whole serum cholesterol; high thickness lipo-protein ratio; systolic as well as diastolic blood pressure as well as the marker for the fatness of the body and also fat division of the body. The fitness of the physical body was calculated by the test of maximal oxygen inhaled/kilogram of the bodyweight as well as by maximum incline that is arrived at on a test applied on treadmill in adolescence was connected to a fit cardio-vascular ailment risk report at the 32 years age such as the inversely to the sum of four skin-folds, the waist circumference and to whole serum cholesterol. No connection was determined amid physical activity in adolescence and also to a fit cardio-vascular ailment risk profile at the 32 years age.

**Ozdirenc, Ozcan, Akin and Gelecek (2005)** conducted a comparative studied on physical fitness in rural and urban children in Turkey. 98 rural children and seventy four urban children of age group nine to eleven years were chose for this research. Physical activity of children was determined with a questionnaire and EUROFIT battery test was used to assess the physical fitness of students. The results revealed that urban students preferred to play indoor sports and on the other hand rural students like to play football and volleyball. The study also showed that 35% urban students didn't participate in any sports while 30.6% rural children did not involve in any sports activity. The urban children watched television more than the rural children. The results showed that urban children had significantly higher BMI and skin folds thickness than the rural students. Insignificant difference was found in the hip and waist circumference and hip-waist ratio of urban and rural students. In case of cardiopulmonary and motor fitness, no difference was reported between the urban students and rural students. The children in rural area had significantly greater flexibility and muscle endurance compared to urban children. It was concluded that the children from urban areas were inactive and obese, which leads to decreased flexibility and muscle endurance.

**Trudeau and Shephard (2008)** performed examination based on the relationships of educational presentation and its determinants to partaking in physical activities of schools, together with school sports, physical activity and physical education.

Experimental data specify that assigning up to a supplementary day or hour of curricular time to physical activity programmes doesn't influence the educational presentation of primary school students unconstructively, yet the time assigned to other subjects typically showcases an equivalent diminution. A supplementary curricular stress on PE may outcome in small unqualified increasing effect on GPA, such outcomes propose a comparative augment in presentation unit of educational teaching. Moreover, the tremendously mainstream these kind of programmes have showcased an enhancement in the strategies of physical fitness. Observations showcases a constructive alliance amid educational performance and PA, but PF does not seem to show such an alliance. PA has constructive influences on attention, reminiscence and classroom conduct. Data from research discover assistance in mechanistic research on cognitive function, pointing to a constructive association amid PA and rational performance. Given proficient providers and physical activities can be supplemented to the curriculum with the help of taking time from other subjects without hindering student's educational accomplishment. On the other hand, adding time to extracurricular and academic subjects by taking time from physical teaching doesn't add grades in these subjects and also can have negative effect on health.

**Shriver et al. (2011)** undertook a research on body weight, physical fitness and activity among 3rd-grade rural students. All students were measured for weight and height. The results revealed that 38 percent children were found obese or overweight. Approximately 15 percent children were exceptionally obese. It was found that the obese children spent a lesser amount of time in activity at different levels of intensity compared to other children. 43 percent children were not up to mark with muscular strength and fitness standard and 36 percent were not up to mark for flexibility. Rural students were found to have high obesity than the normal average rage. Rural children had poor fitness and 30 percent had lower activity level than the minimal physical activity recommendations on the day before.

**Saha and Halder (2012)** scrutinized the health of the rural and urban school going children from West Bengal, connected physical fitness and psychomotor aptitude. They employed flexibility test to determine lower back suppleness, fat of the body check for its proportion, 1.5 mile run was conducted to measure

cardiovascular/aerobic function, abdominal muscular strength and stamina was measured by inequitable curl ups as well as the upper body muscular strength as well as patience was measured by the push-ups. Nelson Hand Reaction Test was performed to calculate and determine the reaction skill and psychomotor aptitude of children. The outcome showcased imperative dissimilarities amid rural as well as the urban school going children in all the physical fitness related to health mechanism supplementing within reaction aptitude under psychomotor aptitude as well as rural school going children was perceived superior to the urban school going children.

**Heaney (2012)** studied the aerobic energy system that undermines the team sport activities and thus acquaintance regarding tutoring measures adopted to increase this energy system is vital. Such knowledge could facilitate unswerving training instruction and make certain that the most effectual conditioning measures and principles are being adopted to acquire the required aerobic adaptations. The intention of this research was to consider the efficacy of mass aerobic speed guided hiatus training on eliciting enhancements in aerobic robustness with privileged girls hockey players (number 25, age 22-23 years, stature 5.5-5.7 feet, mass 60-65kg). The players were the scholarship holders from the Victorian Institute of Sport and were getting trained to contend at the Australian Hockey League tournament. Throughout this period they finished three MAS conditioning sessions six days in a week. At the termination of the **four week** aerobic interval training block, there was an 18% enhancement in total distance. It was noticed that team average increased from 16.6 (at baseline) to 17.3 (at the conclusion). As the result, mass aerobic speed improved to 16kmh from 55kmh. In the end it was discovered that MAS guided interval training has significant effect for eliciting aerobic energy system of female hockey players.

**Shaban, Kenno and Milne (2014)** investigated that the training with high intensity intervals have same adaptations of metabolic changes as it was found with endurance training. The present research is concerned upon investigating the outcomes of a modified HIIT **2 week** programme of insulin resistance (HOMA-IR) on the homeostatic model on samples having diabetes type two. Results have shown improvement of high intensity training on HAMA-IR.9 subjects having type two diabetes, body mass index upto  $33.9 \pm 5.3$ ; plasma glucose in fasting [FPG] ranging  $8.7 \pm 2.9$  executed six individualized tutoring sessions of HIIT (4x30 seconds at 100%

of approximated utmost load which was followed by four minutes of rest intervals for two weeks. These interpretations supported the affirmative health benefits of HITT for individuals with type two diabetes reported in lately published data by means of a modified HIIT protocol. Nevertheless, they recommend that the degree of the ailment should be evaluated when probing the consequences of exercise involvement in individuals with diabetes type two.

**Irina (2017)** on the occasion of “International Day of Sports” suggested the need to highlight importance of sports related activity for the improvement and harmony amongst different nations. She focused on the well-being and empowerment. According to the data there are several deaths which occur due to lack of body exercises. Irina also focused the need of physical education in schools. Conference of Ministers and Senior Officials responsible for physical education and sport (MINEPS VI) organized by UNESCO laid foundation on three major themes which also includes the assistances in the field of physical activity and sports activity for the shielding and advancement of the honor of sports. Countries which partners UNESCO desired to strength physical education and activities. It has even stated that quality physical education/activity designing and implementation of sports capsules should be increased enormously.

### **2.3 Studies Pertaining to Anthropometric Variables**

**Malina et al. (1995)** conducted the study on fatness and fitness of girls. For the study a total 6700 girls of the age group 7 to 17 were selected. All the girls were measured for biceps, triceps, sub scapular, supra-iliac and calf skinfolds and health-related physical fitness. The results revealed that if weight and height is under control then body fat play its role in calculating percentages of the variance in every fitness elements. Fitness related health can be evaluated with Harvard step-up test, sit and reach, flexed arm hand and sit-ups and leg lifts. Motor fitness was estimated by plate tapping, flamingo stand, shuttle run, arm pull, standing long jump and vertical jump. It is concluded that the girls having highest level of fats are more prone to diseases and have poor motor fitness level.

**Anderson et al. (1998)** assessed children of United States as those who have been induced with the highest level of rigorous action and those who have habits of



watching television for long durations and their association with fitness level and weight of their body in children of United States. In a survey which is done nationwide having a nature of cross sectional study which involves personal interview and medical examination. In total four thousand sixty three children ranging age between eight and sixteen were observed in the year 1988 to 1994 which was the part of Survey III of National Health and Nutrition Examination. Occurrences of weekly strenuous activity and everyday watching hours of television and their relationship to BMI and physical fitness were under observation. Data revealed that 80% of children perform three or more bouts of strenuous movement activity every week.

Similar results were lower in non- Hispanic Mexican and Black American girls (sixty nine percent and seventy three, respectively). 20% of US children joined in 2 or fewer bouts of rigorous activity every week, this rate was high in girls (twenty six percent) as compared to boys. Conclusion of the study reflects that Overall, 26% of US children watched 4 or more hours of television per day (42%). Boys and girls who watched more than four hours of television every day had greater body fat and had a greater BMI than those who watched less than two hours of television per day. The study concluded that many American children involve in watching a great deal of television and are not vigorously active. The girls Mexican American and non-Hispanic blacks have lowest Vigorous activity levels. There is need of intervention strategies in United States to promote lifelong physical activity among children.

**Epstein and Goldfield (1999)** researched effectiveness of physical activity as a management for obese and overweight adolescents and children. The study was related to adequate number of researches to make a quantitative examination for the evaluation of the effect of exercise programs with diet as compared to effect of diet without exercise in the short-term management of obesity. The study specified that fitness is greater for subjects assisted with exercise or exercise shared with diet in assessment with subjects offered without exercise or with only diet.

**Ara et al. (2007)** conducted a research on body composition and physical fitness of the children. Total 1068 children of age group 7 to 12 years were selected for the study. All the children were assessed for height, weight and fitness variables. The results revealed that 31% children were overweight and 6% children were obese. There was no major difference between rural and urban children. The physically

active and inactive groups had similar proportion of overweight and obese boys. The physically active girls were found to have significantly lower obesity compared with inactive girls. The physically active girls had significantly lower sum of the 6 skin-fold when compared with the inactive girls. Regression equation revealed that physical activity significantly affected the sum of skin-fold and BMI in boys. BMI and body fat in boys and girls were found to be effectively associated with maximum oxygen uptake.

**Tinazci and Emiroglu (2008)** evaluated the fitness level in physical terms of age and gender dissimilarities of urban as well as rural primary school students. The total of 7414 boys and girls school students of 9 to 11 years age from 90 schools was chosen for the research. All the children were determined for their height, weight and skin-fold width and undergone assessments for suppleness, equilibrium, sits-ups, hand grip, standing broad jump and cardiovascular physical fitness, 10x5 m shuttle run and plate tapping. The outcomes showcased that urban children were seen to have considerably greater body mass index and sum of skin-fold thicknesses in comparison to the rural children. It was also perceived that performance augmented with age for males as well as females. There were noteworthy dissimilarities in cardio-pulmonary and motor fitness amid the students of rural as well as urban school.

**Gandhi, Koley and Sandhu (2010)** investigated the alliance amid anthropometric characteristics and physical strength in school students of Amritsar. 330 children of which 165 boys, 165 girls of 6 to 16 years age, were evaluated for their body weight, standing height and five skin-fold dimensions i.e. biceps, triceps, suprailiac, sub scapular and calf, right and left hand grip strength. Outcomes showcased that tremendously noteworthy constructive correlations amid all the eight anthropometric features and left and right hand grip strength were discovered amongst school going children.

**Akkoyunlu and Sirin (2010)** determined some biometric features of 14 years football players. 20 active footballer and 20 subjects who did not take exercise regularly were assessed for the age, height, body weight, shoulder, back, hip, thigh, calf, biceps flexion, forearm flexion, forearm extension, thigh and hip measurement, body fat percentage, 20m speed, reach and touch, right and left hand grasp, stop and jump and vertical jump. The results showed that 20 meter run, flexibility, stop and

long jump, vertical jump were found to have significant difference between the groups. Right and left hand grasp were found to have insignificant difference. From the body measurements; shoulder, back, hip, biceps flexion, biceps extension, forearm flexion, forearm extension, thigh, calf were reported to have insignificant difference. Body fat percentage measurement values (biceps, triceps and upper hip) were found significant.

**Matvienko and Fard (2010)** conducted research on the effect of **four weeks** after-school program on motor skills and fitness of kindergarten and first-grade students on anthropometric variables, motor skills and fitness levels of young children. Four-week program consisted daily morning walk and an after-school physical activity lesson, snack and non-structured active play. The intervention group scored significantly better on some fitness and all motor skill tests after 4 weeks. It was also concluded that short, intense after-school program can produce significant, sustainable improvements in motor skill and fitness levels of young children.

**Dana, Habibi, Hashemi and Asghari (2011)** conducted a research on description and comparison of anthropometrical and physical fitness characteristics in rural and urban girls and boys of age 7-11 years. 1224 children of age group 7 to 11 years old were selected for the study. All the subjects were assessed for body weight, standing height and physical fitness tests. The study showed that the boys were found to have significantly greater height and weight as compared to girls. Similarly, the boys performed significantly better in standing long jump and sit-ups than the girls. On the other hand, the girls have significantly higher scores in body fat as compared to boys. The children residing in urban areas had significantly greater weight, standing long jump and sit-up in comparison with the rural children. The girls from rural areas have significantly lower handgrip than the other groups. It was also found that the height had a positive relationship with jumping and running tasks whereas weight showed a negative relationship with the running and jumping performances. While in the terms of weight there is a positive correlation with handgrip strength.

**Raghupathi and Krishnaswamy (2013)** compared the physical growth and coordinative abilities between urban and rural school going boys of Bangalore District, Karnataka. One hundred eighty boys age group 10-15 years was selected as sample for the study of which ninety were urban and the remaining ninety boys were

from rural schools. The subjects were tested for height, weight and chest circumference, differentiation ability and orientation ability. Result of the study shows noteworthy difference between urban and rural school going boys in the physical growth and coordinative abilities. The urban boys had significantly greater height and weight as compared to rural boys. The rural boys had significantly better differentiation ability and orientation ability than the urban boys.

**Fredrikdrn, Skar and Mamen (2018)** have studied the body mass index of waist circumference, waist-to-height ratio of children of first to sixth class. In total seventeen hundred and thirteen samples were selected. Variables which were selected for the study are strength (hand grip), running performance, mass and height of the body. Result have shown that waist circumference, ratio of weight height ratio have linear relation to the fitness score as compared to weight height ratio. The accurate classification of fit and unfit was relatively high for the three measurements. BMI, WC and WHtR which were found to be feasible measurements, but weight height ratio had greater accuracy in its classification into fit and unfit in this population.

**Haq et al. (2019)** have considered urban and rural school girls of Bahawalpur district to study the fitness and anthropometric characteristics. Two hundred samples were of urban population and same were on rural population aged between eight and ten years. Rural girls have shown better speed, better agility, ball throw, flexibility and better endurance than urban girls. Body mass, skinfold of iliac-crst, abdominal, girth of waist, hip, thigh, arm length and hand length of urban girls were found higher when compared to rural girls. Suggestions were also forwarded to their parents to indulge children in similar activities to improve overall fitness.

#### **2.4 Studies Pertaining to Biomotor Variables**

**Monyeki et al. (2005)** conducted a study on physical fitness and body composition of children in Ellisras, South Africa. A total 393 girls and 462 boys of the age 7 to 14 years were selected for the study. All the children were assessed for height, weight, skinfolds thicknesses, waist to hip ratio and 09 physical fitness items. The results revealed that body mass index had highly related with fat free mass and flamingo balance among the children. Regression analysis revealed that doer with higher body mass index or sum of skinfolds performed significantly lower in bent arm hang and in

1600 mtr run. Waist-to-hip ratio was positively related with bent arm hang and negatively associated with sit and reach among the children. Significant associations were reported between BMI and standing long jump, sit and reach and plate tapping in the children. Sum of skin-folds was notably related with sit and reach. There were significant negative relationships between fat free mass and bent arm hang, 1600 m run and 50 m dash. Mass without fat was notably associated with standing broad jump, body balance and flexibility of the children.

**Gabbet (2006)** scrutinized the conclusion of an aptitude based instruction program on the extent of agility and physical fitness in volleyball players who were identified on the basis of talent. The skilled 26 junior players of volleyball those had partaken in an aptitude based instruction program of 8 week duration that had incorporated 3 courts sessions/week based on aptitude. Aptitude schedules were prepared to generate passing; setting; serving; spiking; as well as jamming technique and precision of the strategies of games and positioning knowledge. The adept masters employed combined instructional and technical training, correlated with games based on aptitude to even the improvement of learning. Subjects executed the measurements of expertise i.e. passing; setting; serving; spiking as well as jamming system and accurateness, height; standing height, body mass, as well as calculation of 7 skin folds, muscular power of the lower body, 5 m & 10 m sprint, t test for agility and also the multistage fitness test for aerobic power, before as well as after physical instructions. Training encouraged noteworthy enhancements in passing, setting, spiking accuracy as well as technique. In comparison to pre training, there was noteworthy enhancement in 5 m and 10 m agility and speed. There was no important dissimilarity amid pertaining and after training session for skin fold thickness, body mass, muscular power of upper and lower body maximum aerobic power. All such outcomes have shown that volleyball training based on agility improves setting, smashing and passing precision, smashing and passing method, whereas slight effect was noted on anthropometric and physiological variables of the sportsperson/players.

**Kim and Park (2006)** examined the influence of body structure and composition on Physical Fitness and motor aptitude in Japanese obese boys. The research work was planned on 305 subjects of 12-14 years. Eighteen motor aptitude and physical fitness elements were examined and skin-fold thickness was calculated at 06 sites using an

Eiken-type calliper. Variables which showcased muscular power and patience were unconstructively influenced by percent body fat while muscular strength was absolutely related to percent body fat. Flexibility variables were found not to be influenced by percent body fat while muscular strength was certainly related to percent body fat.

**Laia et al. (2009)** have studied the 4 weeks effect of an alteration from regular endurance to speed endurance training on muscle oxidative capacity. Capillarization as well as energy expenditure of humans 9 trained runners were assigned speed endurance training and 8 were kept as control group. For **4 weeks** experimental group, replaced to high intensity sessions and control group continued with ordinary training. After 4 weeks oxygen uptake was 6.4% lower and in speed endurance training in control group, remained unchanged. Study has shown that speed endurance training reduces energy expenditure after four weeks of intervention.

**Powell et al. (2009)** examined lower physical fitness among 05<sup>th</sup> and 07<sup>th</sup> grade students. In this study total numbers of 5248 pupils from 93 schools were selected for the study. All the children were measured for body composition and structure, endurance, muscle strength, flexibility and aerobic capacity. Physical activities of the children were taken of the most recent 3 days. The results revealed that the 52% of children were not up to the standards for required aerobic fitness. 23 percent children did not accomplish the required standard for endurance, muscular strength and flexibility. 30 percent children were not in the required range that is recommended for body mass index. 22 percent children did not achieve the recommended sixty minutes of everyday physical activity. Substantial numbers of Georgia's children demonstrated detrimental levels of physical fitness.

**Tinazci and Emiroglu (2009)** studied the physical fitness of rural school children compared with urban school children in North Cyprus. Total 3939 male primary school children from nine to eleven year old were tested which were selected from ninety schools of Cyprus. Tests performed for the study were equal to Eurofit tests. The results reported that urban children had significantly higher skinfold thicknesses and BMI. There was also noteworthy difference in motor and cardiopulmonary fitness between urban and rural school children. Rural school children have notably higher flexibility and muscle endurance compared to urban children. In the outcomes, the

noteworthy lower strength, flexibility and muscle endurance of urban school children showed a lower and habitual physical activity level.

**Al-Shamli (2010)** studied the physical activities and physiological fitness of students from Oman. A total three hundred and thirty boys from urban and rural areas were selected for this study. All the children were assessed for the skinfold of chest, abdominal and thigh, physical activity, 1 mile walk/run test, sit and reach test, hand grip test and one minute sit-ups. The outcomes revealed that the urban children had significantly higher body fat percentage and muscle strength compared to rural children. The flexibility, muscle endurance and cardiovascular endurance were considerably higher among rural school children as compared to urban school children. There was noteworthy difference in muscle endurance, body fat percentage and cardiovascular endurance on the basis of participation in sports activities and physiological fitness for all the children.

**Adamo et al. (2010)** highlighted the child obesity and physical fitness among Canadian and Kenyan children from rural and urban areas. The children from Kenya were compared with Canadian children on the basis of anthropometric measurements and physical fitness. 179 Kenyan rural and urban children were selected for the study. The standing height, body weight, trunk circumference and triceps skinfolds were considered and measured of the Kenyan children and compared with the data of Canadian children from rural and urban. Aerobic fitness, flexibility and handgrip strength were also assessed of the Kenyan children. The results of the study have shown that none of the rural doers were obese. It was reported that 6.8% of urban male children and 16.7% of female children were obese. The rural Kenyan children were found to have significantly lower body mass index, waist circumference and triceps skinfolds compared to the Kenyan urban children and children of Canada. Urban Kenyan children were leaner than Canadian children. Boys and girls from rural areas had higher running speeds and aerobic fitness than urban children. There was no noteworthy difference in Kenyan groups and urban living Canadian children in the terms of isometric strength. Urban children from Kenya had significantly lower flexibility than the other groups. The girls had higher flexibility compared to boys in all groups.

**Albon, Hamlin and Ross (2010)** conducted a research on 3306 primary school children aged between ten and fourteen years old were selected. All the children were measured for standing height, body weight, standing broad jump and flexibility, agility, abdominal sit-ups and 550 m run. The outcomes revealed that over the 12 years period, the increase in boys' weight was 4.5 kg and that of girls was 3.9 kg. Mean body mass index increased by 0.12 per year for boys and that of girls 0.11 per year for girls. The performance in 550 m run was declined by 1.5% for boys per year and 1.7% for girls per year. Significant differences were not found between children in the leanest percentiles and highest performing in 1991 and 2003. On the other hand there were noteworthy differences for children in the fattest percentiles and poorest performing in 2003.

**Fahiminezhad (2010)** examined the anthropometric measurements and physical fitness of male students of Shahrood. Total 368 boy students of the age group 12 to 14 years old were chosen for this research. All the students were measured for different anthropometric measurements waist circumference, cardio-respiratory fitness, strength, power of legs, flexibility and agility. The outcomes of the research showed that there was noteworthy negative relationship between cardio-respiratory fitness and anthropometric measurements among the boy students. Agility, flexibility and leg power were reported significant negative correlation with height. The general strength and leg power had significant positive correlation with anthropometric measurements of the subjects. Results also demonstrated that 12 to 14 years students of Shahrood city had lower height, weight, body mass index, general strength and leg power compared to the students of other countries.

**Tran et al. (2016)** conducted research to find out the effects of **four weeks** of detraining on strength, power and sensorimotor ability of adolescent surfers, for this purpose nineteen adolescent surfers were selected. After four weeks of detraining, it was concluded that vertical jump, isometric strength and relative strength was significantly decreased therefore it is necessary to continue resistance training and avoid cessation of resistance training.

**Dian Pujianto (2018)** determined the effect of physical activity program on static balance in early childhood. Five year children were considered as the population for the study. For these ten students from TK Aba Sermo, Sleman, Yogyakarta was



included as samples. It was concluded that static balance was influenced by the physical activity at early childhood.

**Azmi and Kusnanik (2018)** have conducted research which aimed to analyze the effect of speed, agility and quickness training program to increase in speed, agility and acceleration. This study was conducted at 26 soccer players and divided into 2 groups with 13 players each group. Group 1 was given SAQ training program and Group 2 conventional training program for 8 weeks. This study used a quantitative approach with quasi-experimental method. The design of this study used a matching only design. Data was collected by testing 30 meters sprint (speed), agility t-test (agility) and run 10 meters (acceleration) during the pre-test and post-test. Furthermore, the data was analyzed using paired sample t-test and independent t-test. The results showed: that there was a significant effect of speed, agility and quickness training program in improving in speed, agility and acceleration. In summary, it can be concluded that the speed, agility and quickness training program can improve the speed, agility and acceleration of the soccer players.

**Hulsdunker et al. (2019)** researched that the stroboscopic training is recommended to advance visuomotor skills in physical activity. Nevertheless, preceding investigation has chiefly aimed on amateur trainees and only measured behavioural data. The research focused on analyzing the consequences that stroboscopic training have upon visuomotor performance and neural visual purpose of athletes. In all ten badminton players of German participated in the research analysis. After the **4 weeks** training period, athletes showcased the badminton specific visuomotor tasks either under normal visual environment (control) or wearing shutter glasses (experimental). Before and after completing the training, behavioural smash-defence tests and neurophysiologic examinations of the N2 movement onset visual evoked potential were utilized to recognize modulations in both athletes' visuomotor skill as well as visual acuity speed. The outcomes showcases that stroboscopic tutoring would be more effectual than the traditional visuomotor tutoring for enhancing visuomotor skills even in sports persons showcasing at high skill levels. Moreover, visuomotor performance gains could potentially be affected by neural adaptations in the visual motion system. These results should be established for sports persons from different disciplines.

## **2.5 Studies Pertaining to Physiological Variables**

**Hall and York (1993)** investigated the effect of a token reinforcement intervention (a physical activity program) on the percentage of leisure time adolescents spent in physical activity, degree of overweight, self-concept and attitude toward physical activity. Also addressed was the suitability of the intervention for weight control for adolescents. A single A-B-A research design was applied to evaluate the functional correlation between the independent and dependent variables. Changes in degree of overweight were measured using BMI, body weight and waist to hip ratio techniques. Self-concept and attitude toward physical activities were measured using present post-test questionnaires. Suitability of the physical activity program was evaluated with a staff questionnaire. All subject experienced an enhancement in physical activity and a decline in waist to hip ratio as a result of the intervention. With the exception of one subject, BMI declined. Improvements in self-concept scores occurred for three subject, while two subjects showed as improved attitude toward physical activity.

**Strauss and Knight (1999)** investigated a study which specifies the children nurtured in surroundings with high level of rational encouragement have the least possibilities of gaining obesity free of socio comic factor; therefore maternal BMI socio-economic factor and hereditary obesity were also significant to the growth of children obesity. To understand the overweight children one requires committing to thinking that his overweight is because of living in a family that deliberately or unconsciously promoted overeating and inactivity.

**Snehalatha et al. (2002)** scrutinized the pervasiveness of overweight in adolescent students of the age group 13-18 years old and also its hazard factors in urban India school students which were two thousand three hundred eighty two male and two thousand three hundred eighteen were female were selected for the research. BMI statistics of body, eating habits, parents financial status and body weight of the children at the time of the birth and age of menstruation in girl students were taken by opinion poll. Adjusted age pervasiveness of obese was 17.8 percent for boy students and 15.8 percent for girl students. It augmented with age and was affected by physical activity and advanced socio-economic environment. The weight at birth time and present BMI were absolutely connected with the research related to pervasiveness of obese students.

**Orjan, Kristjan and Bjorn (2005)** executed an empirical research on Swedish children and adolescents' physical performance. A total of 1737 children of age 10, 13 and 16 were chosen for the research. The height as well as the mass of the body of the children was calculated and BMI was determined. Physical fitness was calculated with the aid of the Eurofit tests. The outcome showcased that the boys exercised considerably superior in the tests of physical performance than the girls and their activity exercise was boosted with the age. Body mass index augmented with age in boys as well as girls. Huge dissimilarities were determined within age as well as gender groups. The research offered the reference statistics on physical performance and body size of Sweden children and adolescents.

**Brunet, Chaput and Tremblay (2007)** determined the alliance linking low physical fitness as well as high body mass index/waist circumference is escalating with age in children. Out of the total 1140 children i.e. 591 boys, 549 girls were chosen for the research. The mentioned total children were examined on their height, weight as well as the waist circumference and also the tests of the physical fitness. The outcomes displayed that the body mass index was considerably in relation to the waist circumference in boys as well as girls. There were considerably unconstructive relations amid body mass index as well as waist circumference and the presentation in all the tests of physical fitness in boys as well as girls. The Canadian Fitness Survey of 1981 revealed that merely 4.7-14.1% of boys exercised in the upper quartile (fit boys) while 32.1-69% exercised in the lower quartile (unfit boys) for each of the fitness test. The comparative fitness of girls declined in 2003 drastically as only 1-9.9% girls exercised in the upper quartile of the allocation in comparison to 42.8-81.4% exercised higher quartile in 1981.

**Kiviniemi et al. (2007)** studied the test utility of heart rate variability (HRV) in daily endurance exercise prescriptions. 26 samples moderately fit male were considered. Eight in predefined training group, Nine in HRV and Nine in control group. **4 weeks** training was informed with varied intensity. It was concluded that cardiovascular fitness can be improved by using heart rate variability for daily i.e. four-week training period consisted of running sessions lasting 40 min each at either low or high intensity level training prescription.

**Shannan and Gormley (2008)** conducted research to verify whether different training intensities affect aerobic capacity, heart rate and blood pressure. Effect was found on the 60 healthy young adults. Intensities of training were 50%, 75% and 95%. Control group was also there. At the end of the study it was concluded that no statistical difference was found in the resting heart rate and blood pressure. But higher intensities workout proved more effective in improving VO2 max. than lower intensities work out.

**Amusa, Goon, Amey and Toriola (2011)** completed the empirical research on the physical fitness related to health of the rural school children of Tshannda as well as to assess dissimilarities in age and gender among the Tshannda children in South Africa in physical fitness. The stature, mass of the body as well as skin-folds of the children were calculated and also the bodily robustness was calculated with the aid of Euro fit test battery. Proportion of fats in body, mass of fat and fat free mass was considered. The boys usually achieved superior to girls. While the girls were better than the boys in the flexibility tests. Fat of the body was much high in girls as compared to the boys of all grades; thus also it in augments with improvement in grades. The physical performance calculates the boost in grade levels and also reveals that the boy students have higher skills than girl students as well as perform tactically in activities that needed physical endeavour and consumption of energy. On the other hand, the girls showcased the advantage in suppleness calculations and thus tend to a mass more body fat comparative to the boys. Physical fitness of these children of the rural school was perceived low and hence validating the worldwide decrease in the fitness levels of children.

**Ujevic et al. (2013)** in their research study mentioned the dissimilarity amid profiles of the children towards physical fitness related to health of urban and rural areas of Croatian. Two thousand four hundred thirty one children out of which one thousand two hundred forty eight were boys and one thousand one hundred eighty three girls were selected for study. Univariant examination of difference and canonical discriminate analysis were applied to find the differences between rural and urban children. The results showcased that there were noteworthy dissimilarities in the height of body amid rural children as well as urban children. The differences in percent body fat and body mass index were not significant between the mentioned

two groups. In twenty meter dash, sit-ups and standing long jump children from urban areas performed significantly better than rural children. But significant differences were not found between the variable of flexibility between urban and rural children.

**Suarez and Rave (2014)** researched the outcome of diverse teaching measures on the resistance performance of the players; as such no research work has been done on how the allocation of training loads affects the enhancement of aerobic resistance. This investigation sets out to examine the effectiveness of distributions with a constant load (CON) on aerobic activity along with enhance in intensity (INC) over a time of 4 weeks. A total number of 30 sports persons participated in this analysis. All the participants were divided into 03 groups of 10 sports persons in each group. One of group was CON group which followed a training plan and the other group was an INC distribution. Both of the groups performed at the same degree and strength, except the allocation of load over **four weeks**. The 3<sup>rd</sup> group was tutored with a complimentary load allocation during this time. Perfection in VO<sub>2</sub> max as well as ventilatory thresholds (VT1 and VT2) was examined prior and subsequent to the training period lasting for 4 weeks. There was no amendment of the VO<sub>2</sub> max in any of the tutoring schedules. FRE and INC groups displayed a noteworthy reduction ( $p < 0.05$ ) in their VO<sub>2</sub> in VT1 group and in the CON group there was a noteworthy reduction ( $p < 0.05$ ) in heart rate in VT2. These outcomes displays how tutoring period generates diverse progress on performance and showcases the efficacy of period programmes, since period programmes acquire equivalent or advanced adaptations with lower training volumes than non-period programmes.

**Alghadir, Gabr and Aly (2015)** conducted research for four weeks aerobic training on physiological variables i.e. saliva cortisol and testosterone. 16 healthy students were selected between the age group 15-25 years. Participants performed an exercise test of moderate intensity for 4 weeks three days per week and exercise on treadmill walking. Saliva cortisol and testosterone was measured before and after **4 weeks** of moderate aerobic training. It was found that after 4 weeks cortisol was significantly increased and 4 weeks of moderate intensity training significantly increased salivary stress hormone.

**Stevens et al. (2018)** studied the effect of different clothing's on the physical and physiological performance against fortitude tutoring for 2 weeks in moderate

environment, to resolve if this method would be utilized as an alternate method for heat acclimation approach for sportsperson. For the conduct of research 15 experienced sportsperson were given the task to perform matched group task, who finished a two week unsupervised survival cycling and running. Running was done in half pant and half sleevest-shirts. Other subjects performed the training in winter clothing's. Result of this study has observed no physiological symptoms of heat acclimatization and in their time trial performance was observed. It was concluded that 2 weeks were not found effective for heat acclimation approach.

## **CHAPTER - 3**

### **METHODS AND MATERIALS**

#### **3.1 Method**

After thorough study of review of related literature and considering the recommendations of UNESCO and WHO, curriculum of Physical Activity was designed with consultation and incorporation of suggestions by Physical Education experts of various institutes. Developed physical activity curriculum is depicted from page number 74 to 239.

- Dr. Rupa Saini (Retd. Principal Govt. College of Physical Education, Patiala)
- Mr. Mohinder Singh (Retd. District Sports Officer, Mansa)
- Mr. Ramandeep Singh Gill (Principal Govt. Sports School, Ghudda Bathinda)
- Mr. Sukhmander Singh (Wrestling Coach Punjab and Chandigarh Sports Department)
- Dr. Sunder Singh (Asst. Prof. of Physical Education Arya College, Ludhiana)
- Mr. Parveen Thakur (Judo Coach, Punjab Sports Department)

To initiate the present research work, first of all team of above six experts of Physical Education were selected, curriculum of physical activity curriculum was developed by keeping demand, requirement need and importance of physical activity in present era. Thereafter one copy of curriculum was submitted to each panel experts as mentioned above for the suggestions and recommendations if any for one month time period. And after collection of the curriculum from the above experts suggestions and recommendations were incorporated. Physical Activity curriculum was planned to implement during school hours in games/zero period, between nine of morning and three of afternoon for 40 minutes as per feasibility. It was ensured with the help of school authorities that each class should get one period every day (6 days in a week) for the physical activity training whereas for implementation of physical activity curriculum/training, assistance of Physical Education teachers/Fitness trainers of the particular school was taken. Before implementation of training, brief discussion and training was imparted to Physical Education Teachers/Fitness trainers of the schools.

Pre-test and post-test research design was applied to achieve the objectives of this research study. Main focus of the present investigation was to develop/design physical activity curriculum and secondary objective was just to study the short term (4 weeks) effect of developed physical activity curriculum on the secondary school children. Physical Activity Curriculum was developed for the elementary school children therefore to widen the area and implication of the present research in two school boards were purposely selected i.e. Central Board of Secondary Education (CBSE) and Punjab State Education Board (PSEB). After completion of the research this (Physical Activity Curriculum) will be submitted to the above mentioned educational boards to include this curriculum in their respective Boards and their respective schools. Further, it is also expected to be adopted, included and implemented by various state and central school boards of India. After planning, systematic designing and development of physical activity curriculum, students were selected from various schools of three regions of Punjab state with convenience sampling technique i.e. Malwa region, Doaba region and Powadh region. Total three hundred thirty-six students were considered for the study, where sample were divided in sixteen groups i.e. one was controlled group another was treatment group consisting twenty one students in each group. Experimental group were induced physical activity curriculum. Pre-test and post-test score were compared to meet various objectives of the study. Physical activity curriculum of four weeks i.e. forty minutes duration, six days in a week during school physical training hours was incorporated on elementary school students.

Though, the primary aim and expected result cum outcome of the research was to develop a Physical Activity curriculum because till date there is no such curriculum in the Indian schools which is being followed. After the development of physical activity curriculum it was also aimed to verify four weeks effect of this curriculum on the elementary school children's.

Four weeks intervention was considered because:

- 1) Research reviews suggests that there are research studies which have been conducted for four weeks intervention amongst which few were mentioned on page number 26, 30, 33, 35, 36, 38, 40 & 41.



- 2) Four weeks intervention is considered especially because 3 to 6 weeks is enough to check the adaptation (effect) caused by the training as suggested by Hardy Singh, Science of Sports Training, DVS Publication, New Delhi, 1993, Pg 244). Because, if adaptation takes place then significant changes in the body is also expected.
- 3) Intervention of Physical activity curriculum (for one game/one athletics event) all over India is implemented for twenty one days i.e. three weeks whereas in the present research, study was conducted for one additional week which makes it for four weeks.

### **3.2 Selection of Subjects**

The target population of this study involved school students of elementary level located in Punjab state. In the present study investigator has adopted the multi-stage sampling, to select the sample which is explained below:

In first stage, considering the feasibility to conduct the experiment, convenience sampling technique was used by the investigator to select the appropriate schools for selection of samples. The selected school were from three regions of Punjab state i.e., Malwa region, Doaba region and Powadh region. In first stage six schools have selected three CBSE affiliated and three PSEB affiliated.

The names of the selected schools are as: -

- Lomas Rishi Public School, Manakpur (PSEB)
- Usha Vidya Mandir High School, Mehangerwal (PSEB)
- Gurukul Public School, Ropar (PSEB)
- Doraha Public School, Doraha (CBSE)
- Shefaliy International School, Ludhiana (CBSE)
- Gobindgarh Public School, Mandi Gobindgarh (CBSE)

In the second stage, from all the selected schools the list of students has arranged separately class wise. After listing the all-students class wise in each school, research scholar selects every nth student by adopting the systematic random sampling technique. The school-wise and class-wise the distributions of sample is depicted and shown in the following table:

Name of School	Class																Total Students
	First		Second		Third		Fourth		Fifth		Sixth		Seventh		Eighth		
	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	
L.R.P.S.	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4	72
U.V.M.H.S.	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	40
G.P.S.	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	56
D.P.S.	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	72
S.I.S.	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	40
G.P.S.	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	56
<b>Total</b>	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	336

### 3.3 Selection of Tests

The selection of the tests to measure the anthropometric variables (standing height and body weight), bio motor variables (speed, agility, balance, leg strength and flexibility) and physiological variables (pulse rate and body mass index) for the study was made with a view to measure the variables with a field test. It was ensured that all selected tests had been frequently used in the existing literature related to the present study. Further the tests were selected because of their administrative feasibility in terms of economy of time, money and equipment for the smooth conduct, test items and type of tests has been presented in table below: -

Sr. No.	Test Item	Type of Test
1.	Standing Height	Field test to measure standing height
2.	Body Weight	Weighing machine was used to measure body weight
3.	20mtrs dash	Field test to measure speed
4.	20mtrs zig-zag	Field test to measure agility
5.	One Leg stand	Field test to measure balance
6.	Sit-ups	Field test to measure leg strength
7.	Sit and reach	Field test to measure flexibility
8.	Stethoscope measurement	Field test to measure pulse rate
9.	BMI table reading	Field test to measure body mass index

### **3.4 Selection of Variables**

On the basis of available literature and in consultation with the expert of the field and considering the feasibility of entire following variables were selected.

#### **Anthropometric Variables**

- Standing Height
- Body Weight

#### **Biomotor Variable**

- Speed
- Agility
- Balance
- Leg strength
- Flexibility

#### **Physiological Variables**

- Pulse rate
- Body Mass Index

### **3.5 Research Tools/Instruments used**

Research tools used to collect the data was as follows.

- Steel tape used after calibration with anthropometric rod
- Stopwatch
- Weighing Machine
- Measurement Tape
- Scale
- Stethoscope
- BMI table

### **3.6 Experimental Research Design**

Pre-test and post-test design was applied to mark the difference in the results. The selected subjects (N =336) were divided equally and randomly into two groups in each class, out of which group I acted as an experimental group and underwent physical activity curriculum, and group II acted as control group. The experimental group had given training of physical activity during school hours in games/zero periods i.e., between nine of morning and three of afternoon for 40 minutes for six

days in a week and Sunday was kept for the rest. Apart from training, daily routine classes of other subjects were also attended by the subjects. Data of pre-test and post-test were collected under the supervision of experts.

Subjects were divided in control group and experimental group as depicted in the following table:-

Group	Selected Samples from each class	Class								Total
		First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	
C.G.	Twenty one	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	168
E.G.	Twenty one	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	168
Total Number of samples for the study: Three hundred thirty six samples.										336

### 3.7 Orientation of Subjects

Selected subject has to complete all test items as per the station. For smooth conduct of the test, help of Physical Education teachers / trained fitness trainers of the school was taken. Trials with demonstrate on were conducted to assist subjects for better understanding of the task to students. Instructions were specifically given to all the subjects/samples.

### 3.8 Description of Test along with Procedure of Data Collection

#### Standing Height

**Equipment:** Steel tape was calibrated with Anthropometric Rod.



**Figure 1:** Measuring the Standing Height

**Procedure:** Researcher recorded vertical distance from the vertex to the surface which is horizontal. Data was collected by the measurement which was noted when the subject was standing in a straight in an upright manner, students should be barefooted by standing in attention position by touching heels of both feet to each other and the toes of both feet should be thirty degrees apart. For recording, instrument which can be used is the steel tape which should be held in an upright/vertical position where as the horizontal bar was brought down over the head, so that it touches the top most point of the head in the mid sagittal plane. Before noting/recording the reading, the subject was asked to take deep breathe by stretching the trunk portion of the body without moving the feet apart.

**Scoring:** The scoring of height was measured in centimetres.

## Body Weight

**Equipment:** Weighing Machine.



**Figure 2:** Measuring the Body Weight

**Procedure:** For the measurement of the body weight children was instructed to stand straight and erect on the centre/middle portion of the scaled platform of a standardized portable weighing machine followed by recording the exact data displaying on the machine when the needle was stationary. To record correct and precise values, the subject was asked to be stationary or static in position not to make any kind of movement while standing on machine. The zero of the scale will be checked before taking each movement.

**Scoring:** The scoring of body weight was measured in Kilograms.

## **Biomotor Variables**

### **Speed**

**Equipment:** Measurement Tape and Stopwatch.



**Figure 3:** Students performing 20 meters dash for Speed

**Procedure:** This test determines the speed. Students sprints for 20 meters after a command and performance is recorded. In order to start the running, child is told to stand in a stationary standing position and one foot of the student should be close to the starting line and the other foot should be behind the first foot. When the students are ready, the teacher blows the whistle. The tester provided hints for maximizing speed and he tested galvanized the students not to slow down until crossing the finishing line. The time taken by a student in one trial was the score of the student in that test. The timing starts from the first movement till crossing the finishing line, through his/her toes.

**Scoring:** Time measured in seconds was considered as the score of speed.



## Agility

**Equipment:** Measurement Tape, Cones and Stopwatch.



**Figure 4:** Students performing zigzag running for Agility

**Procedure:** Demonstration of 20 meters zig-zag run was given to students and they will follow it later. The student is instructed to stand close to the starting line. On the blowing of the whistle, the students started from starting line to finishing line in a zig-zag manner. Only one chance was given to them.

**Scoring:** Performance was recorded in seconds.



## **Balance**

**Equipment:** Stopwatch.



**Figure 5:** Students standing on one leg for Body Balance

**Procedure:** Children were asked to stand on one leg for maximum possible duration.

**Scoring:** Performance was measured in seconds.

## Leg Strength

**Equipment:** Stopwatch.



**Figure 6:** Students performing sit-ups for Leg Strength

**Procedure:** Children performed maximum possible sit-ups (Sit and Stand).

**Scoring:** Total number of sit-ups were considered.

## Flexibility

**Equipment:** Scale.



**Figure 7:** Student performing sit and reach test for Flexibility

**Procedure:** Students were instructed to put his/her feet against the testing box and sit down on the floor with knees straight. After that, the students were given command to put his/her one hand on the top of the other. Subject will lean forward with the fingers of both hands touching the scale for the maximum points. After that student was told to slide his hand along the measuring scale while straitening his knees as much as possible and to hold the farthest position for one second.

**Scoring:** Scores were recorded in centimetres.



## Physiological Variables

### Pulse Rate

**Equipment:** Stethoscope, Stopwatch.



**Figure 8:** Count number of beats for Pulse Rate

**Procedure:** The pulse rate was taken at the radial artery. The subjects were in a resting condition.

**Scoring:** The number of beats in one minute was recorded as his/her score.

### Body Mass Index (BMI)

**Equipment:** BMI chart.

**Procedure:** Height and weight was measured and compared to standard BMI chart.

**Scoring:** Ratio of BMI was evaluated as per table. (Appendix- E Pg. No. 438)

### 3.9 Pilot Study

Pilot study of two weeks was conducted on thirty-six students to examine the feasibility of an approach and validate proper implication of physical activity curriculum for four weeks. To achieve the objective of the study, thirty-six school students from Ludhiana District of Punjab in India were selected as subjects. Convenience sampling technique was used to select the samples from different

schools. Students were given the treatment of selected exercises for two weeks (six day a week) which lasted for forty minutes. To find out the significant difference between selected samples, statistical analysis was performed using SPSS version 22.0 and Microsoft excel worksheet. All descriptive data pertaining to selected variables i.e. speed, leg strength and pulse rate was reported as average (mean), SD and t-test score. Significance level was set at 0.5. Results of pilot study were discussed in next chapter.

### **3.10 Statistical Technique**

For the analysis of data, SPSS version 22 and Microsoft Excel worksheet were used. Descriptive statistics i.e. mean, mean difference, standard deviation and t-value were calculated in order to determine the significance of difference between pre-test and post-test score of selected components of anthropometry, biomotor and physiological variables. Whereas level of significance was set at .05 level.

## CHAPTER - IV

### RESULTS AND DISCUSSION

#### 4.1 Physical Activity Curriculum And Its Effect on Elementary School Students

Main outcome and result of this research i.e. Developed Physical Activity Curriculum and its implementation for four weeks were explained and discussed in this chapter. Physical Activity Curriculum was implemented during school hours in games/zero period, between nine of morning and three of afternoon for 40 minutes as per feasibility. It was ensured with the help of school authorities that each class should get one period every day (6 days in a week) for the physical activity training whereas for implementation of physical activity curriculum/training, assistance of Physical Education teachers/Fitness trainers of the particular school was taken. Before implementation of training, brief discussion and training was imparted to Physical Education Teachers/Fitness trainers of the schools. Before the imparting the planned and developed physical activity curriculum, seven to eight minutes were devoted to warm up activity which consists of light warm-up exercises. Main part/activity consists of first two exercises of 11 minutes each i.e., approximately 22 minutes as mentioned in the below tables. Last 10 minutes were devoted to recreational activity which is described after the explanation of main part of the physical activity curriculum.

The class wise and day wise physical activity training program is mentioned as below:

#### Physical Activity Training Schedule of 40 minutes for Class I

Days	Timing	Activities
Monday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Stepping</li> <li>✓ Catching Balloons</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Run, Run Chicken Go Home</li> </ul> </li> </ul>

Tuesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Passing the Hoops</li> <li>✓ Jumping</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Cross the Stream</li> </ul> </li> </ul>
Wednesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Trunk Rotation</li> <li>✓ Walking Lions</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Doggy Doggy, Where's Your Bone</li> </ul> </li> </ul>
Thursday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Catch the Paper</li> <li>✓ Jumping on Single Leg/Hopping</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Assemble Line</li> </ul> </li> </ul>

Days	Timing	Activities
Friday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Catching Scarf</li> <li>✓ Active Shake Up</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Freeze Dance</li> </ul> </li> </ul>
Saturday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Dribbling</li> <li>✓ Freeze and Melt</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Paper Race</li> </ul> </li> </ul>



### Physical Activity Training Schedule of 40 minutes for Class II

Days	Timing	Activities
Monday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Throw the Ring</li> <li>✓ Catch the Ring</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Obstacle Course</li> </ul> </li> </ul>
Tuesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Various Movements of Body</li> <li>✓ Touch the Balloons</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Hide and Seek</li> </ul> </li> </ul>
Wednesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Stop the Ring</li> <li>✓ Shuttle Run</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Doggy Doggy, Where's Your Bone</li> </ul> </li> </ul>

<b>Days</b>	<b>Timing</b>	<b>Activities</b>
Thursday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Numeric and Alphabet Pathways</li> <li>✓ Roll a Ball</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Wall to Wall</li> </ul> </li> </ul>
Friday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Kicking the Ball</li> <li>✓ Balance</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Lemon &amp; Spoon – Race</li> </ul> </li> </ul>
Saturday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Walking</li> <li>✓ Animal Walks</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Lemon &amp; Spoon – Race</li> </ul> </li> </ul>

### Physical Activity Training Schedule of 40 minutes for Class III

Days	Timing	Activities
Monday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Tip the Ball and Stop</li> <li>✓ Nose Ear Hold</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Freeze Dance</li> </ul> </li> </ul>
Tuesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Ball Kicking</li> <li>✓ Five Cone Jump</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Musical Chair</li> </ul> </li> </ul>
Wednesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Netting the Ball</li> <li>✓ Ball Shuttle</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Bring Your Board Game Day</li> </ul> </li> </ul>

Days	Timing	Activities
Thursday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Body Movement</li> <li>✓ Ball Throw</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Cat and Mouse</li> </ul> </li> </ul>
Friday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Rotating the Arm Opposite Direction</li> <li>✓ On the Spot Running</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Lemon &amp; Spoon – Race</li> </ul> </li> </ul>
Saturday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Balloon Balance</li> <li>✓ Climbing</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Blanket Pull</li> </ul> </li> </ul>

### Physical Activity Training Schedule of 40 minutes for Class IV

Days	Timing	Activities
Monday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Forward Roll</li> <li>✓ Zigzag Running</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Cross the Stream</li> </ul> </li> </ul>
Tuesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Passing the Basketball</li> <li>✓ Shuttle Run</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Death Leaps</li> </ul> </li> </ul>
Wednesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Pick the Bag</li> <li>✓ Jumping in Hoops</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Paper Race</li> </ul> </li> </ul>

Days	Timing	Activities
Thursday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Catch the Ball</li> <li>✓ Bent-Knee Push-Ups</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Ghost in the Graveyard</li> </ul> </li> </ul>
Friday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Head to Toe Stretch Exercise</li> <li>✓ Crab Walk</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ A Wolf in Sheep's Clothing</li> </ul> </li> </ul>
Saturday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Walking on Balancing Beam</li> <li>✓ Hanging on the Bar</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Sack Race</li> </ul> </li> </ul>

### Physical Activity Training Schedule of 40 minutes for Class V

Days	Timing	Activities
Monday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Chair Squats</li> <li>✓ Tip the Ball and Jump over It</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Lemon &amp; Spoon – Race</li> </ul> </li> </ul>
Tuesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Frog Jump</li> <li>✓ Skipping</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Freeze Dance</li> </ul> </li> </ul>
Wednesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Four Square Jumping</li> <li>✓ Circuit Training</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Musical Chair</li> </ul> </li> </ul>

<b>Days</b>	<b>Timing</b>	<b>Activities</b>
Thursday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Legs Stretching</li> <li>✓ Stretching Fitness</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Lagori or Pithu</li> </ul> </li> </ul>
Friday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Skipping the Hoops</li> <li>✓ Standing Broad Jump</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Hide and Seek</li> </ul> </li> </ul>
Saturday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Stretching exercises, running in circle, jumping exercises, free hand exercise, arm rotation, neck rotation and shoulder rotation etc.)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Yoga</li> <li>✓ Moving on the Bar with Hands</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Lagori or Pithu</li> </ul> </li> </ul>



### Physical Activity Training Schedule of 40 minutes for Class VI

Days	Timing	Activities
Monday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ 50 Meter Dash</li> <li>✓ Plank</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Marbles</li> </ul> </li> </ul>
Tuesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Four Corner Shuttle</li> <li>✓ Jumping on Both Feet</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Lemon &amp; Spoon – Race</li> </ul> </li> </ul>
Wednesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Physical Activity:               <ul style="list-style-type: none"> <li>✓ Duck Walk</li> <li>✓ Movement and Math</li> </ul> </li> <li>• Recreational Activity:               <ul style="list-style-type: none"> <li>✓ Hide and Seek</li> </ul> </li> </ul>

<b>Days</b>	<b>Timing</b>	<b>Activities</b>
Thursday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Vertical Jump</li> <li>✓ Multi-Way Tug-of-War</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Sack Race</li> </ul> </li> </ul>
Friday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Basketball Count</li> <li>✓ Muscular Strength Fitness</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Three-Legged Race</li> </ul> </li> </ul>
Saturday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Physical Activity: <ul style="list-style-type: none"> <li>✓ Four Corner Shuttle</li> <li>✓ Pull Ups on the Bar</li> </ul> </li> <li>• Recreational Activity: <ul style="list-style-type: none"> <li>✓ Musical Chair</li> </ul> </li> </ul>

### Physical Activity Training Schedule of 40 minutes for Class VII

Days	Timing	Activities
Monday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Introduction of the Kho-Kho Game</li> <li>• Position of chaser and runner</li> <li>• Running skills: Zigzag</li> <li>• Avoiding</li> </ul>
Tuesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Dodging</li> <li>• Three to three</li> <li>• Second attack</li> <li>• Skill of defence: Simple Kho</li> </ul>
Wednesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Fake Kho</li> <li>• Late Kho</li> <li>• Giving Kho</li> <li>• Getting in square</li> <li>• Position play in the court</li> </ul>

<b>Days</b>	<b>Timing</b>	<b>Activities</b>
Thursday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Getting off square</li> <li>• Pole diving</li> <li>• Sudden change direction</li> <li>• Tapping</li> <li>• Position play in the court</li> </ul>
Friday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Diving</li> <li>• Grasping direction</li> <li>• Diagonal attack</li> <li>• Covering</li> <li>• Layout of the court</li> <li>• Position play in the court</li> </ul>
Saturday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Pole turning</li> <li>• Rule regulation in Kho-Kho</li> <li>• Signs in the Kho-Kho</li> <li>• Layout of the court</li> <li>• Position play in the court</li> </ul>

### Physical Activity Training Schedule of 40 minutes for Class VII

Days	Timing	Activities
Monday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Introduction of the Basketball Game</li> <li>• Ball handling and stance of the players</li> <li>• Passing: Simple pass</li> <li>• Chest pass</li> <li>• Overhead pass</li> <li>• Push pass</li> </ul>
Tuesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Bounce pass</li> <li>• Side arm pass</li> <li>• Receiving: Ball receiving with two hands</li> <li>• Ball receiving with one hand</li> <li>• Ball receiving in running</li> <li>• Ball receiving in jumping</li> </ul>
Wednesday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Dribbling : Low dribble</li> <li>• High dribble</li> <li>• Behind the back</li> <li>• Pull back dribble</li> <li>• Change-of-pace</li> <li>• Advance skills Shooting : Free throw</li> <li>• Position Play in the court</li> </ul>

<b>Days</b>	<b>Timing</b>	<b>Activities</b>
Thursday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Jump shot</li> <li>• Layup</li> <li>• Dunk</li> <li>• Three point shot</li> <li>• Hook shot</li> <li>• Rebounding :Defense rebound</li> <li>• Position Play in the court</li> </ul>
Friday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Offence rebound</li> <li>• Defense : Individual defense</li> <li>• Zonal defense</li> <li>• Moves</li> <li>• Violations</li> <li>• Position Play in the court</li> </ul>
Saturday	During 9:00 am to 3:00 pm	<ul style="list-style-type: none"> <li>• General warm up: (Neck rotation, Arm rotation, shoulder rotation and stretching exercise of neck, shoulder and legs)</li> <li>• Signs in Basketball</li> <li>• Layout of the court</li> <li>• Full game on all positions</li> </ul>

## 4.2 Description of Developed Physical Activity Curriculum from Class Ist to Class VIIIth:

### Class – I

#### Physical Activity and Recreational Game - 1

#### Stepping

##### Objectives

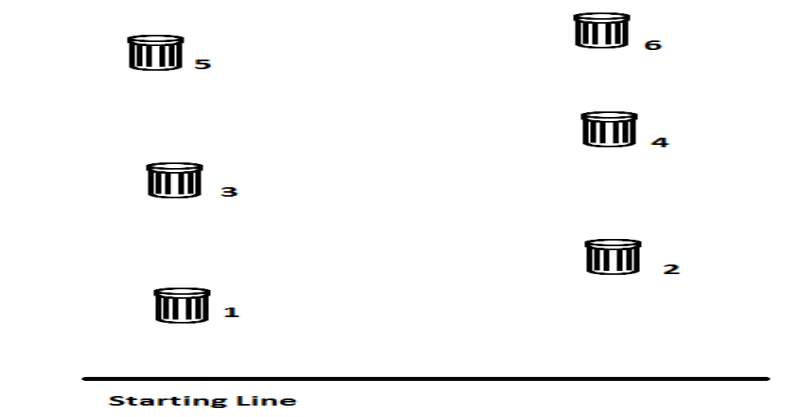
- To improve body mind coordination.
- To increase the rhythmic qualities.
- For identification of gymnastic abilities.
- To improve explosive abilities.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Marker
- Gymnasium Hall

##### Instructions

- This activity is for individual students.
- The time taken by the student to complete one set of all the ten points will be recorded by the instructor.
- This activity is of stepping and not jumping. Therefore, it is very important that the student will use one foot at one step and the other foot at the next step. He/she will not put both the feet on one point at a time.



### **How to do**

In this activity, the student will be asked to step on the given points. The child will be asked to stand on the starting point and after the instructor blows the whistle, the student will step on the first point with one foot in the air and then he will step on the next point with the other foot. This way, the student will complete a round of ten points. Two sets of this activity will be repeated.

### **Outcomes/Effects**

- This activity is helpful to grow the balancing power of the student.
- It also increases the rhythmic qualities of the body of the child which will help in identifying the gymnastic abilities of the student.

## **Recreational Game**

### **Run, Run Chicken Go Home**

#### **Requirements**

- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, the students run from one place to another. However, there is one person who stands in their way to catch them while saying, “Run Run Chicken Home”. In this game process, whoever is caught have to become the part of the catchers’ team to catch the next runner. After catching rest of the players, the game starts again.



**Class – I**  
**Physical Activity and Recreational Game - 2**  
**Catching Balloons**

**Objectives**

- To develop concentration and focus of the student.
- To improve reaction time of the student.
- To increase eye hand coordination of the body.

**Requirements**

- Instructor
- Stopwatch
- Balloons
- Gymnasium Hall



**Instructions**

- This activity is to be performed individually.
- The student should stand straight in front of the instructor.
- The number of balloons caught by the student will be counted by the instructor.

**How to do**

The instructor will hold four fully blown balloons in his both hands. The student will stand in front of the instructor. The instructor will keep his arms straight and will leave hold over the balloons one by one. The child will be asked to catch the balloons according to the pattern in which the balloons fall. Five sets of this activity will be repeated.

**Outcomes/Effects**

- This activity will develop the concentration and focus of the student.
- It will also decrease the reaction time taken by the student.
- This exercise is immensely helpful in increasing the eye hand coordination of the student.

## **Recreational Game**

### **Socks**

#### **Requirements**

- Socks
- Whistle
- Stopwatch
- Playground

#### **How to do**

Anyone who wants to play this game should have a second hand sock in the back of his shirt. The players who becomes 'It' does not own a sock so he tries to get one. Elementary school students like the game very much and normally they do not follow the rules strictly.

## Class – I

### Physical Activity and Recreational Game – 3

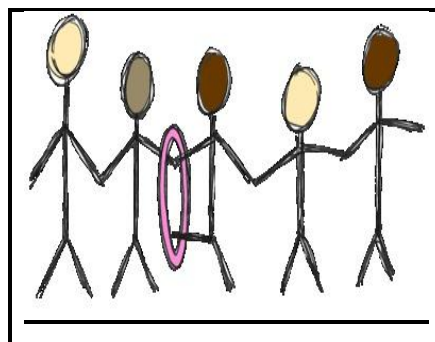
#### Passing the Hoops

##### Objectives

- To increase hand to hand coordination
- To enhance leg to leg coordination.
- To develop sociological aspects.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Hoops
- Playground or Gymnasium Hall



##### Instructions

- This is a group activity.
- The number of students in each group 10.
- In this activity, the whole class of students will be involved.
- Divide the class into different groups of equal number.

##### How to do

The instructor will make all the students to stand in a line. Each student joining hands in a line. Than instructor will hands over hoop to student standing at the one end of the line. Task is to pass the hoop to one another until the hoop reaches to the student standing at the other end of the line in some period of time mentioned by the instructor and the challenge which is added is to hand over the hoop to the students from one end of the line to the other end by not letting it go off each other's hand. To vary the challenge, students can try the same task by lying on the floor in a row.

##### Outcomes/Effects

- This activity will be helpful in the body movement of the students and it will increase the feet points' movement of the student.
- This exercise will develop the team spirit among the students.

## **Recreational Game**

### **Hide and Seek**

#### **Requirements**

- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

It is a very famous game among children. Any number of players can take part in it. One child becomes “IT” and closes his eyes while counting 1 to 10-15. The other players hide themselves. After completing his counting he says “Ready or not, here I come”. He makes efforts to find out all the hidden players. This game is liked by children throughout the world.

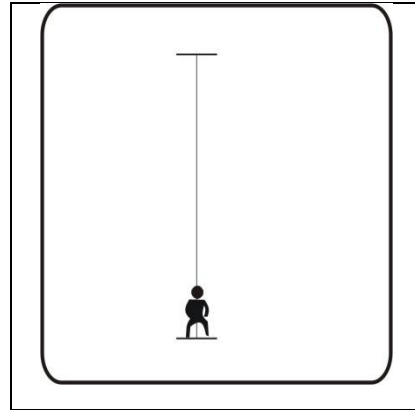
**Class - I**  
**Physical Activity and Recreational Game - 4**  
**Jumping**

**Objectives**

- To strengthen calf and thigh muscles.
- To increase reaction time.
- To improve leg muscles.
- Enhance dynamic stability of the body.

**Requirements**

- Instructor
- Stopwatch
- Cones
- Gymnasium Hall



**Instructions**

- A line is to be drawn of twenty meters.
- Four cones are to be placed on the line at the distance of five meters.
- This exercise is to be done for two or three times.

**How to do**

In this exercise students are told to start from the starting line and they have to jump over all the cones. The time taken during this exercise is to be noted. Later on when students become adept in the activity, the distance and the cones can be increased for the students. Students should be motivated do this exercise in less time.

**Outcomes/Effects**

- This activity will bring strength to calf and thigh muscles.
- There will be improvement in the speed of the students.

**Recreational Game**  
**Cross the Stream**

**Requirements**

- Chalk
- Measurement Tape

- Whistle
- Stopwatch
- Playground

**How to do**

In this game, a stream is drawn by making use of a chalk. The width of the stream is not more than 4 feet. Some spots are marked for children to show their capacity to jump as long as they can. Players can say funny words while jumping such as, 'Geronimo'.

## Class – I

### Physical Activity and Recreational Game - 5

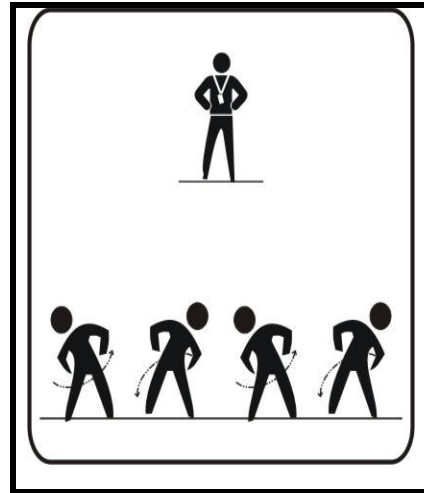
#### Trunk Rotation

##### Objectives

- Increase trunk mobility
- Strengthen lower back
- Burn fats of the trunk
- Strength digestive system.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Playground or Gymnasium Hall



##### Instructions

- This is a group activity.
- All the students should be lined up.
- Their bodies should be straight while doing the exercise.
- The instructor should face the line.
- Time taken by the students to complete one set of the activity will be noted by the instructor.

##### How to do

The students will put their hands on their trunks. After the instructor blows the first whistle, the students will start rotating their trunks to their right side for 20 seconds. After a rest of 20 seconds, the instructor will blow the whistle for the second time. Then, the students will rotate their trunks to their left side for another 20 seconds. Two sets of this activity will be done.

##### Outcomes/Effects

- This exercise will burn the fat from the stomach of the students.
- This kind of workout gives strength to the trunk joints.
- Most importantly, it will strengthen the respiratory and digestive systems of the body.

## **Recreational Game**

### **Freeze Dance**

#### **Requirements**

- Music Player
- Whistle
- Stopwatch
- Playground

#### **How to do**

If students are in a mood to enjoy a beautiful cold day, they can play the game of freeze dance. This game can help them to put forth great efforts into a task as well as to utilize their energy. In order to play this game, play the music and invite all the students for dancing. After sometime stop the music and tell the students that they have to freeze when the music will be paused. If any students is caught dancing when the music is stopped, he/she will be sent out of the game. In the end, one student who is left standing will be the winner of the game.



**Class - I**  
**Physical Activity and Recreational Game - 6**  
**Walking Lions**

**Objectives**

- To improve walking skills.
- To develop the neck and shoulder muscles of the students.
- To increase body balance of trainee.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Cones
- Playground or Gymnasium Hall

**Instructions**

- This is a group activity.
- Hands and legs move in opposition.
- Arm swing is visible.
- Arms do not cross the mid-line.
- Feet point straight and parallel to each other.
- Feet land heel to toe.
- Body is straight.

**How to do**

Let the students stand in a manner such that everyone has enough place to walk around.

- Demonstrate the correct walk with following variations;
  - ✓ Slow
  - ✓ Fast
  - ✓ High (on toes)
  - ✓ Low (bend knees)
  - ✓ In a small circle
  - ✓ In a large circle

- ✓ Taking very short steps
  - ✓ Taking long steps
  - ✓ Beginning high and finishing low
  - ✓ Beginning low and finishing high
  - ✓ From high to low and low to high
- Let the student follow you.
  - Observe if students are walking properly. Make a note in the notebook and correct if any student is having difficulty in walking.

### **Outcomes/Effects**

- This activity will to develop the walking skills.
- It will also develop the neck and shoulder muscles of the student.
- This activity will be immensely helpful in the body balancing of the student.

## **Recreational Game**

### **Doggy Doggy, Where's Your Bone**

#### **Requirements**

- Handkerchief (for fake bone)
- Whistle
- Stopwatch
- Classroom or Gymnasium Hall

#### **How to do**

In this game a child is selected to perform the role of a guesser who is asked to go out of the room for some time. At the same time, all the other students hide a fake dog bone and sit on that to conceal that bone. After returning, the guesser tries to find out that hidden bone while other children sing, "Doggy, doggy where's your bone, somebody took it from your home, guess who?" This game is liked by students because they love to sing as well.

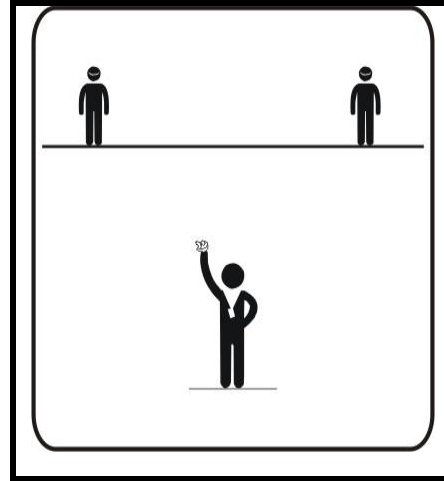
**Class - I**  
**Physical Activity and Recreational Game - 7**  
**Catch the Paper**

**Objectives**

- To improve decision making power of students.
- To enthuse the students about the competition.
- To improve auditory reaction time.

**Requirements**

- Instructor
- Stopwatch
- Paper (Hard)
- Gymnasium Hall



**Instructions**

- This activity is to be performed by two students at a time.
- This activity performed five repetitions.
- Both hands will be behind their backs.
- The instructor will count the number of times when the child follows the instructions properly and will catch the paper with the right hand.

**How to do**

Two students will stand opposite facing each other at distance of one meter. The instructor will stand at an angle of 45 degrees from both the students. The instructor will hold a piece of paper in front of both the students. He/she will give command to the students to catch the paper with either left or right hand. Whichever hand the instructor tells them to use, they will have to use only that hand.

**Outcomes/Effects**

- This activity is very helpful in checking the speed of the child to react to a given task.
- It will also increase the decision-making power of the child.

- Since this activity involves two students at a time, it will grow a spirit of competition between them.
- This exercise will also improve psycho-motor ability.

## **Recreational Game**

### **Counting Jumps**

#### **Requirements**

- Whistle
- Stopwatch
- Playground or Gymnasium Hall

#### **How to do**

The players of this game sing rhymes while jumping. This important thing in this game is to count as many jumps as students can without tripping.

“A” “B” “C” and Vegetables soup

What student will find in his alphabet soup?

“A” “B” “C” .....

(During the play when the letter is missed, then an athlete must prompt skipped alphabet.)

Word “Ladybug” will be called twice

With this word an athlete will turn around,

The he will touch the surface/ ground.

Calling lady bug twice athlete will shine his shoes,

Recalling of the word will be in continuous form followed by reading the news.

Lady bug -2 how old are you?

1, 2, 3, or 4.....

## Class - I

### Physical Activity and Recreational Game - 8

#### Jumping on Single Leg/Hopping

##### Objectives

- To strengthen leg.
- To improve the strength endurance of trainee.
- To improve explosive strength of legs.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Playground or Gymnasium Hall



##### Instructions

- Students are required to jump on one leg at a time.
- Initially in this activity students have to take 15 jumps.
- Maximum five minutes duration for 15 jumps to the students.
- The instructor will count the jumps of each student.
- After that the time period of the jumps can be exceeded to 30 seconds.

##### How to do

The students are asked to jump 10 times consecutively on both legs. This activity is to be performed in the set of two students. When students become perfect in the given frame, they will be asked to do maximum jumps in minimum time.

##### Outcomes/Effects

- This activity will lead to the development of the muscles of legs.
- It can also improve the stamina and strength in the students.
- It can lead to the enhancement in the endurance power.

## **Recreational Game**

### **Assembly Line**

#### **Requirements**

- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, a child is selected who comes up in front of the class and begin to make a movement repeatedly. After observing the movement of this child, other children are asked to come forward and to add some more repetitive movements. The instructor should go on calling rest of students until they have a big assembly line.

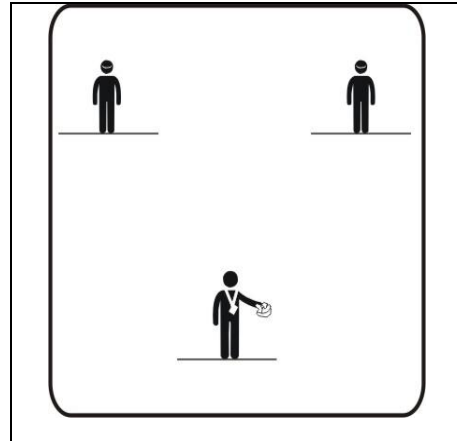
**Class - I**  
**Physical Activity and Recreational Game - 9**  
**Catching Scarf**

**Objectives**

- To enhance the hand-eye coordination of the students.
- To boost the jumping power of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Scarf
- Gymnasium Hall



**Instructions**

- Two students in a set are to be employed in this activity.
- Scarf will be thrown in the center of both students.

**How to do**

In a set of two students one will be asked to throw the scarf in the air and the other will have to catch it. Firstly, the thrower will be given five attempts to throw the scarf and later the catcher will be given five attempts to throw the ball.

**Outcomes/Effects**

- There will be improvement in the eye-hand coordination of the doers.
- It will also improve the jump of the students.

**Recreational Game**  
**Freeze Dance**

**Requirements**

- Music Player
- Whistle
- Stopwatch

- Playground

**How to do**

If students are in a mood to enjoy a beautiful cold day, they can play the game of freeze dance. This game can help them to put forth great efforts into a task as well as to utilize their energy. In order to play this game, play the music and invite all the students for dancing. After sometime stop the music and tell the students that they have to freeze when the music will be paused. If any students is caught dancing when the music is stopped, he/she will be sent out of the game. In the end, one student who is left standing will be the winner of the game.



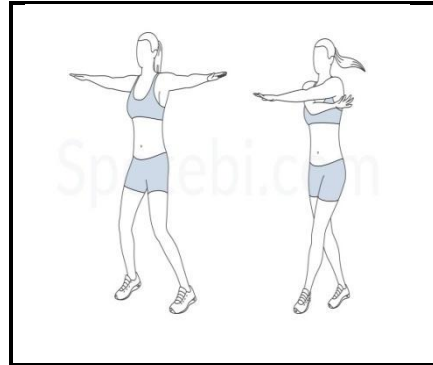
**Class - I**  
**Physical Activity and Recreational Game - 10**  
**Active Shake Up**

**Objectives**

- To strengthen arms and legs of the body.
- To increase endurance ability of students.
- Increase/enhance overall strength of the body.

**Requirements**

- Physical trainer / Instructor
- Whistle
- Stop-watch
- Playground or Gymnasium Hall



**Instructions**

- This particular activity is an individual activity.
- After training, all the students will be asked to perform the same activity for maximum number of times they can do.
- Students should be instructed to be careful while moving and should take care of the distance between the players.
- Proper finishing line should be marked at some distance from the walls. In place of fencing, stages or walls as a finishing point.
- Draw four fitness signs with drawing two physical activities on each whereas different signs should be drawn around the activity area.
  - Station One: Perform ten full squats and 15 stride jumps.
  - Station Two: Fifteen push-ups and fifteen pull ups
  - Station Three: Fifteen jumps (legs out then crossed) and twenty times heel have to be touched.
  - Station Four: Fifteen steps with high knees and twenty toe touches.
- Make the students move around at the activity area using different movements.

- Instructions have to be given to the students to move to nearest station activity have to be performed at once and twice followed by physical activities and then students have to return back to the initial position and then second time students have go to that station since he/she has to perform different physical activity.
- When students have to perform physical activities then instructions have to be given to students to move around the activity area and then have to perform free movements of their own choice according to their interest like:- running, jumping, shifting, stirring etc.

### **Outcomes/Effects**

- This particular activity will help in the development of the leg and arm muscles.
- Activity will enhance endurance ability of the students.
- Activity will also lead to the enhancement in the endurance power.

## **Recreational Game**

### **Shadows**

#### **Requirements**

- Whistle
- Stopwatch
- Playground

#### **How to do**

In a clear and sunny day, children should be moved out in the space where they are able to see their shadows. Children should be instructed to make various/different shadows with different features. The shadows should be tall and wide as possible and as narrow they can make. Children should be instructed to make different shadows by making use of their legs while lying on their back. They can create trees, animals, machines etc. Children should lie on their back and make shadows with their legs. In combinations with others, make a dog shadow. Create monsters, machines plants etc.

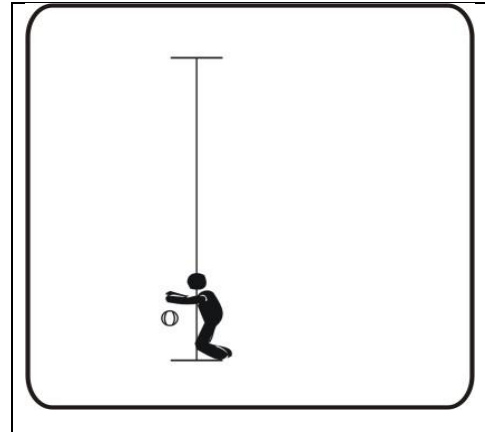
**Class - I**  
**Physical Activity and Recreational Game- 11**  
**Dribbling**

**Objectives**

- To improve ball control of the students.
- To make the students' body more flexible.
- To improve coordinative ability.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Small Basketball
- Gymnasium Hall



**Instructions**

- A line of twenty meters is to be marked.
- The students have to run and take the ball from the starting to the finish point.

**How to do**

In this activity a student will be asked to take the basketball bouncing from the starting point to the end-point. The time taken during this exercise is to be recorded and the students should be motivated to complete this exercise in minimum time.

**Outcomes/Effects**

- This exercise will strengthen the grip of the students.
- This exercise will improve the flexibility and speed of the students.

**Recreational Game**  
**Cat and Mouse**

**Requirements**

- Nerf Balls
- Whistle
- Stopwatch

- Playground

**How to do**

In order to play this game, bring two balls. One ball must be of small size and second one must be larger one. Tell the players to sit in a circle. Start telling their an interesting story about a cat who always runs after a mouse, who is very active and fast. Tell them to handover the balls from one player to the other as fast they can. The small ball should be considered as the mouse so firstly must be passed from student to student whereas large ball should be considered as the cat and must be passed from student to student after passing the small ball.

**Class – I**  
**Physical Activity and Recreational Game -12**  
**Freeze and Melt**

**Objectives**

- To fortify the imagination of the students.
- To improve the agility of the students.
- To improve stability and body control.
- To boost the control over mind.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Playground



**Instructions**

- A group of four students should be made.
- The student once frozen is not allowed to move from his/her place till he/she is not melted by the other comrade.
- This activity is to be done for a maximum of 15 minutes at one time.

**How to do**

One student out of the group will be instructed to take the turn of freezing other three students by touching them. The other can melt the frozen one by touching him/her. The student on turn will have to freeze all the students in order to be relieved of the turn. The next turn will be assigned to the student who is the first to be frozen. This way, game will be continued for 15 minutes in one go.

**Outcomes/Effects**

- This activity will increase the agility of the students.
- This activity will enhance the reaction and decision making speed of the students.
- This activity will strengthen the imagination of the students.

## **Recreational Game**

### **Paper Race**

#### **Requirements**

- Paper
- Whistle
- Stopwatch
- Playground

#### **How to do**

Distribute pieces of paper among children. Then, explain to them how to run with paper on their chests. After picking up the speed, on air pressure helps to hold these papers. It is quite easy to run in a straight line while holding the paper. So, it is a challenge to run in the circle.

## Class - II

### Physical Activity and Recreational Game - 1

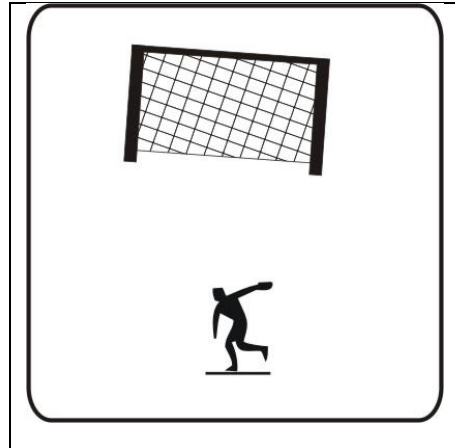
#### Throw the Ring

##### Objectives

- To boost the throwing ability of the students.
- To improve the eye hand coordination of the students.

##### Requirements

- Instructor
- Stopwatch
- Rings
- Goal Post
- Gymnasium Hall



##### Instructions

- The starting point is to be eight meters from the small goal-post.
- A single student will be provided with ten rings.

##### How to do

A student will be asked to throw the rings in the goal-post from the starting point which is from eight meters from the goal-post. The number of successful attempts and time taken by the students should be recorded. With the passage of time the number of rings and the distance of goal-post from the starting point can be increased.

##### Outcomes/Effects

- This activity will bring strength to the shoulders and can improve the throwing ability of the students.
- There will be improvement in the eye-hand coordination of the doers.

#### Recreational Game

#### Ghost in the Graveyard

##### Requirements

- Whistle

- Stopwatch

**How to do**

Ask a student to play the role of a ghost tell all the other students to lie down on the floor acting as if they are lying in graves. After counting 1 to 20, the ghost comes near to the graves. At that time, every student begins to find out where the ghost is. The first finder scream while saying, “Ghost in the graveyard” and it is a signal for all to go back to their groves if any student is caught before going back to his grove, have to become the next ghost.



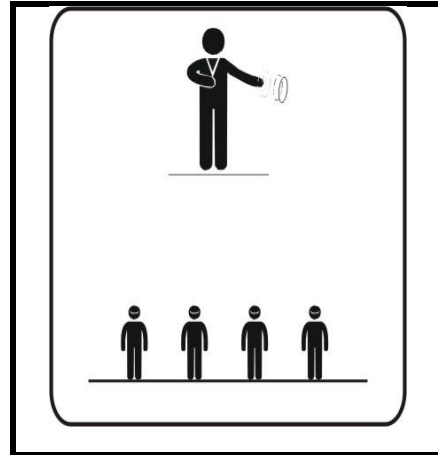
**Class - II**  
**Physical Activity and Recreational Game - 2**  
**Catch the Ring**

**Objectives**

- To fortify the muscles of the shoulders.
- To enhance the eye hand coordination.
- To improve anticipation

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Rubber Rings
- Gymnasium Hall



**Instructions**

- Students have to be lined up in a group of five facing the instructor.
- The distance among the students should be two to three feet from each other.
- The distance of the instructor will be 2 meters from the students.

**How to do**

The instructor will throw the ring towards a student to catch. The student has to throw it back towards the instructor. This exercise will be repeated with all the students. When the students will be able to do this exercise comfortably, the speed of throwing the ring will be increased accordingly. The distance of the instructor can be increased according to the situation.

**Outcomes/Effects**

- This exercise will improve the eye-hand coordination of the students.
- It will bring strength in the shoulders of the students.

**Recreational Game**  
**Obstacle Course**

**Requirements**

- Whistle
- Stopwatch

- Gymnasium Hall

**How to do**

You need to set up a series of car tires in a row and tell the students to stand beside the one side of the row. Then, each student is asked to cross this row by jumping in the middle of tire. The student who is able to finish the task without falling in the lowest time becomes the winner.

## Class - II

### Physical Activity and Recreational Game - 3

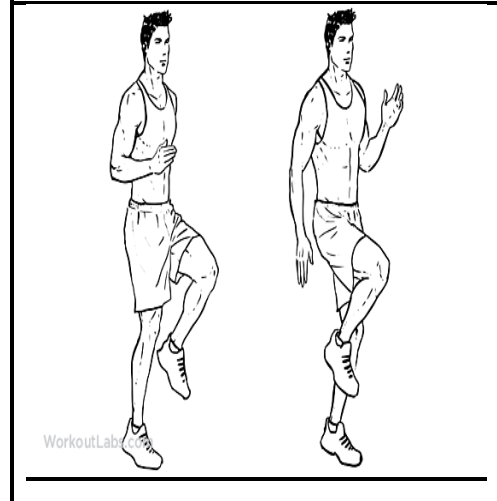
#### Various Movements of Body

##### Objectives

- To boost the athletic ability of the students.
- To boost the coordination abilities of the students.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Blackboard
- Gymnastics Mats (10)
- Gymnasium Hall



##### Instructions

- This is a group activity.
- Students are lined up.

##### How to do

The students are told to stand at one place to perform the different body movement activities. A roll of various kinds of athletes with a compatible action for single form should be prepared. Somebody should be asked to post this list on the blackboard. It includes the following:

- ✓ A swimmer: one has to move or walk while using swimming gestures like crawling (on gymnastics mat) by rotating his arms.
- ✓ A dancer: Dance on the spot while using one's imaginations and facial expressions.
- ✓ A jogger: Jog while standing at one place.
- ✓ A cyclist: Children can only perform while lying down cycling motion.
- ✓ A Mountaineer: Move arms up and down and march at the same time on the spot.

This activity will be done for two minute in one go. Thereafter, a rest of 30 seconds will be given. One more round of this will be repeated.

**Outcomes/Effects**

- This activity will be developing the athletics ability in the students.
- This exercise will develop the coordination abilities of the student.

**Recreational Game**

**Counting Jumps**

**Requirements**

- Whistle
- Stopwatch
- Playground or Gymnasium Hall

**How to do**

The players of this game sing rhymes while jumping. This important thing in this game is to count as many jumps as students can without tripping.

“A” “B” “C” and Vegetables soup

What student will find in his alphabet soup?

“A” “B” “C” .....

(During the play when the letter is missed, then an athlete must prompt skipped alphabet.)

Word “Ladybug” will be called twice

With this word an athlete will turn around,

The he will touch the surface/ ground.

Calling lady bug twice athlete will shine his shoes,

Recalling of the word will be in continuous form followed by reading the news.

Lady bug -2 how old are you?

1, 2, 3, or 4.....

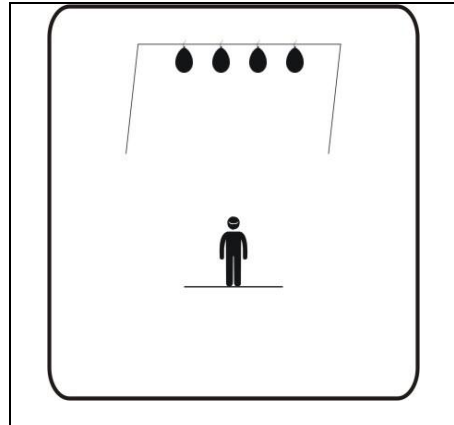
**Class - II**  
**Physical Activity and Recreational Game - 4**  
**Touch the Balloons**

**Objectives**

- To improve the overall development of the students.
- To affect the mental operations of the students positively.

**Requirements**

- Instructor
- Stopwatch
- Balloons of different color
- Two Poles (adjustable)
- Wire
- Gymnasium Hall



**Instructions**

- A wire will be tied to two poles.
- The height of the pole according to the students.
- Balloons of five different colors will be tied to this wire.

**How to do**

In this activity the instructor will name the color of balloon and the student has to touch it by taking a jump. The student will have to take five jumps in this activity. With the passage of time the height and the balloon count can be increased.

**Outcomes/Effects**

- This activity will be helpful in decreasing the reaction time of the students.
- It will also positively affect the mental operations of the students.
- It will also improve the standing jump of the students.
- It is also helpful in the holistic development of the students.

## **Recreational Game**

### **Hide and Seek**

#### **Requirements**

- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

It is a very famous game among children. Any number of players can take part in it. One child becomes “IT” and closes his eyes while counting 1 to 10-15. The other players hide themselves. After completing his counting he says “Ready or not, here I come”. He makes efforts to find out all the hidden players. This game is liked by children throughout the world.

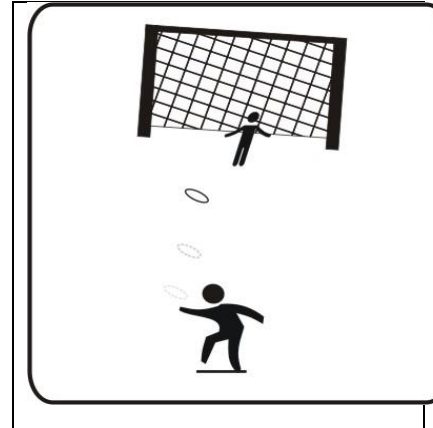
**Class - II**  
**Physical Activity and Recreational Game - 5**  
**Stop the Ring**

**Objectives**

- To make the students' body more flexible.
- To improve the jumping reach of the students.

**Requirements**

- Instructor
- Stopwatch
- Rubber Rings (15)
- Goal Post of 3×3 feet
- Gymnasium Hall



**Instructions**

- In this activity single student is employed at a time.
- Ten rings are required for this activity, so a single student has ten chances to stop rings.

**How to do**

In this activity a student has to stop the rings from entering in goal-post. The instructor will throw the ring towards the goal post. The student who will be in the role of goal keeper has to stop the ring to enter in the goal-post. The instructor will throw the rings to left and right of the student. The speed of the ring can be increased according to the capabilities of the students.

**Outcomes/Effects**

- With this exercise the flexibility in the body of the student will increase.
- There will be increase in the jump reach of the student.

**Recreational Game**  
**Doggy Doggy, Where's Your Bone**

**Requirements**

- Handkerchief (for fake bone)
- Whistle

- Stopwatch
- Classroom or Gymnasium Hall

**How to do**

In this game a child is selected to perform the role of a guesser who is asked to go out of the room for some time. At the same time, all the other students hide a fake dog bone and sit on that to conceal that bone. After returning, the guesser tries to find out that hidden bone while other children sing, “Doggy, doggy where’s your bone, somebody took it from your home, guess who?” This game is liked by students because they love to sing as well.



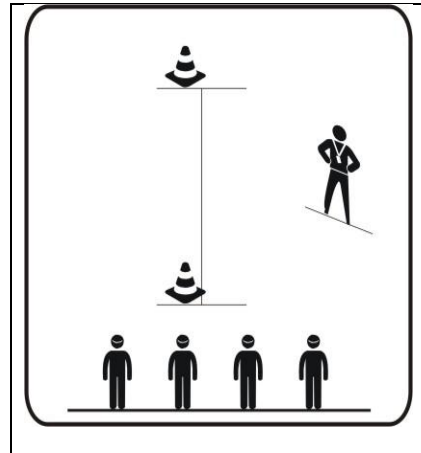
**Class – II**  
**Physical Activity and Recreational Game - 6**  
**Shuttle Run**

**Objectives**

- To boost the stamina of the students.
- To boost the agility in the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Cones
- Playground



**Instructions**

- Two cones are installed at the distance of 15 meters.
- Students are lined up.
- Time taken to finish the activity of the individual student is to be recorded.
- The distance of the cones can be increased when students start doing this exercise easily.

**How to do**

During this exercise the students are asked to run from first to second cone. Each student has to come back to the first cone after touching the second one. All the students have to do this activity twice.

**Outcomes/Effects**

- This activity will increase agility in the students.
- It can also improve the stamina and strength in the students.
- It can lead to the enhancement in the endurance power.
- It is a holistic game as all the body parts are in movement.

## **Recreational Game**

### **Charades**

#### **Requirements**

- Papers
- Pencil
- Bowl
- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

It is an interesting game. In this game, children are told to imagine something like an animal, bird, machine, aircraft etc. and they are told to write it down on a piece of paper and put it aside after folding it. Every student is asked to do the same. Then, all the slips are placed into a bowl. After that every student from both teams comes to choose a paper and then try to tell his team what is written on that paper by acting out. The team with the highest points wins the game.

## Class – II

### Physical Activity and Recreational Game - 7

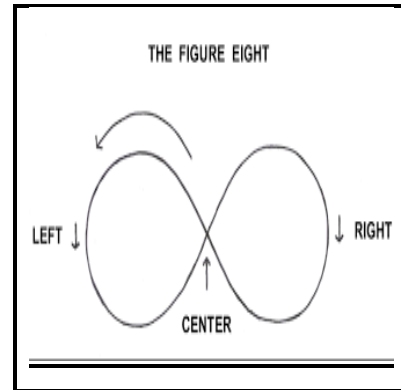
#### Numeric and Alphabet Pathways

##### Objective

- To make the students physically active.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Playground



##### Instructions

- Practice moving around in different pathways.
- Distance in each pathway 10 meters.
- This is a group activity.
- Divide the students into four groups; let the four teams stand in a straight line.

##### How to do

- Pathways in various designs (circle, figure of 8, square and rectangle) should be marked on the floor.
- When the music starts, the teams being to move through the design using various skills like running, jumping, hopping, skipping etc.
- When a group is done with one design they will switch to another design and move through it.
- Mark pathways in such a way that they should be narrow at few places and broad at other places.
- Students should be told to give their best and not to step out of the boundary.

##### Outcomes/Effects

- To practice moving around in different pathways.

## **Recreational Game**

### **Wall to Wall**

#### **Requirements**

- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

To play this game, players need to run from wall to wall. Begin the game by shouting loudly “Go!” Outwardly it seems very easy but there is a challenge in it. The challenge is to run in a different way every time. For instance: - Tip toes, Knees high, Arms high, Circling, Swinging, Twisting, Zigzag, Backwards and Jumping.

**Class - II**  
**Physical Activity and Recreational Game - 8**  
**Roll a Ball**

**Objective**

- To enhance the accuracy of the students.

**Requirements**

- Instructor
- Whistle
- Cones
- Soft Balls
- Stopwatch
- Playground or Gymnasium Hall

**Instructions**

- Place 2 cones in between the students at a distance of 5 feet from each student.
- The number of the successful rolls between the cones taken should be noted down.

**How to do**

- Make pairs. Give each pair one soft ball.
- Ask them to roll the ball between the cones. Let them practice this until they demonstrate the correct rolling technique.
- Increase the distance of the student from the cones.
- Repeat this for some time till they demonstrate correct rolling technique.

**Outcomes/Effects**

- This activity will develop the accuracy of students.

**Recreational Game**  
**Catching the Dragon's Tail**

**Requirements**

- Whistle
- Stopwatch
- Playground

**How to do**

Tell the students to stand in line ten to eleven students can participate in this game. Tell the students to place their hands on the shoulders of the students who stand before them. The first student of the line should be considered as the “head” of the dragon whereas last student should be considered as “tail”. The first student tries to catch the last student while moving carefully around the line. After being caught, the last player becomes the new “head” and old “head” takes the second position in the line.

**Class - II**  
**Physical Activity and Recreational Game - 9**  
**Kicking the Ball**

**Objectives**

- To improve the kicking ability of the students.
- To improve the agility of knees and ankle joints.

**Requirements**

- Instructor
- Whistle
- Cones
- Soft Balls
- Stopwatch
- Playground



**Instructions**

- This is a group activity.
- In this activity, the students have to kick the ball with their left feet and with the right feet three times each.

**How to do**

- Make pairs. Ask them stand 15 feet away and opposite each other.
- Give all the soft balls to the students.
- Ask them to place the ball in front of them.
- On the whistle, 1-2 kick, ask the students to kick the ball to their partners.
- The partners should collect the ball and place it in front of them.
- On the whistle, 1-2 kick, ask the children to kick the ball back to their partner.

**Outcomes/Effects**

- Kicking ability will be enhanced.
- This exercise will put the knee and ankle joints in motion and improve their agility.

**Recreational Game**  
**Run, Run Chicken Go Home**

**Requirements**

- Whistle
- Stopwatch
- Playground

**How to do**

In this game, the students run from one place to another. However, there is one person who stands in their way to catch them while saying, “Run Run Chicken Home”. In this game process, whoever is caught have to become the part of the catchers’ team to catch the next runner. After catching rest of the players, the game starts again.



**Class - II**  
**Physical Activity and Recreational Game - 10**  
**Balance**

**Objectives**

- To strengthen the ligaments of knees.
- To fortify the thighs and calf muscles.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Gymnasium Hall



**Instructions**

- The student will be asked to stand for 20 seconds on one leg.
- The student is not supposed to make any movement from his place while standing.

**How to do**

The student will be asked to stand on right leg first for the given time. Thereafter, the student will repeat the exercise with left leg. Two sets of the same will be done. Once the student becomes comfortable with this exercise, he/she will be asked to stand for the maximum time he/she can stand. The maximum time will be noted by the instructor.

**Outcomes/Effects**

- This kind of workout increases the balancing capacity of the body of the child.
- It also develops the thigh and calf muscles.
- It adds strength to the ligaments of knees.

**Recreational Game**  
**Lemon & Spoon – Race**

**Requirements**

- Lemons
- Small Spoons

- Whistle
- Stopwatch
- Playground

#### **Warning for participants**

- Once the race starts participants are not allowed to touch the spoon if they do so then they are out of game.
- If a lemon falls from the spoon then that participant is also out of the game.
- Whoever crosses the distance first, with spoon in mouth and lemon in it, is the winner.

#### **How to do**

- Mark distance approximate of 15 to 20 feet.
- Ask participants to stand up on one end of marked distance.
- Give each participant 1 spoon and 1 lemon.
- Participants have to hold spoon in their mouth and place lemon in that spoon.
- Participants have to cover marked distance by walking or running.

## Class - II

### Physical Activity and Recreational Game - 11

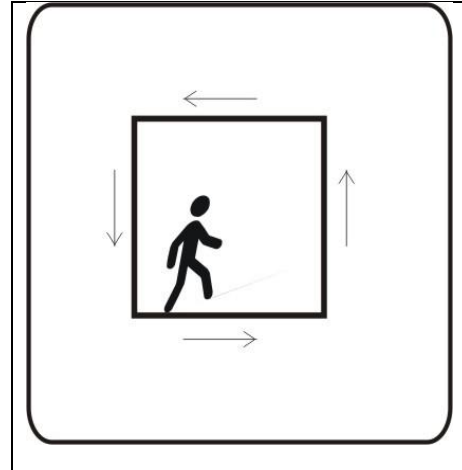
#### Walking

##### Objectives

- To improve the body balancing.
- To strengthen the neck and shoulder muscles of the students.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Cones
- Marking Area
- Playground



##### Instructions

- The instructor will mark four lines of 10 meters each and join them to make it a square.
- The student should keep his/her body straight while walking on the line.
- The hands will not be in use while doing the activity.

##### How to do

In this activity, the child will be asked to walk in a square of 40 meters by keeping a cone on his/her head. The cone should not be touched by the student while walking. The time in which the student covers the entire distance will be noted by the instructor. Two rounds of this activity will be conducted.

##### Outcomes/Effects

- This activity will be immensely helpful in the body balancing of the child.
- It will also develop the neck and shoulder muscles of the child.

**Recreational Game**  
**Non-Elimination Simon Says**

**Requirements**

- Whistle
- Stopwatch
- Playground

**How to do**

In this game, two games are played at the same time having two teams and two leaders for each team. The leaders is to make some movements and give an order to the members of their teams to music after listing the command of the leader which is, “ Simon says do \_\_\_\_\_”. But, when the leader gives a command like “Do \_\_\_\_\_” without saying “Simon says” any child who tries to obey is transferred to the second team instead of being eliminated. Thus, no student is sent out of the game, they just move from one group to other group.

**Class - II**  
**Physical Activity and Recreational Game - 12**  
**Animal Walks**

**Objective**

- To make the students active physically as well as mentally.

**Requirements**

- Instructor
- Whistle
- Playground

**Instructions**

- This activity needs to be conducted on a smooth surface.

**How to do**

- **Puppy Walk**
  - Students have to put their hands on ground.
  - They have to bend their arms and legs slightly.
  - They should be told to walk like a puppy while using two hands as feet.
- **Elephant Walk**
  - Make a trunk by bending forward and clasping hands together.
  - Students should be told to wing their trunk side to side while walking slowly and keeping legs straight.
- **Kangaroo Hop**
  - Hop with the both legs.
- **Lion Walk**
  - Walk on hands and feet with long and stretched out strides.
- **Horse Gallop**
  - Walk with long stride.
- **Bear Walk**
  - Walk on hands and feet moving the same hand-foot combination.
- **Giraffe Walk**
  - Walking should be upon toes.

- **Duck Walk**

- Students should squat down and bend their arms like wings. Then walk and flap their wings.

**Outcomes/Effects**

- It also sharpens the mind of the child for it is as much a mental activity as it is a physical one.

**Recreational Game**  
**Lemon & Spoon – Race**

**Requirements**

- Lemons
- Small Spoons
- Whistle
- Stopwatch
- Playground

**Warning for participants**

- Once the race starts participants are not allowed to touch the spoon if they do so then they are out of game.
- If a lemon falls from the spoon then that participant is also out of the game.
- Whoever crosses the distance first, with spoon in mouth and lemon in it, is the winner.

**How to do**

- Mark distance approximate of 15 to 20 feet.
- Ask participants to stand up on one end of marked distance.
- Give each participant 1 spoon and 1 lemon.
- Participants have to hold spoon in their mouth and place lemon in that spoon.
- Participants have to cover marked distance by walking or running.

**Class – III**  
**Physical Activity and Recreational Game - 1**  
**Tip the Ball and Stop**

**Objectives**

- To enhance the feet-eyes coordination.
- To enhance the agility of knees and ankle joints.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Small size Football
- Gymnasium Hall or Playground



**Instructions**

- In this exercise, the student has to do ten reps of stopping the ball on the ground with both feet.
- During this exercise the no. of stops made are to be counted.

**How to do**

The student will tip the ball and stop it on ground before it comes up. This exercise is to be done with both the feet. The student is supposed to stop the ball with alternative foot every time.

**Outcomes/Effects**

- This exercise will enhance student's control over the ball.
- This exercise will put the knee and ankle joints in motion and improve their agility.
- It will lead to the improvement in feet and eyes coordination.

**Recreational Game**  
**Freeze Dance**

**Requirements**

- Music Player

- Whistle
- Stopwatch
- Playground

### **How to do**

If students are in a mood to enjoy a beautiful cold day, they can play the game of freeze dance. This game can help them to put forth great efforts into a task as well as to utilize their energy. In order to play this game, play the music and invite all the students for dancing. After sometime stop the music and tell the students that they have to freeze when the music will be paused. If any students is caught dancing when the music is stopped, he/she will be sent out of the game. In the end, one student who is left standing will be the winner of the game.



**Class – III**  
**Physical Activity and Recreational Game - 2**  
**Nose Ear Hold**

**Objectives**

- To make the students more focused.
- To boost their eye-hand coordination.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Gymnasium Hall or Playground

**Instructions**

- Make a linear line of 10 students facing the instructor.
- A maximum time of 5 seconds should be given to complete one set of this activity.
- Initially, the exercise is to be done with open eyes.
- Once the momentum is set, the eyes of the student are to be closed while doing the activity.

**How to do**

In this exercise the doer has to hold his/her nose with right hand and right ear with left hand. This exercise is to be repeated by holding his/her nose with left hand and left ear with right hand.

**Outcomes/Effects**

- This will help increasing the coordination between eyes and hands.
- This activity will also enhance the concentration and focus of the student.
- Most importantly, this activity will help in decreasing the reaction time and increase the reaction ability of the student.

**Recreational Game**  
**Bring Your Board Game Day**

**Requirements**

- White Board
- Marker
- Whistle
- Stopwatch
- Gymnasium Hall

**How to do**

In order to have fun, invite the children with their favourite board game. When the children bring their games, place them in the classroom for others to have a look at that. After that permit children to cast votes to choose a game of their interest.

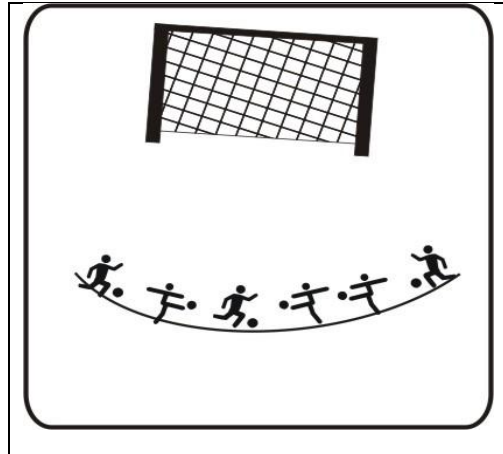
**Class – III**  
**Physical Activity and Recreational Game - 3**  
**Ball Kicking**

**Objectives**

- To improve the running ability of the students.
- To develop the basic steps of football playing.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Six Cones
- Six Footballs
- Goal Post
- Playground



**Instructions**

- A goal post with a height of 3 feet and width of 4 feet is to be placed on the ground.
- Six cones should be placed in front of the goal post in arc shape with equal distance among them.
- The distance between the cones and the goal post should be 10 meters from all the angles.
- Finally, six footballs are to be placed on the cones.

**How to do**

The balls are to be put in the goal post at the whistle of the instructor. The student has to start with the right hand side of the cycle and proceed from right to left, hitting the ball with the left foot. After this, the student has to start from the left hand side of the cycle and proceed from left to right, hitting the ball with the right foot. Two sets of this activity from both the sides should be done.

### **Outcomes/Effects**

- This activity will be helpful in increasing the force of ankle and foot in the student.
- This will also enhance the running ability of the student.
- This activity will train the student in the basic steps of football playing.

## **Recreational Game**

### **Musical Chair**

#### **Requirements**

- Chairs
- Music Player
- Whistle
- Stopwatch
- Playground

#### **How to do**

It is very interesting game to play with music and chairs. Put some chairs in the classroom. After playing the music, students have to walk around the chairs. However, when the music is stopped, students have to sit on chairs. The persons who do not occupy a seat for him/her when the music is stopped, he/she have to go out of the game. Last person sitting on the chair will be the winner.

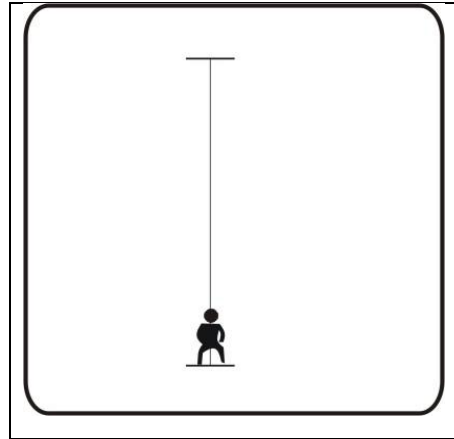
**Class – III**  
**Physical Activity and Recreational Game - 4**  
**Five Cone Jump**

**Objectives**

- To make the trunk and backbone more flexible.
- To strengthen the calf and thigh muscles of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Five Cones
- Playground



**Instructions**

- Five cones should be placed at an equal distance of four meters each, covering a total area of 20 meters.
- Ten students should be made to stand in a linear line.
- Students will be instructed to jump one by one on all the five cones.
- Timings of the jumping of each student should be noted by the instructor.

**How to do**

The first student in the line will be asked to start from the starting point and to jump over all the cones with both the feet at the same time. The remaining students have to follow the suit.

**Outcomes/Effects**

- This exercise will bring the calf and thigh muscles into moment.
- This exercise will enhance the jumping ability of the students and can pave the way for jumping as a game in future.
- This activity will bring the flexibility in trunk and backbone.

## **Recreational Game**

### **Mum is the Word**

#### **Requirements**

- Softball
- Desks
- Whistle
- Stopwatch
- Classroom or Gymnasium Hall

#### **How to do**

This game is very interesting. It can be played without making any noise. Tell all the students to sit on their benches. One child should be given a soft ball who throws it towards other students who are expected to catch the ball if they miss the catch, and then they have to stand up and throw the ball towards other students. The condition is that if the child does not throw the ball opportunity, he is considered out. The last student who is caught sitting has been declared as the winner.

**Class – III**  
**Physical Activity and Recreational Game - 5**  
**Netting the Ball**

**Objectives**

- To fortify the biceps and triceps.
- To improve the decision making ability of the students.

**Requirements**

- Instructor
- Whistle
- Landing Net Special Racquet
- 10 Light Weight Balls



**Instructions**

- Both the instructor and the student will be involved. There will be a distance of 8-10 meters between the instructor and the student.
- The student will put the ball in the net five times with the left hand and five times with right hand.
- The balls netted by the student will be counted by the instructor.

**How to do**

The instructor will throw the ball towards the student. The student is supposed to net the ball in each throw. Two sets of five throws with both hands will be practiced.

**Outcomes/Effects**

- This activity escalates the concentrating ability of the student.
- It also increases the decision taking skills.
- Moreover, this game will help in growing the eye- hand coordination.
- Significantly, this exercise will strengthen the bicep and triceps muscles.

## **Recreational Game**

### **Charades**

#### **Requirements**

- Papers
- Pencil
- Bowl
- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

It is an interesting game. In this game, children are told to imagine something like an animal, bird, machine, aircraft etc. and they are told to write it down on a piece of paper and put it aside after folding it. Every student is asked to do the same. Then, all the slips are placed into a bowl. After that every student from both teams comes to choose a paper and then try to tell his team what is written on that paper by acting out. The team with the highest points wins the game.



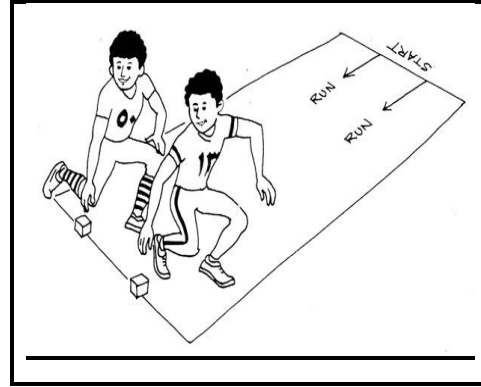
**Class – III**  
**Physical Activity and Recreational Game- 6**  
**Ball Shuttle**

**Objectives**

- To improve the agility of the students.
- To boost the stamina of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Small Rubber Balls
- Playground or Gymnasium Hall



**Instructions**

- This is a group activity.
- Students divide into two groups and asks them to be at the opposite sides of the activity area.
- Separate the two by marking the line 10-15 meters apart between them.
- Fill the activity area with the several balls placed in between the two groups.

**How to do**

- Make the students run with speed from the starting point to the middle.
- Now the students have to pick one ball at a time from the middle and have to return to their starting line and place ball there (one can place it there by passing or throwing also). Students have to repeat the same until all the balls have been shifted.
- When all the balls have gone from the middle, now the students have to run from their starting line to the opposite side and recover the balls one at time from there and bring it back to their starting line and place it there.
- Students have to continue this particular task for 3-5 minutes.
- Add the challenge by asking the students to move constantly for entire time.

**Outcomes/Effects**

- This activity will increase the agility of the students.

- This activity will enhance the reaction speed of the students.
- It can also improve the stamina of the students.

## **Recreational Game**

### **Hoopers**

#### **Requirements**

- Hoops
- Whistle
- Stopwatch
- Playground

#### **How to do**

This game is play in the playground. First of all, bring hoops and place those hoops on the ground. Number of hoops and number of players should be equal. Then players should be given a command “Run”. Players have to run around the hoops without touching then on the next command “Hooper’s”, all players have to jump inside the nearest hoop while running around the hoops their actions must be different like gallop, turn, jump and skip.

**Class - III**  
**Physical Activity and Recreational Game - 7**  
**Body Movement**

**Objectives**

- To strengthen the muscles of the students.
- To develop the gymnastic ability of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Drum
- Playground

**Instructions**

- This is a group activity.
- First of all arrange the student in a formation such that there is enough space between the students.
- Teach each step of the rhythmic routine individually till they are able to identify each step.

**How to do**

- Walk on the spot: March to a beat.
- Stretch and Clap overhead: Stand with feet comfortably apart. To a beat stretch your arms out sideways and above the head to clap.
- Hop on spot: Perform hopping on the right foot two times, change feet and start hopping on the left foot two times.
- Turn on spot: Turnaround from your right side. Turnaround from the left side.
- Skip and Clap: Skip front and clap once.

Now combine the above in a rhythmic fashion. Repeat a couple of times. Use the Locobeats track from the music CD if you have the music player or use drums.

- Walk on the spot: 8 counts
- Rag Doll: 8 counts

- Stretch and Clap overhead: 8 counts
- Hop on spot: 8 counts
- Turn on spot: 8 counts
- Skip and clap: 8 counts

Arrange the children in a scatter formation. Teach each step of the rhythmic routine individually till they are able to identify each step. Combine the steps and have the children perform them to music as indicated.

- Jump and Rotate: With feet together, jump in place; stretch both hands to the sides. Rotate both hands clockwise in full circles. Do the same anti clockwise.
- Run Forward and Backward: Run forward eight steps and then backward eight steps.
- In-and-Out jump: Jump up moving the feet apart and then jump up with feet together.
- Ballet dancer: Stretch your arms above your head without bending your elbows. Stretch your fingers. Stand on your tips toes and turn around.

Now combine the above in a rhythmic fashion. Repeat a couple of times. Use the Locobeats track from the music CD if you have the music player or use drums.

- Jump and Rotate : 8 counts
- Run Forward and Backward: 8 counts
- In-and-Out Jump: 8 counts
- Ballet Dancer: 8 counts

### **Outcomes/Effects**

- This activity will increase the flexibility and muscles strength.
- It will develop the gymnastic abilities of the students.

## **Recreational Game**

### **Cat and Mouse**

#### **Requirements**

- Nerf Balls
- Whistle
- Stopwatch

- Playground

**How to do**

In order to play this game, bring two balls. One ball must be of small size and second one must be larger one. Tell the players to sit in a circle. Start telling their an interesting story about a cat who always runs after a mouse, who is very active and fast. Tell them to handover the balls from one player to the other as fast they can. The small ball should be considered as the mouse so firstly must be passed from student to student where as large ball should be considered as the cat and must be passed from student to student after passing the small ball.

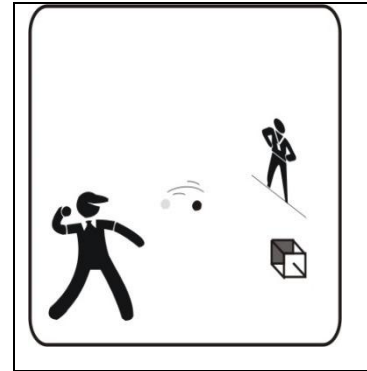
**Class - III**  
**Physical Activity and Recreational Game - 8**  
**Ball Throw**

**Objectives**

- To improve the arm-eye coordination of the students.
- To enhance the throwing ability of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Balls
- Box/Basket



**Instructions**

- A box is placed at the distance of 10 meters from the starting line.
- Pupils are lined up.
- A single student is provided with ten balls and he/she has to throw the balls in the box.
- The number of the successful throws and the time taken should be noted down.

**How to do**

In this activity all the students are asked to throw the ball in the box at the whistle of the instructor. Each student will be given ten balls to throw. When students start doing this activity easily the distance of the box from the starting line can be increased and the size can be decreased accordingly.

**Outcomes/Effects**

- This activity will improve the throwing ability of the students.
- The shoulder joints are in movement in this activity so it will strengthen them.
- It will enhance the coordination between arms and eyes.

## **Recreational Game**

### **The Blob**

#### **Requirements**

- Lime powder
- Whistle
- Stopwatch
- Playground

#### **How to do**

Create boundaries with lime powder. One student considers himself the Blob and run after the other children to catch them. The caught children help the blob to catch other children by holding hands. Thus, the size of blob increases after every catch. The condition is that only the outsider free hands are allowed to tag other players. Sometimes the blob is divided into smaller blobs which consist of at least two players. The game ends when all the students are caught.

### Class - III

## Physical Activity and Recreational Game - 9

### Rotating the Arm Opposite Direction

#### Objectives

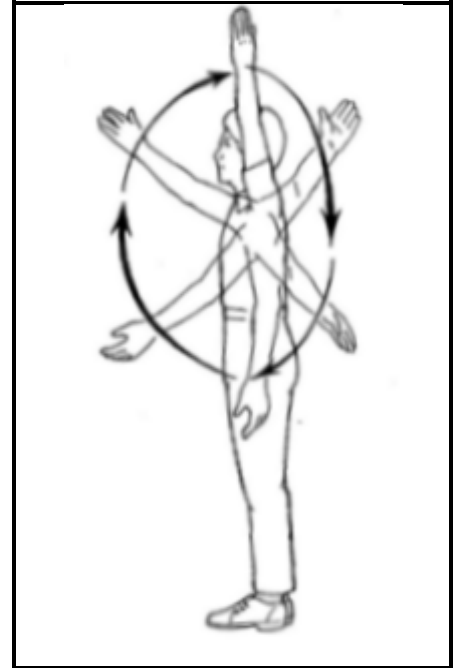
- To make the students more focused.
- To make the student strong mentally and physically.
- To enthuse the students to do multi-tasks.

#### Requirements

- Instructor
- Whistle
- Stopwatch
- Gymnasium Hall or Playground

#### Instructions

- This is a group activity.
- The students should be lined up in two groups having equal number of students.
- Both the groups will stand facing each other at a distance of at least 2 meter.



#### How to do

After the instructor will blow the whistle the students will start rotating both the arms at the time. But this activity is unique in the sense that each student is supposed to rotate both his/her arms in opposite directions. If one arm is rotated clockwise the other one would follow the anti-clock wise pattern. All the students will do this activity in similar way at one time. Two sets of 20 seconds each are to be done.

#### Outcomes/Effects

- This exercise will help the students to increase the concentration and focus over a given look.
- This kind of activity makes the student multi-tasking at the same time.
- It also sharpens the mind of the child for it is as much a mental activity as it is a physical one.



**Recreational Game**  
**Lemon & Spoon – Race**

**Requirements**

- Lemons
- Small Spoons
- Whistle
- Stopwatch
- Playground

**Warning for participants**

- Once the race starts participants are not allowed to touch the spoon if they do so then they are out of game.
- If a lemon falls from the spoon then that participant is also out of the game.
- Whoever crosses the distance first, with spoon in mouth and lemon in it, is the winner.

**How to do**

- Mark distance approximate of 15 to 20 feet.
- Ask participants to stand up on one end of marked distance.
- Give each participant 1 spoon and 1 lemon.
- Participants have to hold spoon in their mouth and place lemon in that spoon.
- Participants have to cover marked distance by walking or running.

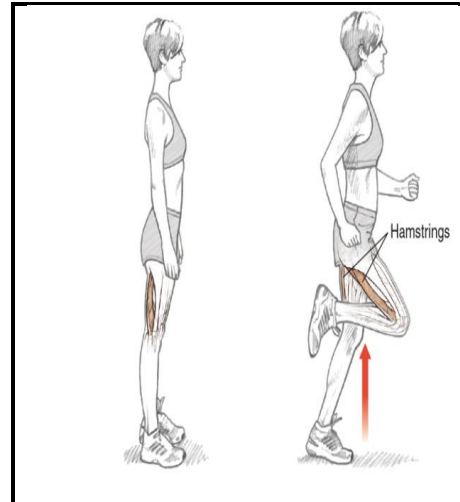
**Class - III**  
**Physical Activity and Recreational Game -10**  
**On the Spot Running**

**Objectives**

- To strengthen all the muscles of the body.
- To improve the endurance ability of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Playground



**Instructions**

- This is a ground activity.
- All the students will stand in a line.

**How to do**

In this activity, the students will do a simple task of running when the instructor blows the whistle. The uniqueness of the activity lies in the fact that they are not supposed to leave the place while running. They will keep running by standing on the same place. This activity will be done for one minute in one go. Thereafter, a rest of 30 seconds will be given. One more round of this will be repeated.

**Outcomes/Effects**

- This kind of exercise develops the overall muscles of the body.
- It also helps in increasing patience in the students.

**Recreational Game**  
**Catching the Dragon's Tail**

**Requirements**

- Whistle
- Stopwatch
- Playground

**How to do**

Tell the students to stand in line ten to eleven students can participate in this game. Tell the students to place their hands on the shoulders of the students who stand before them. The first student of the line should be considered as the “head” of the dragon whereas last student should be considered as “tail”. The first student tries to catch the last student while moving carefully around the line. After being caught, the last player becomes the new “head” and old “head” takes the second position in the line.

**Class - III**  
**Physical Activity and Recreational Game - 11**  
**Balloon Balance**

**Objectives**

- To enhance the grip of the players.
- To make the wrists more flexible.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Balloon
- Racquet
- Gymnasium Hall

**Instructions**

- In this activity students have to balance a balloon on a racquet for twenty seconds.
- At first both the arms are employed consecutively.
- With perfection both hands should be employed simultaneously in this activity.
- The duration of the stay of balloon must be recorded.

**How to do**

The doer will be provided with a racquet and a balloon and asked to hold the balloon on the racquet at a stretch for twenty seconds. The time of the stay is to be noted down when the balloon is placed on the racquet. With the passage of time and perfection both the hands can be employed simultaneously. At later stages, there will be no time limit.

**Outcomes/Effects**

- This activity will improve the grip of the doers.
- The biceps and triceps muscles are in tension while doing this exercise.
- It will be helpful in providing flexibility in wrists.

## **Recreational Game**

### **Blanket Pull**

#### **Requirements**

- Blanket
- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

In order to play this game, children need a sturdy blanket. The blanket can be used as a slide as well as a cradle. While using it as a slide, one or two students sit in it while other students hold the edges of the blanket in their hands and walk. On the other hand, while using it as a cradle, it is brought forward and backward like a swing by the children after placing a toy inside it.

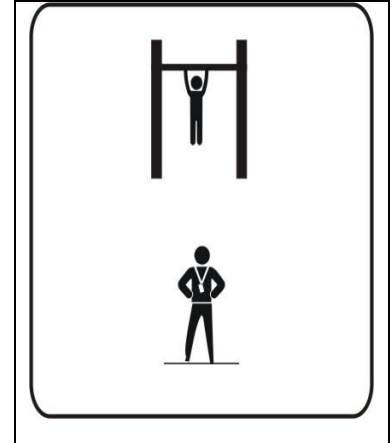
**Class - III**  
**Physical Activity and Recreational Game - 12**  
**Climbing**

**Objectives**

- To raise the height of students.
- To enhance the strength of arms of students.

**Requirements**

- Instructor
- Whistle
- Stop watch
- Horizontal bar
- High jump Mattress
- Gymnasium Hall



**Instructions**

- This activity is to be done under extreme care.
- There will be high jump mats on the ground so that even if the child loses grip over the bar and falls down, he/she should not be hurt physically.

**How to do**

The instructor is supposed to pick the child in the air and tell him/her to hold the horizontal bar with the both hands. Initially, the child will be made to hang on the bar for eight seconds at least. As a precaution the instructor has to hold the doers from their waist. This exercise will be repeated twice. At later stages the time of holding the bar will be increased according to individual capability of the students.

**Outcomes/Effects**

- This activity is immensely helpful in increasing the height of the students.
- It will have a positive impact on the strength of the arms of the doers.

**Recreational Game**  
**Huckle Buckle Beanstalk**

**Requirements**

- Small Object

- Whistle
- Stopwatch

### **How to do**

In this game, first of all a thing is chosen to be hidden. There must be enough space for players to gather quickly. Then one child is selected who conceals the thing and all the other students are supposed not to look at it. After that, all the other students try to search the hidden thing. When a child finds it, he runs back towards home base while saying “Huckle Buckle beanstalk!”. He continues until all the students find it.

## Class – IV

### Physical Activity and Recreational Game - 1

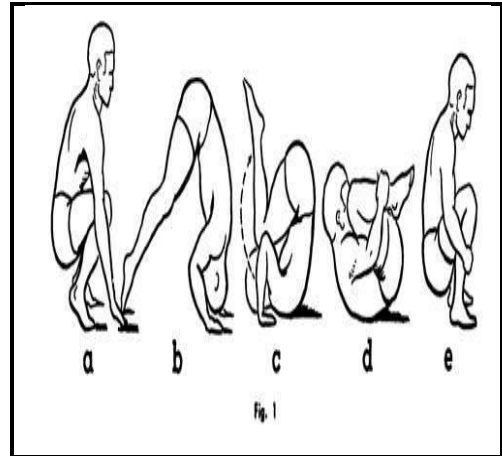
#### Forward Roll

##### Objectives

- To bring flexibility and elasticity in Students' muscles.
- To enrich the coordination ability of the students.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Gymnastic Mats (10)
- Gymnasium Hall



##### Instructions

- The instructor will make sure that the students should not fall on the ground.
- The mats should be placed next to each other so that they make complete bedding for the student.
- The number of rolls performed by a student will be counted by the instructor.

##### How to do

The instructor will demonstrate the activity in front of the students. Thereafter, he/ she will ask the students to perform the task one by one. Five forward rolls are expected to be done in one go. Two sets of this exercise are to be repeated. Once the student becomes perfect in doing the forward rolls, he/she will be instructed to do this for the maximum times.

##### Outcomes/Effects

- This activity will bring out the gymnastic abilities of the student.
- It will also bring elasticity and flexibility in the muscles of the student.
- This will also help increase the coordination ability of the student.



## **Recreational Game**

### **Pebble Chase**

#### **Requirements**

- Pebble
- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, students are told to stand in a line in front of a safe area at some distance. One student is made the leader who holds a pebble in his hand and walk in front of that line while pretending to throw it into the outstretched hands of the students. When the leader really drops the pebble into somebody's hand becomes the receiver is caught by another student on his way to safe area, the new student becomes the leader this time. If the receiver reaches safely then he becomes the new leader.

**Class - IV**  
**Physical Activity and Recreational Game - 2**  
**Zigzag Running**

**Objectives**

- To make the students physically active.
- To improve the endurance strength of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Marking Area
- Playground



**Instructions**

- The student will cover a running area of 50 meters.
- The time that the student takes for completing the task will be noted by the instructor.
- The distance between the zigzag points will be 5 meters each.

**How to do**

This exercise will be performed by one student at a time. The student will start running from the starting point in a zigzag manner after the blowing of the whistle. He/she will run from point to point till he reaches the ending point. This set will be repeated after a rest of one minute.

**Outcomes/Effects**

- This activity will improve the endurance strength of the student.
- This kind of exercise makes the student agile and active.
- Most importantly, this exercise will boost the running ability of the student and will strengthen all the muscles of the body.

## **Recreational Game**

### **Cross the Stream**

#### **Requirements**

- Chalk
- Measurement Tape
- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, a stream is drawn by making use of a chalk. The width of the stream is not more than 4 feet. Some spots are marked for children to show their capacity to jump as long as they can. Players can say funny words while jumping such as, 'Geronimo'.

## Class - IV

### Physical Activity and Recreational Game - 3

#### Passing the Basketball

##### Objectives

- To develop all the muscles of the students
- To make the students cooperative and disciplined.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Basketball
- Basketball Court



##### Instructions

- Instructor explains the methods of throwing and catching to the students (Chest pass by slightly bending down and pushing the ball with straight arms).
- A student will be given a time of 10 seconds to pass the ball to the next student.
- The timing of the student will be noted by the instructor.

##### How to do

Groups of two students each will be made by the instructor. There will be 5 groups in the Basketball Court at a time. The distance between the two students may be kept according to their physical capacity. One student out of each group will be asked to pass the ball to his partner and vice versa. Initially, they will do the activity for one minute, then open time will be given to them.

##### Outcomes/Effects

- The overall muscles of the body will be developed with this activity.
- Most importantly, this activity brings team spirit among the students. They learn to cooperate with each other.

## **Recreational Game**

### **Death Leaps**

#### **Requirements**

- Hoops
- Chalk
- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, a few hoops are placed in an uneven pattern. If students are inside the hoop, they are safe. If a child touches outside then they will die (out). It is a challenge to go towards the different side. Chalk can be used to draw a safe area. They should be allowed to draw the safe spots.

## Class – IV

### Physical Activity and Recreational Game - 4

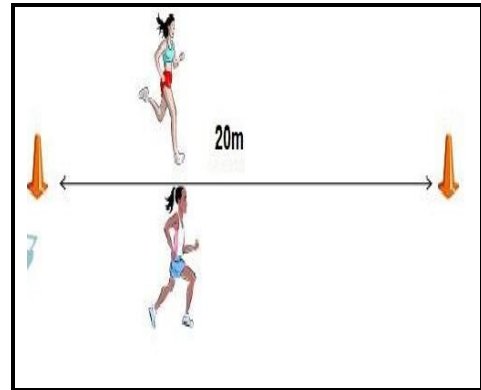
#### Shuttle Run

##### Objectives

- To improve the Stamina of the students
- To enhance the endurance capacity of the students.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Cones (4)
- Playground



##### Instructions

- Four cones will be installed at the distance of 20 meters from the student.
- Time taken to finish the activity of the individual student is to be recorded by the instructor.
- The distance of the cones can be increased when students start doing this exercise easily.

##### How to do

During this exercise the student will be asked to run to the first cone and pick it up, and then run back to the starting point. This action will be repeated with all the cones. The time taken by the student in bringing all the four cones to the starting point will be noted by the instructor.

##### Outcomes/Effects

- This will increase the running and endurance capacity of the student.
- Overall, this activity will raise the strength levels of the body of the child and improves their stamina.
- It is a holistic game as all the body parts are in movement.

## **Recreational Game**

### **Cat and Mouse**

#### **Requirements**

- Nerf Balls
- Whistle
- Stopwatch
- Playground

#### **How to do**

In order to play this game, bring two balls. One ball must be of small size and second one must be larger one. Tell the players to sit in a circle. Start telling their an interesting story about a cat who always runs after a mouse, who is very active and fast. Tell them to handover the balls from one player to the other as fast they can. The small ball should be considered as the mouse so firstly must be passed from student to student where as large ball should be considered as the cat and must be passed from student to student after passing the small ball.

**Class – IV**  
**Physical Activity and Recreational Game - 5**  
**Pick the Bag**

**Objectives**

- To fortify the thighs and calf muscles of students.
- To improve the flexibility of the students' body.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Empty Carry Bags
- Gymnasium Hall

**Instructions**

- This is a group activity.
- The student should be lined up.
- The instructor will stand facing the line.

**How to do**

In this activity the number of bag placed in front of the students should be a manner that each student has one carry bag for him/her self. The instructor will command the students to pick their respective bags with their teeth by standing on their right leg first and with the left leg afterwards when he/she blows the whistle. This exercise will be done ten times using the left leg and ten times using the right leg. Two consecutive sets of this exercise will be done.

**Outcomes/Effects**

- This activity will increase the flexibility of the body.
- This will strengthen the spinal cord of the student.
- This exercise will help in the development of thigh and calf muscle of the child.



## **Recreational Game**

### **Elbow Tag**

#### **Requirements**

- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, there are groups of two players who are united by holding arm in arm at the elbows. They are safe until there are two members in one group. If the third student comes to join the group then one of students need to find a new pattern before being tagged.

## Class – IV

### Physical Activity and Recreational Game - 6

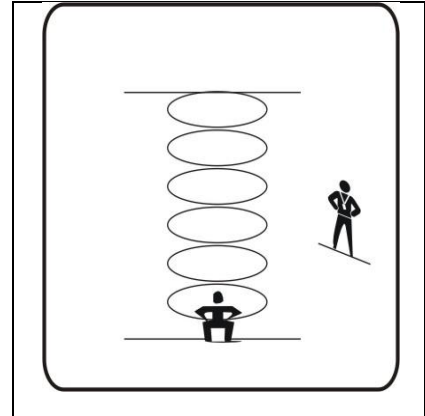
#### Jumping in Hoops

##### Objectives

- To strengthen the trunk.
- To enrich the jump ability of students.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Hoops (Five)
- Gymnasium Hall



##### Instructions

- This activity is to be performed by one student at a time under the supervision of the instructor.
- Five hoops will be placed on the ground.
- While jumping, both the hands of the child should be placed on his/her trunk.
- Time taken by a student to complete the whole set will be noted by the instructor.

##### How to do

In this activity the student will start from the starting point and jump into the first hoop. There he will jump three times and then jump into the next hoop. There he will again jump thrice and move into the next hoop. In this way, the child will complete a set of four hoops from the starting point to ending point and back from the ending point to the starting point. Only one set of this activity should be done.

##### Outcomes/Effects

- This activity will enhance the standing broad jump ability of the student.
- This will also affect the strength of the trunk in a positive way.

## **Recreational Game**

### **Paper Race**

#### **Requirements**

- Paper
- Whistle
- Stopwatch
- Playground

#### **How to do**

Distribute pieces of paper among children. Then, explain to them how to run with paper on their chests. After picking up the speed, on air pressure helps to hold these papers. It is quite easy to run in a straight line while holding the paper. So, it is a challenge to run in the circle.

## Class – IV

### Physical Activity and Recreational Game - 7

#### Catch the Ball

##### Objectives

- To enhance the flexibility of shoulder joints.
- To strengthen the arm muscles.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Ball (small light weight)
- Gymnasium Hall or Playground



##### Instructions

- The student must not make any movement from his place while standing in the position for the activity.
- 20 seconds will be given to the student.
- Student should try to maintain a distance of at least 50 centimeters between both the hands during the activity.
- The number of balls caught by the student will be counted.

##### How to do

After the whistle, the student will start the activity by keeping the ball in one hand and catching it with the other hand. The student will practise this for 20 seconds. Once the student becomes perfect in catching, he/she will be asked to do this activity for the maximum time. This timing will be noted by the instructor.

##### Outcomes/Effects

- This activity will be helpful in making the shoulder joints flexible.
- It will also increase the capacity of the arm muscles of the student.
- This exercise enhances the eye hand coordination as well as the concentration level of the child.

**Recreational Game**  
**A Wolf in Sheep's Clothing**

**Requirements**

- Whistle
- Stopwatch
- Classroom

**How to do**

In this game, children are told to sit on their benches with their heads down and eyes closed. The teacher touches the head of a student who is now a wolf. Now, inform all the students to choose names for them for instance: a dog, cat, chicken and warn them not to disclose their names to other students. After that, the teacher announces the name of an animal whoever is that animal is expected to change his seat in 5 seconds. After the 5 seconds, if that student does not change his seat is out of the game (except the wolf). An interesting thing is that the wolf has to change his seat every time and it is challenge for other students to guess who the wolf is.

## Class – IV

### Physical Activity and Recreational Game - 8

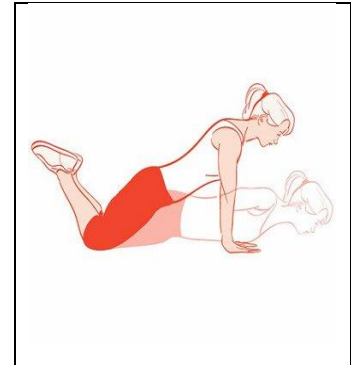
#### Bent-Knee Push-Ups

##### Objectives

- To bring flexibility and elasticity in Students' muscles.
- To improve the wrestling ability of students.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Playground or Gymnasium Hall



##### Instructions

- The number of push-ups performed by a student will be counted by the instructor.

##### How to do

This activity should be performed before the students by the instructor. After that, the instructor should invite the students to perform the task one by one. To rest down on the hands as well as knees with hands somewhat wider in comparison to the shoulders and knees allied with hips. Maintaining the abs stiff, breathe in and curve elbows to 90 degrees. Breathe out, push-ups and set straight the arms.

Students have to do the five push-ups in one go. Tell the students to repeat the two sets of this exercise. After the students become perfect in doing the push-ups, they will be instructed to do this for the maximum times.

##### Outcomes/Effects

- This activity will bring out the wrestling abilities of the student.
- It will also bring elasticity and flexibility in the muscles of the student.

**Recreational Game**  
**Ghost in the Graveyard**

**Requirements**

- Whistle
- Stopwatch

**How to do**

Ask a student to play the role of a ghost tell all the other students to lie down on the floor acting as if they are lying in graves. After counting 1 to 20, the ghost comes near to the graves. At that time, every student begins to find out where the ghost is. The first finder scream while saying, “Ghost in the graveyard” and it is a signal for all to go back to their groves if any student is caught before going back to his grove, have to become the next ghost.

## Class – IV

### Physical Activity and Recreational Game - 9

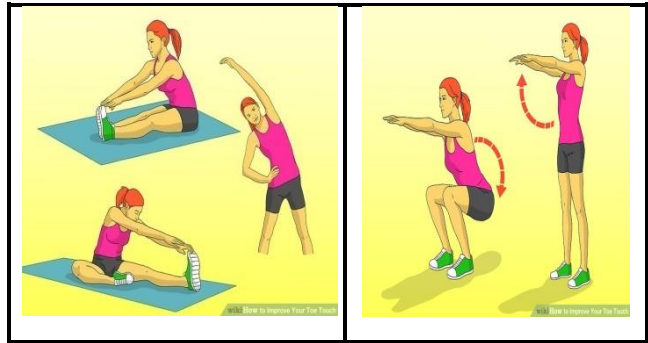
#### Head to Toe Stretch Exercise

##### Objectives

- To boost the leg strength.
- To strengthen the stomach muscles.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Playground or Gymnasium Hall



##### Instructions

- The students should be lined up.
- The maximum number of ups and downs done by the students at a later stage will be counted by the instructor.

##### How to do

1. **Neck:** Students have to rotate their neck while touching the shoulder with left ear than with the right ear and then lowering the chin to the chest and look forward.
2. **Shoulders:** Join the hands behind the back and pull in the backward direction.
3. **Trunk:** Stretches the body gradually to each one side, onward as well as rearward.
4. **Knees:** After lying downward on one side and holding the ankle and slightly pulling the foot towards the seat
5. **Hamstrings:** It is a stretching to makes the muscles situated at back of the thigh strong. It is done by leaning into the forward direction by resting the both palms on the knee. Keep your shoulders down and relaxed.
6. **Ankles as well as calves:** Shift and face towards the wall and set hands on the wall over the shoulders. One leg is kept onward and the other at rear side with feet pointed to the wall. Elongate the rear leg.



This activity should be repeated five times in the beginning. Do two sets of five rounds each. After becoming trained, they will be asked to do it for the maximum times they can do.

### **Outcomes/Effects**

- This activity is immensely helpful in increasing the leg strength of the student.
- This exercise will develop the trunk joints of the student.
- It is also useful in building up the stomach muscles of the student.
- This activity will be helpful in the body movement of the student.

## **Recreational Game**

### **Sack Race**

#### **Requirements**

- Burlap Sack
- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, all the players need burlap sacks. First of all the players put their both feet in the burlap sacks and starts to hop towards the finish line. They have to hold the sack throughout the race with both hands or at least with one hand. Apart from it, students are not allowed to let the sack fall below and knees the students who arrives first at the finishing point, becomes the winner.

**Class – IV**  
**Physical Activity and Recreational Game - 10**  
**Crab Walk**

**Objectives**

- To fortify the arm and leg muscles.
- To improve the coordination of students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Playground



**Instructions**

- In this activity, the whole class of students will be involved.
- Maintain the safe distance between the students.

**How to do**

- The students how a crab walks.
  - Bend your knees; lift your upper body by placing your hands behind you.
  - Now move backwards on all fours.
- Ask the student to practice the crab walk.
- Make a start and finish line, 10 feet apart. All the students make a row at the start line.
- Give them breaks since the might not be used to doing such vigorous activities.
- Repeat this activity by placing bean bags on the student's tummy.
- The student has to shake off the bean bag before reaching the end line.

**Outcomes/Effects**

- This exercise helps make your arms and legs muscles stronger.
- This exercise will develop the coordination of the student.

## **Recreational Game**

### **Assembly Line**

#### **Requirements**

- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, a child is selected who comes up in front of the class and begin to make a movement repeatedly. After observing the movement of this child, other children are asked to come forward and to add some more repetitive movements. The instructor should go on calling rest of students until they have a big assembly line.

## Class – IV

### Physical Activity and Recreational Game - 11

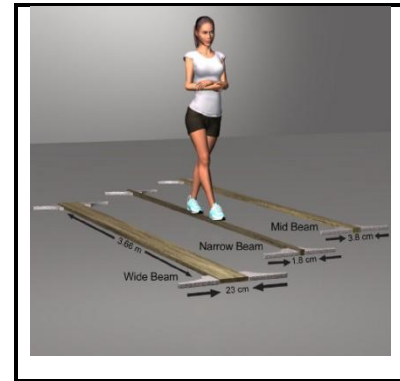
#### Walking on the Balancing Beam

##### Objectives

- To fortify the thighs and calf muscles of students.
- To make better the balancing capacity of students.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Playground or Gymnasium Hall



##### Instructions

- The student will be asked to walk on balance beam.
- The student should keep his/her body straight while walking on the beam.
- The hands will not be in use while doing the activity.

##### How to do

- The students should be informed to walk on the balance beam.
- According to the students' requirements, draw a line and told them to walk on it which enable them not to afraid of height.
- Five balancing station should be made with the balancing beam.
- In the starting, there is a possibility that students will expect a support but they should be inspired to walk without any support.
- Students should try to walk from one end to the other. This activity should be repeated unless the students develop a sense of balance.

##### Outcomes/Effects

- It will develop the sense of balance.
- This kind of workout increases the balancing capacity of the body of the student.
- It also develops to the thigh and calf muscles.

## **Recreational Game**

### **Sack Race**

#### **Requirements**

- Burlap Sack
- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, all the players need burlap sacks. First of all the players put their both feet in the burlap sacks and starts to hop towards the finish line. They have to hold the sack throughout the race with both hands or at least with one hand. Apart from it, students are not allowed to let the sack fall below and knees the students who arrives first at the finishing point, becomes the winner.

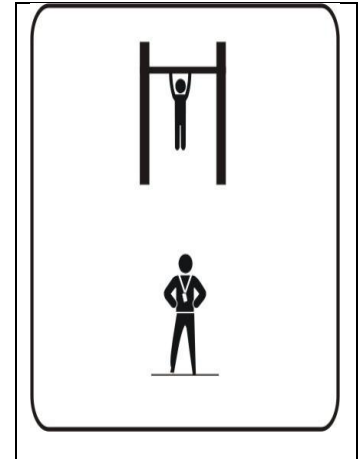
**Class – IV**  
**Physical Activity and Recreational Game - 12**  
**Hanging on the Bar**

**Objectives**

- To raise the height of the students.
- To strengthen all the muscles of body

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Horizontal Bar
- High Jump Mattress
- Gymnasium Hall



**Instructions**

- This activity is to be done under extreme care.
- There will be high jump mats on the ground so that even if the child loses grip over the bar and falls down, he/she should not be hurt physically.

**How to do**

The instructor is supposed to pick the child in the air and tell him/her to hold the horizontal bar with both the hands. Initially, the child will be made to hang on the bar for 15 seconds at least. Three sets of the exercise will be repeated. Gradually, the child will be made to hang over the bar for the maximum time he/she can hold.

**Outcomes/Effects**

- This activity is immensely helpful in increasing the height of the students.
- This will stress all the muscles of the body, especially the stomach muscles of the child.
- Most significantly, this kind of activity helps to decrease the pulse rate and heartbeat of the child which reduces the risk of heart attack at later stage of life.

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### **Recreational Game**

#### **Obstacle Course**

#### **Requirements**

- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

You need to set up a series of car tires in a row and tell the students to stand beside the one side of the row. Then, each student is asked to cross this row by jumping in the middle of tire. The student who is able to finish the task without falling in the lowest time becomes the winner.

## Class – V

### Physical Activity and Recreational Game - 1

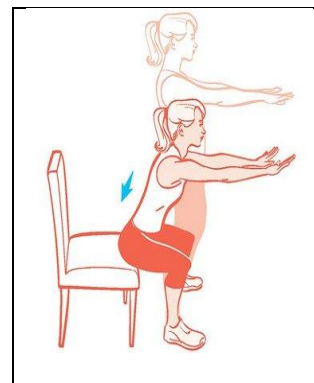
#### Chair Squats

##### Objectives

- To fortify the thigh and calf muscles of body.
- To make the muscles flexible.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Chair
- Playground or Gymnasium Hall



##### Instructions

- The number of Chair Squat performed by a student will be counted by the instructor.

##### How to do

A student will stand six inches away from chair. Foot stance will be shoulder-width apart and toes should be in forward direction. Whole body weight should be on heels. Slowly breathe in and bend from your knees till you sit on the chair lap without bending the backbone. Breathe out, extend the knees and regain the initial position.

Student should perform ten chair squat in one go. Two sets of this exercise are to be repeated. When the student feels comfortable to do the chair squat he/she will be guided to do this for the maximum times.

##### Outcomes/Effects

- This activity will bring out the power lifting abilities of the student.
- It will also bring flexibility and strength in the muscles of the student.
- The thigh muscles and calf muscles of the body will be developed with this physical activity.



**Recreational Game**  
**Lemon & Spoon – Race**

**Requirements**

- Lemons
- Small Spoons
- Whistle
- Stopwatch
- Playground

**Warning for participants**

- Once the race starts participants are not allowed to touch the spoon if they do so then they are out of game.
- If a lemon falls from the spoon then that participant is also out of the game.
- Whoever crosses the distance first, with spoon in mouth and lemon in it, is the winner.

**How to do**

- Mark distance approximate of 15 to 20 feet.
- Ask participants to stand up on one end of marked distance.
- Give each participant 1 spoon and 1 lemon.
- Participants have to hold spoon in their mouth and place lemon in that spoon.
- Participants have to cover marked distance by walking or running.

## **Class – V**

### **Physical Activity and Recreational Game - 2**

#### **Tip the Ball and Jump over It**

##### **Objectives**

- To enrich the agility of students.
- To make all the muscles stronger.

##### **Requirements**

- Instructor
- Whistle
- Stopwatch
- Basketball
- Basketball Court

##### **Instructions**

- This is an individual activity.
- The student will catch the ball with both the hands.
- One set of five rounds of this activity will be done.
- Time taken by the student in catching the ball 5 times will be noted.
- Number of success and failures will also be taken into concentration.

##### **How to do**

In this activity, the student will tip the ball on the ground on his right side and jump over it and catch the ball when it comes up in the air at the first whistle he/she will repeat the same with tipping on ball on his left side the next whistle blow by the instructor. This activity is to be done five times in one go.

##### **Outcomes/Effects**

- This will check the agility of the student and enhance it.
- Since this exercise is to be done at a very fast pace, it strengthens the respiratory system of the child and help in decreasing the pulse rate.
- This exercise is helpful in adding power to all the muscles of the body.

## **Recreational Game**

### **Freeze Dance**

#### **Requirements**

- Music Player
- Whistle
- Stopwatch
- Playground

#### **How to do**

If students are in a mood to enjoy a beautiful cold day, they can play the game of freeze dance. This game can help them to put forth great efforts into a task as well as to utilize their energy. In order to play this game, play the music and invite all the students for dancing. After sometime stop the music and tell the students that they have to freeze when the music will be paused. If any students is caught dancing when the music is stopped, he/she will be sent out of the game. In the end, one student who is left standing will be the winner of the game.

## Class – V

### Physical Activity and Recreational Game - 3

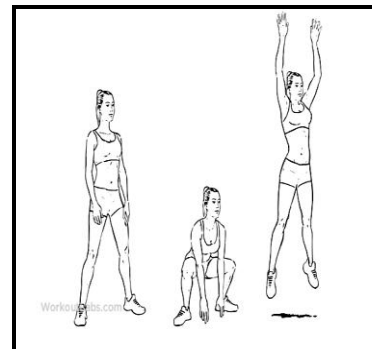
#### Frog Jump

##### Objectives

- To improve the athletic capability of the students.
- To decrease the extra fat of the body.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Staircase (With a wall on one side)



##### Instructions

- This is an individual activity.
- The child can take touch the wall if. He/she feels tired while jumping.

##### How to do

In this activity, the student will start from the first step of the staircase and jump forward in an upward manner after the instructor blows the whistle. The child will at least jump on 10 stairs in one go. After a rest of one minute, one more set of jumping on stairs is to be repeated.

##### Outcomes/Effects

- This exercise cleans the lungs of the students and helps the child to take deep breath the oxygen required.
- This activity burns the overall extra fat of the body.
- This also enhances the athletic abilities of the students.

## Recreational Game

### Musical Chair

##### Requirements

- Chairs
- Music Player

- Whistle
- Stopwatch
- Playground

### **How to do**

It is very interesting game to play with music and chairs. Put some chairs in the classroom. After playing the music, students have to walk around the chairs. However, when the music is stopped, students have to sit on chairs. The persons who do not occupy a seat for him/her when the music is stopped, he/she have to go out of the game. Last person sitting on the chair will be the winner.

## Class – V

### Physical Activity and Recreational Game - 4

#### Skipping

##### Objectives

- To burn the extra body fat.
- To make the heart strong.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Skipping rope
- Playground or Gymnasium Hall



##### Instructions

- This is an Individual activity.
- Warn the students to be careful while moving and take care of the distance between each other.
- Starting duration of this activity according to the capacity of students.

##### How to do

Students have to complete the skipping session in the thirty seconds with the high intensity.

- a) Skipping with jumping on two feet together
  - b) Skipping with the alternate foot forward
  - c) Skipping only with left foot
  - d) Skipping only with right foot.
- After the students have completed the task according to instructor allow them to practice themselves by their own.
  - Then ask the students to do skipping with their own creative ideas.

##### Outcomes/Effects

- This activity is important in of keeping their hearts strong and healthy.
- It will also reduce the fat of the body.

## **Recreational Game**

### **Hoopers**

#### **Requirements**

- Hoops
- Whistle
- Stopwatch
- Playground

#### **How to do**

This game is played in the playground. First of all, bring hoops and place those hoops on the ground. Number of hoops and number of players should be equal. Then players should be given a command “Run”. Players have to run around the hoops without touching them. On the next command “Hooper’s”, all players have to jump inside the nearest hoop while running around the hoops their actions must be different like gallop, turn, jump and skip.

**Class - V**

**Physical Activity and Recreational Game - 5**

**Four Square Jumping**

**Objectives**

- For strengthening of the calf muscles.
- To improve flexibility of whole body.

<b>One</b>	<b>Two</b>
<b>Four</b>	<b>Three</b>

**Requirements**

- Teacher/Instructor
- Whistle
- Watch/Stopwatch
- Skipping Rope/Masking Tape
- Indoor hall / Gymnasium Hall

**Instructions**

- Activity has to be performed in the group.
- The students are tutored to exercise in pairs to constitute a four square pattern on the floor by utilizing the skipping ropes, to illustrate lines on the ground for which masking tape is used.

**How to do**

Demonstration has to be given to the students before making them practice, jumping patterns will be performed as explained below:

- Continuous jumping with both the legs.
- Side jumping from one side to another.
- Up and back (square with four to square with one and vice versa) same will be repeated five times by joining the feet together.
- Jumping with single foot followed by jumping upside and back (from square four to square one and vice versa) 5 jumps with each leg.
- Jump on one side to another on one foot (four to thrice) this exercise have to be repeated 5 times on single leg.
- 4 square (one–three–two–four) 5 times, legs together.



The children's might require using a wall for assistance and stability. Presentation/demonstration with some instructional posters with clear graphics will be helpful in increasing understanding level of students.

- The first partner should endeavor to exercise fully the jumping jacks in the proper sequence, performing numerous jumps potential. After which the other partner will take a take a turn. Students should be encouraged for rapid jumps for every pattern and oral instruction/assistance can also be given to one another.
- After completion of the task, challenge/encourage the students to generate their individual model of jumps.

### **Outcomes/Effects**

- As in this exercise the active player has to change directions instantly, which will enhance flexibility in the body.
- This exercise will be helpful in all-round development of the body.
- There will be development in the calf muscles.

## **Recreational Game**

### **Elbow Tag**

#### **Requirements**

- Whistle
- Stopwatch
- Playground

#### **How to do**

In this game, there are groups of two players who are united by holding arm in arm at the elbows. All the students are safe until there are two members in single group. If third student comes to join the group then one of students need to find a new pattern before being joined/tagged.

## Class – V

### Physical Activity and Recreational Game - 6

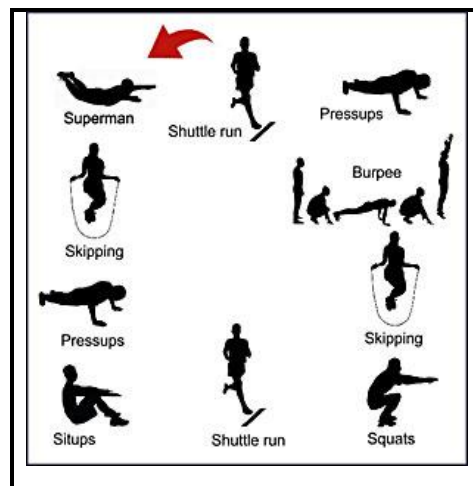
#### Circuit Training

##### Objectives

- To enhance / increase the endurance of the body.
- To tone entire muscular system of the body.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Floor Mat / Grassy field
- Playground or Gymnasium Hall



##### Instructions

- This is a group activity.
- In this activity, the whole class of students will be involved.

##### How to do

Location must be positioned in the region of the activity area as well as students have to voyage in the groups of three to five from one location to another whilst finishing all the fitness tasks. The students have to expend 60-90 seconds at each location, altering at a signal. The students have to jog on the spot for 30 seconds amid every undertaking. Sample locations may comprise the subsequent fitness tasks as under:

- Point 1 – Tuck Jump
- Point 2 – Toe Raises
- Point 3 – Jumping Jacks
- Point 4 – Heel Touches
- Point 5 – Push-ups
- Point 6 – Jogging on the spot
- Point 7 – Knee Lifts

- Point 8 – Jump up and touch the ground

### **Outcomes/Effects**

- This exercise will have an effect on all body muscles of the students.
- It will develop stamina of the body.

## **Recreational Game**

### **Lagori or Pithu**

#### **Requirements**

- Soft Ball
- Stones
- Whistle
- Stopwatch
- Playground

#### **How to do**

It was a very popular game among students in India at one time. In order to play it, you need a ball and a pile of flat stones (which should be stacked on top of each other). There are two teams. One player of a team (it will be called “Hitters”) tries to knock the stones over by throwing a ball on that. The second team makes efforts to restore the pile of stones while the hitters throw ball at them. If the ball touches a player, he or she is out and their team continues to play the game without him or her.

**Class – V**

**Physical Activity and Recreational Game - 7**

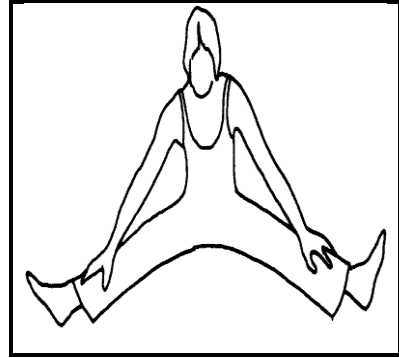
**Legs Stretching**

**Objectives**

- To make the body more flexible.
- To burn the fat of the body.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Floor Mat
- Gymnasium Hall



**Instructions**

- This activity should be done individually.
- This activity will be done under strict guidance of the instructor.
- The time of the students of the stretched period should be noted down.

**How to do**

This activity will be done individually. In this activity the instructor will take care of each student. The instructor will have to hold the hands of each student and help him/her to stretch their legs. When the students will become expert in doing this exercises, the students can be allowed to do it themselves.

**Outcomes/Effects**

- This activity will bring flexibility to the body of the students.
- This activity will bring the coordination in the body of the students.
- There will be improvement in the strength and reduction in the fat of the body.

**Recreational Game**

**All Hands on Deck**

**Requirements**

- Lime Powder
- Whistle

- Stopwatch
- Playground

### **How to do**

To play this game, 3 areas are made. The one part of the play area is considered as the ship whereas the reverse side is considered as the shore. The marked area is considered as the deck. One student is given the role of a leader who gives order “All hands on Deck” which signifies that every student having to run towards the deck of the ship and be seated down. “Attention” signifies all should stand up in military manner. “Salute!” signified every person salute at the same time.

**Class – V**  
**Physical Activity and Recreational Game – 8**  
**Stretching Fitness**

**Objectives**

- To increase the flexibility of students' body.
- To enrich the gymnastic ability of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Mats
- Audio Music Player
- Playground or Gymnasium Hall



**Instructions**

- This is a group activity.
- This activity is to be performed by the students at a time under the supervision of the instructor.

**How to do**

- 1. Body Stretch:** Students will be firm and rigid, Hold the breathe for some time and breath out gradually. Stretch the body as shown
- 2. Leg Stretch:** Flex your knees by keeping upper body straight. Place the legs in a straight line towards the wall then place the left back toe onward grip it.
- 3. Squat Stretch:** Sit on your heels, and sit on the half squat position grip. Endeavor to plunk while tips of the fingers touching the ground, twisting your knees modestly if essential and grip.

**Outcomes/Effects**

- Stretching exercise will affect the student's flexibility.
- This exercise will develop the gymnastic abilities in the students.

## **Recreational Game**

### **Hide and Seek**

#### **Requirements**

- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

It is a very famous game among children. Any number of players can take part in it. One child becomes “IT” and closes his eyes while counting 1 to 10-15. The other players hide themselves. After completing his counting he says “Ready or not, here I come”. He makes efforts to find out all the hidden players. This game is liked by children throughout the world.

**Class – V**  
**Physical Activity and Recreational Game - 9**  
**Skipping the Hoops**

**Objective**

- To enhance the athletics skills of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Low Hurdles
- Cones
- Hoops
- Playground

**Instructions**

- This is an individual activity.
- Students will be performing in twenty meters distance.
- Combination of a step and a hop
- Start with both feet together.
- Step forward with one foot, the other foot should immediately lift up and be placed next to the first foot.

**How to do**

- Now place flat rings and ask the student to skip into and out of the rings.
- Observe if the student are skipping correctly. Help student who are having problems.
- If this is easy, make it a little more challenging. Place low hurdles and let the student skip over the low hurdles.
- Now make a circuit with flat rings and low hurdles. Let the student move around the circuit using skipping.

**Outcomes/Effects**

- This activity will develop the athletics skill abilities related to the hurdles events.



## **Recreational Game**

### **Hide and Seek**

#### **Requirements**

- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

It is a very famous game among children. Any number of players can take part in it. One child becomes “IT” and closes his eyes while counting 1 to 10-15. The other players hide themselves. After completing his counting he says “Ready or not, here I come”. He makes efforts to find out all the hidden players. This game is liked by children throughout the world.

## Class – V

### Physical Activity and Recreational Game - 10

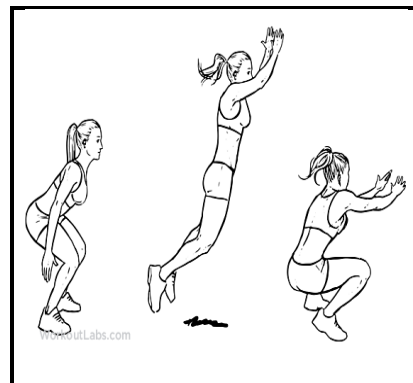
#### Standing Broad Jump

##### Objectives

- To raise the leg length.
- To make the students active.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Measurement Tape
- Playground



##### Instructions

- This is an individual activity.
- The students have to jump according to the capacity.

##### How to do

Ask a student to stand with feet slightly apart from the line marked on the ground. It is a process of jumping with feet together and then landing on the floor, both the arms should be in the upwards direction while jumping forward with bended knees. Student will perform standing broad jump. Each student should be permitted to do three attempts.

##### Outcomes/Effects

- The two sets of this exercise have to be finished in twenty seconds.
- As in this exercise the participant jumps from both legs, it will improve leg strength.
- This exercise will be helpful to increase leg length.

#### Recreational Game

##### Chain

##### Requirements

- Whistle
- Stopwatch

- Playground

### **How to do**

This game is losing popularity now-a-days. Eight to ten players can take part in it. A child becomes the “denner” whose motive is to catch all the other players in the game. Once the denner touches a player, the player becomes his companion and holds his hands with him to catch the remaining players. Every player they catch becomes the part of the chain .When all the players are caught, and then the game is over.

**Class – V**

**Physical Activity and Recreational Game - 11**

**Yoga**

**Objectives**

- To improve the overall health of the body.
- To boost the breathing capability of the students.

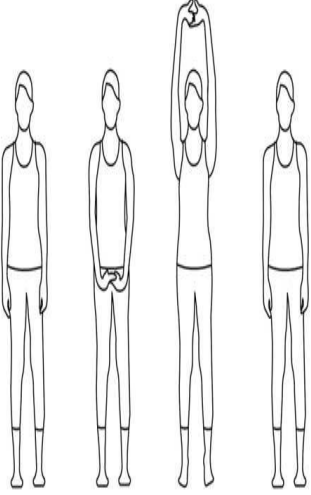
**Requirements**



- Instructor
- Whistle
- Stopwatch
- Mats
- Playground or Gymnasium Hall

**Instructions**

- This is a group activity.
- This activity will be performed in morning.

**How to do**

<b>Mountain Pose</b>	
	<ul style="list-style-type: none"><li>• In this pose one has to stand with tips of the big toes touching the floor, heels slightly upwards from the floor and both the arms stretched in upward direction than touch the floor with the heels and then again standstill upon the tip of the toes than rock back and forth and side to side than repeat this posture for 1-3 minutes.</li></ul>

<p style="text-align: center;"><b>Chair Pose</b></p> 	<ul style="list-style-type: none"> <li>• While standing in mountain pose. Breathe in and lift the arms in the upward direction. Moreover remain the arms equivalent, palms facing inner side or else stick together the palms.</li> <li>• One has to bend slightly down while stretching the arms in upward direction.</li> <li>• And tries to continue in this position for 5-10 seconds and then repeat it as many times as possible.</li> </ul>
<p style="text-align: center;"><b>Tree Pose</b></p> 	<ul style="list-style-type: none"> <li>• In order to stand in a mountain pose. One has to Shift the weight to one leg. Stretch the hands by joining them over the head.</li> <li>• Continue the action for thirty seconds to 01 minute.</li> </ul>

### **Outcomes/Effects**

- Yoga will increase body awareness and flexibility in a non-competitive environment of the students.
- It will also increase the breathing capacity of the lungs.
- This activity will be enhancing overall health and fitness by refreshing and relaxation of the body.

### **Recreational Game**

#### **Word Play**

#### **Requirements**

- Whistle
- Stopwatch
- Gymnasium Hall or Playground

#### **How to do**

Word Play game is an excellent way to enhance child's vocabulary, practice spellings and keeping the mind sharp. Although children just feel that they are playing and having fun but actually they are improving their vocabulary. Whoever is interested in it can take part. Rules are very simple. Students can sit in a circle and one student have to start the game by saying a word (for instance, he says, "Magic), the next student have to say a word whose first letter should be the last letter of the word spoken by first student (for instance he will say, "Camera") then this game goes like this. The student, who is unable to say a word when his turn comes, will be considered out of the game.

## Class – V

### Physical Activity and Recreational Game - 12

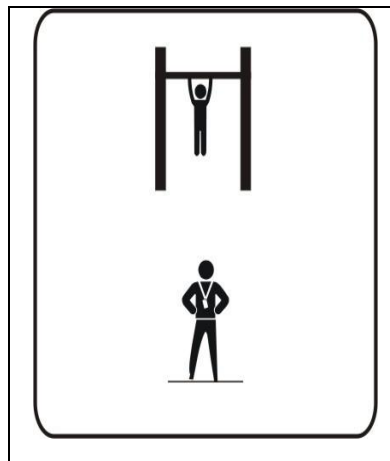
#### Moving on the Bar with Hands

##### Objectives

- To improve the height of the students.
- To enrich the gripping capacity of the students.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Horizontal Bar ( 6 feet long)
- High Jump Mattress
- Gymnasium Hall



##### Instructions

- This activity is to be done under extreme care.
- There will be high jump mats on the ground so that even if the child loses grip over the bar and falls down, he/she should not be hurt physically.

##### How to do

The instructor is supposed to pick the child in the air and tell him/her to hold the horizontal bar with both the hands. Thereafter, when the instructor will blow the whistle, the child will be supposed to walk with both his/ her hands to the corner of the bar. This exercise will be done for twenty seconds. Three sets of the exercise will be repeated. Gradually, the child will be made to walk over the bar for the maximum time he/she can hold.

##### Outcomes/Effects

- This activity is immensely helpful in increasing the height of the students.
- This will stress all the muscles of the body, especially the stomach muscles of the child.
- This will help enhance the gripping capacity of the child.

## **Recreational Game**

### **Marbles**

#### **Requirements**

- Marbles
- Whistle
- Stopwatch
- Playground

#### **How to do**

This game is still played by the children of rural areas. To play it, you need round glass marbles and your motive should be to gather as many marbles as you can by hitting at other marbles with the ones you already have. Rural boys enjoy this game a lot. Any number of players can take part in it.



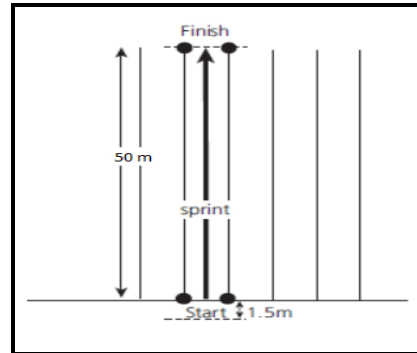
**Class – VI**  
**Physical Activity and Recreational Game - 1**  
**50 Meter Dash**

**Objectives**

- To make the respiratory system stronger.
- To boost the speed of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Playground



**Instructions**

- In this activity students are not allowed to put their feet on starting line.
- The time taken to finish this activity should be noted.
- The students will start the action after the sound of the whistle.
- At the end student will put their strong foot first.

**How to do**

This is a group activity and students will take part in this activity with five students in each group. The students will first stand on starting point and at the sound of the whistle each student will sprint towards the finish line. After that each student has to come back by doing jogging to the starting point. Each student has to take two turns.

**Outcomes/Effects**

- It will positively affect the respiratory system.
- There will be an increase in the speed of the students.
- It will also provide stimulus to the reaction time of the students.

**Recreational Game**  
**Marbles**

**Requirements**

- Marbles

- Whistle
- Stopwatch
- Playground

### **How to do**

This game is still played by the children of rural areas. To play it, you need round glass marbles and your motive should be to gather as many marbles as you can by hitting at other marbles with the ones you already have. Rural boys enjoy this game a lot. Any number of players can take part in it.

**Class – VI**  
**Physical Activity and Recreational Game - 2**

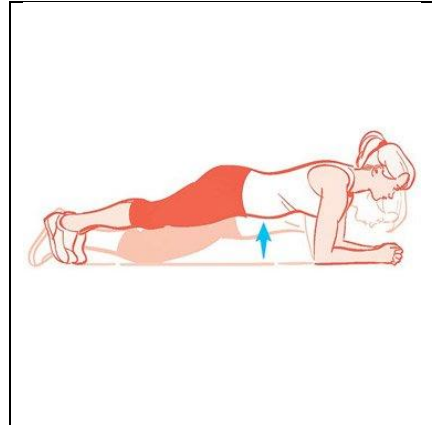
**Plank**

**Objectives**

- To burn extra body fat.
- To make the muscles flexible.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Gymnastic Mat
- Playground or Gymnasium Hall



**Instructions**

- This activity is to be performed by one student at a time under the supervision of the instructor.
- Time taken to finish the activity of the individual student is to be recorded by the instructor.

**How to do**

A student has to lay face down resting on forearms. He/she should do push-ups on to toes, Body will remain upright. Student will recover for sixty seconds and repeat the move. Slowly the student should be asked to plank for the maximum time he/she can hold.

**Outcomes/Effects**

- This activity will bring out the abs of the student.
- It will also bring flexibility in the muscles of the student.
- This activity will reduce the fat of body.

**Recreational Game**

**Sack Race**

**Requirements**

- Burlap Sack

- Whistle
- Stopwatch
- Playground

**How to do**

In this game, all the players need burlap sacks. First of all the players put their both feet in the burlap sacks and starts to hop towards the finish line. They have to hold the sack throughout the race with both hands or at least with one hand. Apart from it, students are not allowed to let the sack fall below and knees the students who arrives first at the finishing point, becomes the winner.

**Class - VI**  
**Physical Activity and Recreational Game - 3**  
**Four Corner Shuttle**

**Objectives**

- To boost the stamina of the students.
- To enrich the agility of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Five Hoops
- Small Rubber Balls (40)
- Gymnasium Hall

**Instructions**

- This is a group activity.
- Divide students into four equal teams.
- Place five hoops around the activity area, one in each corner and one in the middle.
- Place 25 balls in the middle hoop to start.

**How to do**

- Initially students have to collect the balls from the middle hoop, one at a time. Once the students have collected all the balls from the middle hoop then they have to start collecting the balls from any of the hoop around the area.
- Students cannot throw or pass the balls and have to collect one ball at a time.
- Game can be stopped after 30-45 seconds so that team members can make the strategies and can make the discussions.

**Outcomes/Effects**

- This activity will increase the agility of the students.
- This activity will enhance the reaction and decision making speed of the students.
- It can also improve the stamina of the students.

## **Recreational Game**

### **Hide and Seek**

#### **Requirements**

- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

It is a very famous game among children. Any number of players can take part in it. One child becomes “IT” and closes his eyes while counting 1 to 10-15. The other players hide themselves. After completing his counting he says “Ready or not, here I come”. He makes efforts to find out all the hidden players. This game is liked by children throughout the world.

**Class – VI**  
**Physical Activity and Recreational Game - 4**  
**Jumping on Both Feet**

**Objectives**

- To enhance the standing broad jump of the students.
- To boost the jumping reach of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Playground

**Instructions**

- This is a group activity.
- The students will jump without any gap between legs and they have to cover the distance while jumping.
- Running is not allowed in this activity.
- During the jumping students have to put their hands to their waist.
- The distance between the starting and finishing line will be 50 meter.

**How to do**

The students will be lined up into groups of 5. After that at the sound of the whistle students will take the start and they will have to cover the given distance while jumping. They will also have to come back jogging walking to the starting point.

**Outcomes/Effects**

- It will increase the jumping reach of the students.
- There will also be improvement in the standing broad jump of the students.
- It will also positively impart the circulatory system.
- All the joints of legs will also be put into practice during this exercise.

## **Recreational Game**

### **Musical Chair**

#### **Requirements**

- Chairs
- Music Player
- Whistle
- Stopwatch
- Playground

#### **How to do**

It is very interesting game to play with music and chairs. Put some chairs in the classroom. After playing the music, students have to walk around the chairs. However, when the music is stopped, students have to sit on chairs. The persons who do not occupy a seat for him/her when the music is stopped, he/she have to go out of the game. Last person sitting on the chair will be the winner.



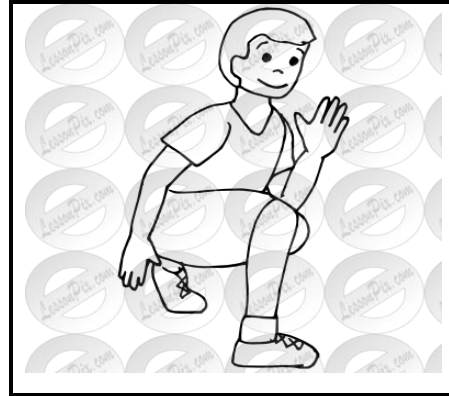
**Class - VI**  
**Physical Activity and Recreational Game - 5**  
**Duck Walk**

**Objectives**

- To improve the digestive system.
- To develop body muscles.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Playground



**Instructions**

- This activity is to be done in sitting position.
- The student will not be allowed to stand up while doing this exercise.
- The students will also be prohibited to touch the ground with their hands.
- The distance between the starting line to finish line would be 30 meter.

**How to do**

This is a group activity and students will be divided into the group of five. During this activity student will walk in sitting posture from the starting line to finish line. The student will have to come back jogging to the starting line.

**Outcomes/Effects**

- This activity will positively develop the muscles of the legs.
- The digestive system will also be influenced.
- Students will come to gasp the set of maintaining the body balance.

**Recreational Game**  
**Three Legged Race**

**Requirements**

- Bandanna
- Tube sock or other piece of fabric to tie legs together
- Whistle

- Stopwatch
- Playground

**How to do**

In order to play this game, students make their teams which include 2 members. It is a fun to play this game. All the players have to stand side by side and tie their inside legs together to have three legs instead of four legs. Together, they run towards the finish line. The first groups of 2 students, who reach at the finish line, become the winners.

**Class - VI**  
**Physical Activity and Recreational Game - 6**  
**Movement and Math**

**Objectives**

- To enrich the decision making power of students.
- To enhance the mental level of Students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Playground or Gymnasium Hall

**Instructions**

- This is a group activity.

**How to do**

- It is a game of number cards one place the number cards on the floor in the activity area.
- Make the students move around the activity area in free movements.
- On instructor's signal two players of each group will pick up the cards and number on that cards will be the answer card and will be considered the points of that team.
- When the partners will finish the activity they will be instructed do the physical activities like running, skipping and jumping

**Outcomes/Effects**

- This activity will increase the mental level of students.
- It will also increase the decision-making power of the students.

**Recreational Game**  
**Lagori or Pithu**

**Requirements**

- Soft Ball
- Stones

- Whistle
- Stopwatch
- Playground

### **How to do**

It was a very popular game among students in India at one time. In order to play it, you need a ball and a pile of flat stones (which should be stacked on top of each other). There are two teams. One player of a team (it will be called “Hitters”) tries to knock the stones over by throwing a ball on that. The second team makes efforts to restore the pile of stones while the hitters throw ball at them. If the ball touches a player, he or she is out and their team continues to play the game without him or her.

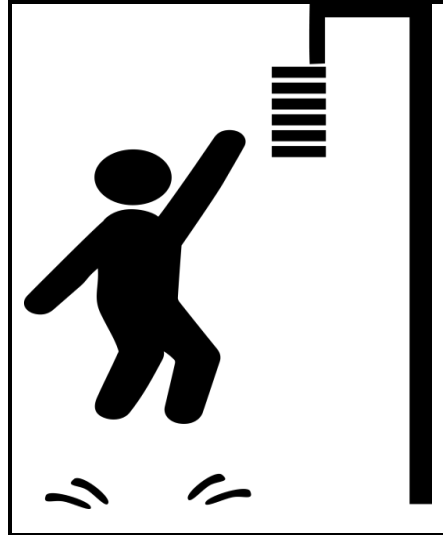
**Class - VI**  
**Physical Activity and Recreational Game - 7**  
**Vertical Jump**

**Objectives**

- To strengthen the leg muscles.
- To improve the jumping reach of the students.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Powder
- Wall
- Gymnasium Hall



**Instructions**

- This is an individual activity.
- In this activity students will jump without moving from their place.
- Running is not allowed to take jump.

**How to do**

This activity is to be done by single student under the supervision of instructor. Firstly the student will have to raise his/her right hand and touch it on the wall. This point is to be marked with color. Then the student is allowed to relax and the hand is to be colored. After that the student has to bend his knees and jump. He/She has to touch his/her right hand on the wall. The distance between the first point and the reach of the jump is to be noted.

**Outcomes/Effects**

- This activity will increase the jumping reach of the students.
- It will also positively affect the leg muscles of the students.
- It will bring agility in the whole body of the students.

**Recreational Game**  
**Lemon & Spoon – Race**

**Requirements**

- Lemons
- Small Spoons
- Whistle
- Stopwatch
- Playground

**Warning for participants**

- Once the race starts participants are not allowed to touch the spoon if they do so then they are out of game.
- If a lemon falls from the spoon then that participant is also out of the game.
- Whoever crosses the distance first, with spoon in mouth and lemon in it, is the winner.

**How to do**

- Mark distance approximate of 15 to 20 feet.
- Ask participants to stand up on one end of marked distance.
- Give each participant 1 spoon and 1 lemon.
- Participants have to hold spoon in their mouth and place lemon in that spoon.
- Participants have to cover marked distance by walking or running.

## Class - VI

### Physical Activity and Recreational Game - 8

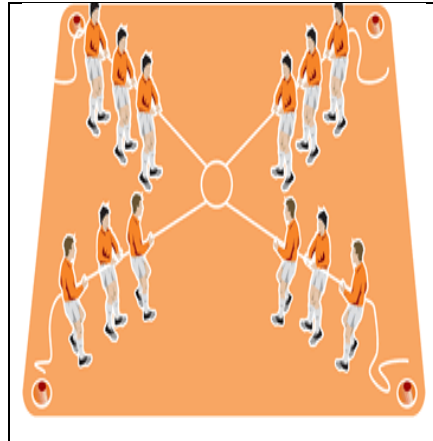
#### Multi-Way Tug-of-War

##### Objectives

- To strengthen all the body parts.
- To maintain the body balance.

##### Requirements

- Instructor
- Whistle
- Stopwatch
- Tug of war rope
- Playground



##### Instructions

- Pick a soft location in playground.
- This is a group activity.
- All students should be into four teams.
- Keep in mind that teams should be of equal strength.

##### How to do

- At the beginning, the players of teams will pick the ropes in their hands. Is the instructor below the whistle, all the teams will draw the ropes which the team will draw all the teams to themselves, the team will be considered the winner.
- Several rounds should be conducted. Activity has to be done till one of the team is able to score three points, or competition to be conducted for best of the three events. Recovery time after each session or round should be five to ten minutes.

##### Outcomes/Effects

- This activity will be helpful in overall maintenance of the body.
- Students will come to choke the set of maintaining the body balance.

## **Recreational Game**

### **Word Play**

#### **Requirements**

- Whistle
- Stopwatch
- Gymnasium Hall or Playground

#### **How to do**

Word Play game is an excellent way to enhance child's vocabulary, practise spellings and keeping the mind sharp. Although children just feel that they are playing and having fun but actually they are improving their vocabulary. Whoever is interested in it can take part. Rules are very simple. Students can sit in a circle and one student have to start the game by saying a word (for instance, he says, "Magic), the next student have to say a word whose first letter should be the last letter of the word spoken by first student (for instance he will say, "Camera") then this game goes like this. The student, who is unable to say a word when his turn comes, will be considered out of the game.



**Class – VI**  
**Physical Activity and Recreational Game - 9**  
**Basketball Count**

**Objectives**

- To enhance the eye hand coordination.
- To bring flexibility in the body.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Basket Ball
- Basketball Court

**Instructions**

- In this activity the time and the number of catches of the doer will be recorded.
- The students will have to catch the ball after every bounce.

**How to do**

This activity can be done in a group of five students. During this activity firstly students have to bounce the ball and catch by turning to their right side. In the same manner students will have to again bounce the ball but this time they have to catch it by turning to their left side. This activity has to be continued and initially students will be given three chances. With the expertise these chances can be increased.

**Outcomes/Effects**

- This activity will help the students in improvement of eye hand coordination.
- It will bring agility to the body as students have to move their bodies to right and left.
- There will be some positive changes in the reaction time also.

## **Recreational Game**

### **Lagori or Pithu**

#### **Requirements**

- Soft Ball
- Stones
- Whistle
- Stopwatch
- Playground

#### **How to do**

It was a very popular game among students in India at one time. In order to play it, you need a ball and a pile of flat stones (which should be stacked on top of each other). There are two teams. One player of a team (it will be called “Hitters”) tries to knock the stones over by throwing a ball on that. The second team makes efforts to restore the pile of stones while the hitters throw ball at them. If the ball touches a player, he or she is out and their team continues to play the game without him or her.

**Class - VI**  
**Physical Activity and Recreational Game - 10**  
**Muscular Strength Fitness**

**Objectives**

- To enrich the biceps and six pack muscles.
- To fortify the arm and stomach muscles.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Mats
- Audio Music Player
- Playground or Gymnasium Hall

**Instructions**

- This is a group activity.
- This activity is to be performed by the students at a time under the supervision of the instructor.

**How to do**

- 1. Push-ups:** A safe push-ups alongside the wall must be exercised.
- 2. Crunches:** Constantly flex knees while performing sit ups. To inter lock your fingers at the back of the head.
- 3. Wall Sit:** Flex your knees while the back should be straight parallel with the wall. Hips and the upper legs should be forming right angle with the wall and perform clapping action for twenty seconds.

Once the student becomes perfect in muscular strength, he/she will be asked to do this activity for the maximum time. This timing will be noted by the instructor

**Outcomes/Effects**

- This exercise will be effect on student's arm muscles and stomach muscles.
- It will also develop the biceps and six pack muscles.

## **Recreational Game**

### **Chain**

#### **Requirements**

- Whistle
- Stopwatch
- Playground

#### **How to do**

This game is losing popularity now-a-days. Eight to ten players can take part in it. A child becomes the “denner” whose motive is to catch all the other players in the game. Once the denner touches a player, the player becomes his companion and holds his hands with him to catch the remaining players. Every player they catch becomes the part of the chain .When all the players are caught, and then the game is over.

**Class - VI**  
**Physical Activity and Recreational Game – 11**  
**Skating Train**

**Objectives**

- To enhance the skating ability of the children.
- To assist in ice hockey game.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Skates
- Helmets
- Gymnasium Hall

**Instructions**

- This is a group activity.
- This activity is to be performed by one student at a time under the supervision of the instructor.
- The maximum time will be noted by the instructor.

**How to do**

The instructor has to inform all the students to stand in a line. Students should be paired up to make a train. The students standing in front moves with a smooth continuous motion while, the another team mate will push from the back. Remoteness should be modified commencing the skaters.

After becoming trained, they will be asked to do it for the maximum times individually they can do.

**Outcomes/Effects**

- This activity will develop the skating abilities in the students.
- It will be also helpful in ice hockey game.

## **Recreational Game**

### **Blanket Pull**

#### **Requirements**

- Blanket
- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

In order to play this game, children need a sturdy blanket. The blanket can be used as a slide as well as a cradle. While using it as a slide, one or two students sit in it while other students hold the edges of the blanket in their hands and walk. On the other hand, while using it as a cradle, it is brought forward and backward like a swing by the children after placing a toy inside it.

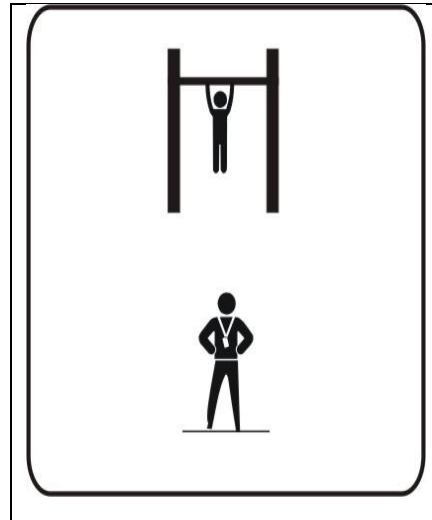
**Class - VI**  
**Physical Activity and Recreational Game - 12**  
**Pull Ups on the Bar**

**Objectives**

- To raise the height of the students.
- To strengthen all the muscles.

**Requirements**

- Instructor
- Whistle
- Stopwatch
- Horizontal Bar
- High Jump Mattress
- Gymnasium Hall



**Instructions**

- This activity is to be done under extreme care.
- There will be high jump mats on the ground so that even if the child loses grip over the bar and falls down, he/she should not be hurt physically.
- The maximum pull ups done by child are to be counted by the instructor.

**How to do**

The instructor is supposed to pick the child in the air and tell him/her to hold the horizontal bar with both the hands in a tight grip. Thereafter, when the instructor will blow the whistle, the child will be supposed to do pull ups in a manner that his nose touches the bar. This exercise will be done five times in a single do. Two sets of the exercise will be repeated. Gradually, the child will be made to do the maximum times according to his/ her capacity.

**Outcomes/Effects**

- This activity is immensely helpful in increasing the height of the students.
- This will stress all the muscles of the body, especially the stomach muscles of the child.
- This will help enhance the gripping capacity of the child and his shoulder strength will also be increased.

- Most significantly, this kind of activity helps to decrease the pulse rate and heartbeat of the child which reduces the risk of heart attack at later stage of life.

## **Recreational Game**

### **Charades**

#### **Requirements**

- Papers
- Pencil
- Bowl
- Whistle
- Stopwatch
- Gymnasium Hall

#### **How to do**

It is an interesting game. In this game, children are told to imagine something like an animal, bird, machine, aircraft etc. and they are told to write it down on a piece of paper and put it aside after folding it. Every student is asked to do the same. Then, all the slips are placed into a bowl. After that every student from both teams comes to choose a paper and then try to tell his team what is written on that paper by acting out. The team with the highest points wins the game.



**Class -VII**  
**Choice Based Games**

**List of Games**

- Kho-Kho
- Football
- Handball
- Table Tennis

**Instructions**

- This is a group activity.
- All students can participate in any game according to their wishes.
- All students will be tested 21 days later to know the progress made in the game.
- Duration of lecture is 40 minutes.

**Game – 1**

**Kho-Kho**

**Objectives**

- To boost the Confidence of the students.
- To enrich physical as well as mental fitness.

<b>Sr. No</b>	<b>Title of Skill</b>	<b>Requirements</b>
1.	Introduction of the Kho-Kho Game	Marked court of Kho-Kho, whistle and stopwatch.
2.	Position of chaser and runner	Same as above
3.	Running skills: Zigzag	Same as above
4.	Avoiding	Same as above
5.	Dodging	Same as above
6.	Three to three	Same as above

7.	Second attack	Same as above
8.	Skill of defence: Simple Kho	Same as above
9.	Fake Kho	Same as above
10.	Late Kho	Same as above
11.	Giving Kho	Same as above
12.	Getting in square	Same as above
13.	Getting off square	Same as above
14.	Pole diving	Same as above
15.	Sudden change direction	Same as above
16.	Tapping	Same as above
17.	Diving	Same as above
18.	Grasping direction	Same as above
19.	Diagonal attack	Same as above
20.	Covering	Same as above
21.	Pole turning	Same as above
22.	Rule regulation in Kho-Kho	Same as above
23.	Signs in the Kho-Kho	Same as above

24.	Layout of the court	Same as above
25.	Position play in the court	Same as above
26.	Full game on all positions	Same as above

**Outcomes/Effects**

- Kho-Kho game will increase the ability of acquiring new skills.
- This game will improve the confidence of the students to take spontaneous decisions at the critical movement.
- This activity will develop physical fitness and mental fitness of the students.

## Game – 2

### Football

#### Objectives

- To boost the stamina.
- To enhance the bone strength of the body.

<b>Sr. No</b>	<b>Title of Skill</b>	<b>Requirements</b>
1.	Introduction of the Football Game	Marked Field of Football, Footballs, Cones, Whistle and Stopwatch
2.	Kicking the ball	Same as above
3.	Kicking the ball with strong foot	Same as above
4.	Kicking the ball with the inside of strong foot	Same as above
5.	Kicking the ball with the outside of strong foot	Same as above
6.	Kicking the ball with the inside of rare foot	Same as above
7.	Kicking the ball with the outside of rare foot	Same as above
8.	Kicking the ball in the target area with both feet (6 time each)	Same as above
9.	Stopping the ball	Same as above
10.	Stopping the ball with the inside foot	Same as above
11.	Stopping the ball with the outside the foot	Same as above
12.	Passing the ball to another player	Same as above

13.	Rolling the ball with inside or outside of the foot	Same as above
14.	Trapping of the ball	Same as above
15.	Throw in (standing position)	Same as above
16.	Thrown in (running position)	Same as above
17.	Heading the ball	Same as above
18.	Heading the ball with partner	Same as above
19.	Heading the ball in running	Same as above
20.	Heading the ball in downward and upward	Same as above
21.	Doze without ball	Same as above
22.	Doze with ball	Same as above
23.	Tackling: Block tackle	Same as above
24.	Poke tackle	Same as above
25.	Slide tackle	Same as above
26.	Chip (with both feet)	Same as above
27.	Dribbling: Slow Dribbling	Same as above
28.	Fast dribbling	Same as above
29.	Dribbling in running	Same as above

30.	Ball clearance with kicking and passing.	Same as above
31.	Receiving and controlling the ball with inside and outside the foot	Same as above
32.	Receiving the flying ball with foot, chest, thigh and head	Same as above
33.	Small Game Play	Same as above
34.	Moves	Same as above
35.	Goal Keeping: kicking, stopping and throwing the ball	Same as above
36.	Rule regulation in Football	Same as above
37.	Signs in Football	Same as above
38.	Layout of the playground	Same as above
39.	Position play in the playground	Same as above
40.	Full game on all positions	Same as above

### **Outcomes/Effects**

- This is a physical demanding game that provides a chance to children to develop their speed, agility & strength.
- Football game will develop eye-foot coordination and cardiovascular endurance.
- This game will increase the stamina of the body.
- Football will burn lower body fat and improves the muscles tone of the body.
- This game will increase the muscles and bone strength of the body.

### Game – 3

### Handball

#### Objectives

- To improve the agility of the students.
- To strengthen the arm muscles.

<b>Sr. No</b>	<b>Title of Skill</b>	<b>Requirements</b>
1.	Introduction of the Handball Game	Court of Handball, Handballs, whistle and stopwatch.
2.	Basic fundamental skills : Ball handling and stance of the players	Same as above
3.	Passing : Standing Pass	Same as above
4.	Single Hand Pass : upward pass, downward pass	Same as above
5.	Both Hand Pass : upper, half upper, lower	Same as above
6.	While running pass	Same as above
7.	With jumping pass	Same as above
8.	With vertical jump	Same as above
9.	Receiving: One hand receiving	Same as above
10.	Two hand receiving	Same as above
11.	Receiving in running	Same as above
12.	Receiving in jumping	Same as above
13.	Dribbling : Low dribbling	Same as above
14.	High dribbling	Same as above
15.	Reverse dribbling	Same as above

16.	Defence skills : Individual defence without ball	Same as above
17.	Individual defence with ball	Same as above
18.	D zone defence	Same as above
19.	Goal Keeping: shooting and penalty shoot	Same as above
20.	Rule regulation in Handball	Same as above
21.	Signs in the Handball	Same as above
22.	Layout of the court	Same as above
23.	Position play in the court	Same as above
24.	Full game on all positions	Same as above

**Outcomes/Effects**

- Handball game will increase the eye hand coordination ability of the students.
- This game improves the arm muscles and upper body strength.
- Handball game will develop the agility of the hand and feet of the students.
- This game will increase the quickness of the body.



**Game – 4**  
**Table Tennis**

**Objectives**

- To burn the calories.
- To enhance the tactical thinking skills.

<b>Sr. No</b>	<b>Title of Skill</b>	<b>Requirements</b>
1.	Introduction of the Table Tennis Game	Table, bats and balls
2.	Table Tennis ready position	Same as above
3.	Table Tennis griping	Same as above
4.	Racquet angle	Same as above
5.	Basic ball control	Same as above
6.	Table Tennis strokes: Back hand push	Same as above
7.	The forehand drive	Same as above
8.	The back hand drive	Same as above
9.	Serving : The basic table tennis serving technique	Same as above
10.	A legal service	Same as above
11.	Service return	Same as above
12.	Advance skills : Spin the hidden side of the table	Same as above
13.	Top spin	Same as above

14.	Back spin	Same as above
15.	Side spin	Same as above
16.	Playing against spin : Returning top spin	Same as above
17.	Returning back spin	Same as above
18.	Returning side spin	Same as above
19.	Table Tennis footwork pattern	Same as above
20.	In and out footwork pattern	Same as above
21.	Side to side footwork pattern	Same as above
22.	Cross-over footwork pattern	Same as above
23.	Rule regulation in Table Tennis	Same as above
24.	Signs in the Table Tennis	Same as above
25.	Full game play	Same as above

**Outcomes/Effects**

- Table tennis game will increase the concentration and alertness of the body.
- This game develops tactical thinking skills.
- Table tennis provides the aerobic exercises.
- Table tennis game will burn 600 calories in one hour.

**Class - VIII**  
**Choice Based Games**

**List of Games**

- Basketball
- Badminton
- Hockey
- Volleyball

**Instructions**

- This is a group activity.
- All students can participate in any game according to their wishes.
- All students will be tested 21 days later to know the progress made in the game.
- These games are both boys and girls.

**Game - 1**

**Basketball**

**Objectives**

- To burn calories.
- To increase balance and coordinative ability.
- To improve concentration.
- To build muscle power and endurance.

<b>Sr. No</b>	<b>Title of Skill</b>	<b>Requirements</b>
1.	Introduction of the Basketball Game	Court of Basketball, Basketballs, whistle and stopwatch.
2.	Ball handling and stance of the players	Same as above
3.	Passing: Simple pass	Same as above
4.	Chest pass	Same as above

5.	Overhead pass	Same as above
6.	Push pass	Same as above
7.	Bounce pass	Same as above
8.	Side arm pass	Same as above
9.	Receiving: Ball receiving with two hands	Same as above
10.	Ball receiving with one hand	Same as above
11.	Ball receiving in running	Same as above
12.	Ball receiving in jumping	Same as above
13.	Dribbling : Low dribble	Same as above
14.	High dribble	Same as above
15.	Behind the back	Same as above
16.	Pull back dribble	Same as above
17.	Change-of-pace	Same as above
18.	Advance skills Shooting : Free throw	Same as above
19.	Jump shot	Same as above
20.	Layup	Same as above

21.	Dunk	Same as above
22.	Three point shot	Same as above
23.	Hook shot	Same as above
24.	Rebounding : Defence rebound	Same as above
25.	Offence rebound	Same as above
26.	Defence : Individual defence	Same as above
27.	Zonal defence	Same as above
28.	Moves	Same as above
29.	Violations	Same as above
30.	Rule regulation in Basketball	Same as above
31.	Signs in Basketball	Same as above
32.	Layout of the court	Same as above
33.	Full game on all positions	Same as above

### **Outcomes/Effects**

- Basketball game will burn calories 630-750 in one hour.
- This game will improve the balance and coordination ability of the students.
- Basketball will develop self-discipline and concentration.
- This activity will build the muscle power and endurance.

**Game – 2**  
**Badminton**

**Objectives**

- To make the muscles flexible and powerful.
- To decrease the stress of the students.

Sr. No	Title of Skill	Requirements
1.	Introduction of the Badminton Game	Court of Badminton, Racquets, Shuttle cocks, whistle.
2.	Badminton ready position	Same as above
3.	Badminton griping	Same as above
4.	Racquet angle	Same as above
5.	Basic Footwork	Same as above
6.	Basic Badminton strokes	Same as above
7.	Basic Badminton serving	Same as above
8.	Basic Badminton stance	Same as above
9.	Defensive high clear	Same as above
10.	Smashing	Same as above
11.	Net play	Same as above
12.	Advance Skills Offensive skills : Attacking the clear	Same as above
13.	Sudden fast attacking mode	Same as above
14.	Attacking the attack	Same as above
15.	Rise and attack	Same as above

16.	Advance Badminton net shot	Same as above
17.	Advance Badminton drop short	Same as above
18.	Clear skills : Offensive forehead clear	Same as above
19.	Backhand clear	Same as above
20.	Defence skills: Cross court defence	Same as above
21.	Diving	Same as above
22.	Serving : Deep corner back court flick serve	Same as above
23.	Low corner front court serve	Same as above
24.	Rule regulation in Badminton	Same as above
25.	Signs in the Badminton	Same as above
26.	Layout of the court	Same as above
27.	Position play in the court	Same as above
28.	Full game Single and Double	Same as above

### **Outcomes/Effects**

- Badminton game will burn approximately 450 calories in one hour.
- This game will reduce the anxiety and stress of the students.
- This game will increase flexibility and muscle power of the students.

### Game – 3

#### Hockey

#### Objectives

- To improve the eye hand coordination.
- To enhance the agility and balance in the body.

Sr. No	Title of Skill	Requirements
1.	Introduction of the Hockey Game	Marked hockey field, hockey sticks, hockey balls, cones, whistle and stopwatch
2.	Skills : Grip	Same as above
3.	Rolling the ball	Same as above
4.	Dribbling	Same as above
5.	Push	Same as above
6.	Scoop	Same as above
7.	Hitting	Same as above
8.	Stopping	Same as above
9.	Hitting, stopping and push	Same as above
10.	Flick	Same as above
11.	Passing : Forward pass	Same as above
12.	Backward pass	Same as above
13.	Triangular pass	Same as above
14.	Preliminary Skills : Hitting on wrong foot	Same as above
15.	Push on wrong foot	Same as above



16.	Flick	Same as above
17.	Dodging : from left or right side	Same as above
18.	Tackling : from front side	Same as above
19.	From right side and left side	Same as above
20.	Small game play	Same as above
21.	Common Bully	Same as above
22.	Position play in attack and defence lines in half ground	Same as above
23.	Moves	Same as above
24.	Goal Keeping: kicking, hitting and stopping	Same as above
25.	Penalty Corner : Direct hit	Same as above
26.	Drag	Same as above
27.	Drag flick	Same as above
28.	Penalty stroke	Same as above
29.	Rule regulation in Hockey	Same as above
30.	Signs in the Hockey	Same as above
31.	Layout of the playfield	Same as above
32.	Position play in the playfield	Same as above
33.	Full game on all positions	Same as above

### **Outcomes/Effects**

- Muscles like triceps, forearms work and shoulder muscles increase in this game.
- The hockey game will increase agility and balance in the body.

- Hockey will increase the sprints of the students.
- This game will maximum increase the eye hand coordination abilities of the students.
- Hockey game will increase muscle mass.

**Game – 4**  
**Volleyball**

**Objectives**

- To increase aerobic capacity.
- To increase metabolic rate.
- To burn excess body fats.
- To increase body mind coordination.
- To increase hand eye coordination.

Sr. No	Title of Skill	Requirements
1.	Introduction of the Volleyball Game	Marked Volleyball court, Volleyballs, whistle and stopwatch
2.	Player's Standing Stance	Same as above
3.	Passing the ball	Same as above
4.	Receiving the ball	Same as above
5.	Upper hand pass	Same as above
6.	Under hand pass	Same as above
7.	Service: Under hand service (simple service)	Same as above
8.	Side arm service	Same as above
9.	Tennis service	Same as above
10.	Spiking	Same as above
11.	Blocking: Single block	Same as above
12.	Double block	Same as above
13.	Advance Skills : Back pass	Same as above

14.	Jump and pass	Same as above
15.	Blocking: Double block	Same as above
16.	Triple block	Same as above
17.	Receiving: Under hand receive	Same as above
18.	Upper hand receive	Same as above
19.	Diving	Same as above
20.	Mini game on small court	Same as above
21.	Three man pass, set, spike, dig	Same as above
22.	Two man - pass, set, spike, dig	Same as above
23.	Rule regulation in Volleyball	Same as above
24.	Signs in Volleyball	Same as above
25.	Layout of the court	Same as above
26.	Full game on all positions	Same as above

**Outcomes/Effects**

- Volleyball game will increase the aerobic ability of students.
- This game will increase the metabolic rate.
- This activity will burn the fat of body.
- Volleyball game will improve coordination of nerves and muscles of the body.
- Advantage of this game is that it will increase eye hand coordination ability.

### 4.3 Analysis of Pilot Study

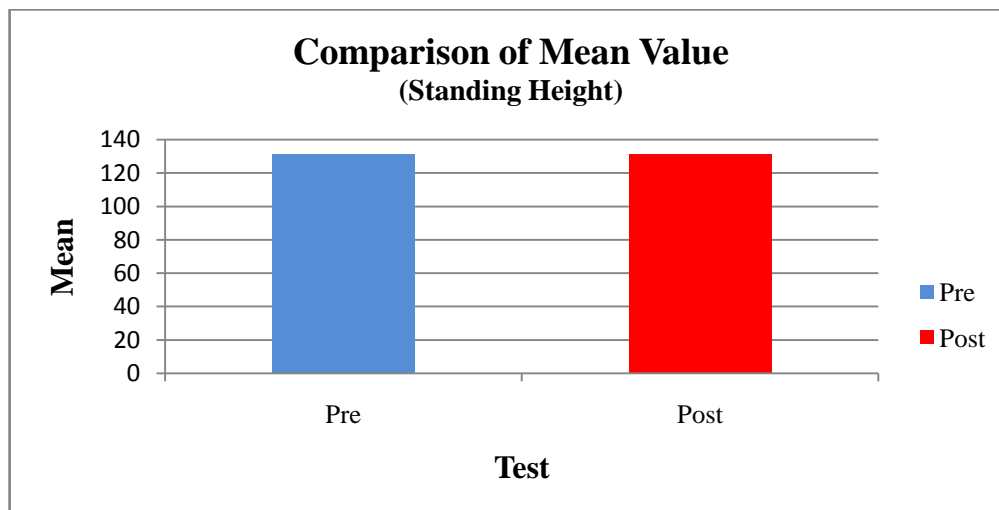
Pilot study of two weeks was conducted by analysing the effects of developed physical activity curriculum on elementary school students. The purpose of the pilot study was to verify the practical applicability and feasibility of the curriculum. Analysis was done for anthropometric, biomotor and physiological variable of elementary school students. Sample of thirty six school students up-to class sixth from first standard were selected by convenience sampling method. Only pre and post-test data were collected and analysed of experimental group. Pre-test and post-test data was collected after the two weeks of experimental period, t-test was applied and analysis was done. Significance of difference between pre and post-test was analysed and depicted in the below mentioned tables. Whereas mean difference was also shown by the medium of bar graph.

#### Analysis of the Data of Pilot Study

**Table 4.1:** Pre-test and post-test comparison of mean value on the variable of standing height

Test	N	Mean	SD	SEM	t-value
Pre-test	36	131.33	10.15	1.69	0
Post-test	36	131.33	10.15	1.69	

Sig. at .05 = 2.02\* level of confidence



**Figure 4.1:** Mean difference of standing height between pre-test and post-test

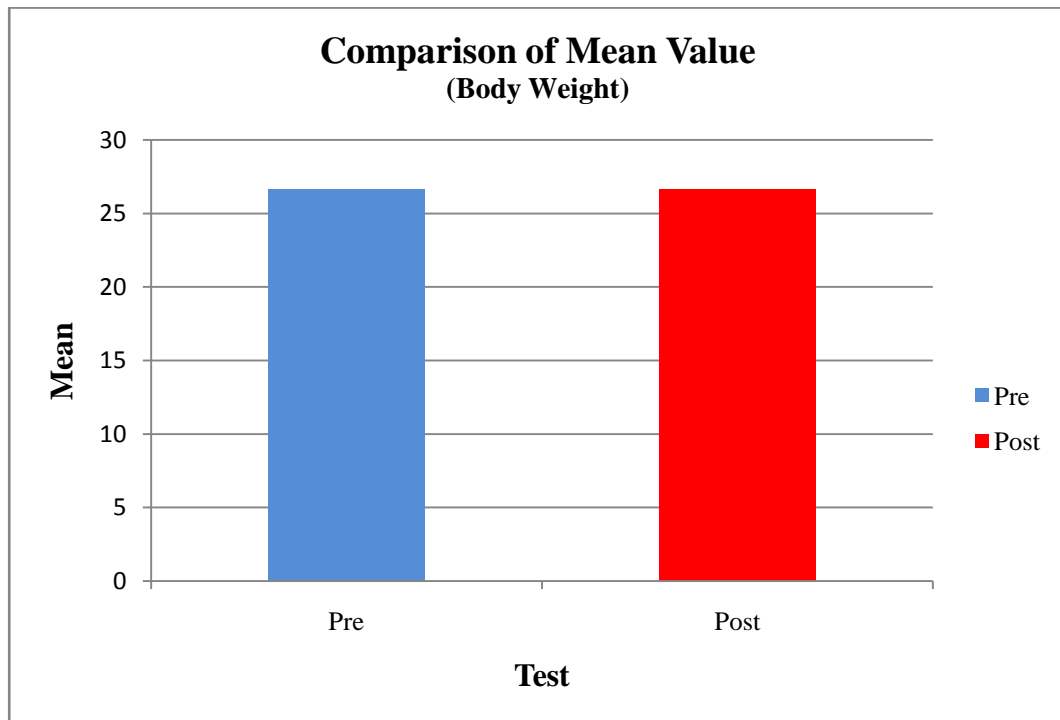
Table 4.1 indicates average (mean) values of standing height 131.33 and 131.33 of pre-test and post-test respectively, indicates that there is no change in

average (mean) value which results in the 0 value of t-test. Indicates that there is no change in the standing height of students, hence hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect standing height significantly” is rejected.

**Table 4.2:** Pre-test and post-test comparison of mean value on the variable of body weight

Test	N	Mean	SD	SEM	t-value
Pre-test	36	26.62	5.87	.97	0
Post-test	36	26.62	5.87	.97	

Sig. at .05 = 2.02\* level of confidence



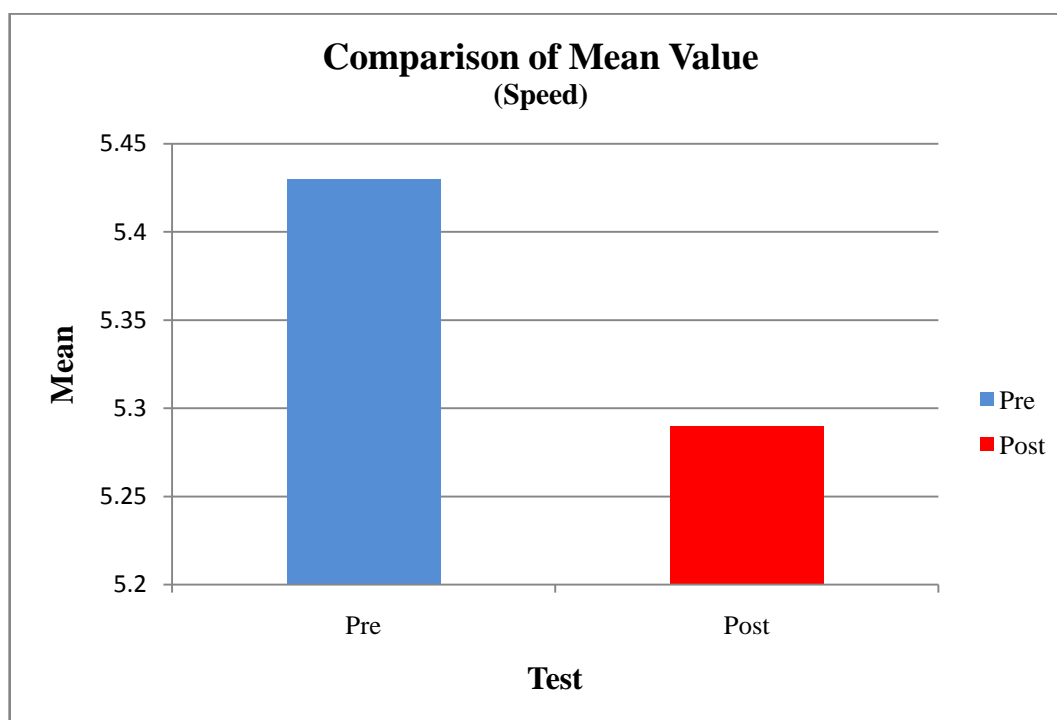
**Figure4.2:** Mean difference of body weight between pre-test and post-test

Table 4.2 indicates average (mean) values of body weight 26.62 and 26.62 of pre-test and post-test respectively, indicates that there is no change in average (mean) value which results in the 0 value of t-test. Indicates that there is no change in the body weight of students, hence Hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity will also effect body weight significantly” is rejected.

**Table 4.3:** Pre-test and post-test comparison of mean value on the variable of speed

Test	N	Mean	SD	SEM	t-value
Pre-test	36	5.43	.60	.10	3.78*
Post-test	36	5.29	.62	.10	

Sig. at .05 = 2.02\* level of confidence



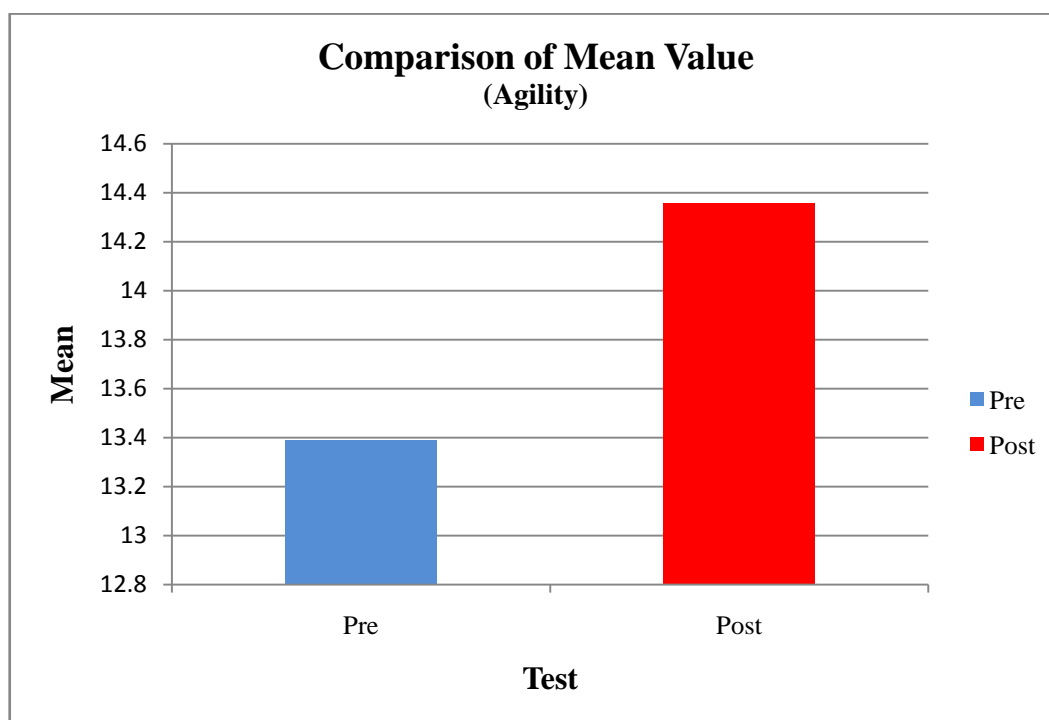
**Figure 4.3:** Mean difference of speed between pre-test and post-test

Table 4.3 indicates average (mean) values of speed 5.43 and 5.29 of pre-test and post-test respectively, indicates enhancement in speed, whereas t-value 3.78 is statistically significant at .05 level of confidence. Thereby indicates that physical activity curriculum was effective in increasing the speed ability of students, hence hypothesis 3 which states that “**H<sub>(3)</sub>**: Speed will be significantly effected by the implementation of the designed curriculum” is accepted.

**Table 4.4:** Pre-test and Post-test comparison of mean value on variable agility

Test	N	Mean	SD	SEM	t-value
Pre-test	36	13.39	1.45	.24	1.10
Post-test	36	14.36	5.96	.99	

Sig. at .05 = 2.02\* level of confidence



**Figure 4.4:** Mean difference of agility between pre-test and post-test

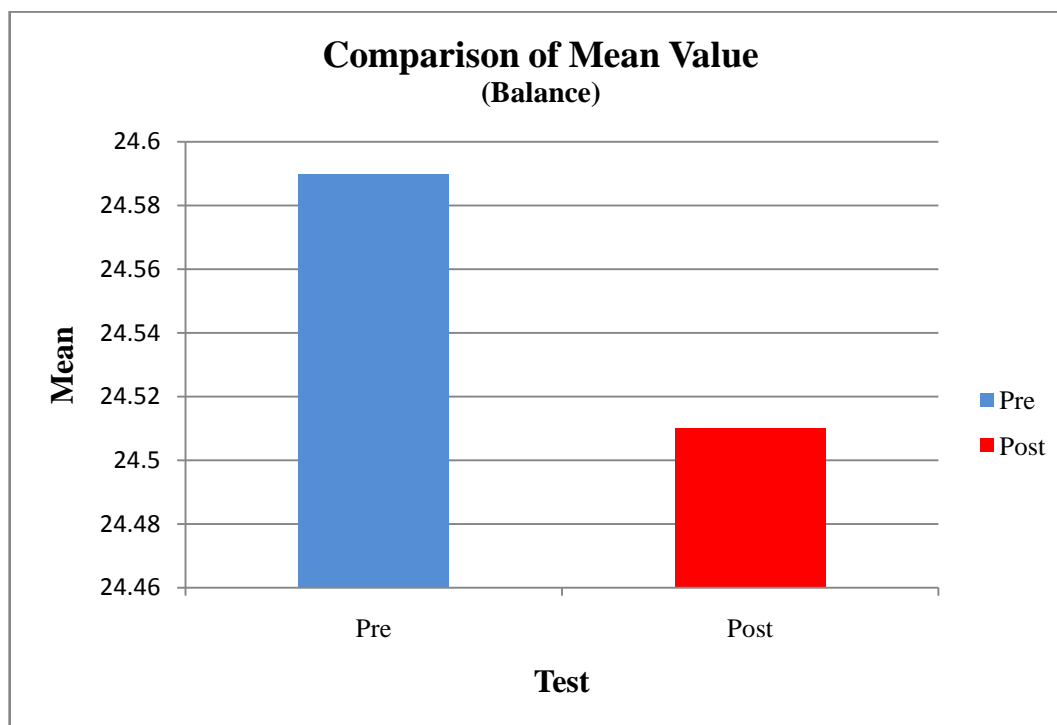
Table 4.4 indicates average (mean) values of agility 13.39 and 14.36 of pre-test and post-test respectively, indicates that physical activity curriculum was not effective in improving the agility of the student which is evident from the change in t-value 1.10, indicates that there is no significant change in the agility of students, hence hypothesis 4 which states that “**H<sub>(4)</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum” is rejected.



**Table 4.5:** Pre-test and post-test comparison of mean value on the variable of balance

Test	N	Mean	SD	SEM	t-value
Pre-test	36	24.59	17.80	2.97	.025
Post-test	36	24.51	16.72	2.79	

Sig. at .05 = 2.02\* level of confidence



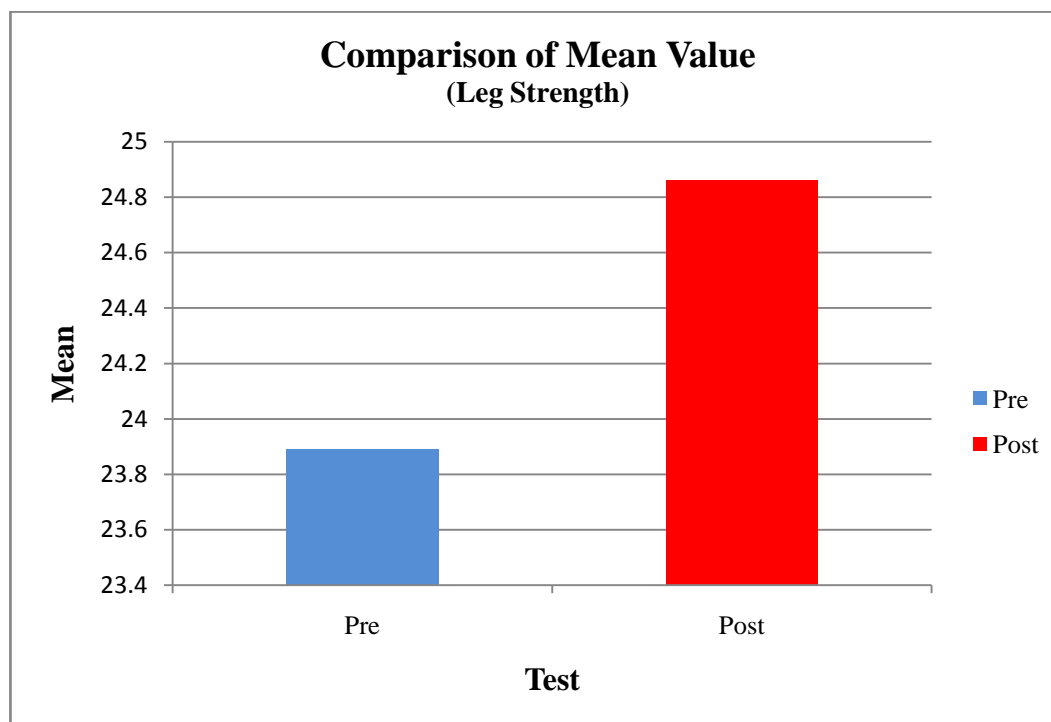
**Figure 4.5:** Mean difference of balance between pre-test and post-test

Table 4.5 indicates average (mean) values of balance 24.59 and 24.51 of pre-test and post-test respectively, indicates that physical activity curriculum was not effective in improving the balance of the student which is evident from the change in t-value .025, indicates that there is no significant change in the balance of students, hence hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” is rejected.

**Table 4.6:** Pre-test and post-test comparison of mean value of leg strength

Test	N	Mean	SD	SEM	t-value
Pre-test	36	23.89	6.79	1.13	1.93
Post-test	36	24.86	7.80	1.30	

Sig. at .05 = 2.02\* level of confidence



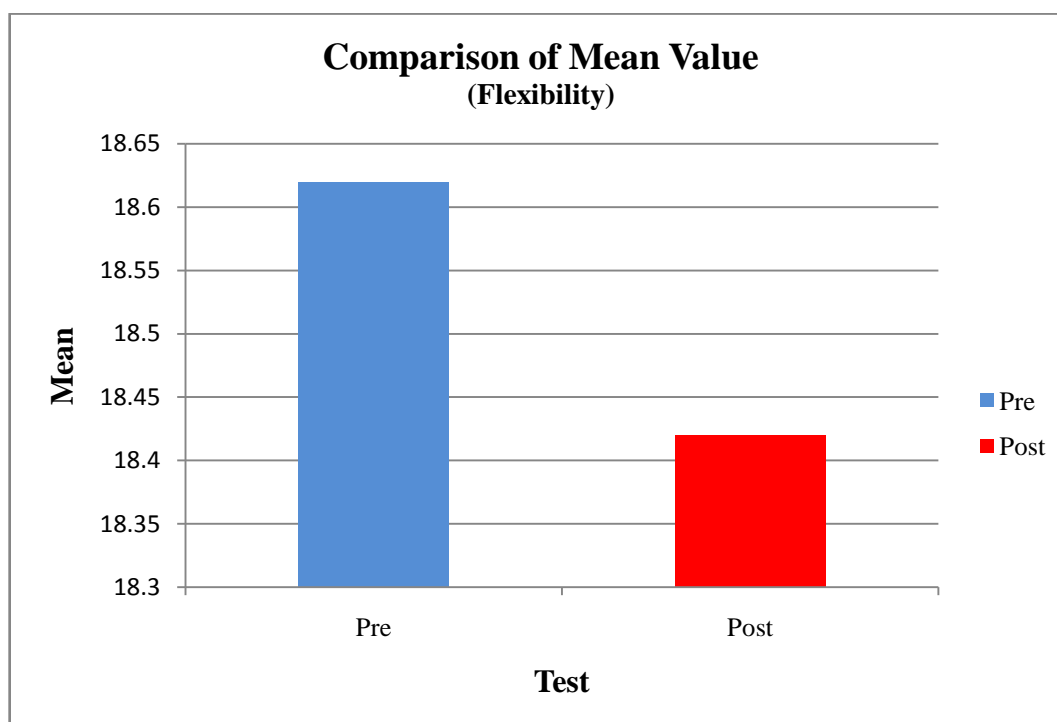
**Figure 4.6:** Mean difference of leg strength between pre-test and post-test

Table 4.6 indicates average (mean) values of leg strength 23.89 and 24.86 of pre-test and post-test respectively, indicates enhancement in leg strength, whereas t-value 1.93 is statistically significant at .05 level of confidence. Thereby indicates that physical activity curriculum was effective in increasing the leg strength ability of students, hence hypothesis 6 which states that "**H<sub>(6)</sub>**: Significant effect of physical activity curriculum of leg strength is hypothesized" is accepted.

**Table 4.7:** Pre-test and post-test comparison of mean value of flexibility

Test	N	Mean	SD	SEM	t-value
Pre-test	36	18.62	4.80	.80	0.53
Post-test	36	18.42	5.51	.92	

Sig. at .05 = 2.02\* level of confidence



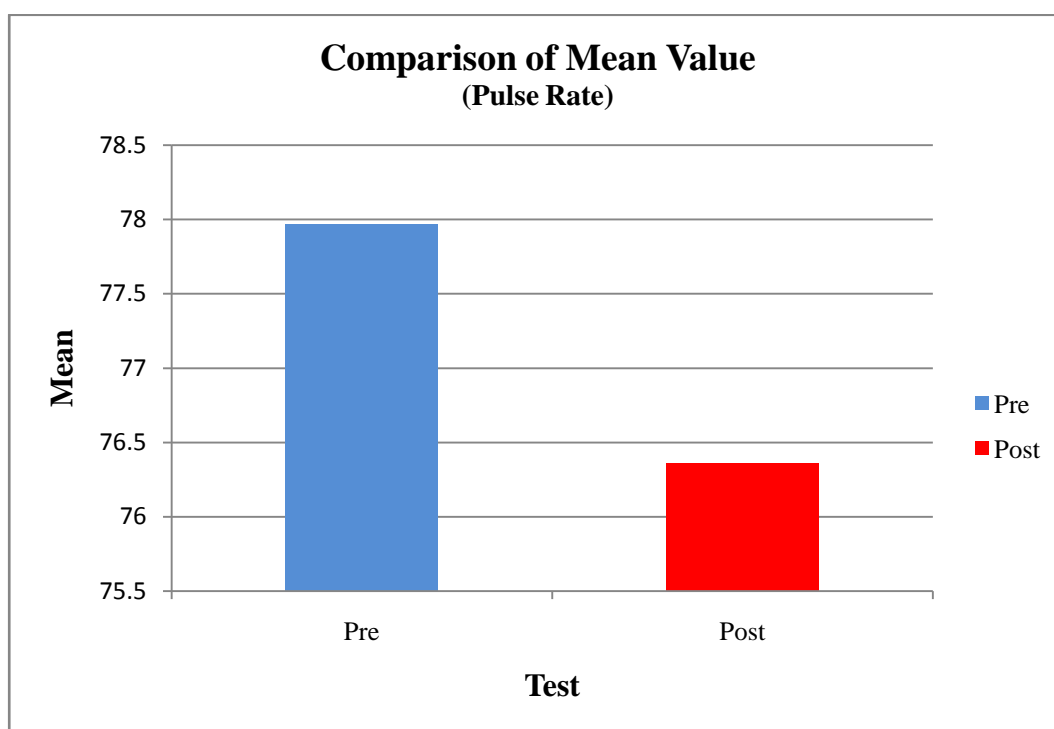
**Figure 4.7:** Mean difference of flexibility between pre-test and post-test

Table 4.7 indicates average (mean) values of balance 18.62 and 18.42 of pre-test and post-test respectively, indicates, physical activity curriculum was not effective in improving the flexibility of the student which is evident from the change in t-value .053, indicates that there is no significant change in the flexibility of students, hence hypothesis 7 which states that “ $H_{(7)}$ : Flexibility will also enhanced with the application of physical activity curriculum” is rejected.

**Table 4.8:** Pre-test and post-test comparison of mean value on the variable of pulse rate

Test	N	Mean	SD	SEM	t-value
Pre-test	36	77.97	7.32	1.22	3.03*
Post-test	36	76.36	5.62	.94	

Sig. at .05 = 2.02\* level of confidence



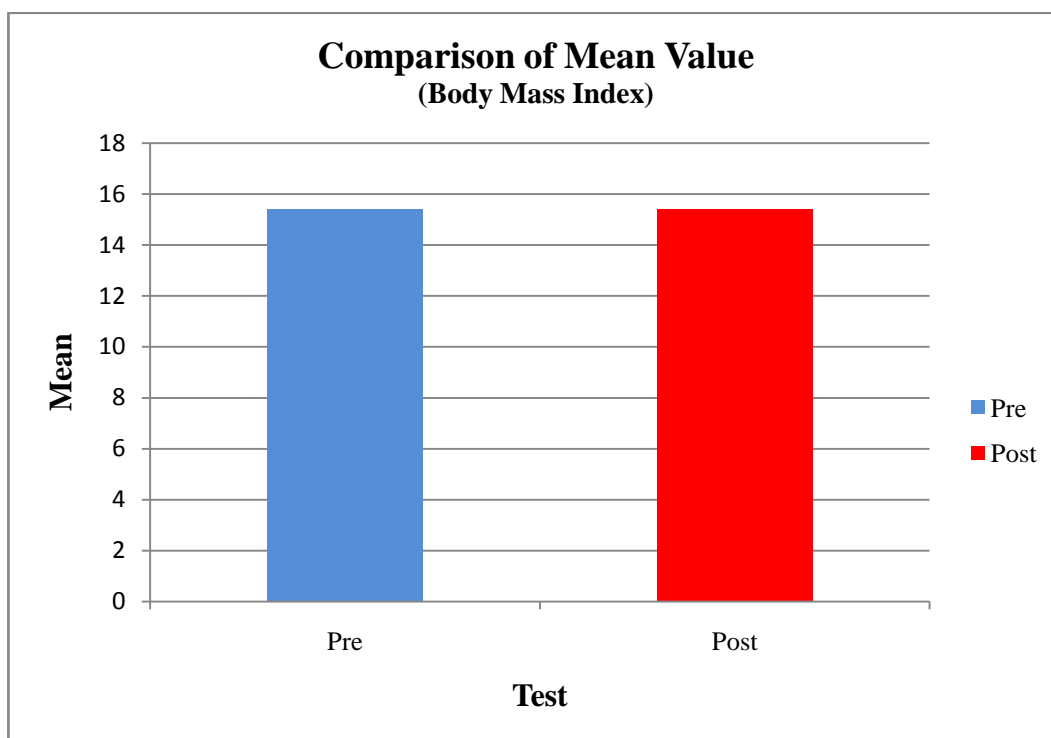
**Figure 4.8:** Mean difference of pulse rate between pre-test and post-test

Table 4.8 indicates average (mean) values of pulse rate 77.97 and 76.36 of pre-test and post-test respectively, indicates enhancement in pulse rate, whereas t-value 3.03 is statistically significant at .05 level of confidence. Thereby indicates that physical activity curriculum was effective in improving the pulse rate of students, hence hypothesis 8 which states that “**H<sub>(8)</sub>**: Pulse rate will be significantly effected” is accepted.

**Table 4.9:** Pre-test and post-test comparison of mean value on the variable of body mass index

Test	N	Mean	SD	SEM	t-value
Pre-test	36	15.42	2.197	.36	0
Post-test	36	15.42	2.197	.36	

Sig. at .05 = 2.02\* level of confidence



**Figure 4.9:** Mean difference of body mass index between pre-test and post-test

Table 4.9 indicates average (mean) values of standing height 15.42 and 15.42 of pre-test and post-test respectively, indicates that there is no change in average (mean) value which results in the 0 value of t-test. Indicates that there is no change in the body mass index of students, hence hypothesis 9 which states that “ $H_0$ ”: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” is rejected.

Similar results were shown by S. Manikanda (2014) who studied the effect of drills related to speed, agility and quickness on selected motor fitness components i.e. speed and leg strength of university players. To fulfill the task of the study, 30 players (M) were carefully chosen as subjects, between the age group of eighteen to twenty five years, they were studying in the different department of Annamalai University,

Tamil Nadu. The nominated samples were divided into two equivalent groups of fifteen each, training group and control group. The SAQ exercises consist of speed, agility and quickness exercises with normal load and recovery. Speed and Leg Strength the variables being tested by using 50 meters dash and weight lifted with legs dynamometer respectively. Statistical tool used is Analysis of covariance used to study the significant difference between the groups. The results of the study presented that Statistical significant difference on selected motor fitness components such as speed and leg strength between SAQ drills group and control group.

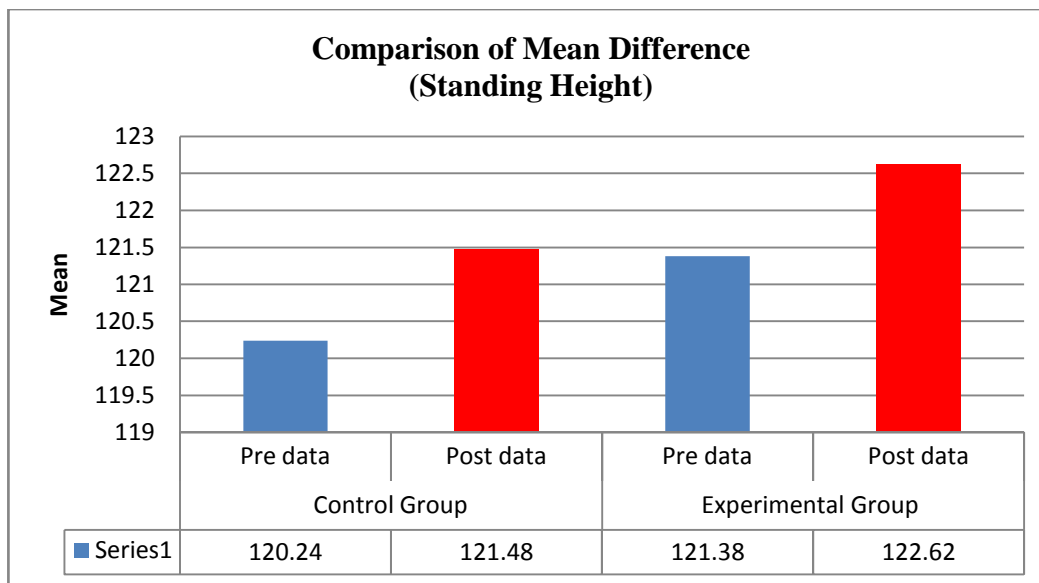
After analysing the consequences of research, researcher summed that after fourteen days of implementation of Physical activity curriculum, significant effect was possible on the variable of speed, whereas difference in average (mean) value was found on all the variables except height and body mass index and statistical significant difference was not found on other variables. Whereas it is expected that, if the physical activity curriculum would be implemented as per schedule mentioned for one academic year, it would be an effective tool for enhancement of the overall growth of children. Purpose of the pilot study was to check the feasibility and implementation of the curriculum and it was found that the published curriculum of physical activity can be implemented properly under the supervision of physical education teacher or fitness trainer working in the schools.

After successful completion of pilot study, data for main study was collected, presented and interpreted in the subsequent tables, figures and paragraphs.

**4.4 Presentation, Analysis and Interpretation of data after four weeks of training:**

**Table 4.10:** Pre-test and post-test score comparison of standing height in centimetres between control and experimental group of Class I students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	120.24	1.24	7.91	7.38**
	Post-test	121.48		7.82	
Experimental	Pre-test	121.38	1.24	5.31	6.01**
	Post-test	122.62		5.09	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.10:** Depicts comparison of mean value of standing height in centimeters, between control and experimental group of Class I students.

**Results:** Table 4.10 represents comparison of standing height in centimeters. Pre-test value of control group is 120.24 and post-test value is 121.48. Pre-test value is 121.38 and post-test value is 122.62 of experimental group. Post-test standard deviation is 7.82 and 5.09 of control group and experimental group respectively. t-value between pre and post-test of control group is 7.38 which is significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 6.01 is also found significant.

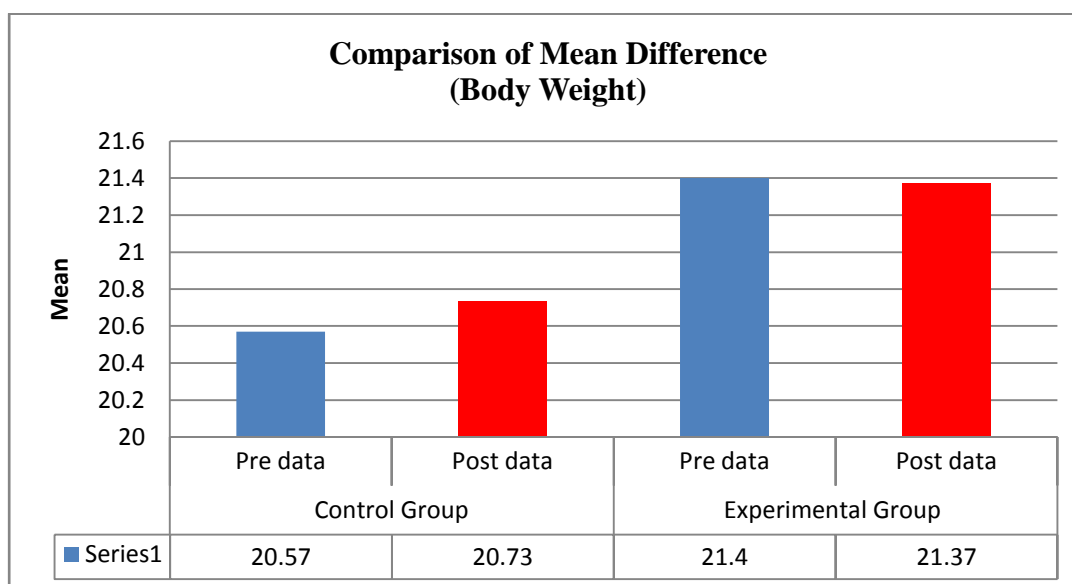
**Discussion:** Above results indicates that statistical significant difference was found between pre-test and post-test value of standing height, hence hypothesis 1 which states that “**H<sub>(1)</sub>**: It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted. Though the height of a child depends on the height of the parents but it may be inferred that control and experimental group have improved in standing height since at this age, growth spurt may have occurred and physical activity always have positive outcomes on growth as concluded by Guilherme Joao Bezerra Alves and Guilherma Victor Alves (2019) who studied the effect of physical activity on children’s growth since intrauterine life. Medline, Embase, Scielo and Cochrane databases of studies published from 1990 to 2018. It was concluded that physical exercise or activity does not appear to impair the child's growth and contributes to the ideal shaping of bone and muscle tissues, ensuring possible beneficial effects throughout life whereas one should not follow the physical activity curriculum just with the sole motive to increase height, since height of an individual / children is hereditary or genetically influenced but not directly affected by physical activity.



**Table 4.11:** Pre-test and post-test score comparison of body weight in kilograms between control and experimental group of Class I students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	20.57	0.16	2.94	0.68
	Post-test	20.73		3.24	
Experimental	Pre-test	21.40	0.03	3.85	0.24
	Post-test	21.37		3.95	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.11:** Depicts comparison of mean value of body weight in kilograms, between control and experimental group of Class I students.

**Results:** Table 4.11 represents mean value of body weight, pre-test 20.57 and post-test 20.73 of control group and pre-test 21.4 and post-test 21.37 of experimental group. Post-test standard deviation is 3.24 and 3.95 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.68 which is not significant at .05 & .01 level of confidence. t-value between pre-test and post-test of experimental group 0.24 is not significant.

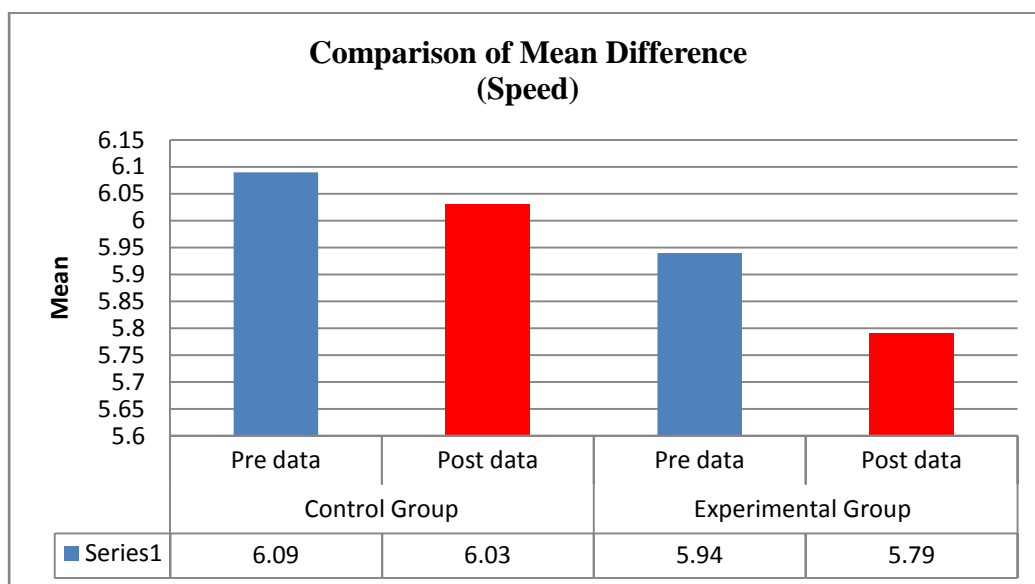
**Discussion:** Hypothesis 2 which states that “**H<sub>(2)</sub>**: Developed curriculum of physical activity will also effect body weight significantly” was rejected since statistical

significance difference was not found between the two groups. Statistical difference may not be found on body weight because before and after school activity like eating habits were not controlled and the effect of the exercises have been neutralized, it can be suggested that intensity of the exercise should be increased in order to make the activity more effective. Shriver et al. (2011) undertook a research on body weight, physical fitness and activity among 3rd-grade rural students. All students were measured for weight and height. The results revealed that 38 percent children were found obese or overweight. Approximately 15 percent children were exceptionally obese. It was found that the obese children spent a lesser amount of time in activity at different levels of intensity compared to other children. 43 percent children were not up to mark with muscular strength and fitness standard and 36 percent were not up to mark for flexibility. Rural students were found to have high obesity than the normal average range. Rural children had poor fitness and 30 percent had lower activity level than the minimal physical activity recommendations for the day.

**Table 4.12:** Pre-test and post-test score comparison of speed in seconds between control and experimental group of Class I students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	6.09	0.06	0.51	0.60
	Post-test	6.03		0.58	
Experimental	Pre-test	5.94	0.15	0.70	1.52
	Post-test	5.79		0.76	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.12:** Depicts comparison of mean value of speed in seconds between control and experimental group of Class I students.

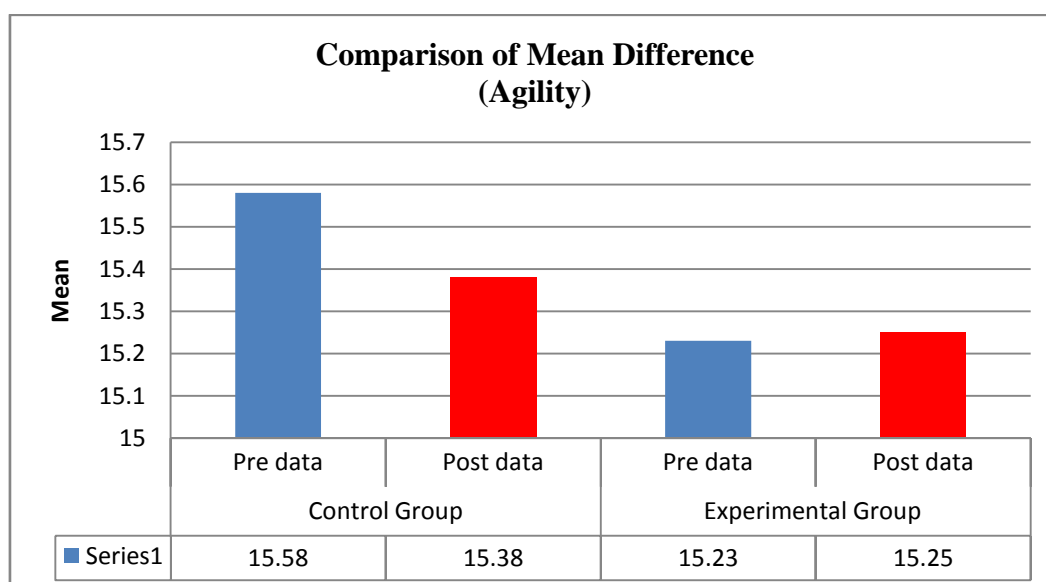
**Results:** Table 4.12 represents mean value of speed, pre-test 6.09 and post-test 6.03 of control group and pre-test 5.94 and post-test 5.79 of experimental group. Post-test standard deviation is 0.58 and 0.76 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.60 which is not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 1.52 was also not found significant indicates that significant difference do not exists between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical significant difference do not exists between pre-test and post-test value of speed, hence hypothesis 3 which states that

“**H<sub>(3)</sub>**: Speed will be significantly effected by the implementation of the designed curriculum” stands rejected. Though the speed of the students have been increased but not significantly. Results were supported by Azmi and Kusnanik (2018) of Negeri Surabaya, University, Indonesia who concluded in their study that there was a significant effect of speed, agility and quickness training program in improving in speed, agility and acceleration. In order have better results, intensity of physical activity curriculum may be increased and monitored accordingly.

**Table 4.13:** Pre-test and post-test score comparison of agility in seconds between control and experimental group of Class I students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	15.58	0.20	1.58	1.33
	Post-test	15.38		1.77	
Experimental	Pre-test	15.23	0.02	1.35	0.07
	Post-test	15.25		1.79	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



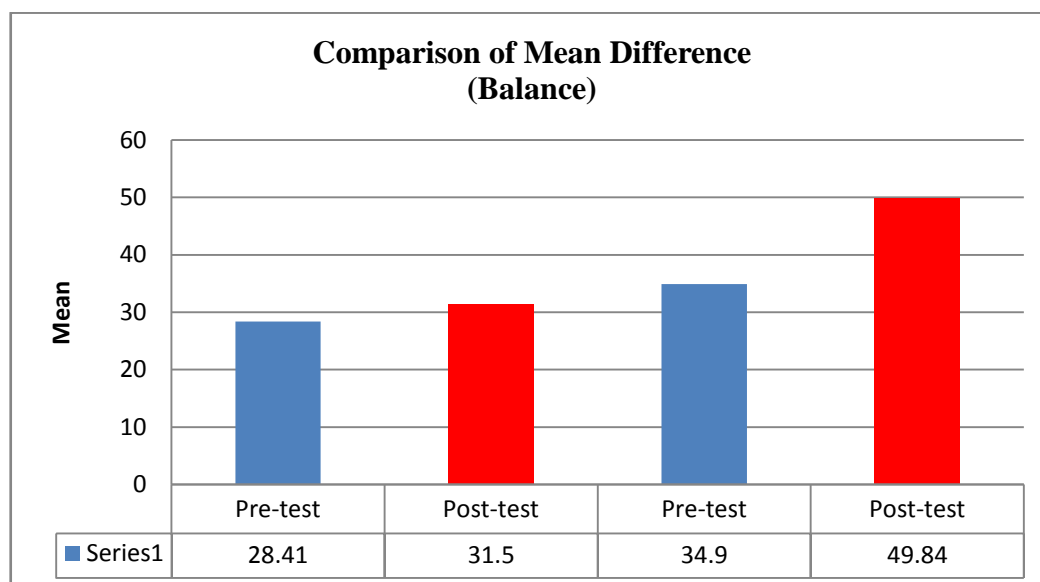
**Figure 4.13:** Depicts comparison of mean value of agility in seconds, between control and experimental group of Class I students.

**Results:** Table 4.13 represents mean value of agility, pre-test 15.58 and post-test 15.38 of control group and pre-test 15.23 and post-test 15.25 of experimental group. Post-test standard deviation is 1.77 and 1.79 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.33 which is not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 0.07 is not significant but statistical difference 0.02 between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical difference have not been found, thereby rejecting hypothesis 4 which states that “**H<sub>(4)</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum”. Results were not significant because the curriculum was prepared to develop overall fitness of the children. And in order alter the nature of the curriculum intensity can be increased. Gabbet (2006) scrutinized the conclusion of an aptitude based instruction program on the extent of agility and physical fitness in volleyball players. In comparison to pre training, there was noteworthy enhancement in 05mtr., 10mtr. agility and speed.

**Table 4.14:** Pre-test and post-test score comparison of balance in minutes between control and experimental group of Class I students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	28.41	3.09	19.96	0.82
	Post-test	31.50		20.43	
Experimental	Pre-test	34.90	14.94	28.02	2.64*
	Post-test	49.84		26.06	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.14:** Depicts comparison of mean value of balance in minutes, between control and experimental group of Class I students.

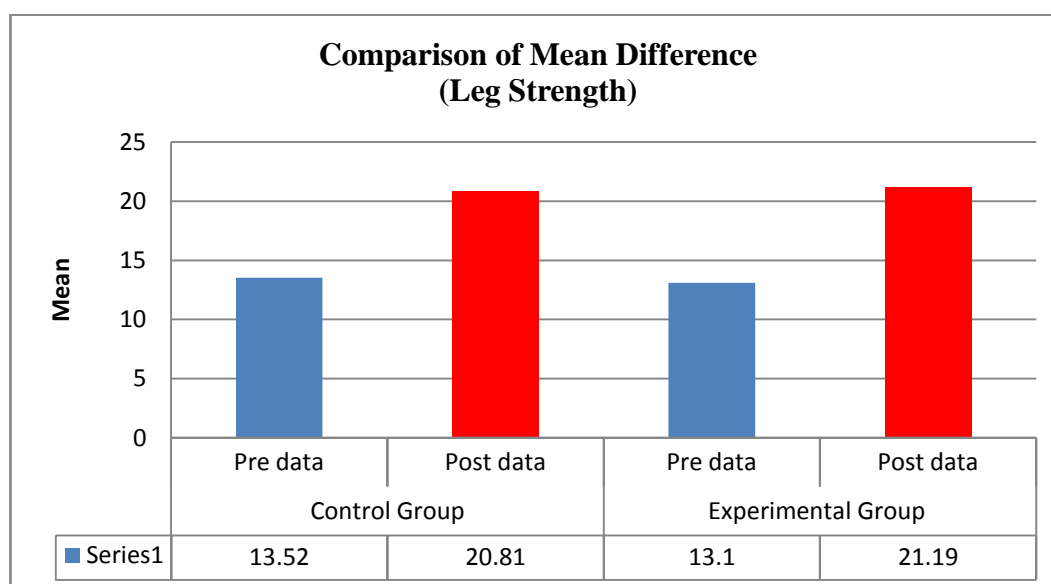
**Results:** Table 4.14 represents mean value of balance pre-test 28.41 and post-test 31.50 of control group and pre-test 34.90 and post-test 49.84 of experimental group. Post-test standard deviation is 20.43 and 26.06 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.82 which is not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 2.64 was significant at .05 level of confidence and statistical difference 14.94 between average (mean) value of experimental group.

**Discussion:** Above results indicates that there exists statistical significant difference between pre-test and post-test value of balance in treatment groups as compared to

control group. Hence hypothesis 5 which states that “**H<sub>(5)</sub>**: Balance ability will also effected significantly by the execution of the physical activity curriculum” is accepted because statistical significance difference between the two groups exists in treatment group only. This shows that Physical activity curriculum was effective in enhancing biomotor abilities. Results of the present study were supported by Dian Pujianto (2018) who studied the effect of physical activity program on static balance in early childhood and concluded that static balance was influenced by the physical activity at the early childhood.

**Table 4.15:** Pre-test and post-test score comparison of leg strength in counts between control and experimental group of Class I students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	13.52	7.29	4.94	3.12**
	Post-test	20.81		10.19	
Experimental	Pre-test	13.10	8.10	3.99	3.87**
	Post-test	21.19		9.38	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.15:** Depicts comparison of mean value of leg strength in counts, between control and experimental group of Class I students.

**Results:** Table 4.15 represents mean value of leg strength, pre-test 13.52 and post-test 20.81 of control group and pre-test 13.10 and post-test 21.19 of experimental group. Post-test standard deviation is 10.19 and 9.38 of control group and experimental group respectively. t-value between pre and post-test of control group is 3.12, which was significant at .05 & .01 level of confidence. Whereas t-test between pre and post-test of experimental group 3.87 was also significant at .01 level of confidence.

**Discussion:** Above results indicates that statistical significant difference was found between pre-test and post-test value of experimental group of leg strength, hence

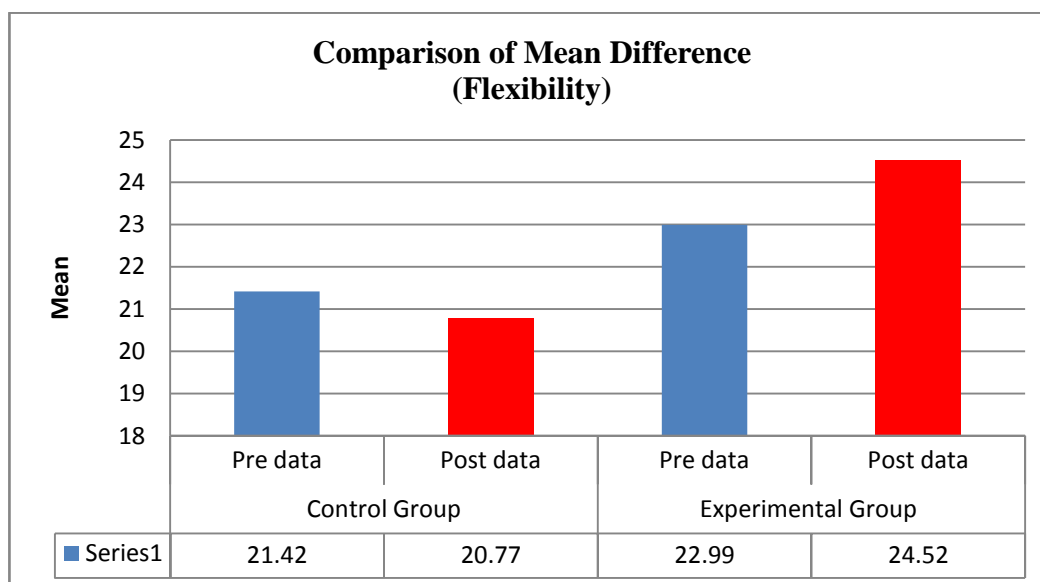


hypothesis 6 which states that “**H<sub>(6)</sub>**: Significant effect of physical activity curriculum of leg strength is hypothesized” stands accepted. Results of the above table suggest that the developed Physical Activity curriculum was effective tool in improving leg strength of elementary school students and detraining decreases the strength as proved by the Tran et al. (2016) on effects of four weeks of detraining on strength, power and sensorimotor ability of adolescent surfers, for this purpose nineteen adolescent surfers were selected. After four weeks of detraining, it was concluded that vertical jump, isometric strength and relative strength was significantly decreased therefore it is necessary to continue resistance training and avoid cessation of resistance training. Hence proved that four weeks are enough to make the desired adaptive changes in the body.

**Table 4.16:** Pre-test and post-test score comparison of flexibility in centimetres between control and experimental group of Class I students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	21.42	0.65	4.76	0.72
	Post-test	20.77		4.66	
Experimental	Pre-test	22.99	1.53	4.65	5.41**
	Post-test	24.52		3.93	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.16:** Depicts comparison of mean value of flexibility in centimetres, between control and experimental group of Class I students.

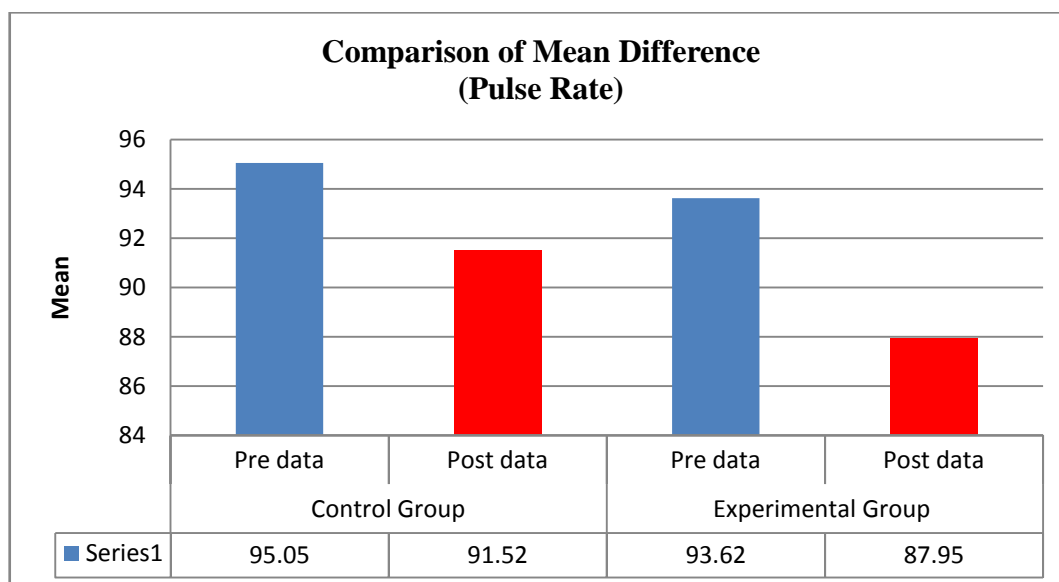
**Results:** Table 4.16 represents mean value of flexibility, pre-test 21.42 and post-test 20.77 of control group and pre-test 22.99 and post-test 24.52 of experimental group. Standard deviation of post-test is 4.66 and 3.93 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.72, which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 5.41 which was found significant at .01 level of confidence.

**Discussion:** Hypothesis 7 which states that “**H<sub>(7)</sub>**: Flexibility will also enhanced with the application of physical activity curriculum” stands accepted because statistical

difference between the experimental group was found significant, which proves that physical activity curriculum proved effective in improving the flexibility of class second students. Results were supported by Akkoyunlu and Sirin (2010) who determined some biomotor features of 14 years football players. In which 20 active footballer and 20 subjects who did not take exercise regularly were assessed for the anthropometric variables, 20m speed, flexibility and other biomotor abilities. The results showed that 20 meter run, flexibility and other biomotor abilities were found significant.

**Table 4.17:** Pre-test and post-test score comparison of pulse rate between control and experimental group of Class I students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	95.05	3.53	13.43	1.89
	Post-test	91.52		11.29	
Experimental	Pre-test	93.62	5.67	8.36	4.35**
	Post-test	87.95		7.93	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.17:** Depicts comparison of mean value of pulse rate per minute, between control and experimental group of Class I students.

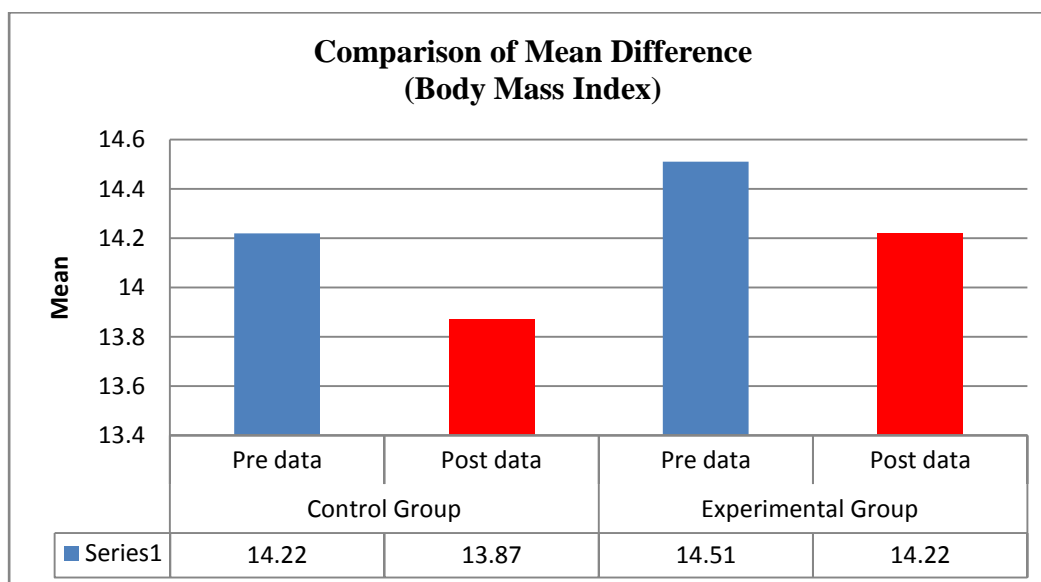
**Results:** Table 4.17 represents mean value of pulse rate, pre-test 95.05 and post-test 91.52 of control group and pre-test 93.62 and post-test 87.95 of experimental group. Pre-test standard deviation is 11.29 and 7.93 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.89 was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.35 was found significant.

**Discussion:** Above results indicates that significant difference exists between pre-test and post-test value of pulse rate, hence hypothesis 8 which states that “**H<sub>(8)</sub>**: Pulse rate

will be significantly effected” was accepted. When compared the overall improvement of pulse rate between control and experimental group, physical activity curriculum has helped in lowering the pulse rate of experimental group as indicated in the above table. Shannan and Gormley (2008) studied “Effect of Intensity of Aerobic Training on VO<sub>2</sub>max” and the purpose was to determine whether various intensities of aerobic training differentially affect aerobic capacity as well as resting HR and resting blood pressure (BP). There were no significant changes in resting HR and BP in any group. When volume of exercise is controlled, higher intensities of exercise are more effective for improving VO<sub>2</sub> max than lower intensities of exercise in healthy, young adults. This study suggests that to get desired result, intensity of physical activity curriculum can be manipulated accordingly.

**Table 4.18:** Pre-test and post-test score comparison of body mass index between control and experimental group of Class I students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	14.22	0.35	1.68	1.64
	Post-test	13.87		1.57	
Experimental	Pre-test	14.51	0.29	2.31	3.11**
	Post-test	14.22		2.27	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



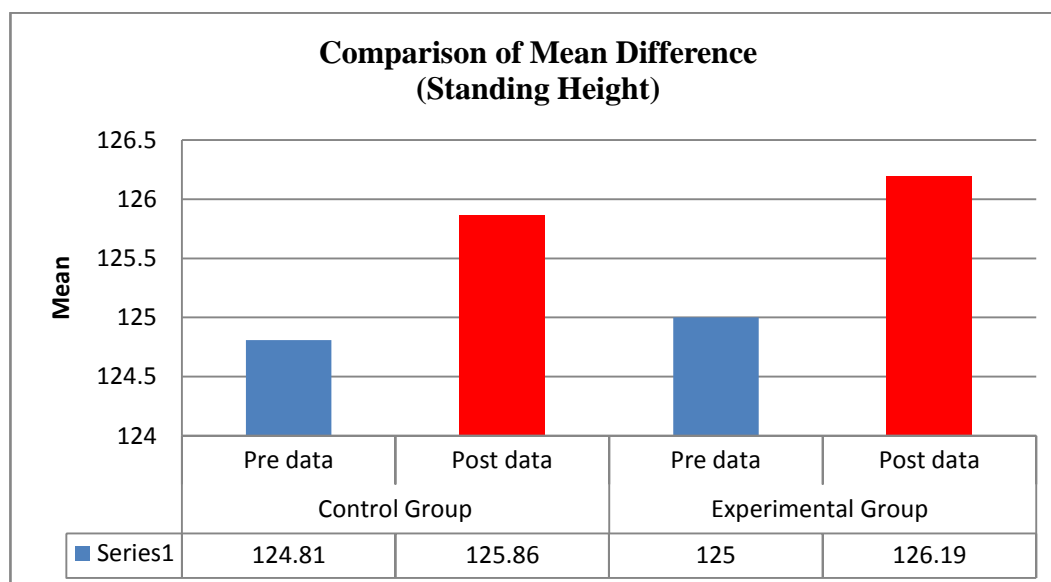
**Figure 4.18:** Depicts comparison of mean value of body mass index, between control and experimental group of Class I students.

**Results:** Table 4.18 represents mean value of body mass index, pre-test 14.22 and post-test 13.87 of control group and pre-test 14.51 and post-test 14.22 of experimental group. Post-test standard deviation is 1.57 and 2.27 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.64 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 3.11 was significant with mean difference 0.29 between average (mean) value of experimental group.

**Discussion:** Above results indicates that t-value at .05 level of confidence between pre-test and post-test value of body mass index was found significant, hence hypothesis 9 which states that “**H<sub>9</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” was accepted. Physical activity curriculum was effective on body mass index of experimental group of class I. Orjan, Kristjan and Bjorn (2005) executed an empirical research on Swedish children and adolescents physical performance. The height as well as the mass of the body of the children was calculated and BMI was determined. The outcome showcased that the boys exercised considerably superior in the tests of physical performance than the girls and their activity exercise was boosted with the age. In the present study it can be concluded that with the grooming/growth of the child BMI will be better if physical activity curriculum will be incorporated by monitoring the load parameters of the activity.

**Table 4.19:** Pre-test and post-test score comparison of standing height in centimetres between control and experimental group of Class II students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	124.81	1.05	5.04	7.18**
	Post-test	125.86		4.81	
Experimental	Pre-test	125.00	1.19	5.28	5.56**
	Post-test	126.19		5.23	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.19:** Depicts comparison of mean value of standing height in centimetres, between control and experimental group of Class II students.

**Results:** Table 4.19 represents mean value of standing height, pre-test 124.81 and post-test 125.86 of control group and pre-test 125.00 and post-test 126.19 of experimental group. Post-test standard deviation is 4.81 and 5.23 of control group and experimental group respectively. t-value between pre and post-test of control group is 7.18 was significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 5.56 was also significant and statistical difference 1.19 between average (mean) value of experimental group.

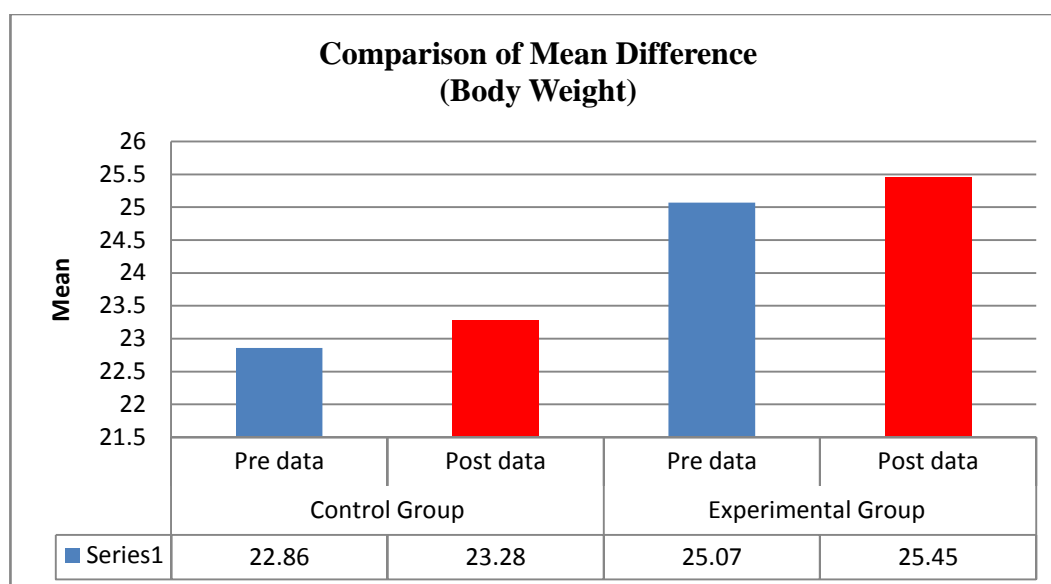
**Discussion:** Hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted



because statistical significance difference between the two groups was found significant. Standing height of both the groups have been increased there by suggesting that physical growth of the children may be in routine and natural process, which may have occurred during the treatment period. But the benefits of physical activity cannot be ignored as concluded by Guilherme Joao et al. (2019) who studied the effect of physical activity on children's growth since intrauterine life. Medline, Embase, Scielo and Cochrane databases of studies published from 1990 to 2018. It was concluded that Physical exercise does not appear to impair the child's linear growth and contributes to the ideal shaping of bone and muscle tissues, ensuring possible beneficial effects throughout life, whereas one should not follow the physical activity curriculum just with the only aim to increase height, since height of an individual / children is based on hereditary or genetical factors but not directly affected by physical activity.

**Table 4.20:** Pre-test and post-test score comparison of body weight in kilograms between control and experimental group of Class II students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	22.86	0.42	2.52	2.74*
	Post-test	23.28		2.25	
Experimental	Pre-test	25.07	0.39	6.43	2.25*
	Post-test	25.45		6.50	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



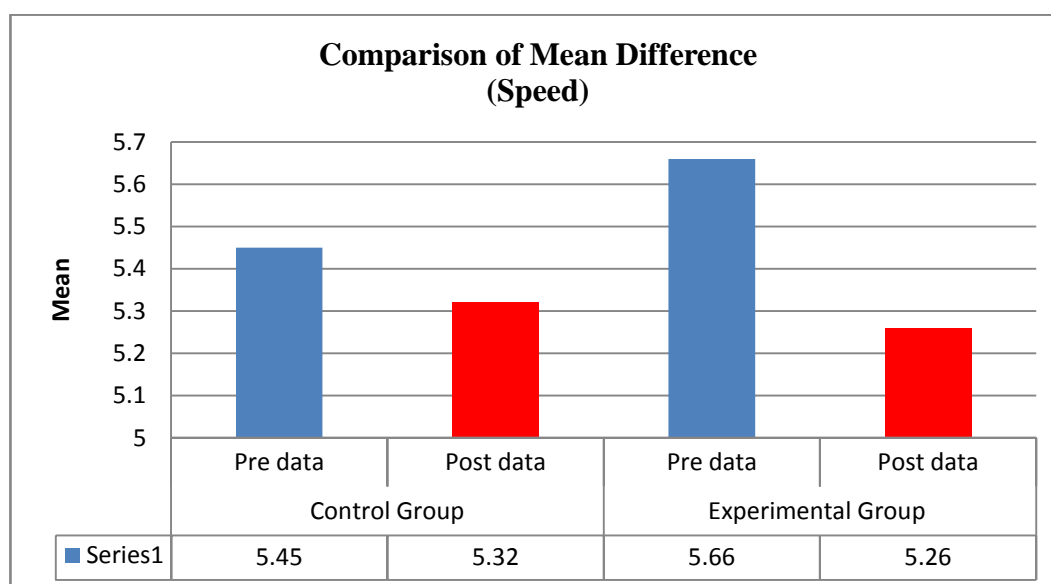
**Figure 4.20:** Depicts comparison of mean value of body weight in kilograms, between control and experimental group of Class II students.

**Results:** Table 4.20 represents mean value of body weight, pre-test 22.86 and post-test 23.28 of control group and pre-test 25.07 and post-test 25.45 of experimental group. Post-test standard deviation is 2.25 and 6.50 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.74 which was significant at .05 level of confidence. t-value between pre and post-test of experimental group 2.25 was found significant whereas statistical mean difference 0.39 between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical difference between pre-test and post-test value of body weight of both the groups were found significant, hence hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity will also effect body weight significantly” stands accepted. Physical activity and diet of the children was not controlled which may have affected the body weight significantly. Swift et al. (2018) who studied the effects of exercise and physical activity on weight loss and maintenance concluded that physical activity, 75 minutes per week can improve the health. In particular weight of the body can be reduced from exercise training programs.

**Table 4.21:** Pre-test and post-test score comparison of speed in seconds between control and experimental group of Class II students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	5.45	0.13	0.64	1.35
	Post-test	5.32		0.73	
Experimental	Pre-test	5.66	0.39	0.57	4.04**
	Post-test	5.26		0.51	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.21:** Depicts comparison of mean value of speed in seconds, between control and experimental group of Class II students.

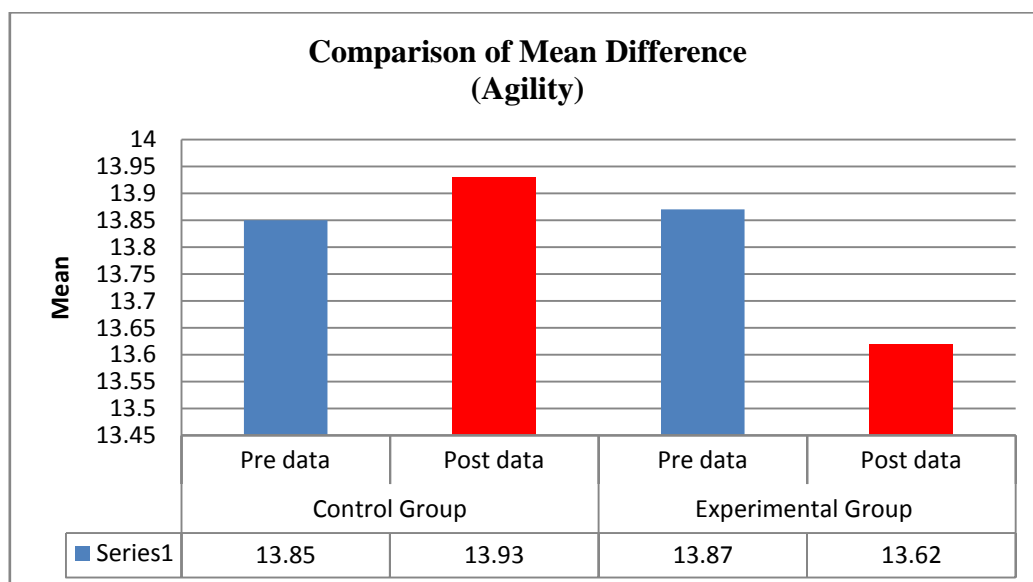
**Results:** Table 4.21 represents mean value of speed, pre-test 5.45 and post-test 5.32 of control group and pre-test 5.66 and post-test 5.26 of experimental group. Post-test standard deviation is 0.73 and 0.51 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.35 which is not significant at .05 level of confidence. t-value between pre and post-test of experimental group 4.04 was found significant.

**Discussion:** Above results indicates that statistical significant difference was found between pre-test and post-test value of speed, hence hypothesis 3 which states that “**H<sub>3</sub>**: Speed will be significantly effected by the implementation of the designed

curriculum” was accepted. Improvement in speed of experimental group signifies that physical activity curriculum was effective in increasing the speed of students. Akkoyunlu and Sirin (2010) determined some biomotor features of 14 years football players. 20 active footballer and 20 subjects who did not take exercise regularly were assessed for anthropometric variables, 20m speed, reach and touch, right and left hand grasp, stop and jump and vertical jump. The results showed that 20 meter run, flexibility, stop and long jump, vertical jump were found to have significant difference between the groups. Body fat percentage measurement values (biceps, triceps, and upper hip) were also found significant.

**Table 4.22:** Pre-test and post-test score comparison of agility in seconds between control and experimental group of Class II students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	13.85	0.07	1.18	1.01
	Post-test	13.93		1.18	
Experimental	Pre-test	13.87	0.25	1.13	5.07**
	Post-test	13.62		1.17	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.22:** Depicts comparison of mean value of agility in seconds, between control and experimental group of Class II students.

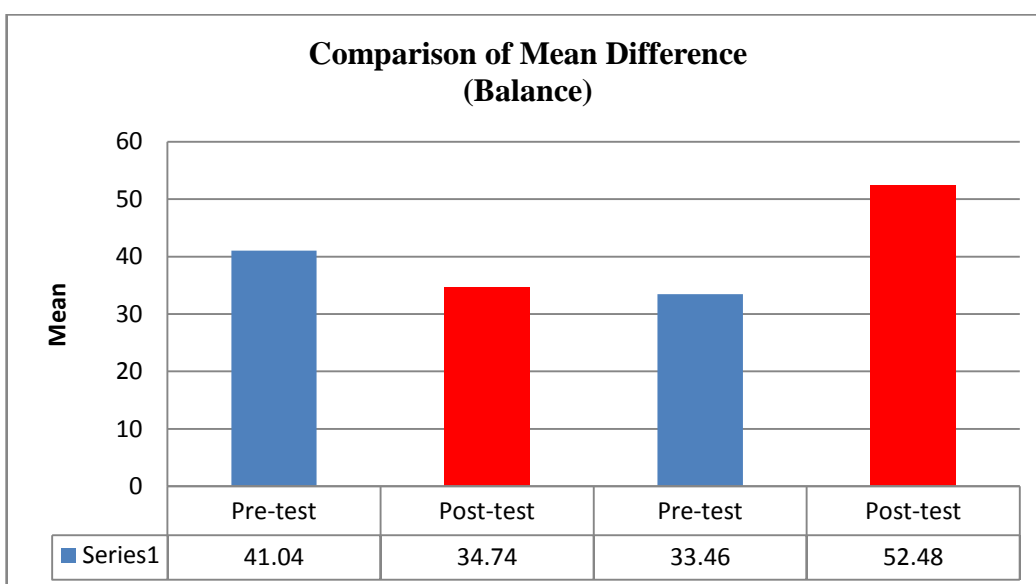
**Results:** Table 4.22 represents mean value of agility, pre-test 13.85 and post-test 13.93 of control group and pre-test 13.87 and post-test 13.62 of experimental group. Post-test standard deviation is 1.18 and 1.17 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.01 which was not significant at .05 level of confidence. t-value between pre and post-test of experimental group 5.07 was highly significant.

**Discussion:** Above results indicates that statistical significant difference between exists between pre-test and post-test value of agility, hence hypothesis 4 which states

that “**H<sub>4</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted, hence proving that curriculum will be effective in enhancing the agility if implemented properly. Fahiminezhad (2010) examined the physical fitness and anthropometric measurements of male students of Shahrood concluded that noteworthy negative relationship exists between cardio-respiratory fitness and anthropometric measurements among the boy students. Agility, flexibility and leg power were reported significant negative correlation with height.

**Table 4.23:** Pre-test and post-test score comparison of balance in minutes between control and experimental group of Class II students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	41.04	6.30	32.08	1.31
	Post-test	34.74		22.65	
Experimental	Pre-test	33.46	19.01	25.28	4.02**
	Post-test	52.48		21.75	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.23:** Depicts comparison of mean value of balance in minutes, between control and experimental group of Class II students.

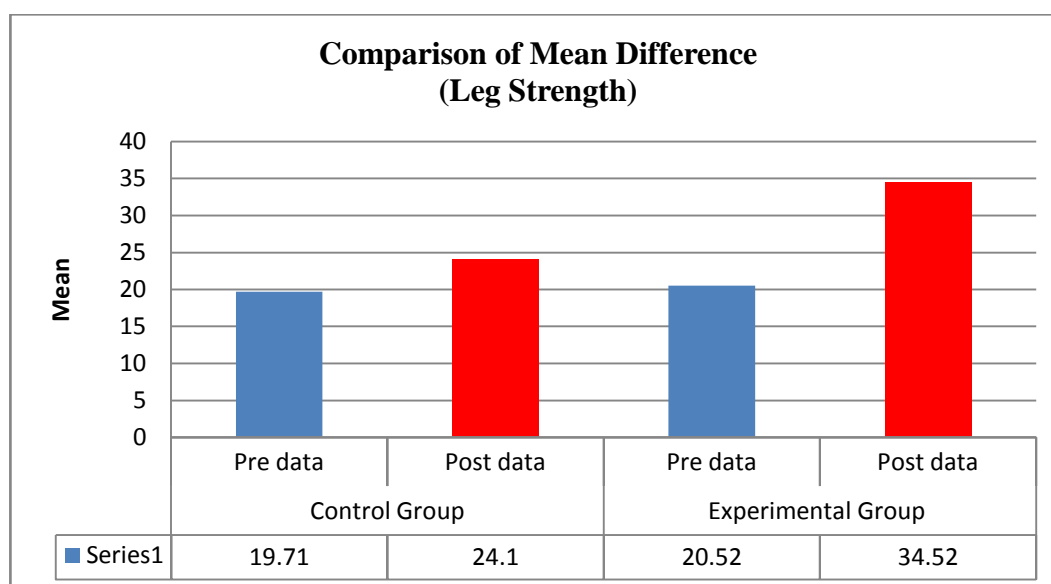
**Results:** Table 4.23 represents mean value of balance, pre-test 41.04 and post-test 34.74 of control group and pre-test 33.46 and post-test 52.48 of experimental group. Post-test standard deviation is 22.65 and 21.75 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.31 which was not significant at .05 level of confidence. t-value between pre and post-test of experimental group 4.02 was found significant and statistical difference 19.01 between average (mean) value of experimental group.

**Discussion:** Statistical significant difference was found between pre-test and post-test value of balance, hence hypothesis 5 which states that “**H<sub>(5)</sub>**: Balance ability will also effected significantly by the execution of the physical activity curriculum” stands accepted. Improvement in balance of the experimental group indicates that physical activity curriculum was effective in improving balance ability of children. Results of the present study were supported by Dian Pujianto (2018) who studied the effect of physical activity program on static balance in early childhood and concluded that static balance was influenced by the physical activity at early childhood.



**Table 4.24:** Pre-test and post-test score comparison of leg strength in counts between control and experimental group of Class II students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	19.71	4.38	11.67	3.20**
	Post-test	24.10		13.41	
Experimental	Pre-test	20.52	14.00	5.69	3.74**
	Post-test	34.52		19.15	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.24:** Depicts comparison of mean value of leg strength in counts, between control and experimental group of Class II students.

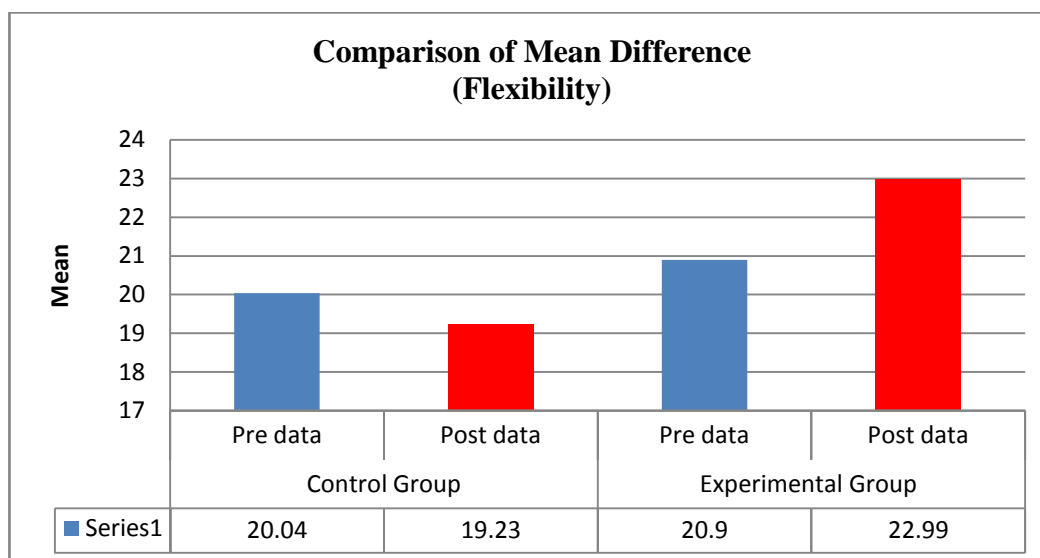
**Results:** Table 4.24 represents mean value of leg strength, pre-test 19.71 and post-test 24.10 of control group and pre-test 20.52 and post-test 34.52 of experimental group. Post-test standard deviation is 13.41 and 19.15 of control group and experimental group respectively. t-value between pre and post-test of control group is 3.20 which was found significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 3.74 was also significant.

**Discussion:** Above results indicates that significant difference exists between pre-test and post-test value of leg strength of both the groups, hence hypothesis 6 which states

that “ $H_{(6)}$ : Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted result of the present study were supported by Hulsdunker et al. (2019), Fahiminezhad (2010) and Albon, Hamlin and Ross (2010) who recommended that physical activity curriculum have beneficial effect on leg strength.

**Table 4.25:** Pre-test and post-test score comparison of flexibility in centimetres between control and experimental group of Class II students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	20.04	0.81	4.23	1.19
	Post-test	19.23		4.16	
Experimental	Pre-test	20.90	2.09	5.84	4.72**
	Post-test	22.99		5.10	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.25:** Depicts comparison of mean value of flexibility in centimetres, between control and experimental group of Class II students.

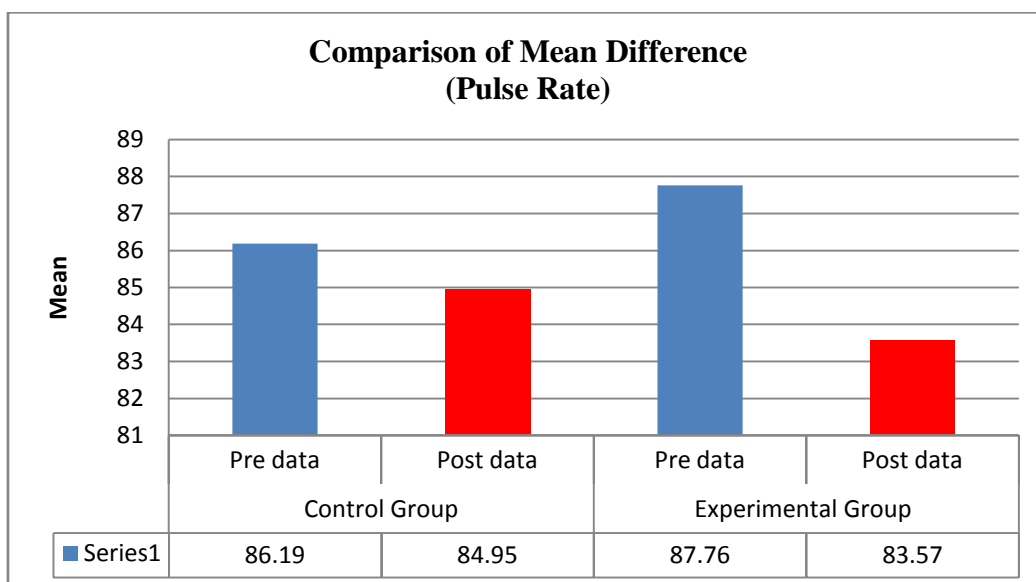
**Results:** Table 4.25 represents mean value of flexibility, pre-test 20.04 and post-test 19.23 of control group and pre-test 20.90 and post-test 22.99 of experimental group. Post-test standard deviation is 4.16 and 5.10 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.19 which was not

found significant at .05 level of confidence. t-value between pre and post-test of experimental group 4.72 was found significant at .01 level of confidence.

**Discussion:** Above results indicates that statistical difference between pre-test and post-test mean value of flexibility in experimental group was found significant, hence hypothesis 7 which states that “**H<sub>(7)</sub>**: Flexibility will also enhanced with the application of physical activity curriculum” stands accepted. After studying the results it can be concluded that Physical activity curriculum was effective in improving flexibility of students of experimental group as depicted in the above table. Research conducted by Shamli (2010) who studied the physical activities and physiological fitness of students from Oman. The outcomes revealed that the flexibility, muscle endurance and cardiovascular endurance were considerably higher among rural school children as compared to urban school children. There was noteworthy difference in muscle endurance, body fat percentage and cardiovascular endurance on the basis of participation in sports activities and physiological fitness for all the children.

**Table 4.26:** Pre-test and post-test score comparison of pulse rate per minute between control and experimental group of Class II students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	86.19	1.24	8.29	0.88
	Post-test	84.95		5.37	
Experimental	Pre-test	87.76	4.19	6.84	4.20**
	Post-test	83.57		7.00	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.26:** Depicts comparison of mean value of pulse rate per minute, between control and experimental group of Class II students.

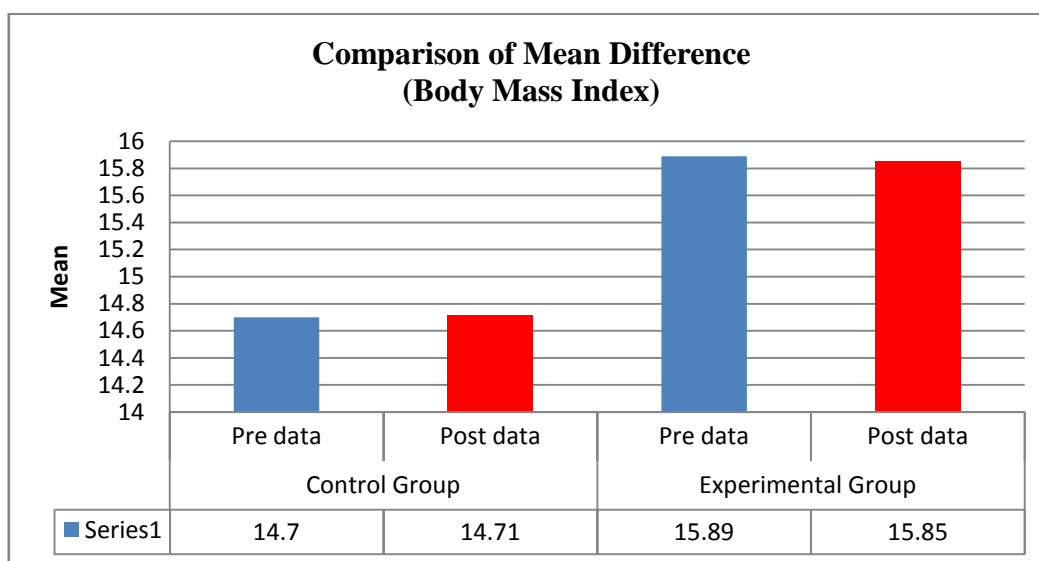
**Results:** Table 4.26 represents mean value of pulse rate, pre-test 86.19 and post-test 84.95 of control group and pre-test 87.76 and post-test 83.57 of experimental group. Pre-test standard deviation is 5.37 and 7.00 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.88 which was not significant at .05 level of confidence. t-value between pre and post-test of experimental group 4.20 was found significant.

**Discussion:** Significant difference between pre-test and post-test value of pulse rate, was found significant thereby accepting hypothesis 8 which states that “**H<sub>(8)</sub>**: Pulse

rate will be significantly effected”. Similar finding were supported by Shannan and Gormley (2008) studied “Effect of Intensity of Aerobic Training on VO<sub>2</sub>max” and the purpose was to determine whether various intensities of aerobic training differentially affect aerobic capacity as well as resting HR and resting blood pressure (BP). When volume of exercise is controlled, higher intensities of exercise are more effective for improving V.O<sub>2</sub> max than lower intensities of exercise in healthy, young adults. Present study suggests that in order to get desired results, intensity of physical activity curriculum can be monitored in order improve the pulse rate of the children.

**Table 4.27:** Pre-test and post-test score comparison of body mass index between control and experimental group of Class II students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	14.70	0.01	1.60	0.12
	Post-test	14.71		1.40	
Experimental	Pre-test	15.89	0.04	3.05	0.38
	Post-test	15.85		3.05	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.27:-** Depicts comparison of mean value of body mass index, between control and experimental group of Class II students.

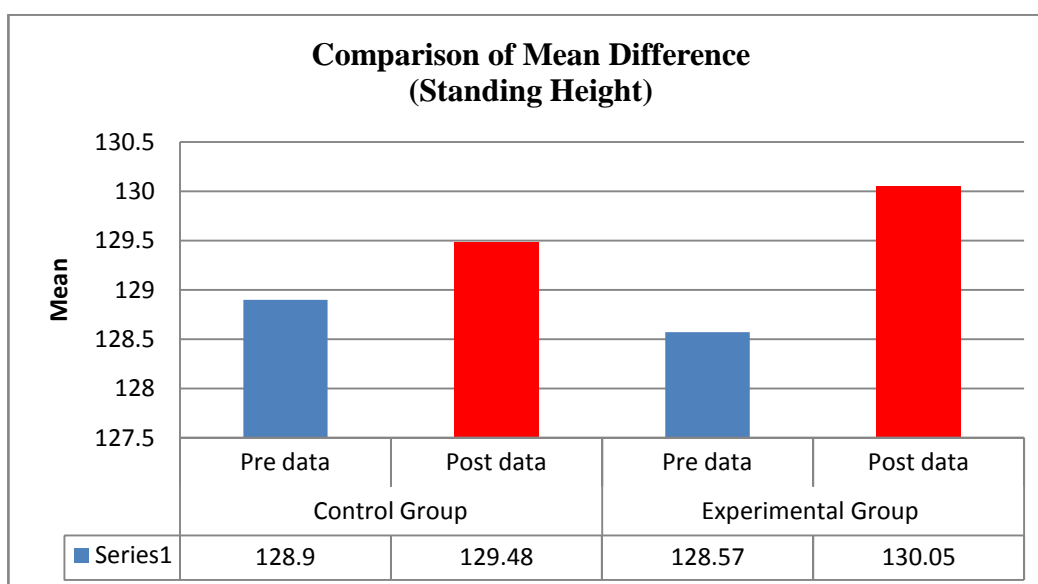
**Results:** Table 4.27 represents comparison of body mass index. Pre-test value is 14.7 and post-test value is 14.71 of control group. Pre-test value is 15.89 and post-test value is 15.85 of experimental group. Post-test standard deviation 1.40 and 3.05 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.12 was not significant at .05 level of confidence. t-value between pre and post-test of experimental group 0.38 was also not significant but statistical negligible mean difference of .04, between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical difference was not found between pre-test and post-test value of body mass index, hence hypothesis 9 which states that “**H<sub>9</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected. Suggesting that physical activity curriculum was not effective in improving BMI of experimental group of class II. It also depends on physical education teacher as how to monitor the load parameters of the curriculum because a study conducted by Orjan, Kristjan and Bjorn (2005) executed an empirical research on Swedish children and adolescents’ physical performance. The height as well as the mass of the body of the children was calculated and BMI was determined. The outcome showcased that the boys exercised considerably superior in the tests of physical performance than the girls and their activity exercise was boosted with the age hence concluded that with the grooming/growth of the child BMI, can also be improved, if physical activity curriculum is monitored/incorporated in a scientific manner.

**Table 4.28:** Pre-test and post-test score comparison of standing height in centimetres between control and experimental group of Class III students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	128.90	0.57	5.69	4.38**
	Post-test	129.48		5.47	
Experimental	Pre-test	128.57	1.48	4.82	5.80**
	Post-test	130.05		5.07	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.28:** Depicts comparison of mean value of standing height in centimetres, between control and experimental group of Class III students.

**Results:** Table 4.28 represents mean value of standing height, pre-test 128.90 and post-test 129.48 of control group and pre-test 128.57 and post-test 130.05 of experimental group. Post-test standard deviation is 5.47 and 5.07 of control group and experimental group respectively. t-value between pre and post-test of control group is 4.38 which was significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 5.80 was found significant but at .05 level of confidence.

**Discussion:** Above results indicates that significant difference was found between pre-test and post-test value of standing height, in control and experimental group

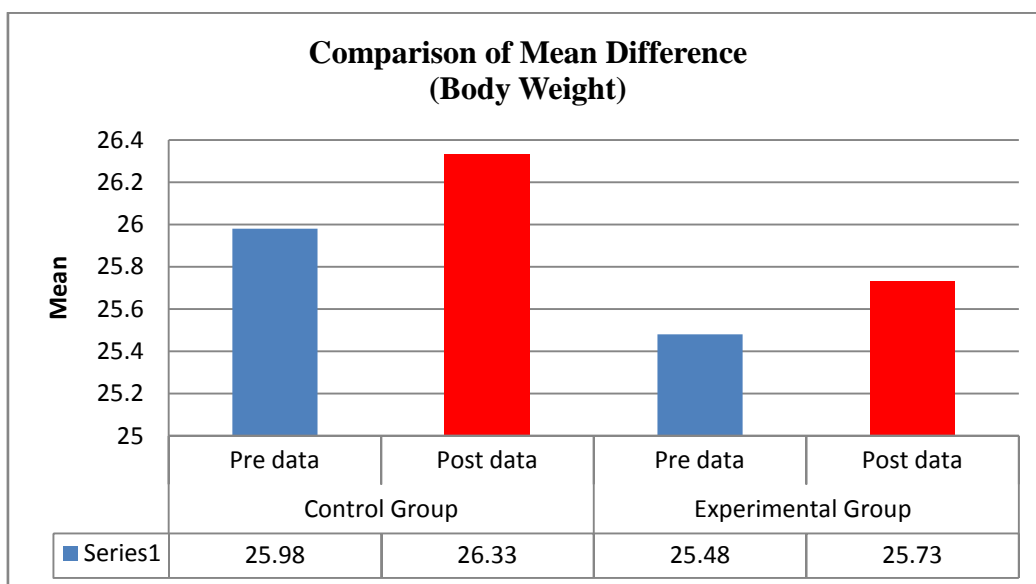
hence hypothesis 1 which states that “**H<sub>(1)</sub>**: It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted. Such results may be due to the growing age of the children, since height cannot be altered with the exercise whereas it height of the children depends on the height of the parents and only in exceptional cases it may vary. Similar finding were supported by Guilherme Joao et al. (2019) who studied the effect of physical activity on children’s growth since intrauterine life. And concluded that Physical exercise does not appear to impair the child's linear growth and contributes to the ideal shaping of bone and muscle tissues, ensuring possible beneficial effects throughout life. It is advised that developed physical activity curriculum should not be followed just with the sole motive to increase height, since height of an individual / children is hereditary or genetically influenced but not directly affected by physical activity.



**Table 4.29:** Pre-test and post-test score comparison of body weight in kilograms between control and experimental group of Class III students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	25.98	0.35	5.22	1.03
	Post-test	26.33		5.35	
Experimental	Pre-test	25.48	0.25	4.67	1.29
	Post-test	25.73		4.86	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.29:** Depicts comparison of mean value of body weight in kilograms, between control and experimental group of Class III students.

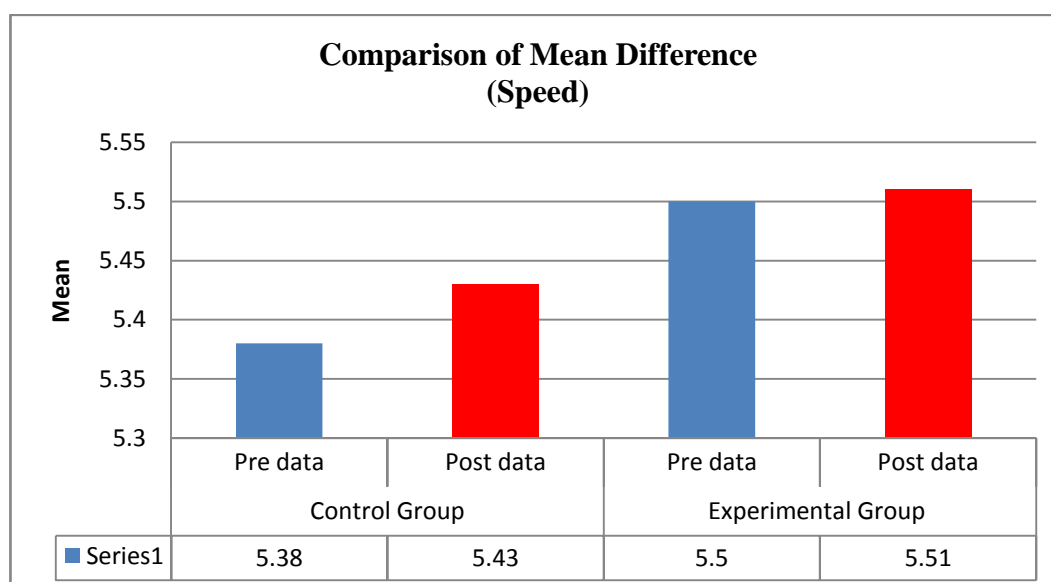
**Results:** Table 4.29 represents mean value of body weight, pre-test 25.98 and post-test 26.33 of control group and pre-test 25.48 and post-test 25.73 of experimental group. Post-test standard deviation is 5.35 and 4.86 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.03 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 1.29 was not significant.

**Discussion:** Above results indicates that difference between pre-test and post-test value of body weight was not found significant, hence hypothesis 2 which states that

“**H<sub>2</sub>**: Developed curriculum of physical activity will also effect body weight significantly” was rejected. In this study, diet was not controlled of the elementary school students. Ara et al. (2007) summed that body fat and BMI in boys and girls were found to be significantly associated with maximal oxygen uptake and in order to get desired results on body weight of the children, load parameters of the physical activity and VO<sub>2</sub> max. should be manipulated accordingly.

**Table 4.30:** Pre-test and post-test score comparison of speed in seconds between control and experimental group of Class III students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	5.38	0.05	0.61	0.72
	Post-test	5.43		0.77	
Experimental	Pre-test	5.50	0.02	0.62	0.21
	Post-test	5.51		0.70	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.30:** Depicts comparison of mean value of speed in seconds between control and experimental group of Class III students.

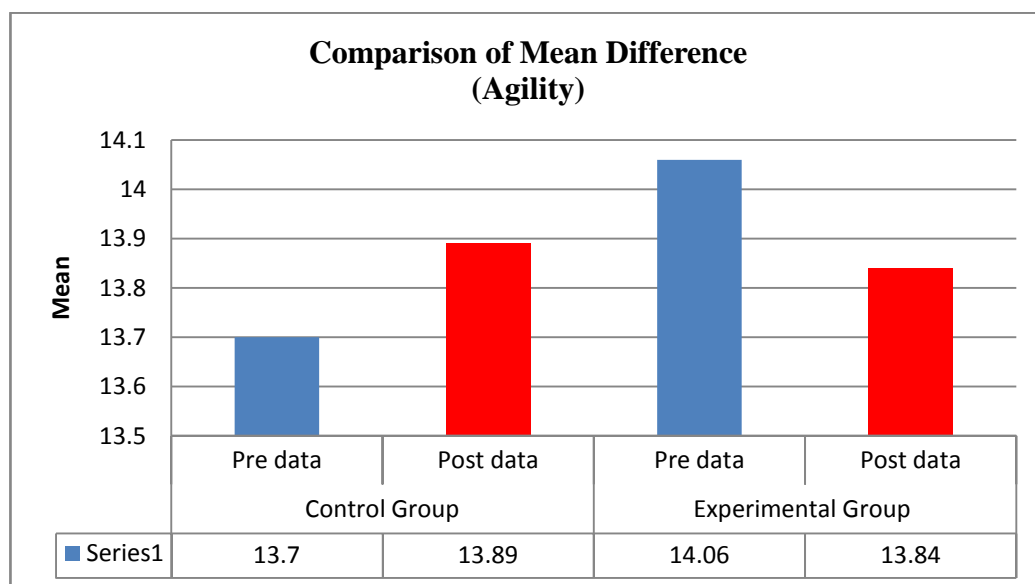
**Results:** Table 4.30 represents mean value of speed, pre-test 5.38 and post-test 5.43 of control group and pre-test 5.50 and post-test 5.51 of experimental group. Post-test standard deviation is 0.77 and 0.70 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.72 which was not significant at .05 level of confidence. t-value between pre and post-test of experimental group 0.21 was not significant.

**Discussion:** Hypothesis 3 which states that “**H<sub>(3)</sub>:** Speed will be significantly effected by the implementation of the designed curriculum” was rejected because statistical significant difference was not found between pre-test and post-test mean value of experimental group. Azmi and Kusnanik (2018) of University of Negeri Surabaya, Indonesia concluded in their study that there was a significant effect of speed, agility and quickness training program in improving in speed, agility and acceleration and it is suggested that in order have better results, intensity of physical activity curriculum should be increased or can be manipulated accordingly.

**Table 4.31:** Pre-test and post-test score comparison of agility in seconds between control and experimental group of Class III students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	13.70	0.19	1.33	0.76
	Post-test	13.89		2.30	
Experimental	Pre-test	14.06	0.23	0.68	4.55**
	Post-test	13.84		0.67	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



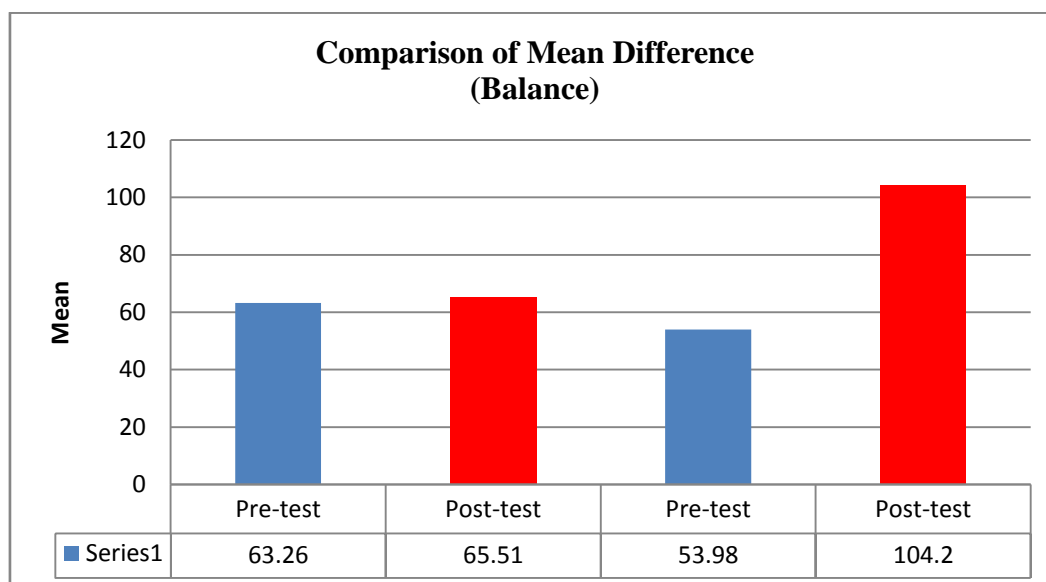
**Figure 4.31:** Depicts comparison of mean value of agility in seconds, between control and experimental group of Class III students.

**Results:** Table 4.31 represents mean value of agility, pre-test 13.70 and post-test 13.89 of control group and pre-test 14.06 and post-test 13.84 of experimental group. Post-test standard deviation is 2.30 and 0.67 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.76 which was not significant at .05 level of confidence. t-value between pre and post-test of experimental group 4.55 was found significant with difference 0.23 between average (mean) value of experimental group.

**Discussion:** Statistical significant difference between pre-test and post-test value of agility of experimental group was found significant hence hypothesis 4 which states that “**H<sub>(4)</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted. Hence proving that developed physical activity curriculum is an effective tool in improving the agility of the students. Similar study by Azmi and Kusnanik (2018) was conducted which aimed to analyze the effect of training program (speed, agility and quickness) to increase in speed, agility and acceleration. This study was conducted at 26 soccer players and divided into 2 groups with 13 players each group. The results showed that there was significant effect of training program (speed, agility and quickness) in improving the speed, agility and acceleration.

**Table 4.32:** Pre-test and post-test score comparison of balance in minutes between control and experimental group of Class III students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	63.26	2.25	35.86	0.33
	Post-test	65.51		35.29	
Experimental	Pre-test	53.98	50.22	28.85	9.43**
	Post-test	104.20		35.41	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



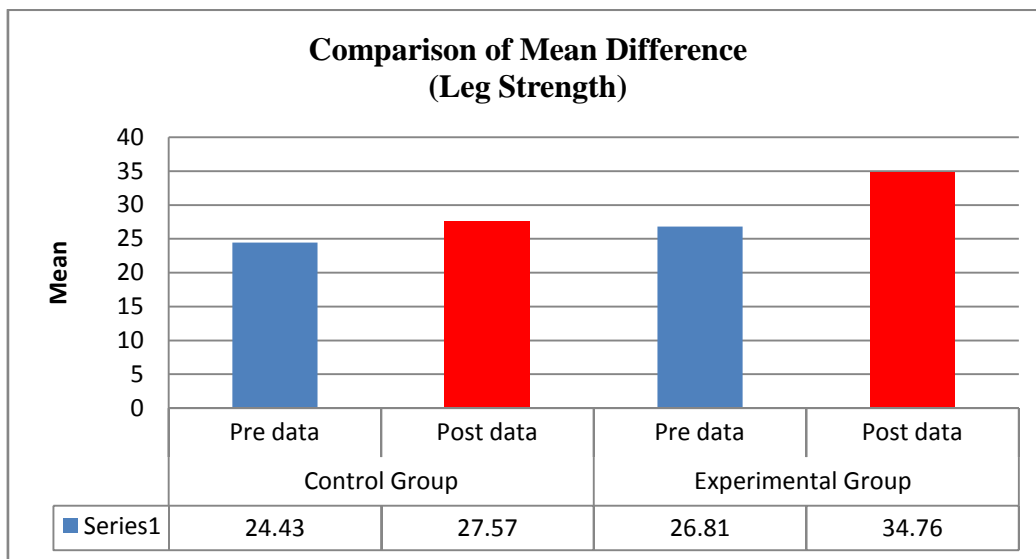
**Figure 4.32:** Depicts comparison of mean value of balance in minutes, between control and experimental group of Class III students.

**Results:** Table 4.32 represents mean value of balance, pre-test 63.26 and post-test 65.51 of control group and pre-test 53.98 and post-test 104.20 of experimental group. Post-test standard deviation is 35.29 and 35.41 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.33 which was insignificant at .05 level of confidence. t-value between pre and post-test of experimental group 9.43 was not significant and statistical difference 19.01 between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical significant difference exists between pre-test and post-test value of balance of experimental group, hence hypothesis 5 which states that “**H<sub>(5)</sub>**: Balance ability will also effected significantly by the execution of the physical activity curriculum” stands accepted. Results of the present study were supported by Dian Pujianto (2018) who studied the effect of physical activity program on static balance in early childhood and concluded that static balance was influenced by the physical activity at early childhood.

**Table 4.33:** Pre-test and post-test score comparison of leg strength in counts between control and experimental group of Class III students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	24.43	3.14	12.71	2.02
	Post-test	27.57		13.61	
Experimental	Pre-test	26.81	7.95	13.36	9.49**
	Post-test	34.76		13.67	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.33:** Depicts comparison of mean value of leg strength in counts, between control and experimental group of Class III students.

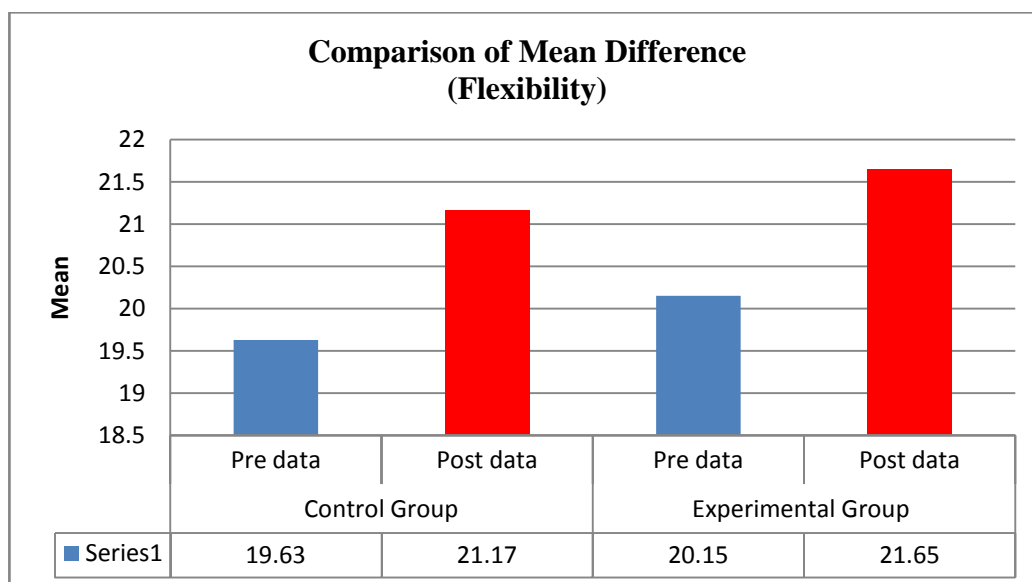
**Results:** Table 4.33 represents mean value of leg strength, pre-test 24.43 and post-test 27.57 of control group and pre-test 26.81 and post-test 34.76 of experimental group. Post-test standard deviation is 13.61 and 13.67 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.02 which is not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group is 9.49 which was found significant.

**Discussion:** Results indicates that leg strength of the students have been increased significantly hence hypothesis 6 which states that “**H<sub>(6)</sub>**: Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted. Suggesting that there was development in leg strength of the experimental group when compared to control group. Results also suggests that developed Physical Activity curriculum was effective tool in improving leg strength of class III students whereas detraining may lead to decrease in the sports performance which is proved by Tran et al. (2016) who conducted research on effects of four weeks of detraining on strength, power and sensorimotor ability of adolescent surfers, for this purpose nineteen adolescent surfers were selected. After four weeks of detraining, it was concluded that vertical jump, isometric strength and relative strength was significantly decreased therefore it is necessary to continue resistance training and avoid cessation of resistance training. Hence it is clear that four weeks are enough make the desired adaptive changes in the body by continuing the training without any training gaps.



**Table 4.34:** Pre-test and post-test score comparison of flexibility in centimetres between control and experimental group of Class III students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	19.63	1.54	3.81	2.11
	Post-test	21.17		3.91	
Experimental	Pre-test	20.15	1.50	4.13	3.34**
	Post-test	21.65		4.01	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.34:** Depicts comparison of mean value of flexibility in centimetres, between control and experimental group of Class III students.

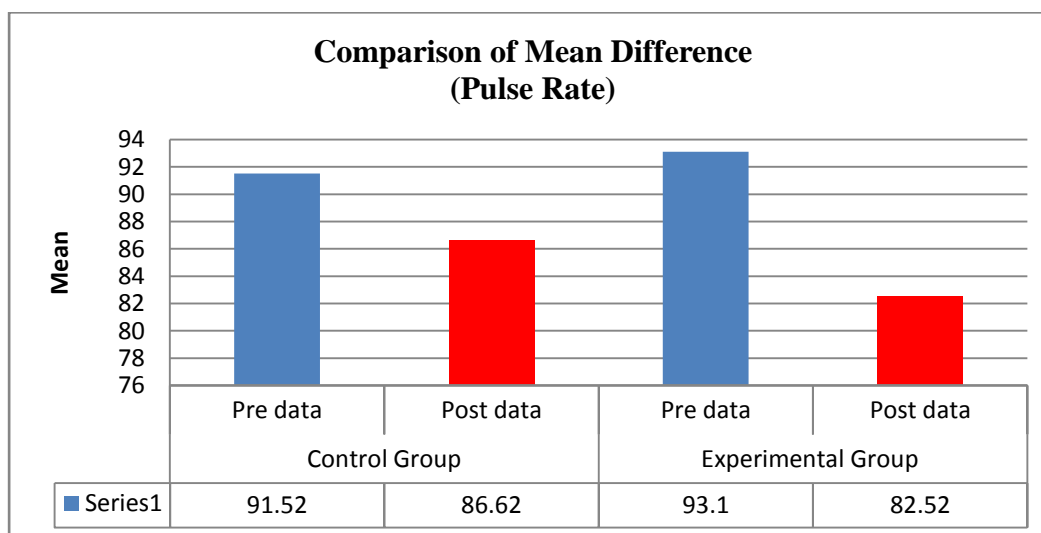
**Results:** Table 4.34 represents mean value of flexibility, pre-test 19.63 and post-test 21.17 of control group and pre-test 20.15 and post-test 21.65 of experimental group. Post-test standard deviation is 3.91 and 4.01 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.11 which was significant at .05 level of confidence. t-value between pre and post-test of experimental group 3.34 was also found significant at .01 level of confidence and statistical difference 1.50 between average (mean) value of experimental group.

**Discussion:** Above results indicates that mean difference between pre-test and post-test value of flexibility of experimental group was significant and hypothesis 7 which states that “**H<sub>(7)</sub>**: Flexibility will also enhanced with the application of physical activity curriculum” stands accepted. This also reflects that activity curriculum if implemented properly may yield fruitful results. Results by Powell et al. (2009) who examined lower physical fitness among 05<sup>th</sup> and 07<sup>th</sup> grade students. In this study total numbers of 5248 pupils from 93 schools were selected for the study. All the children were measured for body composition and structure, endurance, muscle strength, flexibility and aerobic capacity. Physical activities of the children were taken of the most recent 3 days. The results revealed that the 52% of children were not up to the standards for required aerobic fitness. 23 percent children did not accomplish the required standard for endurance, muscular strength and flexibility. Therefore physical activity curriculum is recommended for such 05<sup>th</sup> and 07<sup>th</sup> grade students.

**Table 4.35:** Pre-test and post-test score comparison of pulse rate between control and experimental group of Class III students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	91.52	4.90	10.45	2.41*
	Post-test	86.62		8.17	
Experimental	Pre-test	93.10	10.58	10.80	4.25**
	Post-test	82.52		5.81	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.35:** Depicts comparison of mean value of pulse rate per minute, between control and experimental group of Class III students.

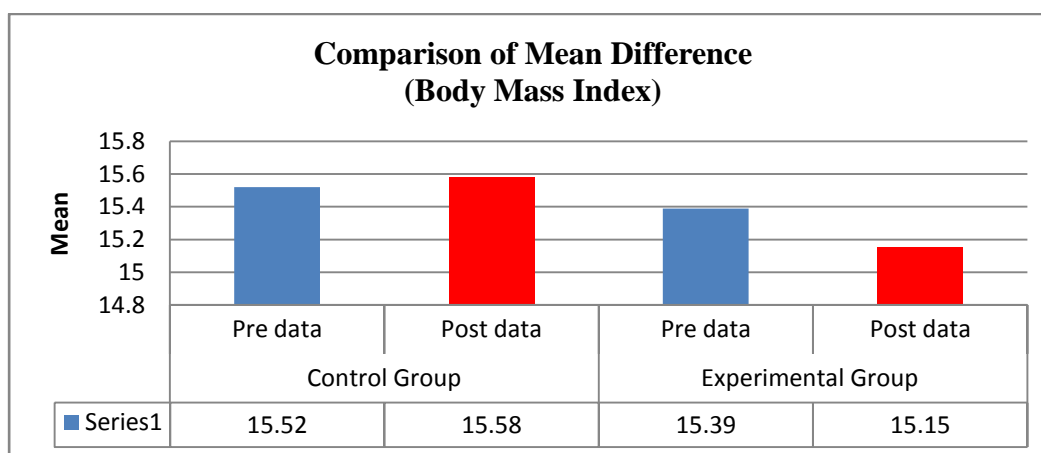
**Results:** Table 4.35 represents mean value of pulse rate, pre-test 91.52 and post-test 86.62 of control group and pre-test 93.10 and post-test 82.52 of experimental group. Post-test standard deviation is 8.17 and 5.81 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.41 which was significant at .05 level of confidence. t-value between pre and post-test of experimental group 4.25 was significant at .01 level of confidence.

**Discussion:** Above results indicates that statistical significant difference was found between pre-test and post-test value of pulse rate, hence hypothesis 8 which states that “**H<sub>(8)</sub>**: Pulse rate will be significantly effected” stands accepted. In the study

conducted by Shannan and Gormley (2008) concluded that that no statistical difference was found in the resting heart rate and blood pressure. But higher intensities workout proved more effective in improving VO2 max. than lower intensities work out, similarly intensity can be lowered of the curriculum to improve pulse rate of the students.

**Table 4.36:** Pre-test and post-test score comparison of body mass index between control and experimental group of Class III students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	15.52	0.06	2.17	0.26
	Post-test	15.58		2.12	
Experimental	Pre-test	15.39	0.24	2.64	1.91
	Post-test	15.15		2.47	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.36:** Depicts comparison of mean value of body mass index, between control and experimental group of Class III students.

**Results:** Table 4.36 represents mean value of body mass index, pre-test 15.52 and post-test 15.58 of control group and pre-test 15.39 and post-test 15.15 of experimental group. Post-test standard deviation is 2.12 and 2.47 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.26 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test

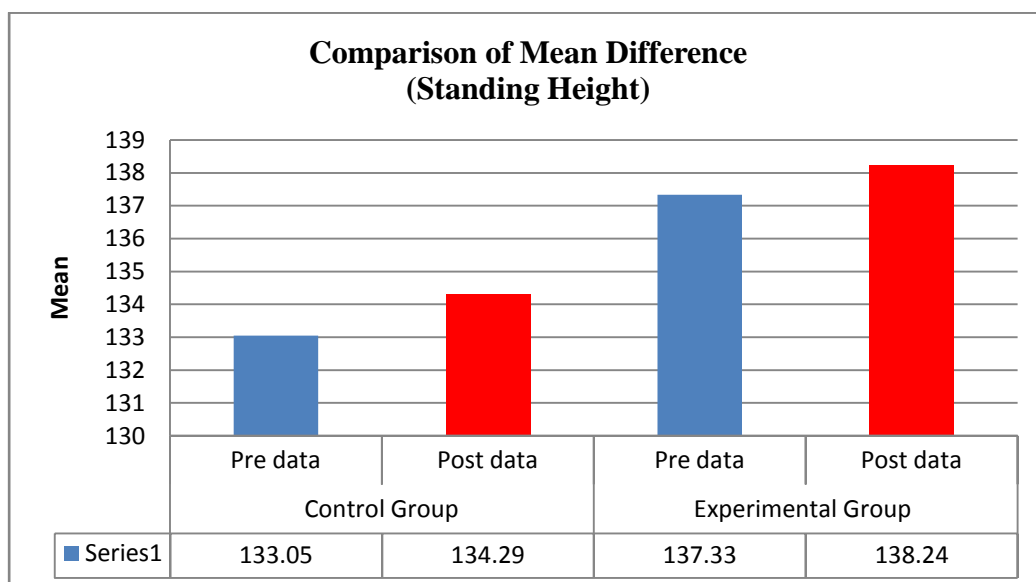
of experimental group 1.9 was not significant but statistical difference 0.24 between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical difference was not found between pre-test and post-test value of body mass index, hence hypothesis 9 which states that “**H<sub>0</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected whereas results are contrary of Orjan, Kristjan and Bjorn (2005) who executed an empirical research on Swedish children and adolescents’ physical performance. The height as well as the mass of the body of the children was calculated and BMI was determined. The outcome showcased that the boys exercised considerably superior in the tests of physical performance than the girls and their activity exercise was boosted with the age. Here it can be concluded that with the grooming/growth of the child BMI will be better if physical activity curriculum will be incorporated in a scientific manner. From this study it can be learnt that in order to improve the BMI one should execute physical activity curriculum with considerable superior load parameters (intensity, volume, recovery and execution of movement).

**Table 4.37:** Pre-test and post-test score comparison of standing height in centimetres between control and experimental group of Class IV students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	133.05	1.24	6.91	4.24**
	Post-test	134.29		6.55	
Experimental	Pre-test	137.33	0.90	7.08	4.39**
	Post-test	138.24		7.24	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.37:** Depicts comparison of mean value of standing height in centimetres, between control and experimental group of Class IV students.

**Results:** Table 4.37 represents mean value of standing height, pre-test 133.05 and post-test 134.29 of control group and pre-test 137.33 and post-test 138.24 of experimental group. Post-test standard deviation is 6.55 and 7.24 of control group and experimental group respectively. t-value between pre and post-test of control group is 4.24 which was found significant at .05 level of confidence. t-value between pre and post-test of experimental group 4.39 was significant and statistical difference 0.90 between average (mean) value of experimental group.

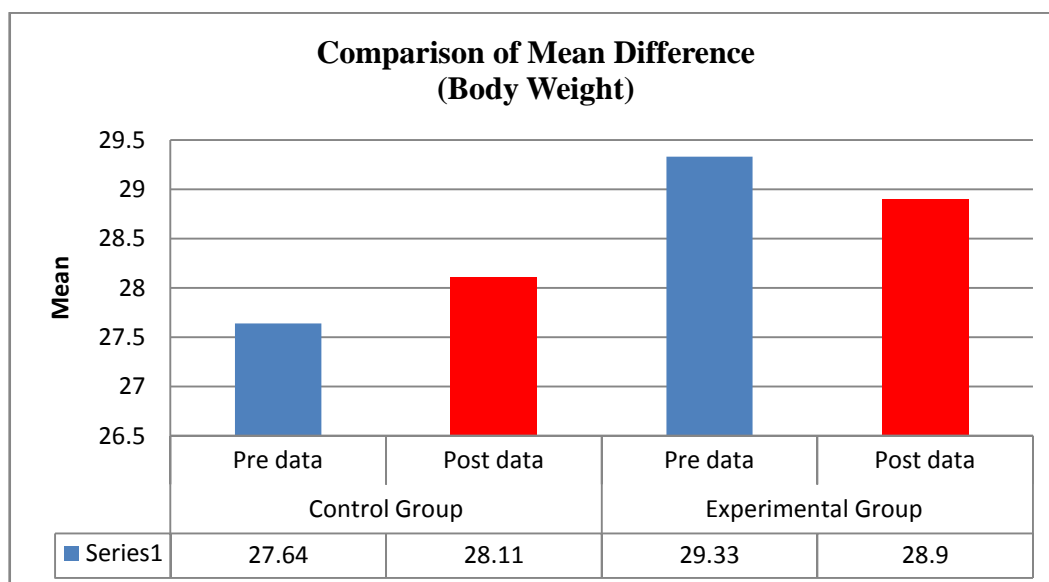
**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of standing height was found in the control and experimental

group, hence hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted. Since the effect was found significant on both the groups it is difficult to conclude that height is increased only due to physical activity curriculum, reason behind may be due to other environmental effects. Guilherme Joao and comates have (2019) also studied the effect of physical activity on children’s growth since intrauterine life. It was found that Physical exercise does not appear to impair the child's linear growth and contributes to the ideal shaping of bone and muscle tissues, ensuring possible beneficial effects throughout life. So based on this study it can be said that there would be definitely a positive effect of physical activity curriculum on the growth of the school children but one should not ignore the fact that height of an individual / children is influenced by the hereditary or genetically factors but not directly affected by physical activity.

**Table 4.38:** Pre-test and post-test score comparison of body weight in kilograms between control and experimental group of Class IV students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	27.64	0.47	5.43	1.89
	Post-test	28.11		5.59	
Experimental	Pre-test	29.33	0.44	6.47	2.29*
	Post-test	28.90		6.70	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.38:** Depicts comparison of mean value of body weight in kilograms, between control and experimental group of Class IV students.

**Results:** Table 4.38 represents mean value of body weight, pre-test 27.64 and post-test 28.11 of control group and pre-test 29.33 and post-test 28.90 of experimental group. Post-test standard deviation is 5.59 and 6.70 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.89 which was not significant at .05 &.01 level of confidence. t-value between SD pre and post-test of experimental group 2.29 was found significant.

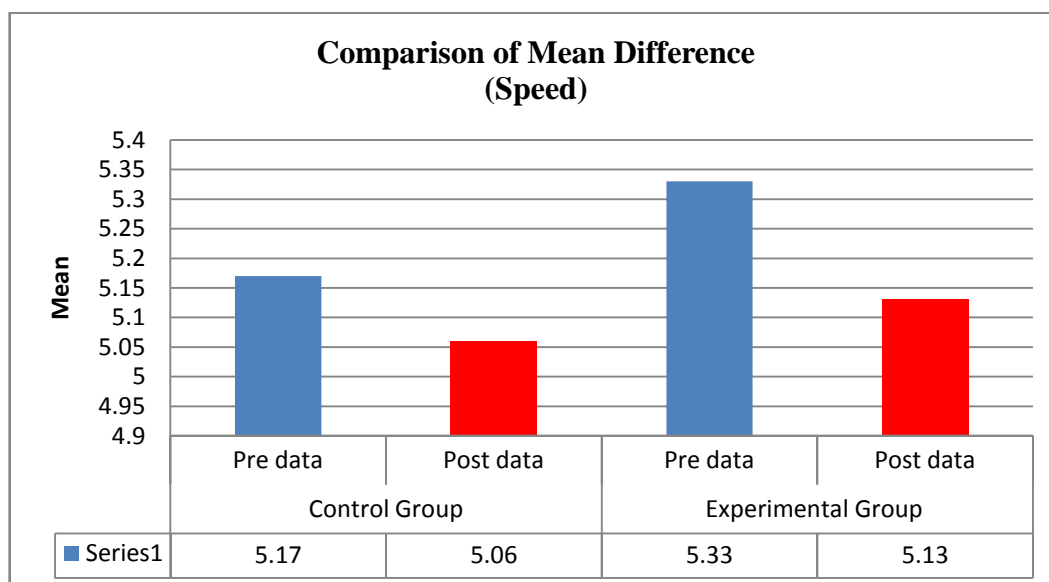
**Discussion:** Above results indicates that hypothesis 2 which states that “**H<sub>(2)</sub>**: Developed curriculum of physical activity will also effect body weight significantly”



was accepted because statistical significance difference was found between the pre and post-test group of experimental group. At this point it is important to suggest that body weight of the school children can be maintained by the implementation of the present physical activity curriculum since significant difference was found between the mean value of experimental group. Result of the study were supported by Shriver et al. (2011) who undertook a research on body weight, physical fitness and activity among 3rd-grade rural students. All students were measured for weight and height. The results revealed that 38 percent children were found obese or overweight. Approximately 15 percent children were exceptionally obese. It was found that the obese children spent a lesser amount of time in activity at different levels of intensity compared to other children. 43 percent children were not up to mark with muscular strength and fitness standard and 36 percent were not up to mark for flexibility. Rural students were found to have high obesity than the normal average range. Rural children had poor fitness and 30 percent had lower activity level than the minimal physical activity recommendations for the day.

**Table 4.39:** Pre-test and post-test score comparison of speed in seconds between control and experimental group of Class IV students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	5.17	0.11	0.58	1.40
	Post-test	5.06		0.53	
Experimental	Pre-test	5.33	0.20	0.42	3.23**
	Post-test	5.13		0.41	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.39:** Depicts comparison of mean value of speed in seconds between control and experimental group of Class IV students.

**Results:** Table 4.39 represents mean value of speed, pre-test 5.17 and post-test 5.06 of control group and pre-test 5.33 and post-test 5.13 of experimental group. Post-test standard deviation is 0.53 and 0.41 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.40 which is not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 3.23 was found significant.

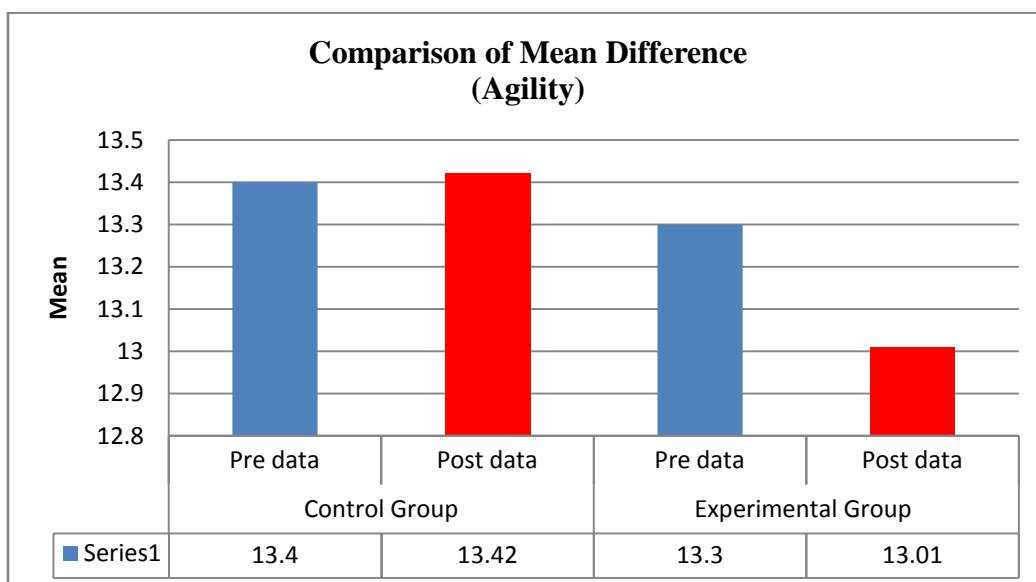
**Discussion:** Results indicates that statistical significant difference between pre-test and post-test value of speed was found significant of experimental group, hence hypothesis 3 which states that “**H<sub>(3)</sub>**: Speed will be significantly effected by the

implementation of the designed curriculum” was accepted, hence proving that physical activity curriculum was effective in enhancing speed performance of the children. Similar study was conducted by Laia et al. (2009) who studied the effect of an alteration from regular endurance to speed endurance training on muscle oxidative capacity. Capillarizations as well as energy expenditure of humans 9 trained runners were assigned speed endurance training and 8 were kept as control group. For 4 weeks experimental group, replaced to high intensity sessions and control group continued with ordinary training. After 4 weeks oxygen uptake was 6.4% lower and in speed endurance training in control group, remained unchanged. Study has shown that speed endurance training reduces energy expenditure after four weeks of intervention.

**Table 4.40:** Pre-test and post-test score comparison of agility in seconds between control and experimental group of Class IV students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	13.40	0.02	0.81	0.57
	Post-test	13.42		0.81	
Experimental	Pre-test	13.30	0.29	0.72	4.85**
	Post-test	13.01		0.77	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



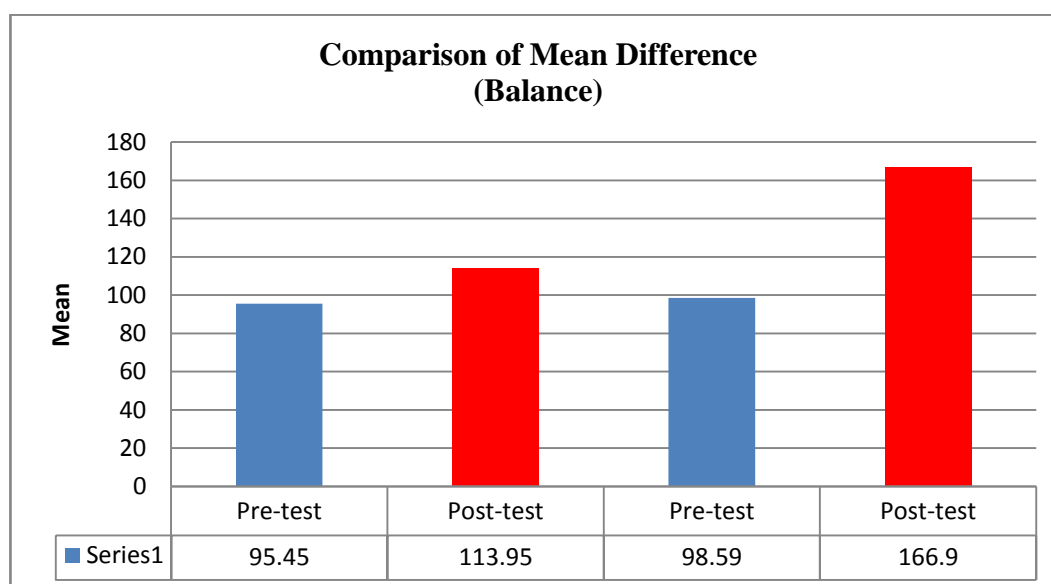
**Figure 4.40:** Depicts comparison of mean value of agility in seconds, between control and experimental group of Class IV students.

**Results:** Table 4.40 represents mean value of agility, pre-test 13.40 and post-test 13.42 of control group and pre-test 13.30 and post-test 13.01 of experimental group. Pre-test standard deviation is 0.81 and 0.77 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.57 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.85 was found significant and statistical difference 0.29 between average (mean) value of experimental group.

**Discussions:** Above results clearly indicates that statistical significant difference between pre-test and post-test value of agility was found significant, hence hypothesis 4 which states that “**H<sub>(4)</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted. Mean difference in experimental group 0.29 seconds was the best performance of class IVth. Thereby indicating that physical activity curriculum was effective in improving agility of student when compared to control group. Gabbet (2006) scrutinized the conclusion of an aptitude based instruction program on the extent of agility and physical fitness in volleyball players who were identified on the basis of talent. In comparison to pre training, there was noteworthy enhancement in 05mtr., 10mtr. agility and speed. There was no important dissimilarity amid pertaining and after training session for skin fold thickness, body mass, muscular power of upper and lower body maximum aerobic power.

**Table 4.41:** Pre-test and post-test score comparison of balance in minutes between control and experimental group of Class IV students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	95.45	18.51	114.11	1.16
	Post-test	113.95		148.44	
Experimental	Pre-test	98.59	68.31	136.41	2.64*
	Post-test	166.90		148.43	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.41:** Depicts comparison of mean value of balance in minutes, between control and experimental group of Class IV students.

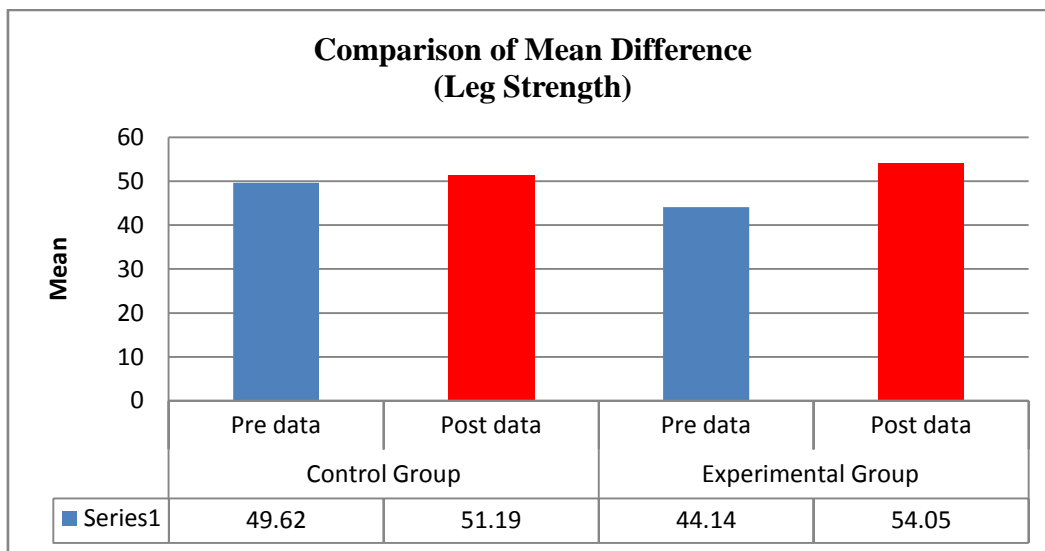
**Results:** Table 4.41 represents mean value of balance, pre-test 95.45 and post-test 113.95 of control group and pre-test 98.59 and post-test 166.90 of experimental group. Post-test standard deviation is 148.44 and 148.43 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.16 which was not significant at .05 & .01 level of confidence. t-value between pre and post of experimental group 2.64 was significant at .05 level of confidence whereas the difference 68.31 between average (mean) value of experimental group.

**Discussion:** Above results revealed that hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity

curriculum” was accepted because statistical significance difference between the two groups exists in treatment group. This shows that Physical activity curriculum was effective enhancing biomotor abilities. Results of the present study were supported by Dian Pujianto (2018) studied the effect of physical activity program on static balance in early childhood and concluded that static balance was influenced by the physical activity at early childhood.

**Table 4.42:** Pre-test and post-test score comparison of leg strength in counts between control and experimental group of Class IV students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	49.62	1.57	24.57	0.50
	Post-test	51.19		20.37	
Experimental	Pre-test	44.14	9.90	16.75	5.96**
	Post-test	54.05		16.86	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.42:** Depicts comparison of mean value of leg strength in counts, between control and experimental group of Class IV students.

**Results:** Table 4.42 represents mean value of leg strength, pre-test 49.62 and post-test 51.19 of control group and pre-test 44.14 and post-test 54.05 of experimental group. Post-test standard deviation is 20.37 and 16.86 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.50 which was not significant at .05 level of confidence. t-value between pre and post-test of experimental group 5.96 was found significant at .01 level of confidence.

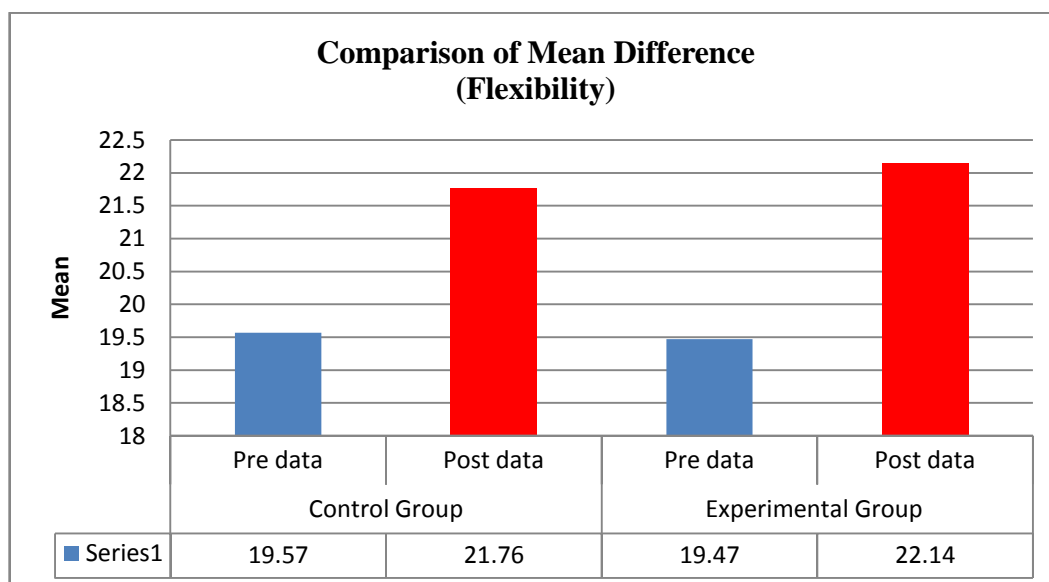
**Discussion:** Above results indicates that statistical significance difference exists between pre-test and post-test value of leg strength, hence hypothesis 6 which states that “**H<sub>(6)</sub>**: Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted. Similar results were supported by the four weeks study conducted by Tran et al. (2016) on effects of four weeks of detraining on strength, power and sensorimotor ability of adolescent surfers, for this purpose nineteen adolescent surfers were selected. After four weeks of detraining, it was concluded that vertical jump, isometric strength and relative strength was significantly decreased therefore it is necessary to continue resistance training and avoid cessation of resistance training. Hence it is evident that four weeks of systematic and scientific training can incur desired adaptive changes in the body.



**Table 4.43:** Pre-test and post-test score comparison of flexibility in centimetres between control and experimental group of Class IV students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	19.57	2.19	6.54	3.13**
	Post-test	21.76		6.33	
Experimental	Pre-test	19.47	2.67	5.32	3.83**
	Post-test	22.14		5.77	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.43:** Depicts comparison of mean value of flexibility in centimetres, between control and experimental group of Class IV students.

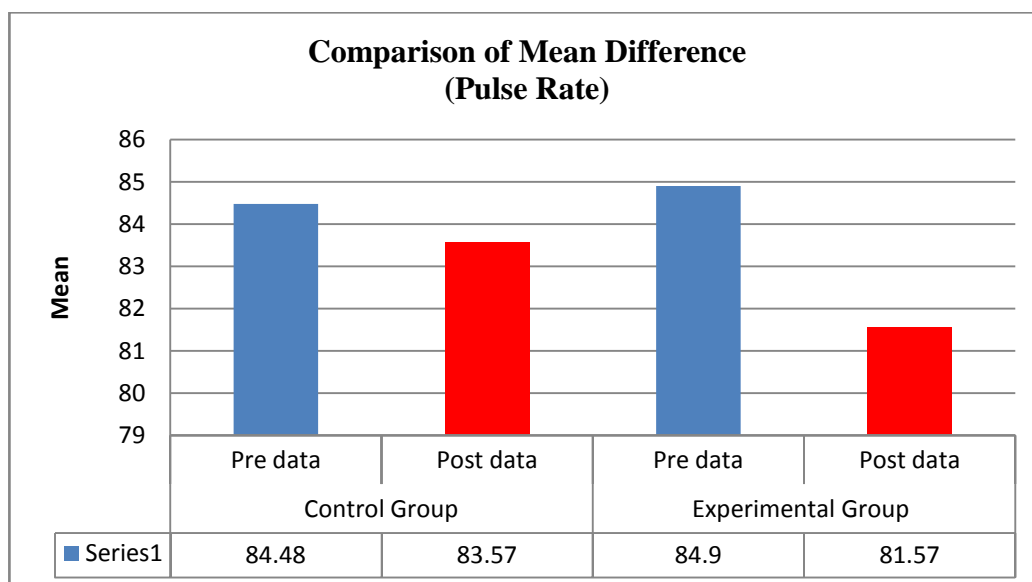
**Results:** Table 4.43 represents mean value of flexibility, pre-test 19.67 and post-test 21.76 of control group and pre-test 19.47 and post-test 22.14 of experimental group. Post-test standard deviation is 6.33 and 5.77 of control group and experimental group respectively. t-value between pre and post-test of control group is 3.13 which was significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 3.83 was found statistical significant at .01 level of confidence.

**Discussion:** Results of flexibility in the table above indicates that statistical significant difference between pre-test and post-test value of control and experimental group was found significant hence hypothesis 7 which states that “**H<sub>(7)</sub>**: Flexibility

will also enhanced with the application of physical activity curriculum” was accepted. Here it is difficult to conclude that range of motion around the joint was increased only because of physical activity curriculum, because the changes have also occurred in control group also which may be due to some other external factors. Results were supported by Akkoyunlu and Sirin (2010) who determined some biomotor features of 14 years football players. In which 20 active footballer and 20 subjects who did not take exercise regularly were assessed for the anthropometric variables, 20m speed, flexibility and other biomotor variables. The results showed that flexibility, 20 meter run, and other biomotor abilities were found significant because of the regular exercises.

**Table 4.44:** Pre-test and post-test score comparison of pulse rate between control and experimental group of Class IV students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	84.48	0.91	8.44	0.48
	Post-test	83.57		7.03	
Experimental	Pre-test	84.90	3.33	7.49	2.46*
	Post-test	81.57		4.64	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.44:** Depicts comparison of mean value of pulse rate per minute, between control and experimental group of Class IV students.

**Results:** Table 4.44 represents mean value of pulse rate, pre-test 84.48 and post-test 83.57 of control group and pre-test 84.90 and post-test 81.57 of experimental group. Post-test standard deviation is 7.03 and 4.64 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.48 which is not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 2.46 was found significant at .05 level of confidence.

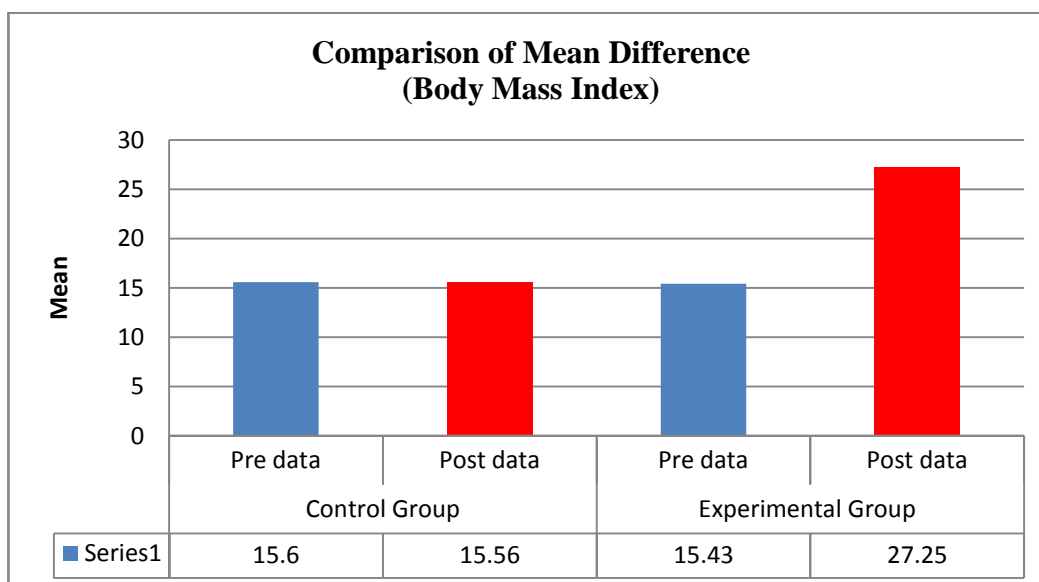
**Discussion:** Above results indicates that statistical significant difference exists between pre-test and post-test value of pulse rate, hence hypothesis 8 which states that

“**H<sub>(8)</sub>**: Pulse rate will be significantly effected” stands accepted. Here results are attributed to the physical activity curriculum. Shannan and Gormley (2008) studied “Effect of Intensity of Aerobic Training on VO<sub>2</sub>max” and the purpose was to determine whether various intensities of aerobic training differentially affect aerobic capacity as well as resting HR and resting blood pressure (BP). There were no significant changes in resting HR and BP in any group. When volume of exercise is controlled, higher intensities of exercise are more effective for improving VO<sub>2</sub> max than lower intensities of exercise in healthy, young adults. This study suggests that to get desired result, intensity of physical activity curriculum can manipulated. After analysing the results it is recommended that physical activity curriculum would be more effective if followed with desired intensity.

**Table 4.45:** Pre-test and post-test score comparison of body mass index between control and experimental group of Class IV students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	15.60	0.05	2.55	0.25
	Post-test	15.56		2.53	
Experimental	Pre-test	15.43	11.82	2.36	1.38
	Post-test	27.25		39.12	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.45:** Depicts comparison of mean value of body mass index, between control and experimental group of Class IV students.

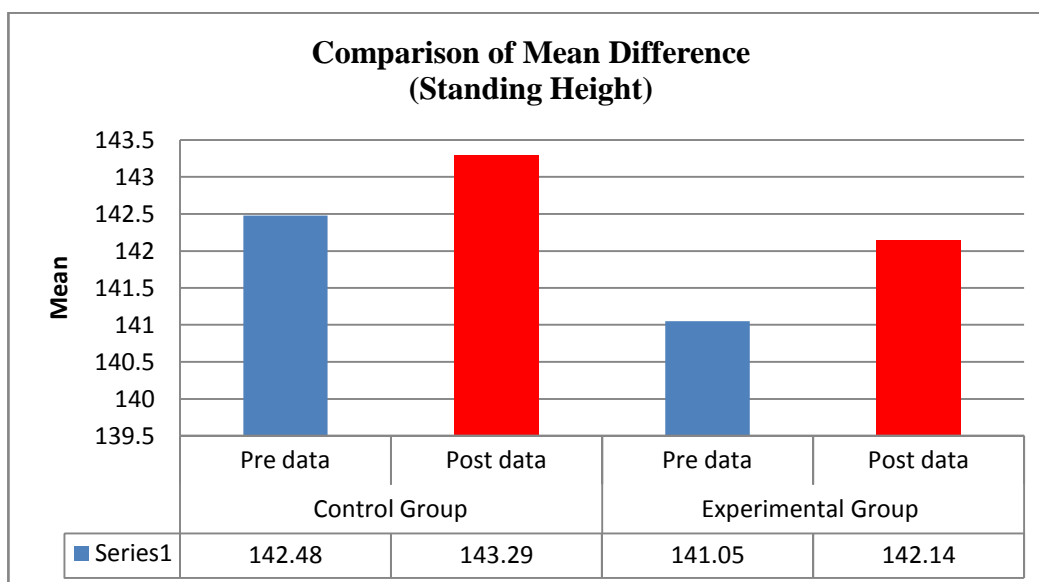
**Results:** Table 4.45 represents mean value of body mass index, pre-test 15.60 and post-test 15.56 of control group and pre-test 15.43 and post-test 27.25 of experimental group. Post-test standard deviation is 2.53 and 39.12 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.25 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 1.38 was not significant.

**Discussion:** Above results indicates that there exists only mean difference between pre-test and post-test value of body mass index of control and experimental group,

hence hypothesis 9 which states that “**H<sub>9</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected because no statistical significance difference between the two groups. Since BMI depends on the weight and height ratio, so it is possible that students may underweight or over weight and after following four week activity curriculum they may have improved but the effect was not significant. Snehalatha et al. (2002) scrutinized the pervasiveness of overweight in adolescent students of the age group 13-18 years old and also its hazard factors in urban India school students which were two thousand three hundred eighty two male and two thousand three hundred eighteen were female were selected for the research. BMI statistics and other variables were taken by opinion poll. Adjusted age pervasiveness of obese was 17.8 percent for boy students and 15.8 percent for girl students. It augmented with age and was affected by physical activity and advanced socio-economic environment.

**Table 4.46:** Pre-test and post-test score comparison of standing height in centimetres between control and experimental group of Class V students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	142.48	0.81	8.49	4.95**
	Post-test	143.29		8.27	
Experimental	Pre-test	141.05	1.10	7.67	5.32**
	Post-test	142.14		7.63	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.46:** Depicts comparison of mean value of standing height in centimetres, between control and experimental group of Class V students.

**Results:** Table 4.46 represents mean value of standing height, pre-test 142.48 and post-test 143.29 of control group and pre-test 141.05 and post-test 142.14 of experimental group. Post-test standard deviation is 8.27 and 7.63 of control group and experimental group respectively. t-value between pre and post-test of control group is 4.95 which was significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 5.32 was found significant at .01 level of confidence and statistical difference 1.10 between average (mean) value of experimental group.

**Discussion:** As concluded in many researches that height of the child is genetic in nature and it cannot be altered largely with the exercise. But above table indicates that

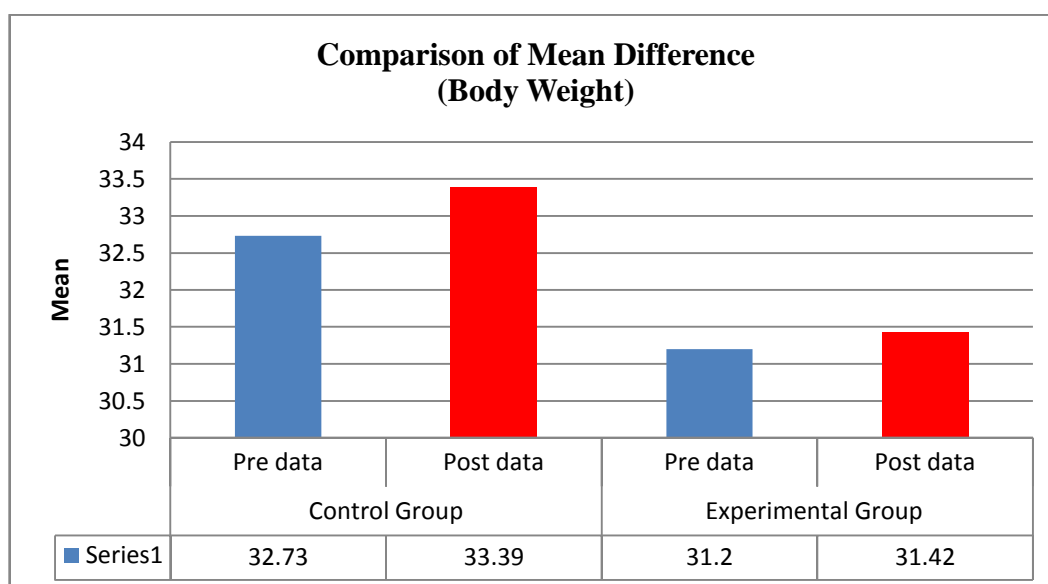
there exist significant difference on standing height of both the groups hence hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect standing height significantly” stands accepted. Table also compare the t-value between control and experimental group. Which suggests that four weeks physical activity curriculum played a vital role in bringing significant changes in standing height of the students but besides this there are chances that increase in standing height may be due to external factors because height of the control group has also shown significant results. Guilherme Joao et al. (2019) have concluded that physical exercise does not appear to impair the child's linear growth and contributes to the ideal shaping of bone and muscle tissues, ensuring possible beneficial effects throughout life. But one should not follow the physical activity curriculum just with the only motive to increase height because role of hereditary or genetics cannot be ignored which affects height directly.



**Table 4.47:** Pre-test and post-test score comparison of body weight in kilograms between control and experimental group of Class V students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	32.73	0.65	7.29	2.35*
	Post-test	33.39		7.42	
Experimental	Pre-test	31.20	0.22	5.04	0.49
	Post-test	31.42		4.85	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.47:** Depicts comparison of mean value of body weight in kilograms, between control and experimental group of Class V students.

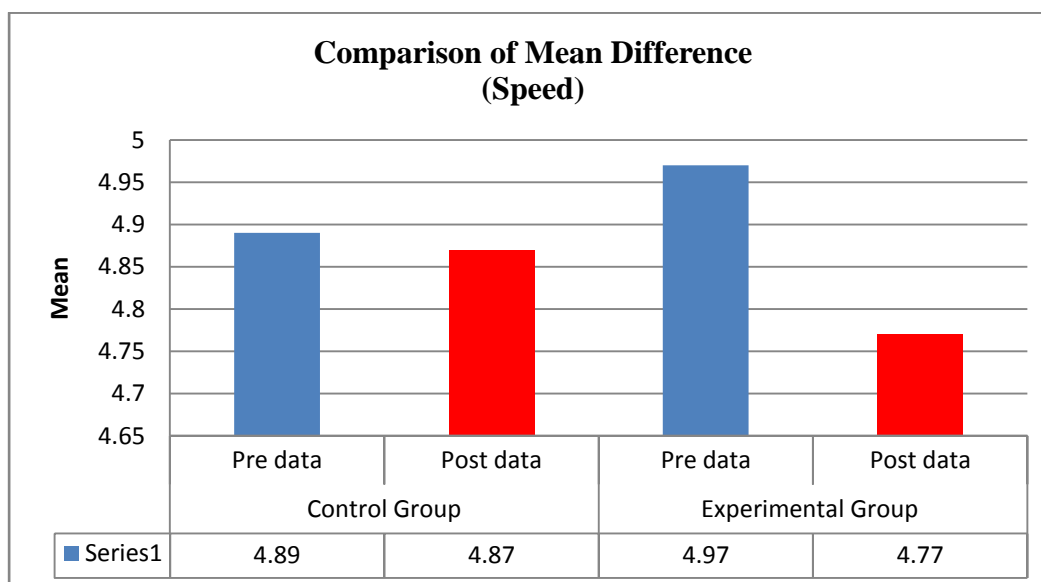
**Results:** Table 4.47 represents mean value of body weight, pre-test 32.73 and post-test 33.39 of control group and pre-test 31.20 and post-test 31.42 of experimental group. Post-test standard deviation is 7.42 and 4.85 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.35 which was found significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 0.49 was insignificant but statistical difference 0.22 between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical difference between pre-test and post-test value of body weight of experimental group was not significant whereas control group has significantly gained the weight thereby rejecting hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity will also effect body weight significantly”. But it does not mean that physical activity curriculum was ineffective because it is clearly seen that treatment group have not gained the weight whereas this group was able to maintain their weight. Shriver et al. (2011) has also proved that physical activity is important since he undertook a research on body weight, physical fitness and activity among 3rd-grade rural students. All students were measured for weight and height. The results revealed that 38 percent children were found obese or overweight. Approximately 15 percent children were exceptionally obese. It was found that the obese children spent a lesser amount of time in activity at different levels of intensity compared to other children. 43 percent children were not up to mark with muscular strength and fitness standard and 36 percent were not up to mark for flexibility. Rural students were found to have high obesity than the normal average rage. Rural children had poor fitness and 30 percent had lower activity level than the minimal physical activity recommendations for the day.

**Table 4.48:** Pre-test and post-test score comparison of speed in seconds between control and experimental group of Class V students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	4.89	0.02	0.59	0.46
	Post-test	4.87		0.65	
Experimental	Pre-test	4.97	0.21	0.75	4.05**
	Post-test	4.77		0.71	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.48:** Depicts comparison of mean value of speed in seconds between control and experimental group of Class V students.

**Results:** Table 4.48 represents mean value of speed, pre-test 4.89 and post-test 4.87 of control group and pre-test 4.97 and post-test 4.77 of experimental group. Post-test standard deviation is 0.65 and 0.71 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.46 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.05 was found significant and statistical difference 0.21 between average (mean) value of experimental group.

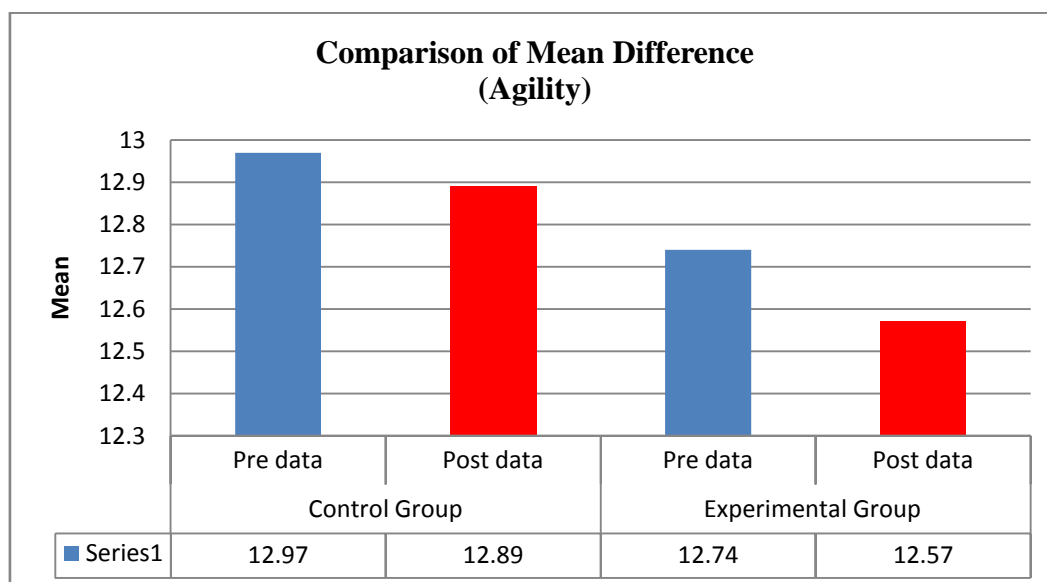
**Discussion:** Above results indicates that statistical significant difference was found between pre-test and post-test value of speed, hence hypothesis 3 which states that

**H<sub>(3)</sub>:** Speed will be significantly effected by the implementation of the designed curriculum” stands accepted. Which suggests that four weeks physical activity curriculum is effective tool to bring significant changes in the speed of the children. Physical activity curriculum not only makes the activity systematic and scientific, but will also enhance the speed ability of the children. Mathisen and Pattersen (2015) have studied the effect of speed training on sprint and agility performance in 15 years old female soccer players. The outcome of the study revealed that speed training program with short burst/high speed exercises improves the sprint and agility performance in youth female soccer players.

**Table 4.49:** Pre-test and post-test score comparison of agility in seconds between control and experimental group of Class V students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	12.97	0.08	1.42	0.88
	Post-test	12.89		1.49	
Experimental	Pre-test	12.74	0.16	1.31	5.18**
	Post-test	12.57		1.29	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.49:** Depicts comparison of mean value of agility in seconds, between control and experimental group of Class V students.

**Results:** Table 4.49 represents mean value of agility, pre-test 12.97 and post-test 12.89 of control group and pre-test 12.74 and post-test 12.57 of experimental group. Post-test standard deviation is 1.49 and 1.29 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.88 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 5.18 was found significant.

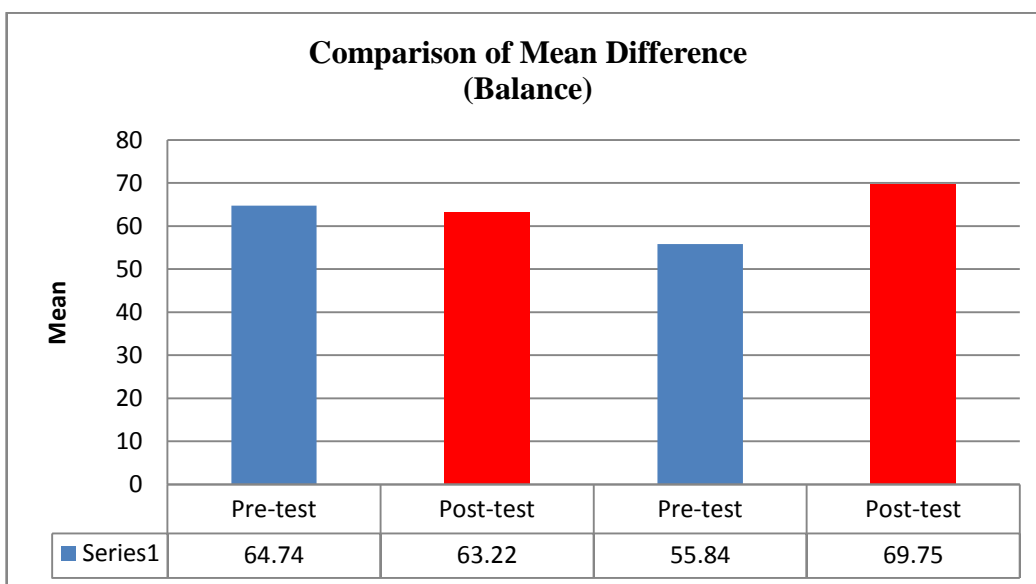
**Discussion:** Above results indicates that statistical significant difference was found between pre-test and post-test value of agility of experimental group, hence

hypothesis 4 which states that “**H<sub>(4)</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted. This also proved that four weeks of training is effective in enhancing agility performance of school children. Results of the study were supported by Alp and Baydemir (2019) who conducted a research on the effect of quick strength training on agility performance in soccer. 36 male soccer players from the age group under 19 and under 17 teams which are the Canakkale sports team were selected for the study. For 8 weeks (3 days per week) experimental group, replaced to quick strength training sessions and control group continued with ordinary training. At the completion of the training time period it was observed that the strength training was more effective in experimental group as compared to control group.

**Table 4.50:** Pre-test and post-test score comparison of balance in minutes between control and experimental group of Class V students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	64.74	1.52	55.84	0.85
	Post-test	63.22		69.75	
Experimental	Pre-test	104.19	89.60	99.79	1.90
	Post-test	193.79		165.79	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.50:** Depicts comparison of mean value of balance in minutes, between control and experimental group of Class V students.

**Results:** Table 4.50 represents mean value of balance, pre-test 64.74 and post-test 63.22 of control group and pre-test 104.19 and post-test 193.79 of experimental group. Post-test standard deviation is 69.75 and 165.79 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.85 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 1.90 was also not found significant and statistical difference 89.60 between average (mean) value of pre-test and post-test value of experimental group.

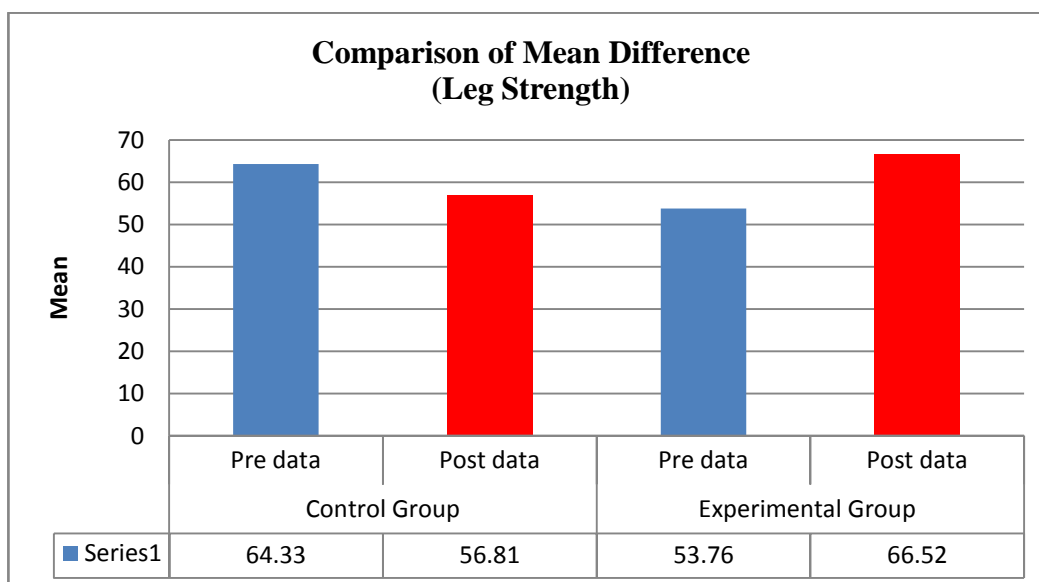
**Discussion:** Statistical significant difference was not found between pre-test and post-test value of balance in experimental group, hence rejecting hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” Here its seems that physical activity curriculum was not effective in enhancing the balance ability of school children but it is suggested that if load parameters were manipulated as per the competition need then it would definitely yield fruitful results. Whereas results of the present study were found contrary by Dian Pujianto (2018) who studied the effect of physical activity program on static balance in early childhood and concluded that static balance was influenced by the physical activity at early childhood.



**Table 4.51:** Pre-test and post-test score comparison of leg strength in counts between control and experimental group of Class V students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	64.33	7.52	31.85	2.62*
	Post-test	56.81		23.67	
Experimental	Pre-test	53.76	12.76	33.07	6.07**
	Post-test	66.52		34.95	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.51:** Depicts comparison of mean value of leg strength in counts, between control and experimental group of Class V students.

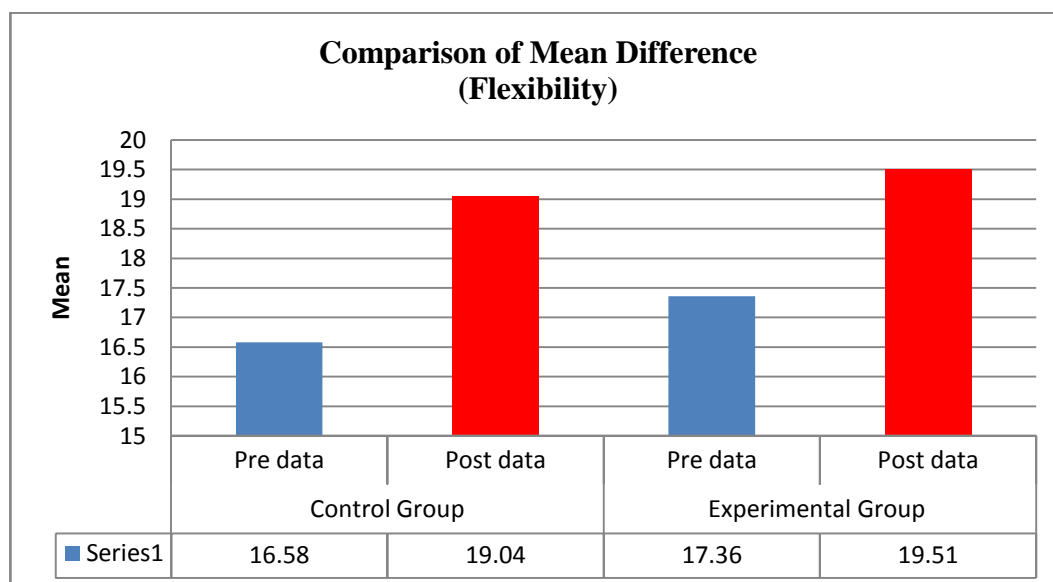
**Results:** Table 4.51 represents mean value of leg strength, pre-test 64.33 and post-test 56.81 of control group and pre-test 53.76 and post-test 66.52 of experimental group. Post-test standard deviation is 23.67 and 34.95 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.62 which was significant at .05 level of confidence. t-value between pre and post-test of experimental group 6.07 was found significant with the difference 12.76 between average (mean) value of pre and post-test experimental group.

**Discussion:** Above results indicates that mean difference between pre-test and post-test value of leg strength was found highly significant, hence hypothesis 6 which states that “**H<sub>(6)</sub>**: Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted. Results of the study reflect the significance of implementation of physical activity curriculum. Results of the present study were supported by Granacher et al. (2011) who examined effects and mechanisms of strength training children. In this study total numbers of thirty two children were selected for the study. This study investigated the effects of strength training on knee extensor/flexor strength, countermovement jumping height, postural control, soft lean mass and muscle cross-sectional area of the dominant leg in children. Result is significant increase peak torque of the knee in children. It is the neural factors rather than muscle hypertrophy account for the observed strength gains in children

**Table 4.52:** Pre-test and post-test score comparison of flexibility in centimetres between control and experimental group of Class V students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	16.58	2.46	4.94	2.91**
	Post-test	19.04		6.20	
Experimental	Pre-test	17.36	2.15	5.29	3.20**
	Post-test	19.51		5.65	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.52:** Depicts comparison of mean value of flexibility in centimetres, between control and experimental group of Class V students.

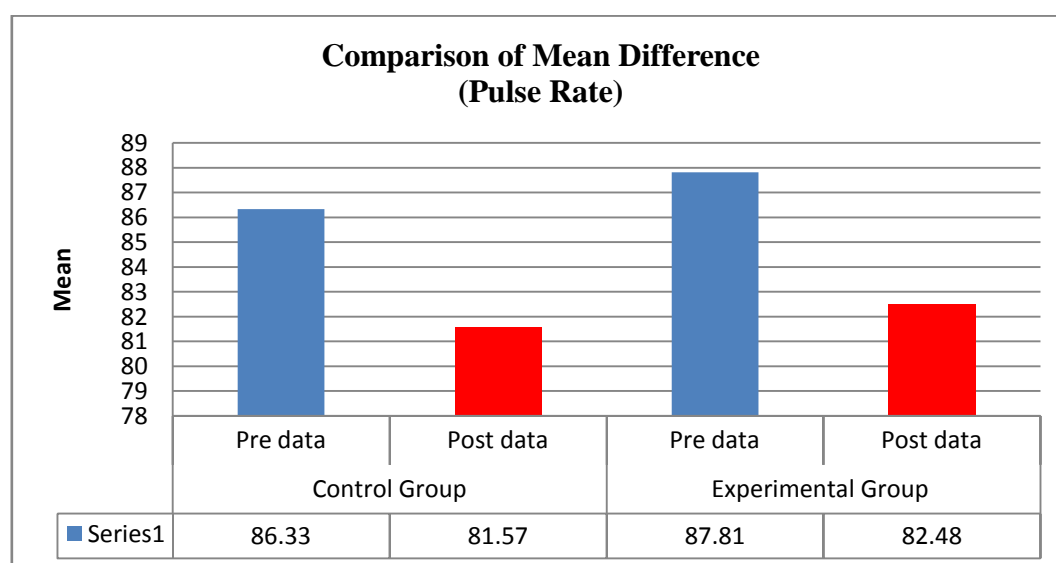
**Results:** Table 4.52 represents mean value of flexibility, pre-test 16.58 and post-test 19.04 of control group and pre-test 17.36 and post-test 19.51 of experimental group. Post-test standard deviation is 6.20 and 5.65 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.91 which was significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 3.20 was found significant.

**Discussion:** Above results indicates that statistical difference was found between pre-test and post-test value of flexibility in control and experimental group hence hypothesis 7 which states that “**H<sub>(7)</sub>**: Flexibility will also enhanced with the

application of physical activity curriculum” was accepted. Here results are attributed to the external factors also because flexibility of control group was also increased significantly. Study conducted by Richard Bailey (2006) have clearly mentioned in his research that physical education and sports i.e. physical activity have the prospective to make characteristic involvement to the development of children’s elementary movement ability and physical competences. In the present study it is recommended that physical activity curriculum should be implemented to the elementary school children in order to inculcate the fitness freak habits amongst them.

**Table 4.53:** Pre-test and post-test score comparison of pulse rate between control and experimental group of Class V students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	86.33	4.76	8.92	2.14*
	Post-test	81.57		5.31	
Experimental	Pre-test	87.81	5.33	8.62	3.30**
	Post-test	82.48		5.81	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.53:** Depicts comparison of mean value of pulse rate per minute, between control and experimental group of Class V students.

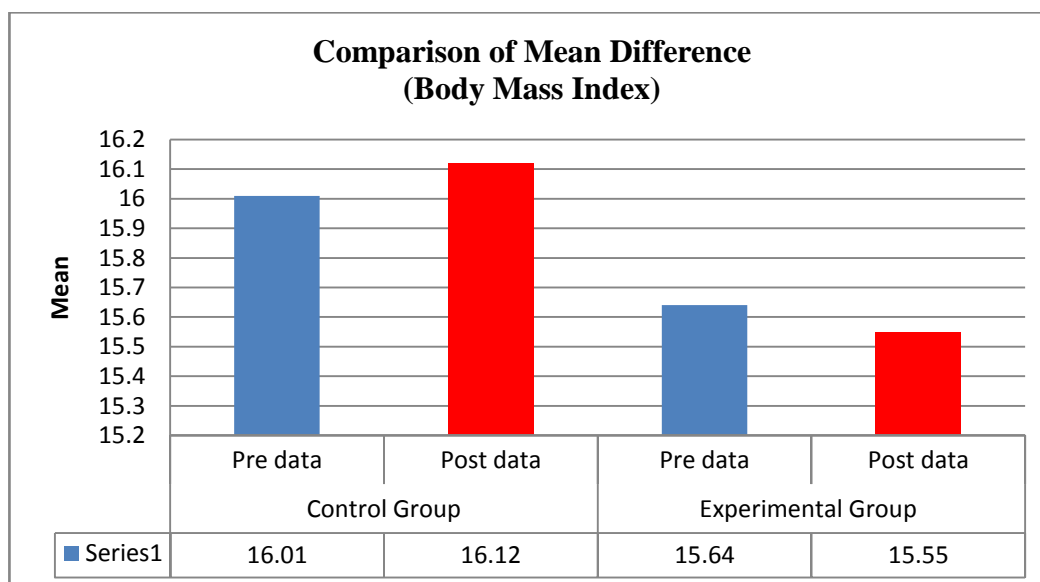
**Results:** Table 4.53 represents mean value of pulse rate, pre-test 86.33 and post-test 81.57 of control group and pre-test 87.81 and post-test 82.48 of experimental group. Post-test standard deviation is 5.31 and 5.81 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.14 which was significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 3.30 was also found significant.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of pulse rate was found significant, hence hypothesis 8 which states that “**H<sub>(8)</sub>**: Pulse rate will be significantly effected” stands accepted. Intensity of the physical activity curriculum should be moderate to high hence it proved effective tool to lower pulse rate of the school children or it helped the school children to enhance overall fitness. Shannan and Gormley (2008) studied “Effect of Intensity of Aerobic Training on VO<sub>2</sub>max” and the purpose was to determine whether various intensities of aerobic training differentially affect aerobic capacity as well as resting HR and resting blood pressure (BP). There were no significant changes in resting HR and BP in any group. When volume of exercise is controlled, higher intensities of exercise are more effective for improving VO<sub>2</sub> max than lower intensities of exercise in healthy, young adults.

**Table 4.54:** Pre-test and post-test score comparison of body mass index between control and experimental group of Class V students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	16.01	0.11	2.60	0.78
	Post-test	16.12		2.64	
Experimental	Pre-test	15.64	0.09	2.00	0.34
	Post-test	15.55		1.90	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.54:** Depicts comparison of mean value of body mass index, between control and experimental group of Class V students.

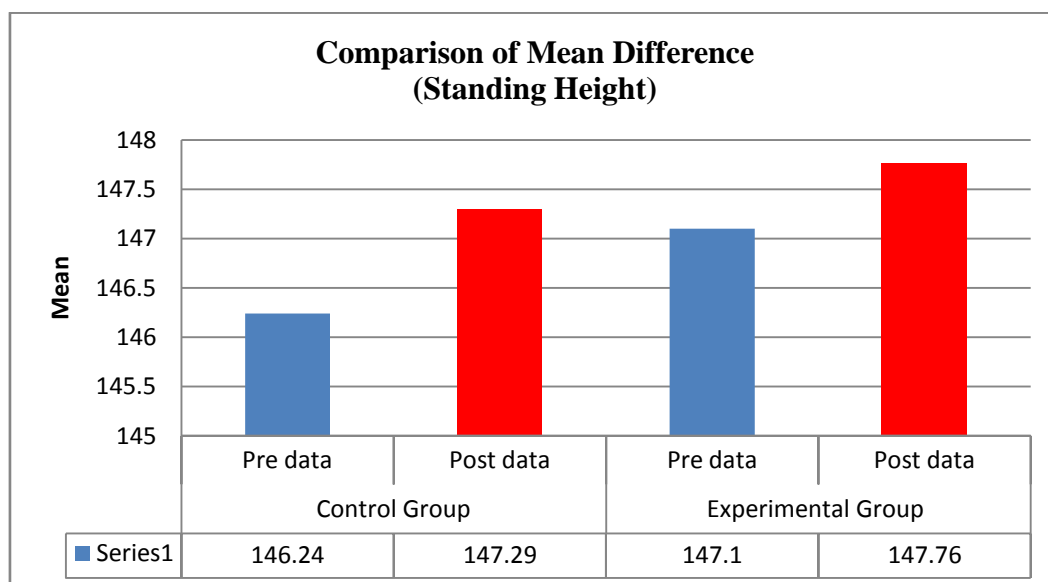
**Results:** Table 4.54 represents mean value of body mass index, pre-test 16.01 and post-test 16.12 of control group and pre-test 15.64 and post-test 15.55 of experimental group. Post-test standard deviation is 2.64 and 1.90 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.78 which was not significant at .05 &.01 level of confidence. t-value between pre and post-test of experimental group 0.34 was not found significant.

**Discussion:** Results have shown that insignificant difference exists between pre-test and post-test value of body mass index of experimental group, hence hypothesis 9

which states that “**H<sub>0</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected. Body mass index is the ratio of the body weight and the height therefore physical activity curriculum proved ineffective in improving BMI because weight reduction should be in relation to the height of the student. Orjan, Kristjan and Bjorn (2005) executed an empirical research on Swedish children and adolescents’ physical performance. The height as well as the mass of the body of the children was calculated and BMI was determined. The outcome showcased that the boys exercised considerably superior in the tests of physical performance than the girls and their activity exercise was boosted with the age. Here it can be concluded that with the grooming/growth of the child BMI will be better if physical activity curriculum will be incorporated in a scientific manner.

**Table 4.55:** Pre-test and post-test score comparison of standing height in centimetres between control and experimental group of Class VI students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	146.24	1.05	7.48	3.86**
	Post-test	147.29		6.94	
Experimental	Pre-test	147.10	0.67	5.52	4.18**
	Post-test	147.76		5.37	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.55:** Depicts comparison of mean value of standing height in centimetres, between control and experimental group of Class VI students.

**Results:** Table 4.55 represents mean value of standing height, pre-test 146.24 and post-test 147.29 of control group and pre-test 147.10 and post-test 147.76 of experimental group. Post-test standard deviation is 6.94 and 5.37 of control group and experimental group respectively. t-value between pre and post-test of control group is 3.86 which was significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.18 was found significant with mean difference of 0.67 of experimental group.

**Discussion:** Above results indicates that there exists significant difference between pre-test and post-test value of standing height, hence hypothesis 1 which states that

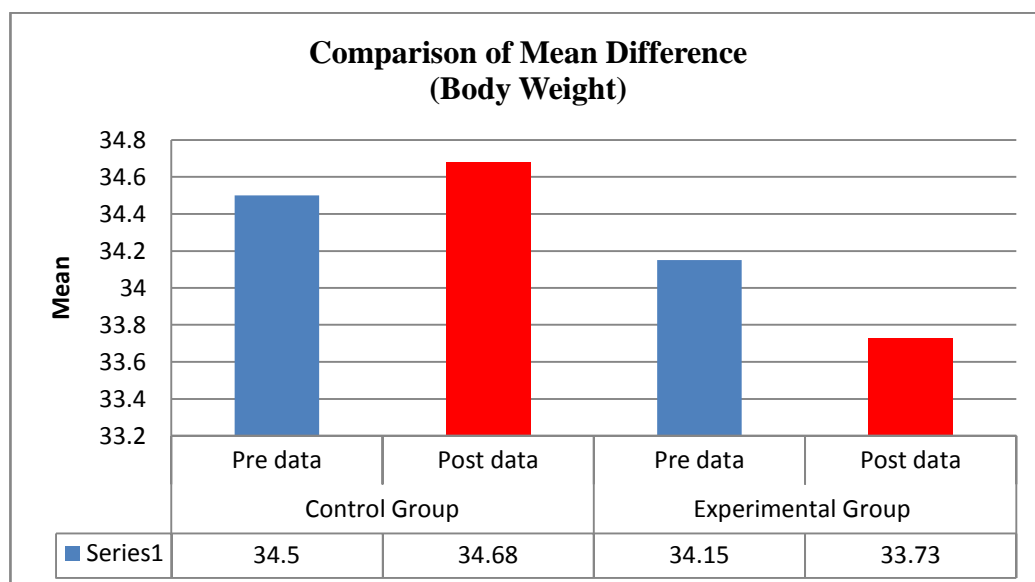


**“H<sub>(1)</sub>:** It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted. Though the height of a child depends on the height of the parents but it may be inferred that control and experimental group have improved in standing height because at this age, growth spurt may have occurred secondly it is also assumed that physical activity always have positive outcome on the effect of the body tissues as concluded by Guilherme Joao BezerraAlves and Guilherma Victor Alves (2019) who studied the effect of physical activity on children’s growth since intrauterine life. Medline, Embase, Scielo and Cochrane databases of studies published from 1990 to 2018. It was concluded that Physical exercise does not appear to impair the child's linear growth and contributes to the ideal shaping of bone and muscle tissues, ensuring possible beneficial effects throughout life. One should not follow the physical activity curriculum just with the sole motive to increase height, since height of an individual / children is hereditary or genetically influenced but not directly affected by physical activity.

**Table 4.56:** Pre-test and post-test score comparison of body weight in kilograms between control and experimental group of Class VI students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	34.50	0.18	4.73	0.64
	Post-test	34.68		4.89	
Experimental	Pre-test	34.15	0.42	8.32	1.86
	Post-test	33.73		8.38	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.56:** Depicts comparison of mean value of body weight in kilograms, between control and experimental group of Class VI students.

**Results:** Table 4.56 represents mean value of body weight, pre-test 34.50 and post-test 34.68 of control group and pre-test 34.15 and post-test 33.73 of experimental group. Post-test standard deviation is 4.89 and 8.38 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.64 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 1.86 was not found significant.

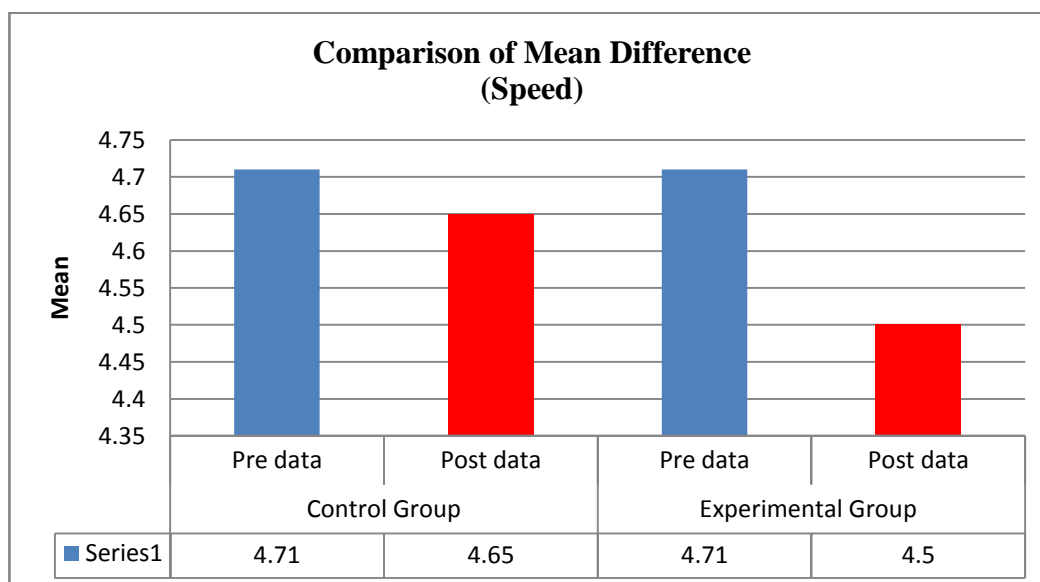
**Discussion:** Above results indicates significant difference was not found between pre-test and post-test value of body weight, hence hypothesis 2 which states that

“**H**<sub>(2)</sub>: Developed curriculum of physical activity will also effect body weight significantly” was rejected. Statistical difference may be not found on body weight because before and after school activity were not controlled, if these factors were kept under control then results would be significant. Shriver et al. (2011) undertook a research on body weight, physical fitness and activity among 3rd-grade rural students. All students were measured for weight and height. It was found that the obese children spent a lesser amount of time in activity at different levels of intensity compared to other children. Rural children had poor fitness and 30 percent had lower activity level than the minimal physical activity recommendations for the day. Therefore it is recommended that this activity curriculum should be followed for at least forty minutes a day, in order to have desired results.

**Table 4.57:** Pre-test and post-test score comparison of speed in seconds between control and experimental group of Class VI students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	4.71	0.06	0.65	0.64
	Post-test	4.65		0.66	
Experimental	Pre-test	4.71	0.21	0.51	4.52*
	Post-test	4.50		0.39	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.57:** Depicts comparison of mean value of speed in seconds between control and experimental group of Class VI students.

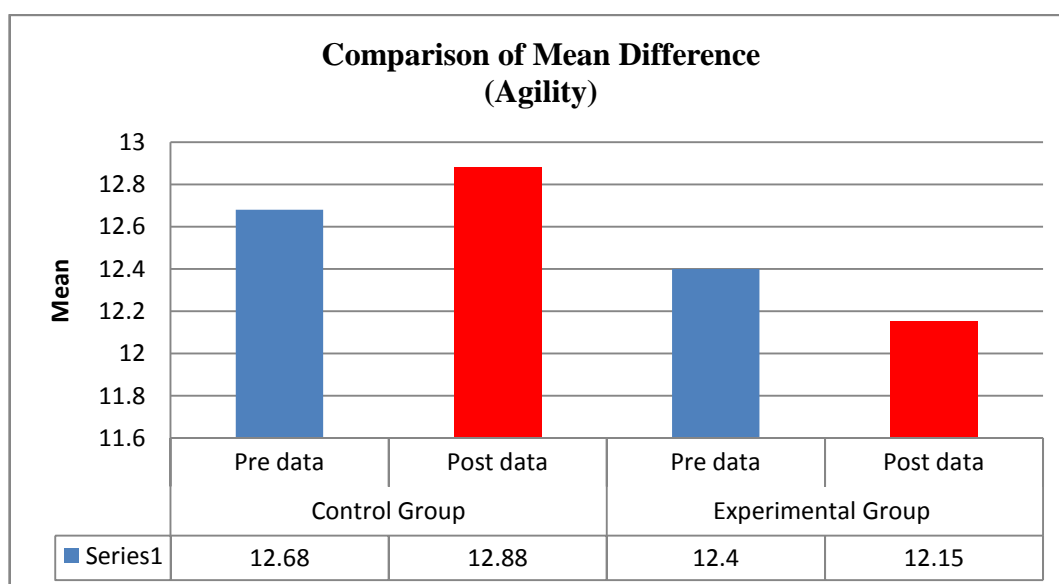
**Results:** Table 4.57 represents mean value of speed, pre-test 4.71 and post-test 4.65 of control group and pre-test 4.71 and post-test 4.50 of experimental group. Post-test standard deviation is 0.66 and 0.39 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.64 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.52 was found significant because statistical significant difference mean value of pre and post-test value of experimental group.

**Discussion:** Statistical significant difference exists between pre-test and post-test value of speed, hence hypothesis 3 which states that “**H<sub>(3)</sub>**: Speed will be significantly

effected by the implementation of the designed curriculum” was accepted hence it is recommended to the schools to implement developed physical activity curriculum in order to elevate physical performance of the children. Results were supported by Mathisen and Pattersen (2015) who have studied the effect of speed training on sprint and agility performance in 15 years old female soccer players. The outcomes of the study that speed training program of short burst high speed exercises improve sprint and agility performance in youth female soccer players.

**Table 4.58:** Pre-test and post-test score comparison of agility in seconds between control and experimental group of Class VI students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	12.68	0.19	1.10	1.54
	Post-test	12.88		0.90	
Experimental	Pre-test	12.40	0.25	0.86	4.02**
	Post-test	12.15		0.86	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.58:** Depicts comparison of mean value of agility in seconds, between control and experimental group of Class VI students.

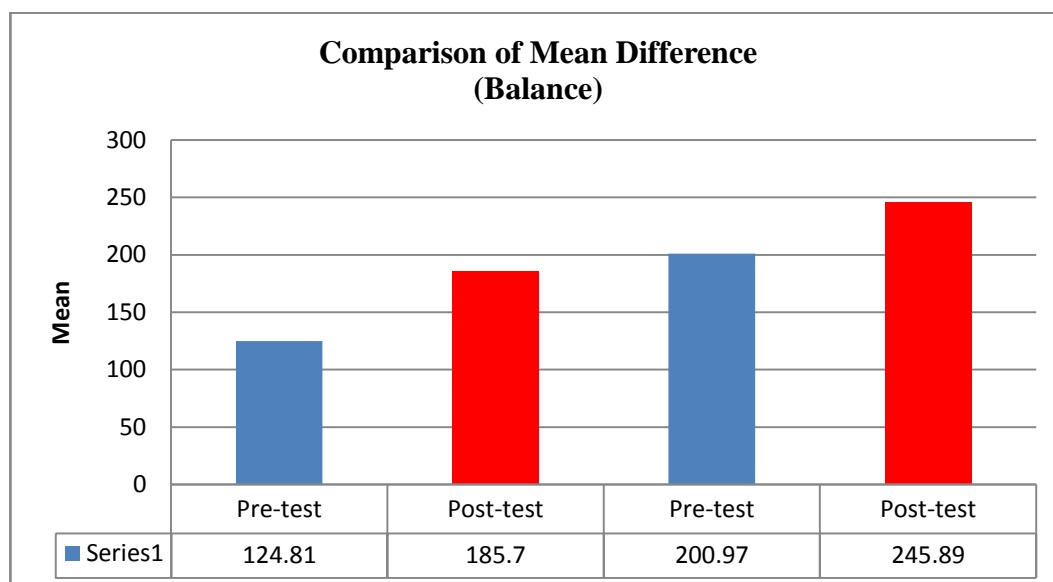
**Results:** Table 4.58 represents mean value of agility, pre-test 12.68 and post-test 12.88 of control group and pre-test 12.40 and post-test 12.15 of experimental group. Post-test standard deviation is 0.90 and 0.86 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.54 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.02 was found significant.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of agility was significant, hence hypothesis 4 which states that “**H<sub>4</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum” stands accepted. Results depicts that physical activity curriculum was effective in increasing agility of the children.

**Table 4.59:** Pre-test and post-test score comparison of balance in minutes between control and experimental group of Class VI students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	124.81	60.89	86.17	1.95
	Post-test	185.70		135.22	
Experimental	Pre-test	200.97	44.92	336.95	0.59
	Post-test	245.89		147.38	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.59:** Depicts comparison of mean value of balance in minutes, between control and experimental group of Class VI students.

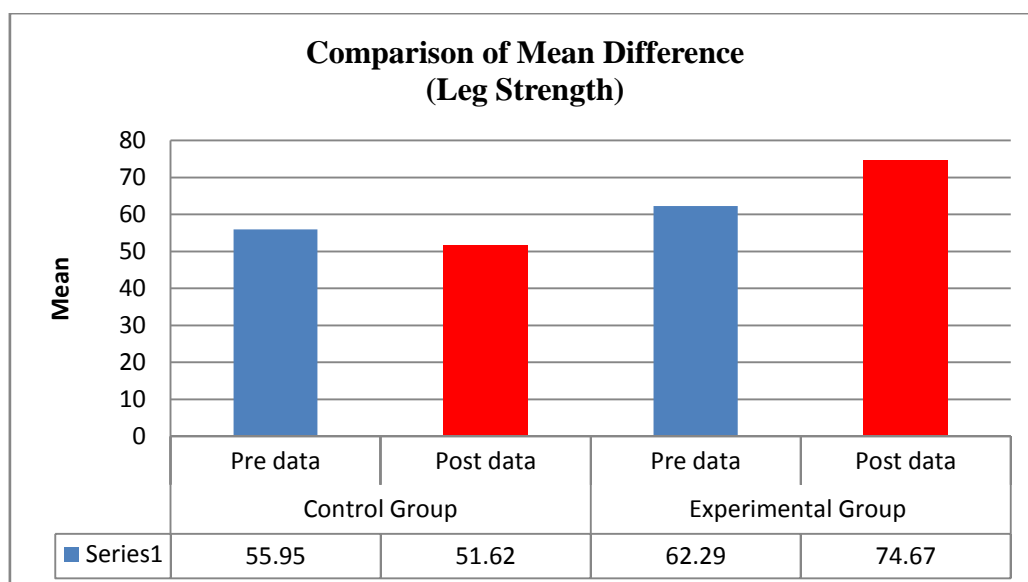
**Results:** Table 4.59 represents mean value of balance pre-test 124.81 and post-test 185.70 of control group and pre-test 200.97 and post-test 245.89 of experimental group. Post-test standard deviation is 135.22 and 147.38 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.95 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 0.59 was not significant and statistical difference 44.92 between average (mean) value of experimental group.

**Discussion:** Pre-test and post-test value of balance was not found significant hence hypothesis 5 which states that “**H<sub>(5)</sub>**: Balance ability will also effected significantly by

the execution of the physical activity curriculum” was rejected. Results of the present study were contrary as shown by Dian Pujianto (2018), where he studied the effect of physical activity program on static balance in early childhood and concluded that static balance was influenced by the physical activity at early childhood. Therefore, in order to have effectiveness on the balance ability load parameters should be monitored scientifically.

**Table 4.60:** Pre-test and post-test score comparison of leg strength in counts between control and experimental group of Class VI students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	55.95	4.33	44.58	1.17
	Post-test	51.62		39.94	
Experimental	Pre-test	62.29	12.38	37.17	4.35**
	Post-test	74.67		41.09	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.60:** Depicts comparison of mean value of leg strength in counts, between control and experimental group of Class VI students.



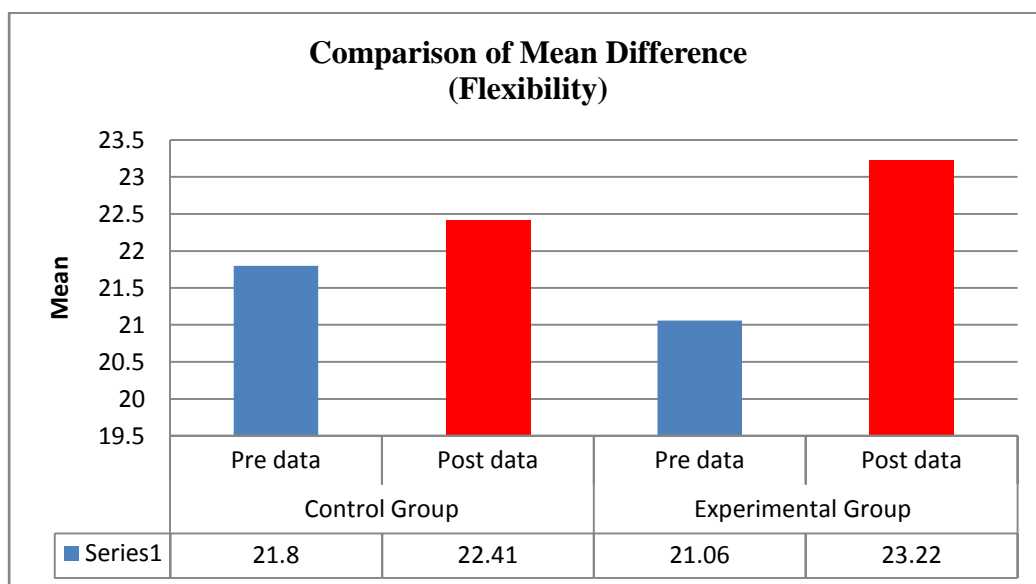
**Results:** Table 4.60 represents mean value of leg strength, pre-test 55.95 and post-test 51.62 of control group and pre-test 62.29 and post-test 74.67 of experimental group. Post-test standard deviation is 39.94 and 41.09 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.17 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.35 was found significant with mean difference 12.38 between average (mean) value of pre and post-test experimental group.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of leg strength was significant, hence hypothesis 6 which states that “**H<sub>(6)</sub>**: Significant effect of physical activity curriculum of leg strength is hypothesized” stands accepted. Here physical activity curriculum proved beneficial to increase the leg strength of children in a significant manner. Gabbet (2006) scrutinized and concluded that 8 weeks of instruction program enhances sports specific easily. Whereas in the present study four weeks training was developed and incorporated in the elementary students.. In this study results have shown increase in the mean value of the variable of motor abilities when pre and post-test data was analyzed.

**Table 4.61:** Pre-test and post-test score comparison of flexibility in centimetres between control and experimental group of Class VI students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	21.80	0.62	6.37	0.82
	Post-test	22.41		6.56	
Experimental	Pre-test	21.06	2.17	6.28	2.15*
	Post-test	23.22		6.99	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.61:** Depicts comparison of mean value of flexibility in centimetres, between control and experimental group of Class VI students.

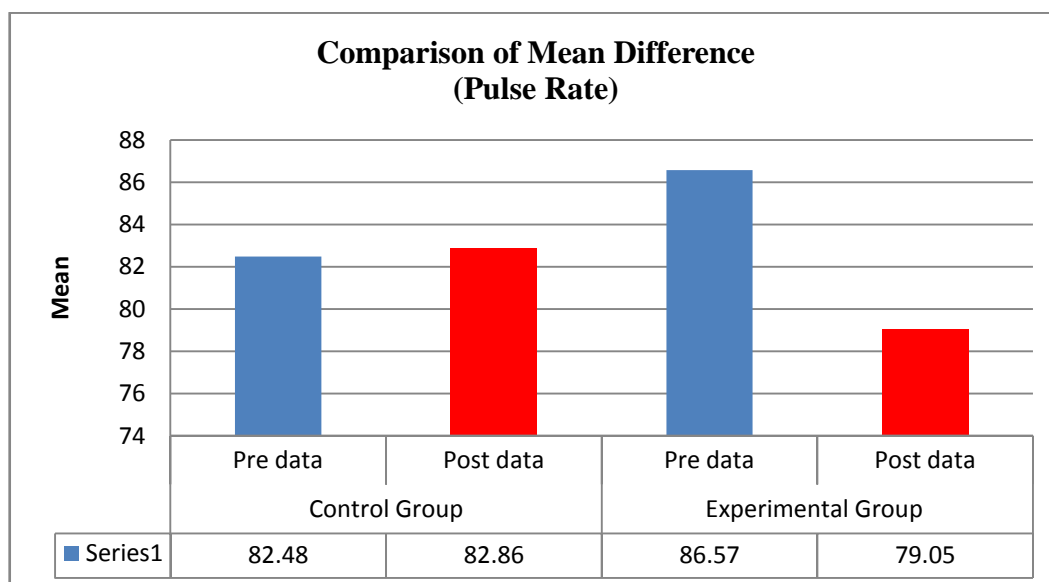
**Results:** Table 4.61 represents mean value of flexibility, pre-test 21.80 and post-test 22.41 of control group and pre-test 21.06 and post-test 23.22 of experimental group. Post-test standard deviation is 6.56 and 6.99 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.82 which was not significant at .05 &.01 level of confidence. t-value between pre and post-test of experimental group 2.15 was significant and statistical difference 2.17 between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical significant difference exists between pre-test and post-test value of flexibility, hence hypothesis 7 which states that “**H<sub>(7)</sub>**: Flexibility will also enhanced with the application of physical activity curriculum” stands accepted. Physical activity curriculum was effective in improving flexibility of student of experimental group as depicted in the above table. Results were supported by Akkoyunlu and Sirin (2010) who determined some biomotor features of 14 years football players. In which 20 active footballer and 20 subjects who did not take exercise regularly were assessed for the anthropometric variables, 20m speed, flexibility and other biomotor. The results showed that 20 meter run, flexibility and other biomotor abilities were found significant.

**Table 4.62:** Pre-test and post-test score comparison of pulse rate between control and experimental group of Class VI students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	82.48	0.38	6.00	0.23
	Post-test	82.86		7.64	
Experimental	Pre-test	86.57	7.52	7.93	5.41**
	Post-test	79.05		3.80	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.62:** Depicts comparison of mean value of pulse rate per minute, between control and experimental group of Class VI students.

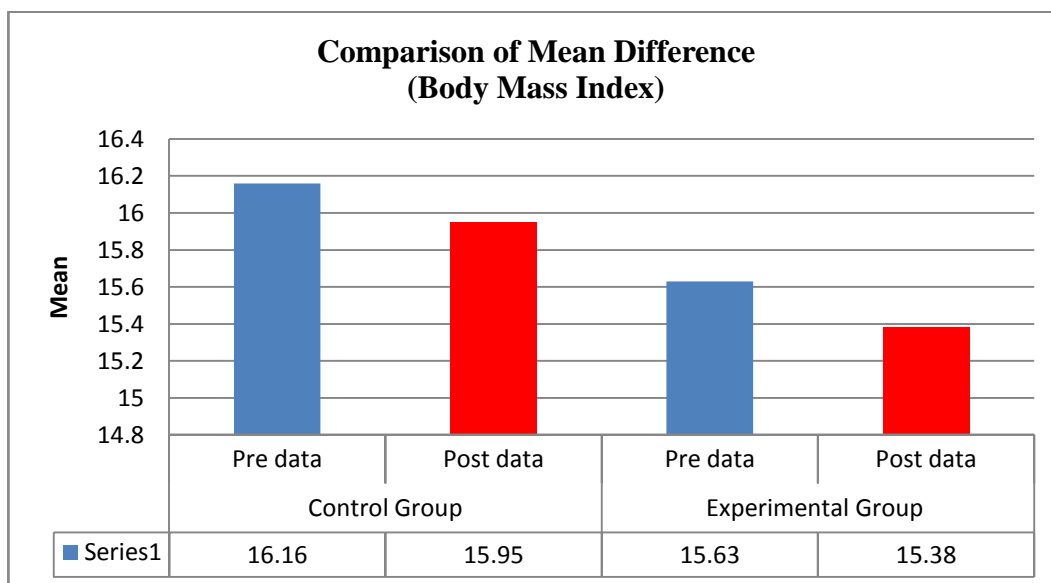
**Results:** Table 4.62 represents mean value of pulse rate, pre-test 82.48 and post-test 82.86 of control group and pre-test 86.57 and post-test 79.05 of experimental group. Post-test standard deviation is 7.64 and 3.80 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.23 which is not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 5.41 was found significant at .05 and .01 level of significance.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of pulse rate of experimental group was highly significant, hence hypothesis 8 which states that “**H<sub>0</sub>**: Pulse rate will be significantly effected”

stands accepted. Which means that physical activity curriculum was effective in lowering the pulse rate of class VIth children.

**Table 4.63:** Pre-test and post-test score comparison of body mass index between control and experimental group of Class VI students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	16.16	0.20	2.17	1.58
	Post-test	15.95		2.12	
Experimental	Pre-test	15.63	0.25	3.13	2.16*
	Post-test	15.38		3.32	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.63:** Depicts comparison of mean value of body mass index, between control and experimental group of Class VI students.

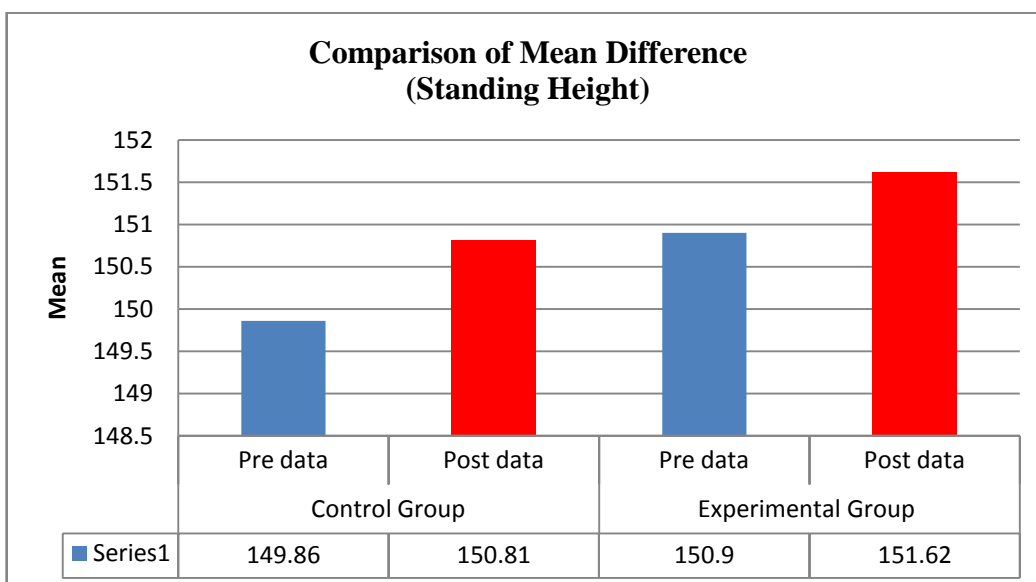
**Results:** Table 4.63 represents mean value of body mass index, pre-test 16.16 and post-test 15.95 of control group and pre-test 15.63 and post-test 15.38 of experimental group. Post-test standard deviation is 2.12 and 3.32 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.58 which

was not significant at .05 & .01 level of confidence. t-value between pre-test and post-test of experimental group 2.16 was found significant.

**Discussion:** Above results indicates that significant difference exists between pre-test and post-test value of body mass index, hence hypothesis 9 which states that “**H<sub>9</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” was accepted. Hence it can be concluded that physical activity curriculum was effective in optimizing BMI value of class VI students. Orjan, Kristjan and Bjorn (2005) executed an empirical research on Swedish children and adolescents’ BMI. The results have shown that the boys exercised considerably superior in the tests of physical performance than the girls and their activity exercise was boosted with the age. Hence it can be concluded that with the grooming/growth of the child, BMI will be better if physical activity curriculum is implemented in a scientific manner.

**Table 4.64:** Pre-test and post-test score comparison of standing height in centimetres between control and experimental group of Class VII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	149.86	0.95	6.13	5.05**
	Post-test	150.81		5.66	
Experimental	Pre-test	150.90	0.71	4.94	4.18**
	Post-test	151.62		4.86	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.64:** Depicts comparison of mean value of standing height in centimetres, between control and experimental group of Class VII students.

**Results:** Table 4.64 represents mean value of standing height, pre-test 149.86 and post-test 150.81 of control group and pre-test 150.90 and post-test 151.62 of experimental group. Post-test standard deviation is 5.66 and 4.86 of control group and experimental group respectively. t-value between pre and post-test of control group is 5.05 which was significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.18 was significant at .01 level of confidence.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of experimental of standing height was significant, hence hypothesis 1 which states that “**H<sub>(1)</sub>**: It is hypothesized that developed curriculum of

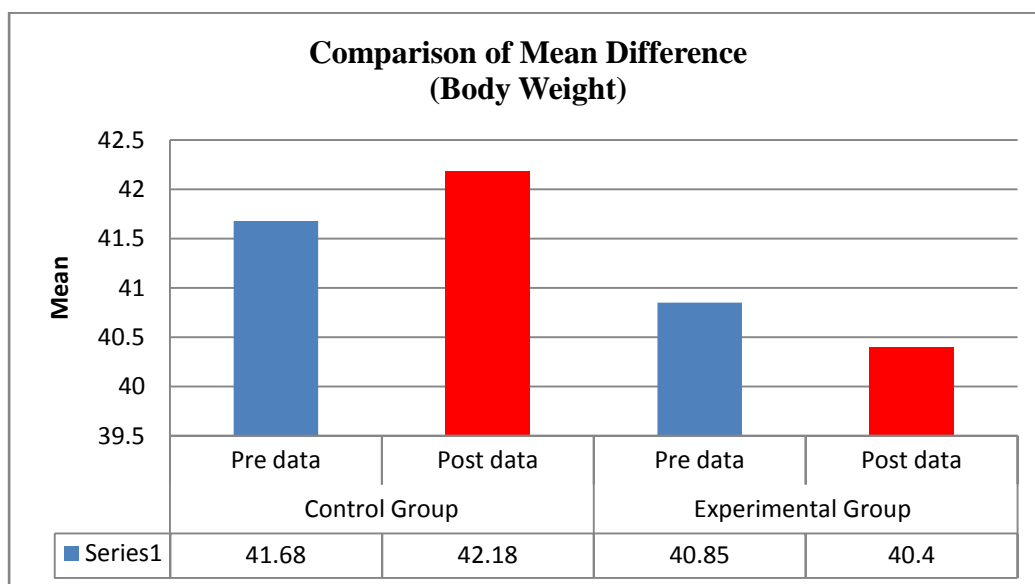
physical activity will effect standing height significantly” was accepted. It may be inferred that control and experimental group have increased in standing height because at this age, growth spurt may have occurred and physical activity always have positive effects on the growth of the child as concluded by Guilherme Joao Bezerra Alves and Guilherma Victor Alves (2019) who studied the effect of physical activity on children’s growth since intrauterine life. Medline, Embase, Scielo and Cochrane databases of studies published from 1990 to 2018. whereas one should not follow the physical activity curriculum just with the sole motive to increase height, since height of an individual / children is hereditary or genetically influenced and not directly affected by physical activity.



**Table 4.65:** Pre-test and post-test score comparison of body weight in kilograms between control and experimental group of Class VII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	41.68	0.50	6.28	1.47
	Post-test	42.18		6.43	
Experimental	Pre-test	40.85	0.45	5.18	2.68*
	Post-test	40.40		5.00	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.65:** Depicts comparison of mean value of body weight in kilograms, between control and experimental group of Class VII students.

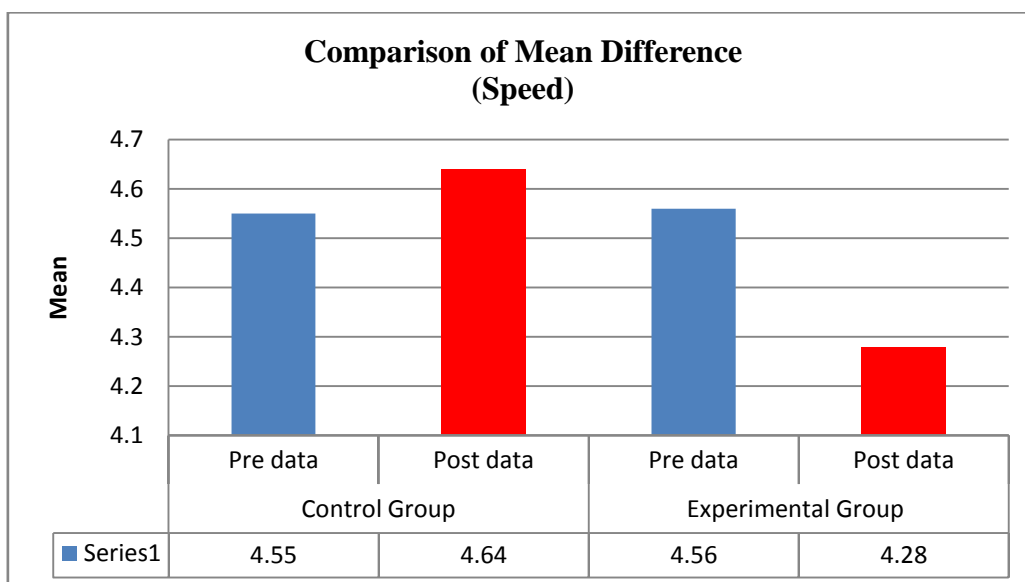
**Results:** Table 4.65 represents mean value of body weight, pre-test 41.68 and post-test 42.18 of control group and pre-test 40.85 and post-test 40.40 of experimental group. Post-test standard deviation is 6.43 and 5.00 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.47 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 2.68 was found significant at .05 level of confidence.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of body weight of experimental group was significant, hence

hypothesis 2 which states that “**H**<sub>(2)</sub>: Developed curriculum of physical activity will also effect body weight significantly” was accepted. Difference in mean value suggests that body weight of the students have been reduced significantly or in other words it can be summed that students have become more fit by following four weeks physical activity curriculum. Shriver et al. (2011) undertook a research on body weight, physical fitness and activity among 3rd-grade rural students. All students were measured for weight and height. It was found that the obese children spent a lesser amount of time in activity at different levels of intensity compared to other children. Rural children had poor fitness and 30 percent had lower activity level than the minimal physical activity recommendations for the day. Hence it can be concluded that in order to have optimum weight as per height, students should follow regular physical activity regime.

**Table 4.66:** Pre-test and post-test score comparison of speed in seconds between control and experimental group of Class VII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	4.55	0.08	0.57	1.14
	Post-test	4.64		0.80	
Experimental	Pre-test	4.56	0.28	0.60	6.06**
	Post-test	4.28		0.44	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.66:** Depicts comparison of mean value of speed in seconds between control and experimental group of Class VII students.

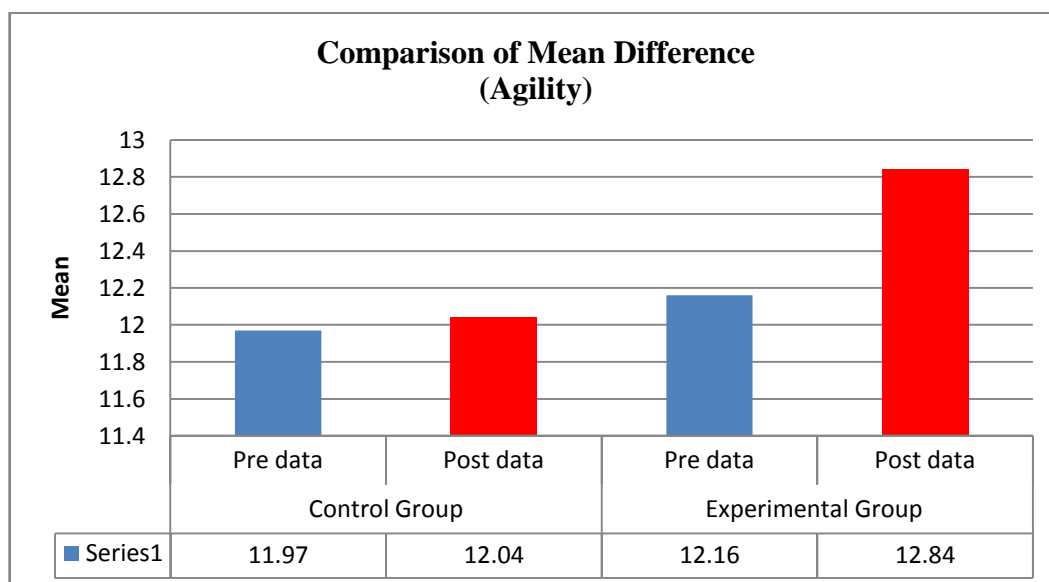
**Results:** Table 4.66 represents mean value of speed, pre-test 4.55 and post-test 4.64 of control group and pre-test 4.56 and post-test 4.28 of experimental group. Post-test standard deviation is 0.80 and 0.44 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.14 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 6.06 was found highly significant with difference 0.28 between average (mean) value of pre and post-test value of experimental group.

**Discussion:** Above results indicates that statistical significant difference exists between pre-test and post-test value of speed, hence hypothesis 3 which states that “**H<sub>(3)</sub>**: Speed will be significantly effected by the implementation of the designed curriculum” stands accepted. Hence it can be concluded that activity curriculum was effective in improving speed ability of class VII children. Laia et al. (2009) have studied the effect of an alteration from regular endurance to speed endurance training on muscle oxidative capacity. For 4 weeks experimental group, replaced to high intensity sessions and control group continued with ordinary training. After 4 weeks oxygen uptake was 6.4% lower and in speed endurance training in control group remained unchanged. Study has shown that speed endurance training reduces energy expenditure after four weeks of intervention. From this research study it can be concluded that four weeks of training is sufficient in bringing desired results in human body.

**Table 4.67:** Pre-test and post-test score comparison of agility in seconds between control and experimental group of Class VII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	11.97	0.07	1.05	0.83
	Post-test	12.04		0.85	
Experimental	Pre-test	12.16	0.32	0.86	4.41**
	Post-test	11.84		0.83	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.67:** Depicts comparison of mean value of agility in seconds, between control and experimental group of Class VII students.

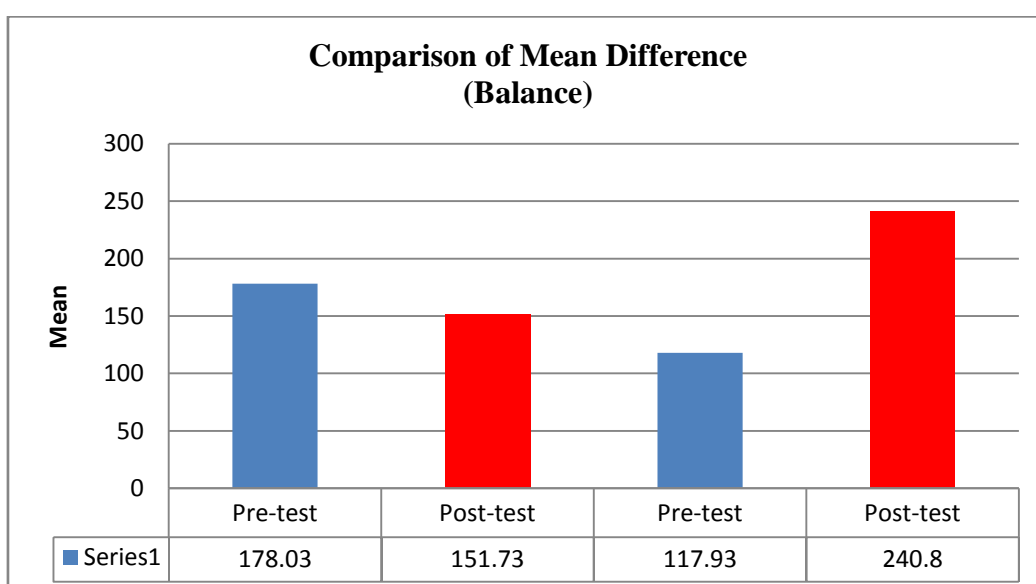
**Results:** Table 4.67 represents mean value of agility, pre-test 11.97 and post-test 12.04 of control group and pre-test 12.16 and post-test 11.84 of experimental group. Post-test standard deviation is 0.85 and 0.83 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.83 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.41 was found significant.

**Discussion:** Results of the above table depicts that statistical significant difference exists between pre-test and post-test value of agility, hence hypothesis 4 which states that “**H<sub>4</sub>**: Significant effect on agility is expected with the use of the developed

physical activity curriculum” stands accepted. It is worth to state that developed physical activity curriculum proved an effective tool in enhancing agility of the students. Results of the present study were supported by Gabbet (2006) scrutinized the conclusion of an aptitude based instruction program on the extent of agility and physical fitness in volleyball players who were identified on the basis of talent. In comparison to pre training, there was noteworthy enhancement in 05mtr., 10mtr. agility and speed.

**Table 4.68:** Pre-test and post-test score comparison of balance in minutes between control and experimental group of Class VII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	178.03	26.30	171.69	0.67
	Post-test	151.73		115.01	
Experimental	Pre-test	117.93	122.88	104.65	4.33**
	Post-test	240.80		169.01	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.68:** Depicts comparison of mean value of balance in minutes, between control and experimental group of Class VII students.

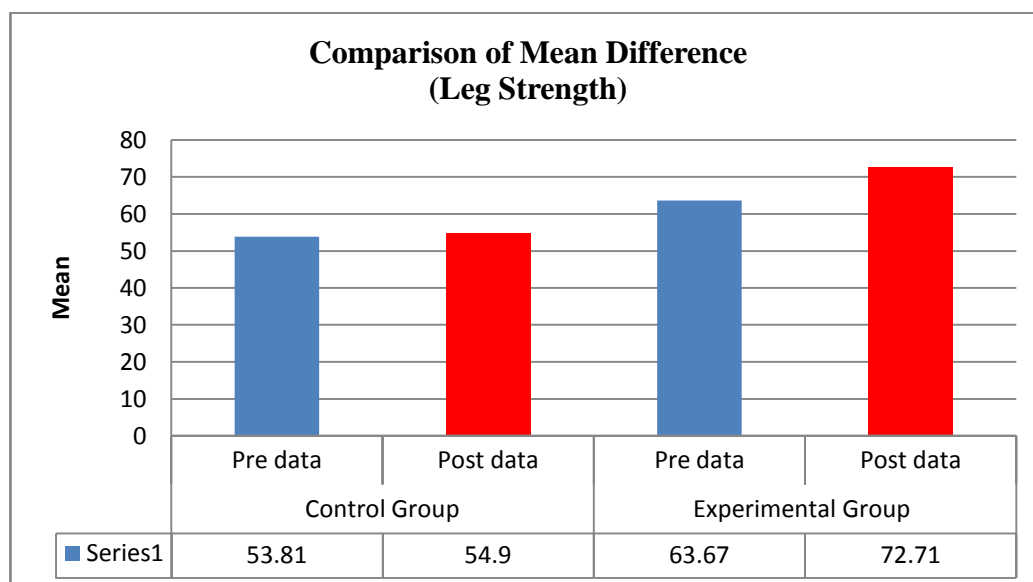
**Results:** Table 4.68 represents mean value of balance, pre-test 178.03 and post-test 151.73 of control group and pre-test 117.93 and post-test 240.80 of experimental group. Post-test standard deviation is 115.01 and 169.01 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.67 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.33 was significant and statistical difference 122.88 between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of balance was found significant, hence hypothesis 5 which states that “**H<sub>(5)</sub>**: Balance ability will also effected significantly by the execution of the physical activity curriculum” stands accepted. Indicating that physical activity curriculum was effective enhancing biomotor abilities of VII class students. Results of the present study were supported by Dian Pujianto (2018) studied the effect of physical activity program on static balance in early childhood and concluded that static balance was influenced by the physical activity at early childhood.

**Table 4.69:** Pre-test and post-test score comparison of leg strength in counts between control and experimental group of Class VII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	53.81	1.10	26.69	0.42
	Post-test	54.90		24.47	
Experimental	Pre-test	63.67	9.05	36.73	2.45*
	Post-test	72.71		36.97	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.69:** Depicts comparison of mean value of leg strength in counts, between control and experimental group of Class VII students.

**Results:** Table 4.69 represents mean value of leg strength, pre-test 53.81 and post-test 54.90 of control group and pre-test 63.67 and post-test 72.71 of experimental group. Post-test standard deviation is 24.47 and 36.97 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.42 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 2.45 was not significant.

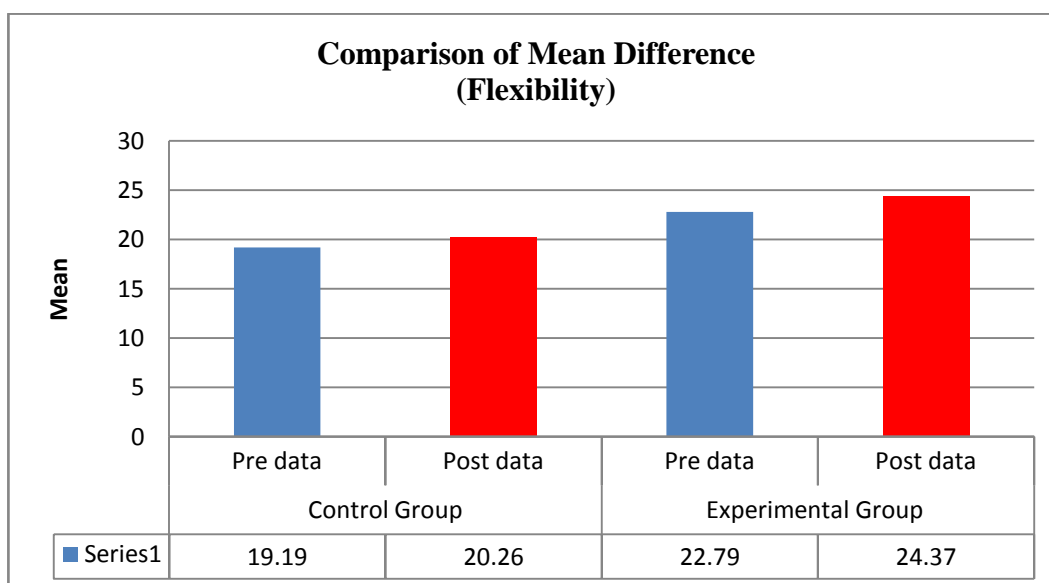
**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of leg strength was significant, hence hypothesis 6 which states that “**H<sub>6</sub>**: Significant effect of physical activity curriculum of leg strength is



hypothesized stands accepted. It is evident from the results that physical activity curriculum was effective in elevating leg strength performance. Four weeks study conducted by Tran et al. (2016) on effects of detraining on strength, power and sensorimotor ability of adolescent surfers, for this purpose nineteen adolescent surfers were selected. After four weeks of detraining, it was concluded that isometric strength, and relative strength was significantly decreased therefore it is necessary to continue resistance training and avoid cessation of resistance training. Hence it is clear that four weeks are enough make the desired adaptive changes in the body but training should be continuous in nature.

**Table 4.70:** Pre-test and post-test score comparison of flexibility in centimetres between control and experimental group of Class VII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	19.19	1.07	5.46	1.33
	Post-test	20.26		6.54	
Experimental	Pre-test	22.79	1.58	8.04	3.10**
	Post-test	24.37		8.03	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



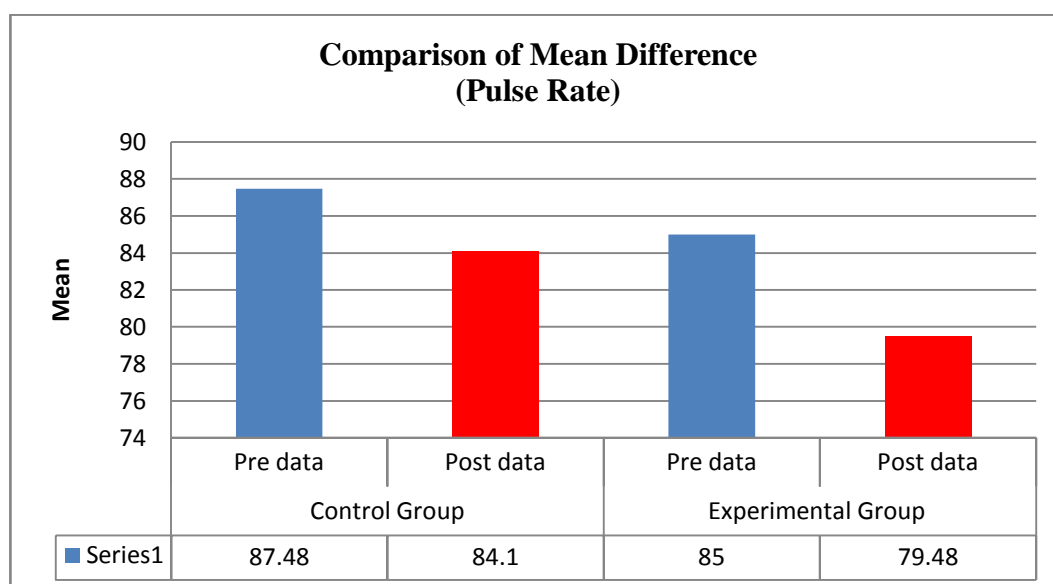
**Figure 4.70:** Depicts comparison of mean value of flexibility in centimetres, between control and experimental group of Class VII students.

**Results:** Table 4.70 represents mean value of flexibility, pre-test 19.19 and post-test 20.26 of control group and pre-test 22.79 and post-test 24.37 of experimental group. Post-test standard deviation is 1.07 and 1.58 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.33 which was not significant at .05 & .01 level of confidence. t-value between pre-test and post-test of experimental group 3.10 was not significant at .01 level of confidence with the difference 1.58 between average (mean) value of experimental group.

**Discussion:** Statistical significance difference was found between pre-test and post-test value of flexibility of experimental group, hence hypothesis 7 which states that “**H<sub>(7)</sub>**: Flexibility will also enhanced with the application of physical activity curriculum” stands accepted, proving that physical activity curriculum was effective tool in improving the flexibility of class VIIth students. Results were supported by Akkoyunlu and Sirin (2010) who determined selected biomotor features of 14 years football players. In which 20 active footballer and 20 subjects who did not take exercise regularly were assessed for the flexibility, anthropometric variables, 20m speed and other biomotor variables. The result depicts that flexibility, 20 meter run, and other biomotor abilities were found significant.

**Table 4.71:** Pre-test and post-test score comparison of pulse rate between control and experimental group of Class VII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	87.48	3.38	9.46	2.18*
	Post-test	84.10		6.52	
Experimental	Pre-test	85.00	5.52	6.60	4.40**
	Post-test	79.48		5.77	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.71:** Depicts comparison of mean value of pulse rate per minute, between control and experimental group of Class VII students.

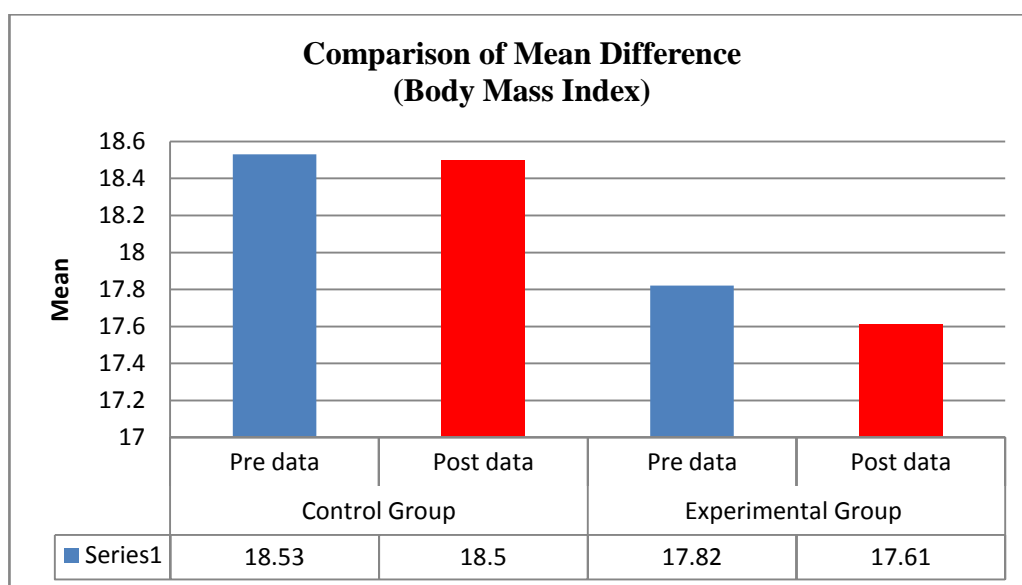
**Results:** Table 4.71 represents mean value of pulse rate, pre-test 87.48 and post-test 84.10 of control group and pre-test 85.00 and post-test 79.48 of experimental group. Post-test standard deviation is 6.52 and 5.77 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.18 which was significant at .05 level of confidence. t-value between pre and post-test of experimental group 4.40 was found significant at .01 level of confidence.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of pulse rate was significant, hence hypothesis 8 which states that "**H<sub>(8)</sub>**: Pulse rate will be significantly effected" was accepted. Physical activity

curriculum has affected dependent variable significantly and has shown improvement in the mean values, thereby increasing overall fitness of the children.

**Table 4.72:** Pre-test and post-test score comparison of body mass index between control and experimental group of Class VII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	18.53	0.03	2.22	0.18
	Post-test	18.50		2.25	
Experimental	Pre-test	17.82	0.21	2.28	1.43
	Post-test	17.61		2.20	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.72:** Depicts comparison of mean value of body mass index, between control and experimental group of Class VII students.

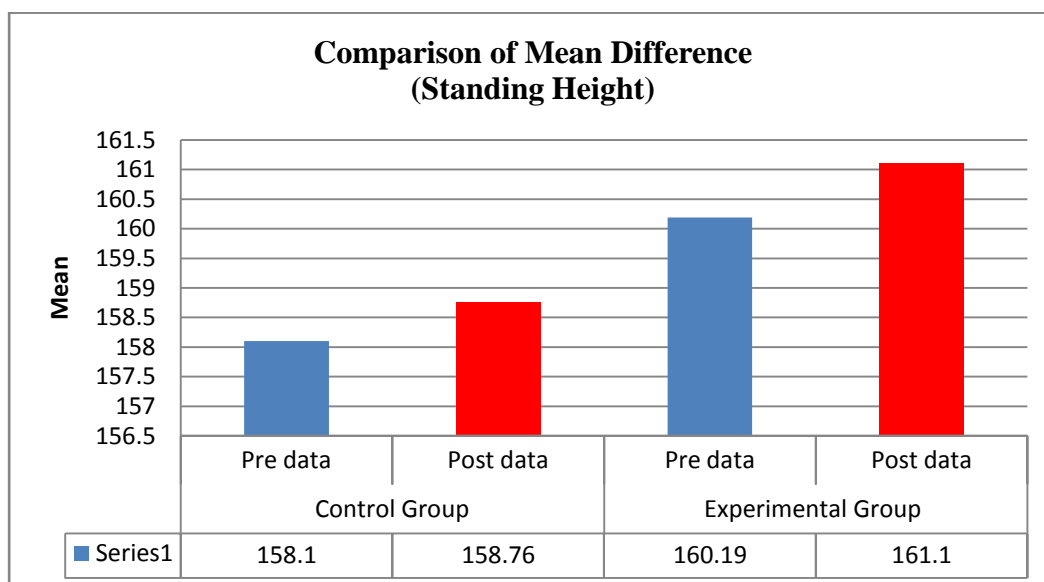
**Results:** Table 4.72 represents mean value of body mass index, pre-test 18.53 and post-test 18.50 of control group and pre-test 17.82 and post-test 17.61 of experimental group. Post-test standard deviation is 2.25 and 2.20 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.18 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test

of experimental group 1.43 was not significant but statistical difference 0.21 between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical mean difference between pre-test and post-test value of body mass index was not found significant, hence hypothesis 9 which states that “**H<sub>9</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” was rejected. Whereas results are contrary of Orjan, Kristjan and Bjorn (2005) who executed an empirical research on Swedish children and adolescents’ physical performance i.e. height as well as the mass of the body of the children was calculated and BMI was determined. The outcome showcased that the boys exercised considerably superior in the tests of physical performance than the girls and their activity exercise was boosted with the age. Here it can be concluded that with the grooming/growth of the child BMI will be better if physical activity curriculum will be incorporated in a scientific manner.

**Table 4.73:** Pre-test and post-test score comparison of standing height in centimetres between control and experimental group of Class VIII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	158.10	0.67	12.30	4.18**
	Post-test	158.76		12.32	
Experimental	Pre-test	160.19	0.90	11.08	4.66**
	Post-test	161.10		10.91	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.73:** Depicts comparison of mean value of standing height in centimetres, between control and experimental group of Class VIII students.

**Results:** Table 4.73 represents mean value of standing height, pre-test 158.10 and post-test 158.76 of control group and pre-test 160.19 and post-test 161.10 of experimental group. Post-test standard deviation is 12.32 and 10.91 of control group and experimental group respectively. t-value between pre and post-test of control group is 4.18 which was significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 4.66 was also found significant at .01 level of confidence.

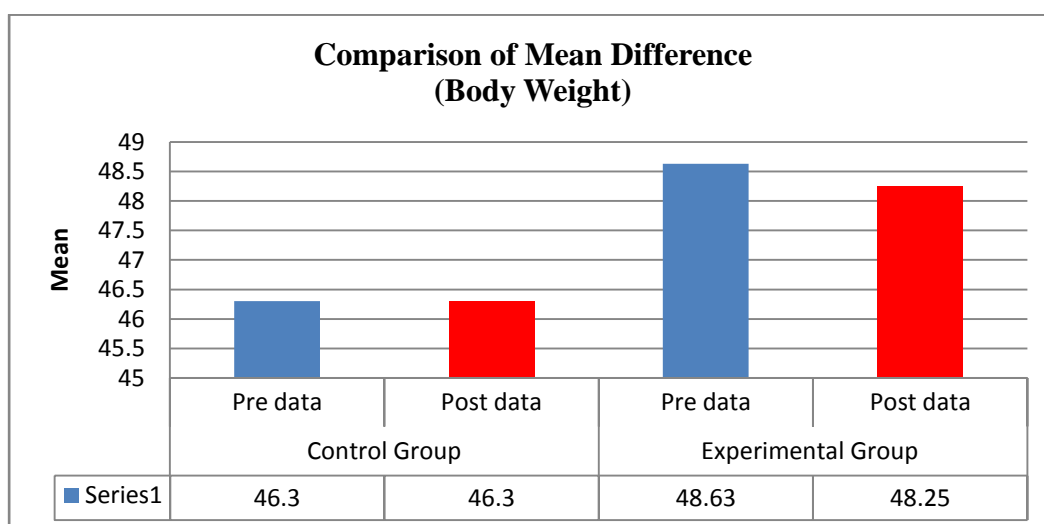
**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of standing height was found significant of both groups, hence

hypothesis 1 which states that “**H<sub>(1)</sub>**: It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted. It is evident from research studies that height of a child depends on the height of the parents but it may be inferred that control and experimental group have increased in standing height because at this age, growth spurt may have occurred and physical activity always have positive effect of the growth of the tissues as concluded by Guilherme Joao Bezerra Alves and Guilherma Victor Alves (2019) who studied the effect of physical activity on children’s growth since intrauterine life. Medline, Embase, Scielo and Cochrane databases of studies published from 1990 to 2018. Physical activity curriculum cannot effect growth directly since research studies on height have proved that physical growth of an individual is affected by hereditary and other extraneous factors whereas above results have also shown significant value on control and experimental group, proving that standing height of an individual depends on extraneous factors including heredity and genetical factors.

**Table 4.74:** Pre-test and post-test score comparison of body weight in kilograms between control and experimental group of Class VIII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	46.30	0.01	10.59	0.26
	Post-test	46.30		10.90	
Experimental	Pre-test	48.63	0.39	11.11	1.14
	Post-test	48.25		11.30	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.74:** Depicts comparison of mean value of body weight in kilograms, between control and experimental group of Class VIII students.

**Results:** Table 4.74 represents mean value of body weight, pre-test 46.30 and post-test 46.30 of control group and pre-test 48.63 and post-test 48.25 of experimental group. Post-test standard deviation is 10.90 and 11.30 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.26 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 1.14 was not significant but statistical difference 0.39 between average (mean) value of experimental group.

**Discussion:** Above results indicates that statistical difference was not found between pre-test and post-test value of body weight, hence hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity will also effect body weight significantly”

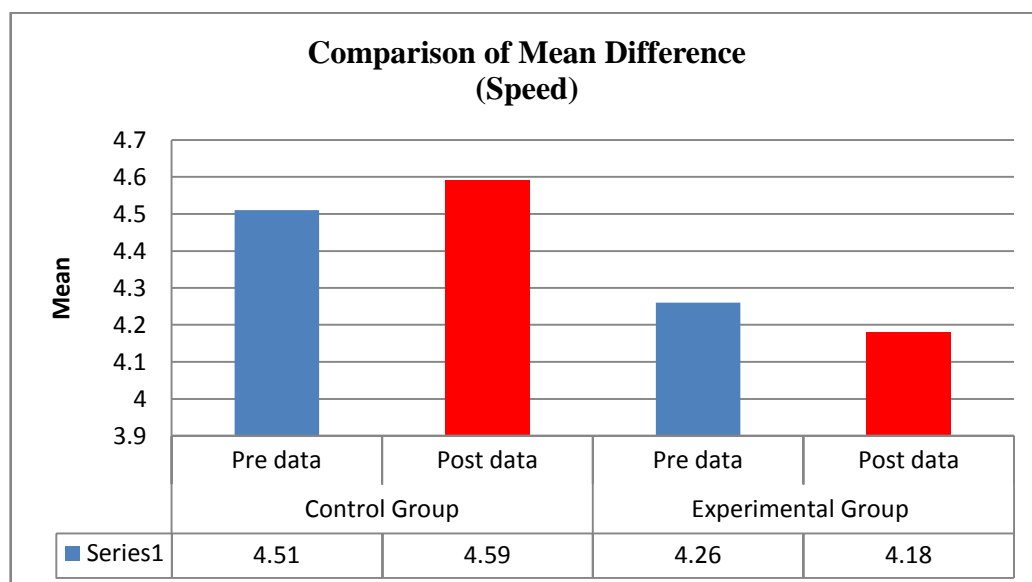


was rejected. Statistical difference may not be found on body weight because diet was not controlled of experimental group. Shriver et al. (2011) undertook a research on body weight, physical fitness and activity among 3rd-grade rural students. All students were measured for weight and height. The results revealed that 38 percent children were found obese or overweight. It was found that the obese children spent a lesser amount of time in activity at different levels of intensity compared to other children. 43 percent children were not up to mark with muscular strength and fitness standard and 36 percent were not up to mark for flexibility. Rural students were found to have high obesity than the normal average range. Rural children had poor fitness and 30 percent had lower activity level than the minimal physical activity recommendations for the day. Therefore in order to have desired results on the variable “body weight” duration of physical activity should be increased.

**Table 4.75:** Pre-test and post-test score comparison of speed in seconds between control and experimental group of Class VIII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	4.51	0.08	0.66	1.35
	Post-test	4.59		0.69	
Experimental	Pre-test	4.26	0.08	0.46	1.64
	Post-test	4.18		0.36	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.75:** Depicts comparison of mean value of speed in seconds between control and experimental group of Class VIII students.

**Results:** Table 4.75 represents mean value of speed, pre-test 4.51 and post-test 4.59 of control group and pre-test 4.26 and post-test 4.18 of experimental group. Post-test standard deviation is 0.69 and 0.36 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.35 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 1.64 was not significant but statistical difference 0.08 between average (mean) value of experimental group.

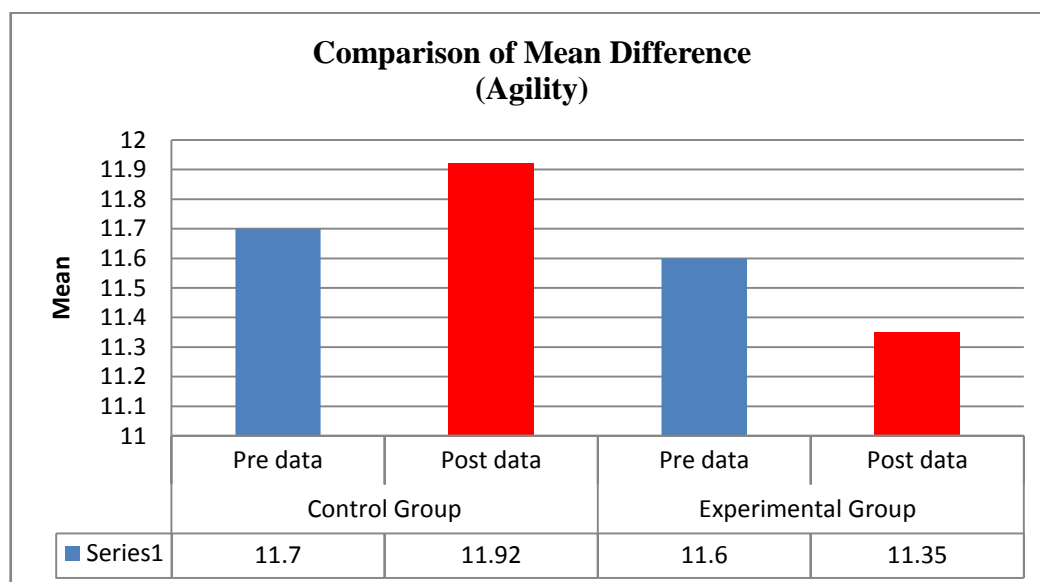
**Discussion:** Results in the above table indicates that statistical difference between pre-test and post-test value of speed was found insignificant, hence hypothesis 3

which states that “ $H_{(3)}$ : Speed will be significantly effected by the implementation of the designed curriculum” stands rejected. Though reduction in mean value was found which depicts that speed of the students were improved but not significantly. Therefore it is suggested that if load parameters of physical activity curriculum is increased and monitored then the significant result would be expected. Azmi and Kusnanik (2018) of Negeri Surabaya, University, Indonesia concluded in that there was a significant effect of training program (speed, agility and quickness) in improving in agility, speed and acceleration therefore its once again suggested that in order have better results, intensity of physical activity curriculum may be increased.

**Table 4.76:** Pre-test and post-test score comparison of agility in seconds between control and experimental group of Class VIII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	11.70	0.21	0.76	1.72
	Post-test	11.92		0.82	
Experimental	Pre-test	11.60	0.25	0.70	2.58*
	Post-test	11.35		0.54	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.76:** Depicts comparison of mean value of agility in seconds, between control and experimental group of Class VIII students.

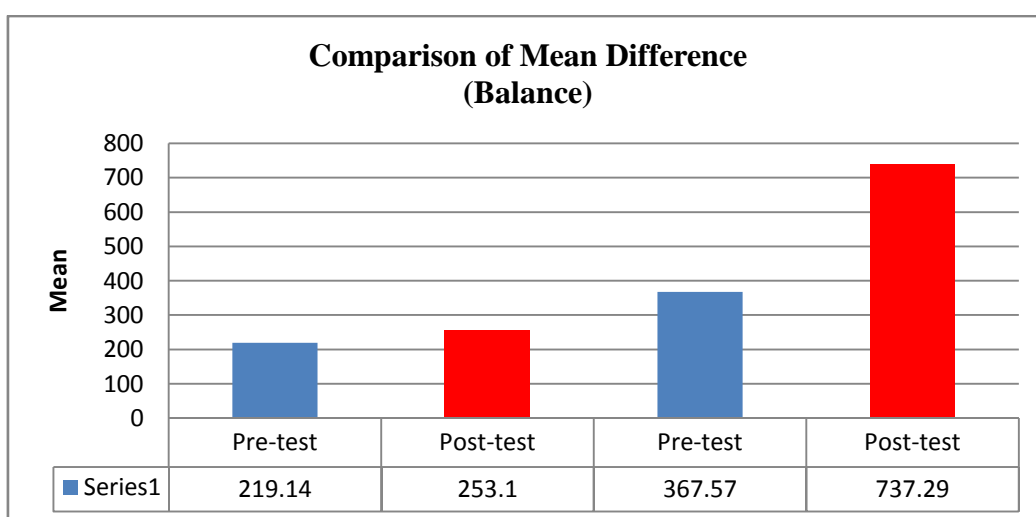
**Results:** Table 4.76 represents mean value of agility, pre-test 11.70 and post-test 11.92 of control group and pre-test 11.60 and post-test 11.35 of experimental group. Post-test standard deviation is 0.82 and 0.21 of control group and experimental group respectively. t-value between pre and post-test of control group is 1.72 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 2.58 was found significant with difference 0.25 between average (mean) value of pre and post-test of experimental group.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of agility has been found significant, hence hypothesis 4 which

states that “**H<sub>4</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted. Physical activity curriculum of four weeks have enhanced agility performance of class VIIIth students. Outcomes of the present study were supported by Gabbet (2006) who scrutinized aptitude based instruction program on the extent of agility and physical fitness in volleyball players who were identified on the basis of talent. In comparison to pre training, there was noteworthy enhancement in 05mtr., 10mtr. agility and speed.

**Table 4.77:** Pre-test and post-test score comparison of balance in seconds between control and experimental group of Class VIII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	219.14	33.95	152.14	0.83
	Post-test	253.10		219.43	
Experimental	Pre-test	367.57	369.71	889.95	1.14
	Post-test	737.29		1138.60	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



**Figure 4.77:** Depicts comparison of mean value of balance in minutes, between control and experimental group of Class VIII students.

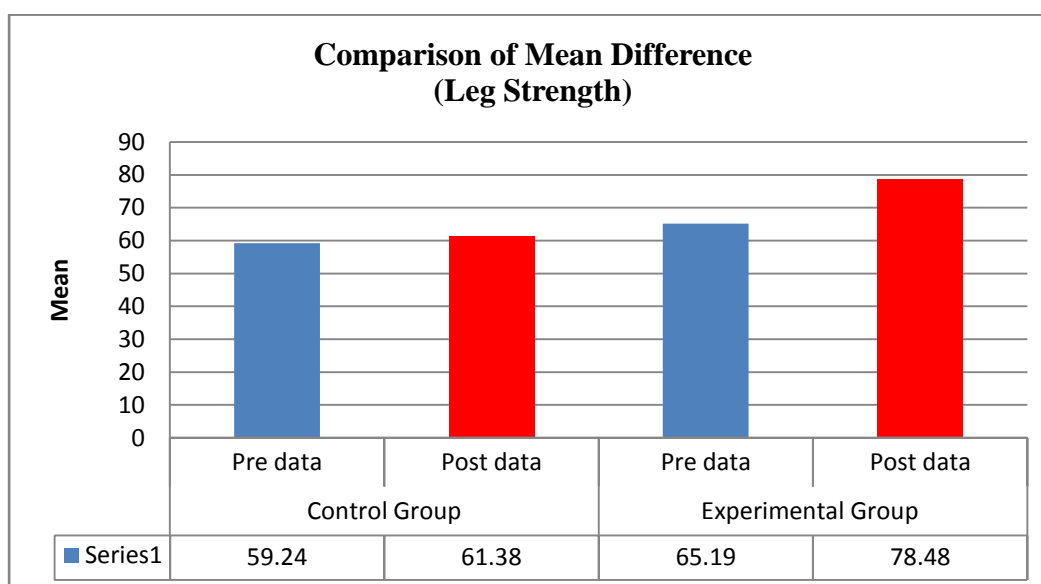
**Results:** Table 4.77 represents mean value of balance, pre-test 219.14 and post-test 253.57 of control group and pre-test 367.57 and post-test 737.29 of experimental group. Post-test standard deviation is 219.43 and 1138.60 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.83 which was not significant at .05 & .01 level of confidence. t-value between pre and post-test of experimental group 1.14 was not significant but statistical difference 369.71 between average (mean) value of experimental group.

**Discussion:** Above results indicates that significant difference was not found between pre-test and post-test value of balance, hence hypothesis 5 which states that “**H<sub>(5)</sub>**: Balance ability will also effected significantly by the execution of the physical activity curriculum” stands rejected. Though, mean difference of experimental group was 369.71 suggesting that balance was improved but not significantly. In order to have desired results one can manipulate the intensity of the physical activity curriculum. Study conducted by Dian Pujianto (2018) concluded that static balance was influenced by the physical activity at early childhood.

**Table 4.78:** Pre-test and post-test score comparison of leg strength in counts between control and experimental group of Class VIII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	59.24	2.14	25.12	0.85
	Post-test	61.38		27.27	
Experimental	Pre-test	65.19	13.29	34.75	3.64**
	Post-test	78.48		31.27	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.78:** Depicts comparison of mean value of leg strength in counts, between control and experimental group of Class VIII students.

**Results:** Table 4.78 represents mean value of leg strength, pre-test 59.24 and post-test 61.38 of control group and pre-test 65.19 and post-test 78.48 of experimental group. Post-test standard deviation is 27.27 and 31.27 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.85 which is not significant at .05 & .01 level of confidence. t-value between SD pre and post-test of experimental group 3.64 was significant.

**Discussion:** Difference between pre-test and post-test value of standing height was found significant even at .01 level of confidence hence hypothesis 6 which states that

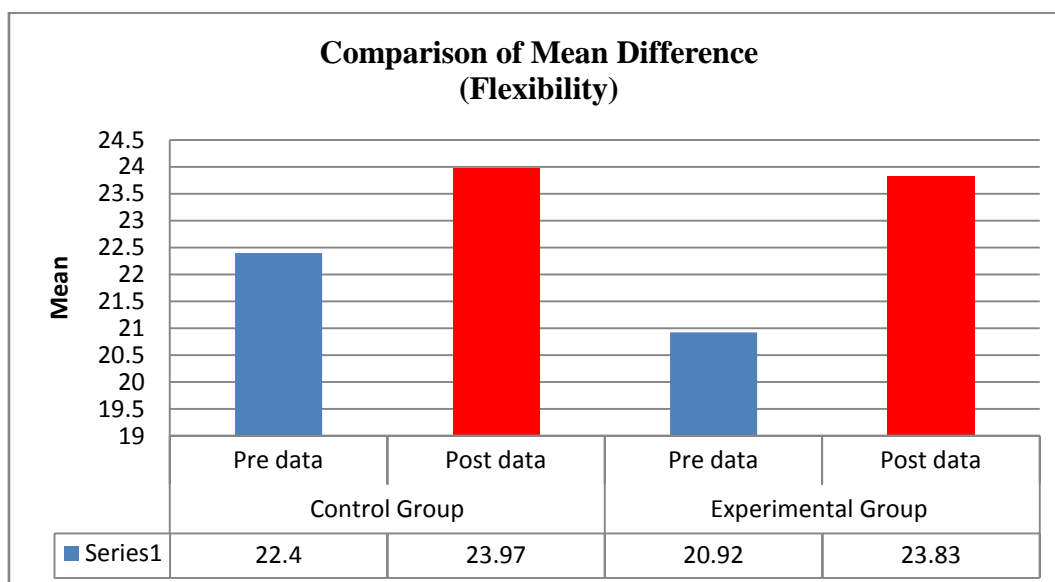
“**H<sub>(6)</sub>**: Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted. Suggesting that there was development in leg strength of the experimental group when compared to control group. Results of the above table suggest that the developed Physical Activity curriculum was effective tool in improving leg strength of class VIIIth students. Results were also supported by the four weeks study conducted by Tran et al. (2016) on effects of four weeks of detraining on strength, power and sensorimotor ability of adolescent surfers, for this purpose nineteen adolescent surfers were selected. After four weeks of detraining, it was concluded that vertical jump, isometric strength and relative strength was significantly decreased therefore it is necessary to continue resistance training and avoid cessation of resistance training. Hence it is clear that four weeks are enough make the desired adaptive changes in the body and training should be continuous in nature.



**Table 4.79:** Pre-test and post-test score comparison of flexibility in centimetres between control and experimental group of Class VIII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	22.40	1.57	7.23	2.66*
	Post-test	23.97		7.80	
Experimental	Pre-test	20.92	2.90	6.56	4.28**
	Post-test	23.83		5.93	

N=21, df=20. Critical value of t at .05 =2.09\* and .01 = 2.84\*\*



**Figure 4.79:** Depicts comparison of mean value of flexibility in centimetres, between control and experimental group of Class VIII students.

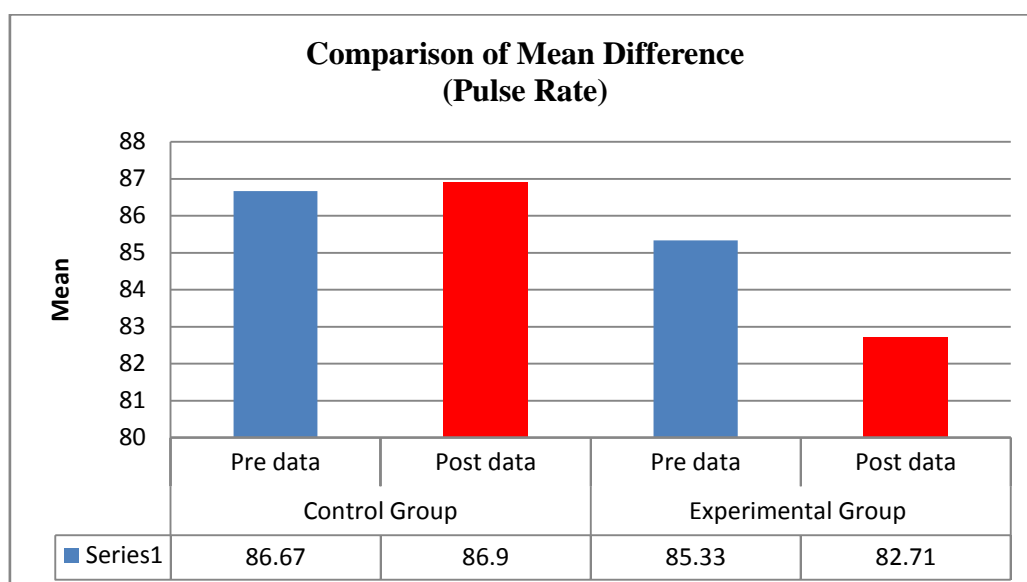
**Results:** Table 4.79 represents mean value of flexibility, pre-test 22.40 and post-test 23.97 of control group and pre-test 20.92 and post-test 23.83 of experimental group. Post-test standard deviation is 7.80 and 5.93 of control group and experimental group respectively. t-value between pre and post-test of control group is 2.66 which was significant at .05 level of confidence. t-value between pre and post-test of experimental group 4.28 was found significant at .01 level of confidence.

**Discussion:** Above results indicates that statistical significant difference between pre-test and post-test value of flexibility was significant suggesting that hypothesis 7 which states that “**H<sub>(7)</sub>**: Flexibility will also enhanced with the application of physical

activity curriculum” stands accepted. Hence, it is proved that physical activity curriculum was effective tool in improving the flexibility of class second students. Results of the present study were supported by Akkoyunlu and Sirin (2010) who determined selected biomotor features of 14 years football players. In which 20 active footballer and 20 subjects who did not take exercise regularly were assessed for the anthropometric variables, 20m speed, flexibility, and other biomotor. The results showed that 20 meter run, flexibility and other biomotor abilities were found significant.

**Table 4.80:** Pre-test and post-test score comparison of pulse rate between control and experimental group of Class VIII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	86.67	0.23	6.58	0.22
	Post-test	86.90		6.21	
Experimental	Pre-test	85.33	2.62	6.18	3.06**
	Post-test	82.71		5.08	
N=21, df=20. Critical value of t at .05 =2.09* and .01 = 2.84**					



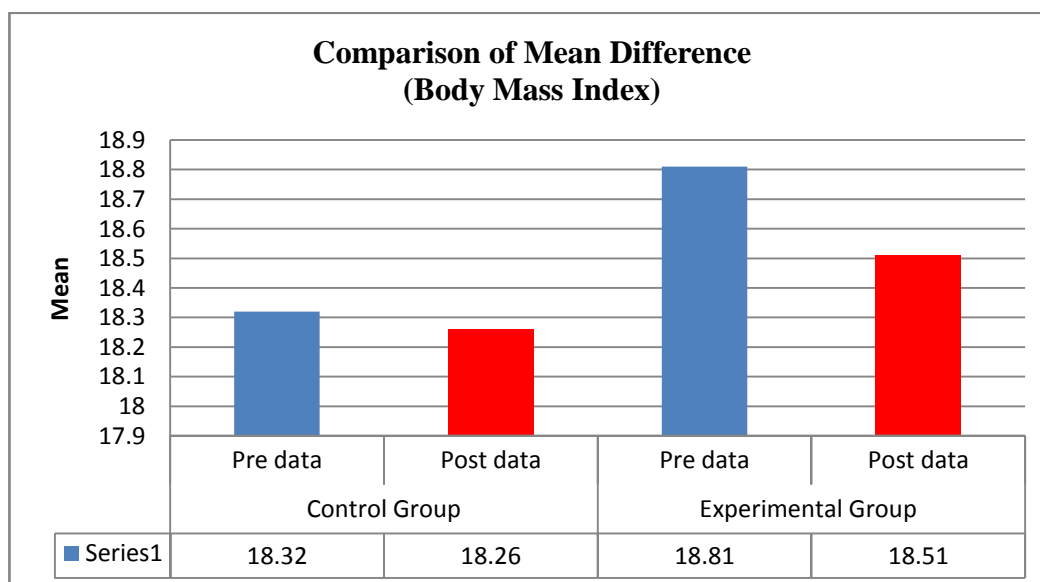
**Figure 4.80:** Depicts comparison of mean value of pulse rate per minute, between control and experimental group of Class VIII students.

**Results:** Table 4.80 represents mean value of pulse rate, pre-test 86.67 and post-test 86.90 of control group and pre-test 85.33 and post-test 82.71 of experimental group. Post-test standard deviation is 6.21 and 5.08 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.22 which was not significant at .05 &.01 level of confidence. t-value between pre and post-test of experimental group 3.06 was found significant at.01 level of confidence.

**Discussion:** Statistical significant difference between pre-test and post-test value of pulse rate of experimental group was found significant, hence hypothesis 8 which states that “**H<sub>(8)</sub>**: Pulse rate will be significantly effected” was accepted. Here results of the physical activity were effective in lowering the pulse rate, which means that physical activity curriculum enhanced overall fitness of the children. Shannan and Gormley (2008) studied “Effect of Intensity of Aerobic Training on VO<sub>2</sub>max” and the purpose was to determine whether various intensities of aerobic training differentially affect aerobic capacity as well as resting HR and resting blood pressure (BP). There were no significant changes in resting HR and BP in any group. When volume of exercise is controlled, higher intensities of exercise are more effective for improving VO<sub>2</sub> max than lower intensities of exercise in healthy, young adults. This study suggests that to get desired result, intensity of physical activity curriculum can manipulated.

**Table 4.81:** Pre-test and post-test score comparison of body mass index between control and experimental group of Class VIII students.

Group	Data	Mean	Mean difference	SD	t-value
Control	Pre-test	18.32	0.06	2.49	0.53
	Post-test	18.26		2.42	
Experimental	Pre-test	18.81	0.30	3.48	1.76
	Post-test	18.51		3.28	
N=21, df=20. Critical value of t at .05=2.09* and .01= 2.84**					



**Figure 4.81:** Depicts comparison of mean value of body mass index, between control and experimental group of Class VIII students.

**Results:** Table 4.81 represents mean value of body mass index, pre-test 18.32 and post-test 18.26 of control group and pre-test 18.81 and post-test 18.51 of experimental group. Post-test standard deviation is 0.06 and 0.30 of control group and experimental group respectively. t-value between pre and post-test of control group is 0.53 was not significant at .05 level of confidence. t-value between pre and post-test of experimental group was 1.56 which was not significant, but statistical difference 0.35 between average (mean) value of control group.

**Discussion:** Results in the above table indicates that statistical difference was not found between pre-test and post-test value of body mass index in experimental group, hence hypothesis 9 which states that “**H<sub>9</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected. It can be assumed that results may alter or differ if the diet and post school activity of the children would be controlled because in order to have desired or ideal BMI, one should follow the physical activity curriculum in a controlled manner. Results of the present study were found contrary when compared with the result of the research conducted by Orjan, Kristjan and Bjorn (2005) who executed an empirical research on Swedish children and adolescents’ physical performance. The height as well as the mass of the body of the children was calculated and BMI was determined. The outcome showcased that the boys exercised considerably superior in the tests of physical performance than the girls and their activity exercise was boosted with the age. Here it can be concluded that BMI of the children can be improved/better if physical activity curriculum is incorporated or followed in a scientific manner by controlling the load parameters and diet of the children.

## **CHAPTER - 5**

### **SUMMARY AND CONCLUSION**

#### **5.1 Summary**

Education prepares children to understand life in more organised way and to find out solution to the problem which comes in a day to day life, this leads their life towards self-contentment and prosperity. Literate with physical fitness enhances ones capacity to meet out social demands which are caused by the changes which occurs in an environment. Present education system is vast and have different streams and it's a challenging task in one's life to choose a right path towards his/her career. Students are often driven by the taste of others and in this process we actually heads towards the life of discontentment. Problem also lies in the level where one can think in a better way and this is only possible if one is physically fit and mentally sound. To achieve this target one should have a balance of education and good session of physical exercises. Here it becomes necessary that there should be an organised curriculum of physical activity in the schools besides and teaching curriculum. In order to fulfil this demand present study has developed curriculum for physical activity which will hopefully be implemented in the different state and national education boards in India.

While at school it is our responsibility to provide as many opportunities as possible to explore their potential and to exhibit their talents. Just keeping children within the four walls of classroom and cramming with lots of information from the textbooks make them boredom and monotonous.

Thirteenth August two thousand thirteen, United Nation's General Assembly made the decision to observe sixth April, the day as "International Day, of Sports for Peace and Development" Whereas World Health Organisation also discussed the report which was presented by secretariat and owned the responsibility to finalize a proposal related to physical activity and diet to prevent and control non-communicable diseases. Report was approved by the Assembly to globalize the plan and to develop physical activity and diet plan. As mentioned in earlier chapters, UNESCO and WHO report was given due consideration while framing and finalizing the present research problem. Hence physical activity curriculum was designed and

then effects were studied on elementary school children. Curriculum for Physical activity should be developed as per the physical education curriculum and should be organized according to the analytical expansions of its theory and practical content required as per human movement from time to time.

### **Positive outcomes of Physical Activity**

**Minimize heart related diseases:** Physical activities prevent the menace of heart failure. It also helps to regulate blood pressure in a stable manner.

**Improves overall fitness:** A good program of physical activities helps in improving the overall fitness of the body of children it also initiates a lot in the overall growth of the children. It helps in proper growth of children muscles bones flexibility etc.

**Stronger bones:** It helps in maintaining stronger bones and also helps in improving the density of the bones in an individual

**Weight management:** Physical activities help in managing the weight of the children as well as of adults as nowadays weight management is the biggest curse among the individuals, so well designed physical activity program will help an individual to overcome this problem in a very effective way and with positive outcomes.

**Psychological development:** Quality physical education helps in the psychological development of an individual like development of leadership qualities, emotional development, development of different kind of responsibilities etc.

**Skill development:** Physical education helps an individual to develop skills it also helps an individual to show their inbuilt talents. It is through Physical Education that skills of different games can be developed. And new sports related skills become easier to learn.

### **Benefits of Physical Activity Curriculum in Student's Life**

In India more population is becoming highly inactive with the more mobile phones are coming in use. This is becoming a concern for the individual himself, parents and the local bodies because it is dragging individual towards more physical and medical ailments, hence it is advised to indulge oneself in more and more Physical activity in a day.

Regular physical activity if added helps a lot in the overall fitness. Physical activity is not necessary to have the intense exercises it can be the

moderate one which will help in the individual's health related issues. Physical activity is very good for the health and it also helps an individual to get rid of diseases like high blood pressure, diabetes etc. Physical activity reduces the risk of all causes mortality. It helps the students to make more active and fast.

The good exercises and physical activities help the students to make their future bright. They formulate them as psychologically attentive and bodily muscular. Supplementary to it, superior health is the most imperative benefit of body activity and sports. The students become skilled at how to handle their complicated situations in an improved way. By showcasing their skills in front of numerous audiences, they can triumph over their anxiety. Physical activities are also good distractions, giving them vigor to gain knowledge of their curriculum. It gives the essential interval from the daily routine life. Physical activity, games and sports help in building a sense of cooperation and team-spirit in an individual. There are more and more competitiveness coming up in the field of sports and in order to remain more fit and in the stream one should be highly active, which is only possible if one follows regular fitness regime since his or her childhood. Sports and games make the students confident and help them to choose their profession in their future life.

**Variables considered in the study are:**

**Anthropometric Variables:** Standing height and body weight.

**Biomotor Variables:** Speed, Agility, Balance, Leg strength and Flexibility.

**Physiological Variables:** Pulse rate and Body mass index.

**Significance of the Study**

Physical activity curriculum was formulated and developed, which was first of its type in the country. "The goal of a successful educational program should emphasize to come across the essentials and existing demands of the nation, the culture and the prospects of the inhabitants being obliged" (Alsubaie 2016). Therefore "curriculum development and the reforms in the educational reforms should remain in continuity which should be re-evaluated and re-formulated from time to time" (Johnson 2001). This curriculum adopted and implemented by various state and central school boards of India. Study will be useful to promote physical activity in various schools of Punjab state. Curriculum will give knowledge and value of physical activity in the schools of Punjab state. Health and fitness standard of Punjab



state schools students will be increased for sure, because physical activity curriculum was developed for elementary school students. There will be improvement in sports and fitness performance. This research will help Physical Education teachers and trainers in planning physical education program for school children. This research will also provide base for the parameters and methods of evaluation of school children. The study may be helpful to prepare sports policy in schools by comparing performance of school children in different events. Physical Activity level of similar students will also be enhanced.

### **Statement of the Problem**

“Curriculum is a critical factor in student academic success” (Steiner 2017). Punjab has produced many National and International level players. But now a day standard of sports is decreased in schools and root cause behind this problem is because schools do not have any kind of physical activity curriculum. Therefore the problem is stated as “Development of physical activity curriculum and its effect on anthropometric, biomotor and physiological variables of elementary school students”.

### **Objectives of the Study**

1. To develop class wise physical activity curriculum for elementary school students.
2. To study the effect of curriculum (physical activity) on the anthropometric variables which are standing height and body weight of elementary school students.
3. Study has the objective to find out the effect on biomotor variables i.e. speed, agility, balance, leg strength and flexibility of elementary school students.
4. Present research also investigate the effect on variables which are physiological in nature i.e. pulse rate and body mass index of elementary school students.

### **Hypotheses of the Study**

#### **Anthropometric variables**

1. **H<sub>(1)</sub>**: It is hypothesized that developed curriculum of physical activity will effect standing height significantly.
2. **H<sub>(2)</sub>**: Developed curriculum of physical activity will also effect body weight significantly.

### **Biomotor Variable**

3. **H<sub>(3)</sub>**: Speed will be significantly effected by the implementation of the designed curriculum.
4. **H<sub>(4)</sub>**: Significant effect on agility is expected with the use of the developed physical activity curriculum.
5. **H<sub>(5)</sub>**: Balance ability will also effected significantly by the execution of the physical activity curriculum.
6. **H<sub>(6)</sub>**: Significant effect of physical activity curriculum of leg strength is hypothesized.
7. **H<sub>(7)</sub>**: Flexibility will also enhanced with the application of physical activity curriculum.

### **Physiological variable**

8. **H<sub>(8)</sub>**: Pulse rate will be significantly effected
9. **H<sub>(9)</sub>**: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity.

### **Operational Definitions**

**Physical Activity:** Physical activity is defined as the movement produced by the body, affecting skeletal muscles and utilizes the energy. In the present study physical activity means different bodily movement /play or exercises which are included in the curriculum.

**Curriculum:** The term curriculum refers to the lessons and academic content taught in a school or in a specific course or program. In the present research, Curriculum of physical activity is developed and implemented in the specified schools to verify the effects if any, which can be modified as per the need of an hour.

**Elementary:** In the present study elementary level comprises of classes/grades from first to eighth standard.

**Anthropometry:** The study of human body measurements especially on a comparative basis. In the present research following measurements were considered as the anthropometric variables.

1. **Standing Height:** The measurement of individual/samples from head to feet.
2. **Body Weight:** Body weight is the measurement of physical material frame of students as determined by means of weighing machine.

**Biomotor Abilities:** There are five basic biomotor abilities and these are strength, endurance, speed, flexibility and coordination.

In the present research following biomotor variables were considered for the study:

1. **Speed:** Minimum time taken to complete 20mtrs straight distance.
2. **Agility (Part of coordination):** Ability to change directions fast and control body movements.
3. **Balance (Part of coordination):** State of stability i.e. ability to stand on one leg for maximum duration.
4. **Leg strength:** It is defined as the force that leg muscles exert by sit-ups.
5. **Flexibility:** Maximum range of movement around joints of the students.

**Physiological terms/variables:** Study of the function of one or more living organisms and their parts. The branch of biology dealing with the functions and activities of living organisms and their parts, including all physical and chemical processes. In the present study pulse rate and body mass index were considered as the physiological variables.

1. **Pulse rate:** Measurement of the beating of heart per minute.
2. **Body mass index:** It is the lean body mass or body mass with free from fats, it is the product of division of Body weight by Height in meter square.

#### **Delimitations of the Study**

1. Elementary school students were considered as the sample in the study.
2. The study was delimited three hundred and thirty six student's i.e one hundred sixty eight CBSE elementary school students and one hundred sixty eight PSEB elementary school students.
3. Study is delimited to selected anthropometric (standing height, body weight), biomotor (speed, agility, balance, leg strength, flexibility) and physiological (pulse rate, body mass index) variables.
4. Study was delimited to investigate four weeks of effect of Physical Activity Curriculum on elementary school children.
5. Two board namely CBSE and PSEB were selected for the purpose of study.
6. Study was delimited for the students from first to eighth standard in the selected schools of Punjab state.

### **Limitations of the Study**

1. Researcher has to depend on school Physical Education teachers/Fitness trainers for the implementation of the curriculum and collection of the data.
2. Diet was not controlled of the samples/students.
3. Pre and post schools activities of the elementary school children were not controlled.
4. Research have ensured that only proper implementation was done of the Physical Activity during the schools hours by the means of Physical Education teachers/Fitness trainers

### **Method**

After thorough study of review of related literature and considering the recommendations of UNESCO and WHO, curriculum of Physical Activity was designed with consultation and incorporation of suggestions by Physical Education experts of various institutes. Developed physical activity curriculum is depicted from page number 74 to 239.

- Dr. Rupa Saini (Retd. Principal Govt. College of Physical Education, Patiala)
- Mr. Mohinder Singh (Retd. District Sports Officer, Mansa)
- Mr. Ramandeep Singh Gill (Principal Govt. Sports School, Ghudda Bathinda)
- Mr. Sukhmander Singh (Wrestling Coach Punjab and Chandigarh Sports Department)
- Dr. Sunder Singh (Asst. Prof. of Physical Education Arya College, Ludhiana)
- Mr. Parveen Thakur (Judo Coach, Punjab Sports Department)

To initiate the present research work, first of all team of above six experts of Physical Education were selected, curriculum of physical activity curriculum was developed by keeping demand, requirement need and importance of physical activity in present era. Thereafter one copy of curriculum was submitted to each panel experts as mentioned above for the suggestions and recommendations if any for one month time period. And after collection of the curriculum from the above experts suggestions and recommendations were incorporated. Physical Activity curriculum was planned to implement during school hours in games/zero period, between nine of morning and three of afternoon for 40 minutes as per feasibility. It was ensured with the help of school authorities that each class should get one period every day (6 days

in a week) for the physical activity training whereas for implementation of physical activity curriculum/training, assistance of Physical Education teachers/Fitness trainers of the particular school was taken. Before implementation of training, brief discussion and training was imparted to Physical Education Teachers/Fitness trainers of the schools.

Pre-test and post-test research design was applied to achieve the objectives of this research study. Main focus of the present investigation was to develop/design physical activity curriculum and secondary objective was just to study the short term (4 weeks) effect of developed physical activity curriculum on the secondary school children. Physical Activity Curriculum was developed for the elementary school children therefore to widen the area and implication of the present research in two school boards were purposely selected i.e. Central Board of Secondary Education (CBSE) and Punjab State Education Board (PSEB). After completion of the research this (Physical Activity Curriculum) will be submitted to the above mentioned educational boards to include this curriculum in their respective Boards and their respective schools. Further, it is also expected to be adopted, included and implemented by various state and central school boards of India. After planning, systematic designing and development of physical activity curriculum, students were selected from various schools of three regions of Punjab state with convenience sampling technique i.e. Malwa region, Doaba region and Powadh region. Total three hundred thirty-six students were considered for the study, where sample were divided in sixteen groups i.e. one was controlled group another was treatment group consisting twenty one students in each group. Experimental group were induced physical activity curriculum. Pre-test and post-test score were compared to meet various objectives of the study. Physical activity curriculum of four weeks i.e. forty minutes duration, six days in a week during school physical training hours was incorporated on elementary school students.

Though, the primary aim and expected result cum outcome of the research was to develop a Physical Activity curriculum because till date there is no such curriculum in the Indian schools which is being followed. After the development of physical activity curriculum it was also aimed to verify four weeks effect of this curriculum on the elementary school children's.

Four weeks intervention was considered because:

- 1) Research reviews suggests that there are research studies which have been conducted for four weeks intervention amongst which few were mentioned on page number 26, 30, 33, 35, 36, 38, 40 & 41.
- 2) Four weeks intervention is considered especially because 3 to 6 weeks is enough to check the adaptation (effect) caused by the training as suggested by Hardy Singh, Science of Sports Training, DVS Publication, New Delhi, 1993, Pg 244). Because, if adaptation takes place then significant changes in the body is also expected.
- 3) Intervention of Physical activity curriculum (for one game/one athletics event) all over India is implemented for twenty one days i.e. three weeks whereas in the present research, study was conducted for one additional week which makes it for four weeks.

### **Selection of Subjects**

The target population of this study involved school students of elementary level located in Punjab state. In the present study investigator has adopted the multi-stage sampling, to select the sample which is explained below:

In first stage, considering the feasibility to conduct the experiment, convenience sampling technique was used by the investigator to select the appropriate schools for selection of samples. The selected school were from three regions of Punjab state i.e., Malwa region, Doaba region and Powadh region. In first stage six schools have selected three CBSE affiliated and three PSEB affiliated.

The names of the selected schools are as: -

- Lomas Rishi Public School, Manakpur (PSEB)
- Usha Vidya Mandir High School, Mehangerwal (PSEB)
- Gurukul Public School, Ropar (PSEB)
- Doraha Public School, Doraha (CBSE)
- Shefaliy International School, Ludhiana, (CBSE)
- Gobindgarh Public School, Mandi Gobindgarh (CBSE)

In the second stage, from all the selected schools the list of students has arranged separately class wise. After listing the all-students class wise in each school, research

scholar selects every nth student by adopting the systematic random sampling technique.

### Experimental Research Design

Pre-test and post-test design was applied to mark the difference in the results. The selected subjects (N = 336) were divided equally and randomly into two groups in each class, out of which group I acted as an experimental group and underwent physical activity curriculum, and group II acted as control group. The experimental group had given training of physical activity during school hours in games/zero periods i.e., between nine of morning and three of afternoon for 40 minutes for six days in a week and Sunday was kept for the rest. Apart from training, daily routine classes of other subjects were also attended by the subjects. Data of pre-test and post-test were collected under the supervision of experts.

Subjects were divided in control group and experimental group as depicted in the following table:-

Group	Selected Samples from each class	Class								Total
		First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	
C.G.	Twenty one	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	168
E.G.	Twenty one	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	168
Total Number of samples for the study: Three hundred thirty six samples.										336

### 5.2 Conclusion

A pilot study of two weeks was conducted to verify feasibility of implementation of physical activity curriculum on elementary school students. After successful implementation of curriculum for two weeks, results were analyzed and reported as: significant effect was not found on the variable of speed, whereas difference in average (mean) value was found on all the variables except Height and BMI, whereas statistical significant difference was not found on other variables. After proper realization of the results of the pilot study, developed curriculum of physical activity was induced to the elementary school students for four week under the

supervision of physical education teachers/fitness trainers and following conclusions were drawn in terms of “significant difference”:

1. Results indicates that statistical significant difference was found between pre-test and post-test value of standing height of Class I students, hence hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted. Though the height of a child depends on the height of the parents but it may be inferred that control and experimental group have improved in standing height since at this age, growth spurt may have occurred and physical activity always have positive outcomes as concluded by Guilherme Joao BezerraAlves and Guilherma Victor Alves (2019).
2. Hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity will also effect body weight significantly” was rejected since statistical significance difference was not found between the two groups of Class I students. Statistical difference may not found on body weight because before and after school activity like eating habits were not controlled and the effect of the exercises have been neutralized, it can be suggested that intensity of the exercise should be increased in order to make the activity more effective.
3. Results of Class I students indicates that statistical significant difference do not exists between pre-test and post-test value of speed, hence hypothesis 3 which states that “ $H_{(3)}$ : Speed will be significantly effected by the implementation of the designed curriculum” stands rejected. Though the speed of the students have been increased but not significantly. Results were supported by Azmi and Kusnanik (2018) of Negeri Surabaya, University, Indonesia who concluded in their study that there was a significant effect of speed, agility and quickness training program in improving in speed, agility and acceleration. In order have better results, intensity of physical activity curriculum may be increased and monitored accordingly.
4. Results of Class I students indicates that statistical difference have not been found, thereby rejecting hypothesis 4 which states that “ $H_{(4)}$ : Significant effect on agility is expected with the use of the developed physical activity



curriculum”. Results were not significant because the curriculum was prepared to develop overall fitness of the children. And in order to alter the nature of the curriculum, intensity can be increased.

5. Results indicates that there exists statistical significant difference between pre-test and post-test value of balance in treatment groups as compared to control group of Class I students, hence hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” is accepted because statistical significance difference between the two groups exists in treatment group only. This shows that Physical activity curriculum was effective in enhancing biomotor abilities.
6. Results indicates that statistical significant difference was found between pre-test and post-test value of experimental group of leg strength of Class I students, hence hypothesis 6 which states that “ $H_{(6)}$ : Significant effect of physical activity curriculum of leg strength is hypothesized” stands accepted. Results of the above table suggest that the developed Physical Activity curriculum was effective tool in improving leg strength of elementary school students and detraining decreases the strength. Hence it is also proved that four weeks are enough to make the desired adaptive changes in the body.
7. Hypothesis 7 which states that “ $H_{(7)}$ : Flexibility will also enhanced with the application of physical activity curriculum” stands accepted because statistical difference between the experimental group of Class I students was found significant, which proves that physical activity curriculum proved effective in improving the flexibility of class second students.
8. Results indicates that significant difference exists between pre-test and post-test value of pulse rate, hence hypothesis 8 which states that “ $H_{(8)}$ : Pulse rate will be significantly effected” was accepted, of Class I students. When compared the overall improvement of pulse rate between control and experimental group, physical activity curriculum has helped in lowering the pulse rate of experimental group as indicated result table. This study suggests that to get desired result, intensity of physical activity curriculum can be manipulated accordingly.

9. Results indicates that t-value at .05 level of confidence between pre-test and post-test value of body mass index was found significant, hence hypothesis 9 which states that “H<sub>(9)</sub>: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” was accepted of Class I students. Physical activity curriculum was effective on body mass index of experimental group of class I.
10. Hypothesis 1 which states that “H<sub>(1)</sub>: It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted because statistical significance difference between the two groups was found significant of Class II students. Standing height of both the groups have been increased there by suggesting that physical growth of the children may be in routine and natural process, which may have occurred during the treatment period.
11. Results indicates that statistical difference between pre-test and post-test value of body weight of both the groups were found significant, hence hypothesis 2 which states that “H<sub>(2)</sub>: Developed curriculum of physical activity will also effect body weight significantly” stands accepted of Class II students. Physical activity and diet of the children was not controlled which may have affected the body weight significantly.
12. Results indicates that statistical significant difference was found between pre-test and post-test value of speed of Class II students, hence hypothesis 3 which states that “H<sub>(3)</sub>: Speed will be significantly effected by the implementation of the designed curriculum” was accepted. Improvement in speed of experimental group signifies that physical activity curriculum was effective in increasing the speed of students.
13. Results of Class II students indicates that statistical significant difference between exists between pre-test and post-test value of agility, hence hypothesis 4 which states that “H<sub>(4)</sub>: Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted, hence proving that curriculum will be effective in enhancing the agility is implemented properly.

14. Statistical significant difference of Class II students was found between pre-test and post-test value of balance, hence hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” stands accepted. Improvement in balance of the experimental group indicates that physical activity curriculum was effective in improving balance ability of children.
15. Results of Class II students indicates that significant difference exists between pre-test and post-test value of leg strength of both the groups, hence hypothesis 6 which states that “ $H_{(6)}$ : Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted.
16. Results indicates that statistical difference between pre-test and post-test mean value of flexibility in experimental group of Class II students was found significant, hence hypothesis 7 which states that “ $H_{(7)}$ : Flexibility will also enhanced with the application of physical activity curriculum” stands accepted. After studying the results it can be concluded that Physical activity curriculum was effective in improving flexibility of students of experimental group as depicted result table.
17. Significant difference between pre-test and post-test value of pulse rate, was found significant thereby accepting hypothesis 8 which states that “ $H_{(8)}$ : Pulse rate will be significantly effected” of Class II students.
18. Results of Class II students indicates that statistical difference was not found between pre-test and post-test value of body mass index, hence hypothesis 9 which states that “ $H_{(9)}$ : Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected. Suggesting that physical activity curriculum was not effective in improving BMI of experimental group of class II. It also depends on physical education teacher as how to monitor the load parameters of the curriculum.
19. Results of Class III students indicates that significant difference was found between pre-test and post-test value of standing height, in control and experimental group hence hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect

standing height significantly” was accepted. Such results may be due to the growing age of the children.

20. Results indicates that difference between pre-test and post-test value of body weight was not found significant, hence hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity will also effect body weight significantly” was rejected of Class III students. In this study, diet was not controlled of the elementary school students.
21. Hypothesis 3 which states that “ $H_{(3)}$ : Speed will be significantly effected by the implementation of the designed curriculum” was rejected of Class III students, because statistical significant difference was not found between pre-test and post-test mean value of experimental group.
22. Statistical significant difference between pre-test and post-test value of agility of experimental group was found significant hence hypothesis 4 which states that “ $H_{(4)}$ : Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted of Class III students. Hence proving that physical activity curriculum is an effective tool in improving the agility of the students.
23. Results of Class III students indicates that statistical significant difference exists between pre-test and post-test value of balance of experimental group, hence hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” stands accepted.
24. Results indicates that leg strength of the students have been increased significantly hence hypothesis 6 which states that “ $H_{(6)}$ : Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted of Class III students. Suggesting that there was development in leg strength of the experimental group when compared to control group. Results also suggests that developed Physical Activity curriculum was effective tool in improving leg strength of class III students whereas detaining may lead to decrease in the sports performance which is proved by Tran et al. (2016) .
25. Mean difference between pre-test and post-test value of flexibility of experimental group was significant and hypothesis 7 which states that

- “H<sub>(7)</sub>: Flexibility will also enhanced with the application of physical activity curriculum” stands accepted of Class III students. This also reflects that activity curriculum if implemented properly may yield fruitful results.
26. Statistical significant difference was found between pre-test and post-test value of pulse rate of Class III students, hence hypothesis 8 which states that “H<sub>(8)</sub>: Pulse rate will be significantly effected” stands accepted. Higher intensities workout proved more effective in improving VO<sub>2</sub> max than lower intensities work out, similarly intensity can be lowered of the curriculum to improve pulse rate of the students.
27. Statistical difference was not found between pre-test and post-test value of body mass index, hence hypothesis 9 which states that “H<sub>(9)</sub>: Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected of Class III students.
28. Results of Class IV students indicates that statistical significant difference between pre-test and post-test value of standing height was found in the control and experimental group, hence hypothesis 1 which states that “H<sub>(1)</sub>: It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted. Since the effect was found significant on both the groups it is difficult to conclude that height is increased only due to physical activity curriculum, reason behind may be due to other environmental effects.
29. Results of Class IV students indicates that hypothesis 2 which states that “H<sub>(2)</sub>: Developed curriculum of physical activity will also effect body weight significantly” was accepted because statistical significance difference was found between the pre and post-test group of experimental group. At this point it is important to suggest that body weight of the school children can be maintained by the implementation of the present physical activity curriculum since significant difference was not found between the mean value of control group.
30. Results indicates that statistical significant difference between pre-test and post-test value of speed was found significant of experimental group, hence hypothesis 3 which states that “H<sub>(3)</sub>: Speed will be significantly effected by the

implementation of the designed curriculum” was accepted of Class IV students, hence proving that physical activity curriculum was effective in enhancing speed performance of the children.

31. Results of Class IV students, clearly indicates that statistical significant difference between pre-test and post-test value of agility was found significant, hence hypothesis 4 which states that “ $H_{(4)}$ : Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted. Mean difference in experimental group 0.29 seconds was the best performance of class IV. Thereby indicating that physical activity curriculum was effective in improving agility of student when compared to control group.
32. Results revealed that hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” was accepted of Class IV students because statistical significance difference between the two groups exists in treatment group. This shows that Physical activity curriculum was effective enhancing biomotor abilities.
33. Results of Class IV students indicates that statistical significance difference exists between pre-test and post-test value of leg strength, hence hypothesis 6 which states that “ $H_{(6)}$ : Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted. Hence it is clear that four weeks are enough make the desired adaptive changes in the body but training should be continuous in nature.
34. Results of flexibility in the table above indicates that statistical significant difference between pre-test and post-test value of control and experimental group was found significant hence hypothesis 7 which states that “ $H_{(7)}$ : Flexibility will also enhanced with the application of physical activity curriculum” was accepted of Class IV students. Here it is difficult to conclude that range of motion around the joint was increased only because of physical activity curriculum, because the changes have occurred in control group also which may be due to some other external factors.
35. Statistical significant difference exists between pre-test and post-test value of pulse rate, hence hypothesis 8 which states that “ $H_{(8)}$ : Pulse rate will be

significantly effected” stands accepted of Class IV students. Here results are attributed to the physical activity curriculum. After analyzing the results it is recommended that physical activity curriculum would be more effective if followed with increased intensity.

36. Results of Class IV students, indicates that there exists only mean difference between pre-test and post-test value of body mass index of control and experimental group, hence hypothesis 9 which states that “ $H_{(9)}$ : Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected because no statistical significance difference between the two groups. Since BMI depends on the weight and height ratio, so it is possible that students may underweight or overweight and after following four week activity curriculum they may have improved but the effect was not significant.
37. Hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect standing height significantly” stands accepted of Class V. Result table compare the t-value between control and experimental group. Which suggests that four weeks physical activity curriculum played a vital role in bringing significant changes in standing height of the students.
38. Statistical difference between pre-test and post-test value of body weight of experimental group was not significant of Class V students whereas control group has significantly gained the weight thereby rejecting hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity will also effect body weight significantly”. But it does not mean that physical activity curriculum was ineffective because it is clearly seen that treatment group have not gained the weight whereas this group was able to maintain their weight, thereby proving the activity curriculum effective in maintaining body weight.
39. Statistical significant difference of Class V students was found between pre-test and post-test value of speed, hence hypothesis 3 which states that “ $H_{(3)}$ : Speed will be significantly effected by the implementation of the designed curriculum” stands accepted. Thereby suggesting that four weeks

physical activity curriculum is effective tool to bring significant changes in the speed of the children.

40. Statistical significant difference was found between pre-test and post-test value of agility of experimental group of Class V students, hence hypothesis 4 which states that “ $H_{(4)}$ : Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted. This also proved that four weeks of training is effective in enhancing agility performance of school children.
41. Statistical significant difference of Class V students was not found between pre-test and post-test value of balance in experimental group, hence rejecting hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” Here it seems that physical activity curriculum was not effective in enhancing the balance ability of school children but it is suggested that if load parameters were manipulated as per the competition need then it would definitely yield fruitful results.
42. Results of Class V students indicates that mean difference between pre-test and post-test value of leg strength was found highly significant, hence hypothesis 6 which states that “ $H_{(6)}$ : Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted. Results of the study reflect the significance of implementation of physical activity curriculum.
43. Statistical difference was found between pre-test and post-test value of flexibility in control and experimental group of Class V students hence hypothesis 7 which states that “ $H_{(7)}$ : Flexibility will also enhanced with the application of physical activity curriculum” was accepted. Here results are attributed to the external factors also because flexibility of control group was also increased significantly.
44. Statistical significant difference between pre-test and post-test value of pulse rate was found significant, hence hypothesis 8 which states that “ $H_{(8)}$ : Pulse rate will be significantly effected” stands accepted of Class V students. Intensity of the physical activity curriculum should be moderate to high hence



it proved effective tool to lower pulse rate of the school children or it helped the school children to enhance overall fitness.

45. Results have shown that insignificant difference exists between pre-test and post-test value of body mass index of experimental group, hence hypothesis 9 which states that “ $H_{(9)}$ : Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected. Body mass index is the ratio of the body weight and the height therefore physical activity curriculum proved ineffective in improving BMI because weight reduction should be in relation to the height of the student.
46. Significant difference between pre-test and post-test value of standing height of Class VI students, hence hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted.
47. Significant difference of Class VI students was not found between pre-test and post-test value of body weight, hence hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity will also effect body weight significantly” was rejected. Statistical difference may be not found on body weight because before and after school activities were not controlled.
48. Statistical significant difference exists between pre-test and post-test value of speed, hence hypothesis 3 which states that “ $H_{(3)}$ : Speed will be significantly effected by the implementation of the designed curriculum” was accepted of Class VI students hence it is recommended to the schools to implement developed physical activity curriculum in order to elevate physical performance of the children.
49. Statistical significant difference of Class VI students between pre-test and post-test value of agility was significant, hence hypothesis 4 which states that “ $H_{(4)}$ : Significant effect on agility is expected with the use of the developed physical activity curriculum” stands accepted. Results depicts that physical activity curriculum was effective in increasing agility of the children.
50. Pre-test and post-test value of balance was not found significant hence hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” was rejected

of Class VI students. Therefore, in order to have effectiveness on the balance ability load parameters should be monitored scientifically.

51. Statistical significant difference of Class VI students between pre-test and post-test value of leg strength was significant, hence hypothesis 6 which states that “ $H_{(6)}$ : Significant effect of physical activity curriculum of leg strength is hypothesized” stands accepted. Here physical activity curriculum proved beneficial to increase the leg strength of children in a significant manner.
52. Statistical significant difference exists between pre-test and post-test value of flexibility, hence hypothesis 7 which states that “ $H_{(7)}$ : Flexibility will also enhanced with the application of physical activity curriculum” stands accepted of Class VI students.
53. Statistical significant difference of Class VI students between pre-test and post-test value of pulse rate of experimental group was highly significant, hence hypothesis 8 which states that “ $H_{(8)}$ : Pulse rate will be significantly effected” stands accepted. Which means that physical activity curriculum was effective in reducing the pulse rate of class VI children.
54. Significant difference exists between pre-test and post-test value of body mass index, hence hypothesis 9 which states that “ $H_{(9)}$ : Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” was accepted of Class VI students. Hence it can be concluded that physical activity curriculum was effective in optimizing BMI value of class VI students.
55. Statistical significant difference of Class VII students between pre-test and post-test value of experimental of standing height was significant, hence hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted. Results may inferred there may be growth spurt and secondly physical activity always have positive effects on the growth of the child as suited by Guilherme Joao BezerraAlves and Guilherma Victor Alves (2019).
56. Statistical significant difference between pre-test and post-test value of body weight of experimental group was significant of Class VII students, hence hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity

will also effect body weight significantly” was accepted. Difference in mean value suggests that body weight of the students have been reduced significantly or in other words it can be summed that students have become more fit by following four weeks physical activity curriculum.

57. Statistical significant difference exists between pre-test and post-test value of speed, of Class VII students hence hypothesis 3 which states that “ $H_{(3)}$ : Speed will be significantly effected by the implementation of the designed curriculum” stands accepted. Hence it can be concluded that activity curriculum was effective in improving speed ability of class VII children.
58. Statistical significant difference of Class VII students, exists between pre-test and post-test value of agility, hence hypothesis 4 which states that “ $H_{(4)}$ : Significant effect on agility is expected with the use of the developed physical activity curriculum” stands accepted. It is worth to state that developed physical activity curriculum proved an effective tool in enhancing agility of the students.
59. Statistical significant difference between pre-test and post-test value of balance was found significant of Class VII students, hence hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” stands accepted. Indicating that physical activity curriculum was effective enhancing biomotor abilities of VII class students.
60. Statistical significant difference between pre-test and post-test value of leg strength was significant of Class VII students, hence hypothesis 6 which states that “ $H_{(6)}$ : Significant effect of physical activity curriculum of leg strength is hypothesized stands accepted. It is evident from the results that physical activity curriculum was effective in elevating leg strength performance.
61. Results of Class VII students indicates that statistical significance difference exists between pre-test and post-test value of flexibility of experimental group, hence hypothesis 7 which states that “ $H_{(7)}$ : Flexibility will also enhanced with the application of physical activity curriculum” stands accepted, proving that physical activity curriculum was effective tool in improving the flexibility of class VII students.

62. Statistical significant difference between pre-test and post-test value of pulse rate was significant, hence hypothesis 8 which states that “ $H_{(8)}$ : Pulse rate will be significantly effected” was accepted. Physical activity curriculum has affected dependent variable significantly and has shown improvement in the mean values, thereby increasing overall fitness of Class VII students.
63. Statistical mean difference between pre-test and post-test value of body mass index was not found significant of Class VII students, hence hypothesis 9 which states that “ $H_{(9)}$ : Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” was rejected.
64. Statistical significant difference between pre-test and post-test value of standing height was found significant of both groups of Class VIII students, hence hypothesis 1 which states that “ $H_{(1)}$ : It is hypothesized that developed curriculum of physical activity will effect standing height significantly” was accepted. It was concluded that Physical exercise does not appear to impair the child's linear growth and contributes to the ideal shaping of bone and muscle tissues, ensuring possible beneficial effects throughout life.
65. Statistical difference was not found between pre-test and post-test value of body weight of Class VIII students, hence hypothesis 2 which states that “ $H_{(2)}$ : Developed curriculum of physical activity will also effect body weight significantly” was rejected. Therefore in order to have desired results on the variable “body weight” duration of physical activity should be increased.
66. Results of Class VIII students have shown that statistical difference between pre-test and post-test value of speed was found insignificant, hence hypothesis 3 which states that “ $H_{(3)}$ : Speed will be significantly effected by the implementation of the designed curriculum” stands rejected.
67. Statistical significant difference between pre-test and post-test value of agility has been found significant of Class VIII students, hence hypothesis 4 which states that “ $H_{(4)}$ : Significant effect on agility is expected with the use of the developed physical activity curriculum” was accepted. Physical activity curriculum of four weeks has enhanced agility performance of class VIII students.

68. Results have shown that significant difference was not found between pre-test and post-test value of balance of Class VIII students, hence hypothesis 5 which states that “ $H_{(5)}$ : Balance ability will also effected significantly by the execution of the physical activity curriculum” stands rejected.
69. Difference between pre-test and post-test value of standing height of Class VIII students was found significant even at .01 level of confidence hence hypothesis 6 which states that “ $H_{(6)}$ : Significant effect of physical activity curriculum of leg strength is hypothesized” was accepted. Suggesting that there was development in leg strength of the experimental group when compared to control group. Which means that the developed physical activity curriculum was effective tool in improving leg strength of class VIII students.
70. Statistical significant difference between pre-test and post-test value of flexibility was significant of Class VIII students suggesting that hypothesis 7 which states that “ $H_{(7)}$ : Flexibility will also enhanced with the application of physical activity curriculum” stands accepted. Hence, it is proved that physical activity curriculum was effective tool in improving the flexibility of class second students.
71. Results of Class VIII students have shown that statistical significant difference was found between pre-test and post-test value of pulse rate of experimental group, hence hypothesis 8 which states that “ $H_{(8)}$ : Pulse rate will be significantly effected” was accepted. Here results of the physical activity were effective in bringing down the pulse rate, which means that physical activity curriculum enhanced overall fitness of the children.
72. Statistical significant difference of Class VIII students, was not found between pre-test and post-test value of body mass index in experimental group, hence hypothesis 9 which states that “ $H_{(9)}$ : Significant effect is hypothesized of body mass index with the implementation of the designed curriculum of physical activity” stands rejected. Results may be contrary or different if the diet and after school activity of the children would be monitored because in order to have better BMI body weight and height have to be in proper ratio.

At this point research wants to specify that height of the children or an individual depends on the genetical factors and other extraneous factors such as diet, environment etc. and not directly influenced by physical activity alone.

UNESCO and WHO are putting their combined efforts to curb modern lazy lifestyle of the next/new generation and realized the importance of introduction of Physical Education/Activity at school level. There are ample reviews available which clearly depicts that Physical Activity/Education and Sports are useful in keeping peace and to overcome psychological challenges. Whereas, there is hardly any research conducted to study effect of physical activity curriculum on anthropometric, biomotor and physiological variables, as done in the present study. Therefore, this study fulfils the recommendations of UNESCO and WHO which clearly states that “Physical Education and Sports should be introduced at school level” because current study is only one of its type in India which has worked on the framework, designing and studied possible outcomes of physical activity curriculum on elementary school children.

### **5.3 Recommendation of the Study**

1. Physical Activity curriculum can be successfully implemented for the students in the PSEB and CBSE board schools of Punjab state, which can be further implemented in whole nation in different boards.
2. It is recommended that the same study may be conducted on High school and Senior Secondary school students.
3. Study may be conducted on Psychological variables of elementary schools students.
4. The study may be conducted on school students of other states as well.
5. The same study can be conducted on elementary school students of other education board's.
6. Effect of physical activity curriculum can be studied for longitudinal period.
7. Developed physical activity curriculum can be incorporated by controlling the load parameters along the proper diet plan in order to attain desired results.

## BIBLIOGRAPHY

Adamo, K.B., Sheel. A.W., Onywera, V., Waudo, J., Boit, M. and Tremblay, M.S. (2010) Child obesity and fitness levels among Kenyan and Canadian children from urban and rural environments: A KIDS-CAN Research Alliance Study. *International Journal of Pediatric Obesity*, 1-8.

Ahmad H Alghadir, Sami A Gabr and Farag A Aly (2015) The effects of four weeks aerobic training on saliva cortisol and testosterone in young healthy persons. *E pub* 2015 Jul; 27 (7): 2029-33. DOI ; 10.1589/jpts.27.2029.

Akkoyunlu and E.Sirin (2010) Comparison of some biomotoric developments of 14 years old who exercise and those not exercise. *European Journal of Educational Studies*, 2(2):131-137.

Albon, M.J. Hamlin and J.J. Ross (2010) Secular trends and distributional changes in health and fitness performance variables of 10-14 year old children in New Zealand between 1991 and 2003. *British Journal of Sports Medicine*, 44(4):263-269.

Ali Fahiminezhad (2010) The study of anthropometric sizes and physical fitness factors of boy students aged 12–14 in Shahrood city. *British Journal of Sports Medicine*, 44 (Suppl 1):i38.

Al-Shamli (2010) Physical activity and physiological fitness status of 10th grade male students in Al-Dhahirah region, Sultanate of Oman. *Current Research Journal of Social Sciences* 2(2):99-109.

Amri Hammam, Basma Harrabi, Magni Mohr and Peter Krusturp (2020) Physical activity and corona virus disease 2019 (COVID-19): Specific recommendations for home-based physical training. *Managing Sports and Leisure*, doi.org/10.1080/23750472.2020.1757494.

Amusa, D.T.Goon, A.K. Amey and Toriola (2011) Health related physical fitness among rural primary school children in Tshannda, South Africa. *Scientific Research and Essays*, 6(22):4665-4680.

Amit Kapoor, Manisha Kapoor and Chirag Yadav (2021) The curious case of investment in education. *Economics Times contribution 16, January*.

Analisa Packham and Brittany Street (2019) The effects of physical education on student fitness, achievement and behaviour. *Economics of Education Review*, Vol. 72, Pages 1-18.

Antti M Kiviniemi, Arto J Hautala, HannuKinnunen and Mikko P Tulppo (2007) Endurance training guided individually by daily heart rate variability measurements. *Eur J Physiol*. 2007 Dec; 101 (6): 743-5. DOI: 10.1007/s00421-007-0552-2.

Anderson, R.E, Crespo, C.J Barttel, S.J, Cheskin, L.J, and Pratt M. (1998) Relationship of physical activity and television watching with body weight and level of fatness among children. Results from Third National Health and Nutrition Examination survey. *Journal of the American Medical Association*. 279 : 938-942.

Ara, Moreno, L.A., Leiva, M.T., Gutin, B. and Casaju J.A. (2007) Adiposity, physical activity and physical fitness among children from Aragon Spain. *Obesity*, 15(8):1918-1924.

Ball, J. Elizabeth (2001) Total energy expenditure, body fatness and physical activity in children aged 6-9 years. *American Journal of Council Nutrition* 74:524.

Brunet, J.P Chaputand Tremblay (2007) The association between low physical fitness and high body mass index or waist circumference is increasing with age in children:



The Quebec en Forme Project. *International Journal of Obesity (London)*, 31(4):637-643.

Chris Lonsdale, Richard R Rosenkranz, Louisa R Peralta, Andrew Bennie, Paul Fahey and David R Lubans (2012) A systematic review and meta-analysis of interventions designed to increase moderate to vigorous physical activity in school physical education lessons. *National Library of Medicine*, doi: 10.1016/j.ypmed.2012.12.004. Epub 2012 Dec 14.

Cabe (2005) National Curriculum Framework 2005 National Council of Education Research and Training (NCERT). New Delhi, India, 87-89 Government of India (1966), Report of The Education Commission 1964-66: Education and National Development. Ministry of Education, Government of India, New Delhi, 45-46.

Clemente Suarez and Gonzalez Rave (2014) Four weeks of training with different aerobic workload distributions effect on aerobic performance. *Eur. Journal Sport Sci. Suppl 1:S1-7*.

Christopher J. Stevens, Storme L. Heathcote, Daniel J. Plews, Paul B. Laursen and Lee Taylor (2018) Effect of two weeks endurance training wearing additional clothing in a temperate outdoor environment on performance and physiology in the heat. Published accepted *author version posted online: 22 Jun 2018, Published online: 5th Sept 2018, pg 267-275*.

Damon L. Swift, Joshua E McGee, Conrad P Earnest, Erica Carlisle, Madison Naygard and Neil M Johannsen (2018) The effect of exercise and physical activity on weight loss and maintenance. *Progress in cardiovascular diseases, Volume 61, Issue 2 Pg. No. 206-213*.

Dana, Z. Habibi, M. Hashemi and Asghari (2011) A description and comparison of anthropometrical and physical fitness characteristics in urban and rural 7-11 years old boys and girls in Golestan Province, Iran. *Middle-East Journal of Scientific Research*, 8(1):231-236.

David Steiner (2017) Curriculum Research: What we know and Where We Need to Go. *Standard Work*. (<https://standardswork.org/wp-content/uploads/2017/03/sw-curriculum-research-report-fnl.pdf>).

Dian Pujianto (2018) Physical Activity and static balance on Early childhood, *Journal of Physical Education, Sports, Health and Recreation*, Vol.7, No.2.

Dorth Stensvold, Arnt Erik Tjonna, Eli-Anne Skaug, Stian Aspenes, Tomas Stolen, Ulrik Wisloff and Stig Arild Slordah (2010) Strength training versus aerobic interval training to modify risk factors of metabolic syndrome. *Journal of Applied Physiology*, 108: 804-810, doi:10.1152.

Emily Clapham, E. Sullivan and L. Ciccomascolo (2015) Effects of a physical education supportive curriculum and technological devices on physical activity. *The Physical Educator*, 72(1). Retrieved from <http://js.sagamorepub.com/pe/article/view/3450>.

Epstein and Goldfield (1999) The utility of exercise as a treatment for overweight and obese children and adolescents. University at Buffalo, Department of Psychology, Park Hall, Buffalo, NY 14260, USA. *Medicine and Science in Sports and Exercise* [1999, 31(11 Suppl):S553-9] Type: Journal Article, Meta-Analysis, Research Support, U.S. Govt, P.H.S.

Espanol (2020) How much physical activity do children need? *Division of Nutrition, Physical Activity, and Obesity*.

F Marcello Laia, YlvaHellsten, Jens Jung Nielsen, Maria Fernstro, Kent Sahlin and Jens Bangsbo (2009) Four weeks of speed endurance training reduces energy expenditure during exercise and maintains muscle oxidative capacity despite a reduction in training volume. *Journal of Applied Physiology*, 106(1):73-80. doi: 10.1152/jappphysiol.90676.2008.

Francois Trudeau and Roy J Shephard (2008) Physical education, school physical activity, school sports and academic performance. *International Journal of Behavioral Nutrition and Physical Activity* 2008, 5:10 doi: 10.1186/1479-5868-5-10 Published 25 February 2008.

Gabbet T. (2006) Change in Skill and Physical Fitness Following Training in Talent Identified Volleyball Players. *Journal of Strength and Conditioning Research* 2006.

G.C. Saha and Haldar (2012) Comparison of health related physical fitness variables and psychomotor ability between rural and urban school going children. *Journal of Exercise Science and Physiotherapy*, 8(2):105-108.

Garcia Lopez, Luis, Contreras Jordan, Onofre R., Penney, Dawn, Chandler and Tim (2009) European Physical Education Review.v15 n1 pg no 47-63 <http://eric.ed.gov/?id=EJ909290>.

Guilherme Joao BezerraAlves and Guilherma Victor Alves (2019) National Library of Medicine, J Pediatr Effects of physical activity on children's growth. (*Rio J*), Mar-Apr 2019;95 Suppl 1:72-78. doi: 10.1016/j.jpmed.2018.11.003. Epub 2018 Dec 26.

Gunnar Mathisen and Svein Arne Pattersen (2015) The effect of speed training on sprint and agility performance in 15 years old female soccer players. *LASE Journal of Sport Science* 6(1):61-70 DOI: 10.1515/ljss-2016-0006.

Gyantso, D.C. and Dukpa, N. (1998) Bhutan Curriculum development for primary and secondary education. *Article of Samtse College of Education, RUB, Samtse.*

Hall, Darlene York (1993) The effect of a token reinforcement on physical activity, body weight, and self concept of overweight and obese adolescents with serious emotional distribution behavioural disorders. *Dissertation Abstracts International 12:4219-19.*

Hansan Margaret and Anne Bawer (1993) Developing the motor creativity of Elementary school Physical Education student. *Dissertation Abstract Intentional 54 455 & 456 - A.*

Harold W. Kohl, Janet E. Fulton and Carl J. Casperson (2000) Assessment of physical activity among children and adolescent. *A review and synthesis. Preventive medicine 31, 54-76.*

Harold W Kohl (2013) Educating the student bodytaking physical activity and physical education to school. *The National Academies Press Washington D.C. paperback: 978-0-309-28313-7, Ebook: 978-0-309-28376-8, Pg. No. 199.*

Hulsdunker T, Rentz C, Ruhnnow D, Kasbauer H, Struder HK, Mierau A. (2019) The effect of 4week stroboscopic training on visual function and sport-specific visuomotor performance in top-level badminton players. Published in *International Journal Sports Physiology Perform. 2019 Mar 1;14(3):343-350. doi: 10.1123/ijsp.2018-0302. Epub 2019 Feb 6.*

Joseph E. Donnelly, Jerry L. Greene, Cheryl A. Gibson and Bryan K. Smith (2009) Physical Activity Across the Curriculum: A randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary school children. *Available online 6.*

Judy A. Johnson (2001) Curriculum revision that works. In principles of effective change. *Journal of Research for Educational Leaders*. Vol. 1 (1-4) Retrieved March 10, 2014.

K Azmi and N W Kusnanik (2018) Effect of Exercise Program Speed, Agility and Quickness (SAQ) in Improving Speed, Agility and Acceleration. *J. Phys.: Conf. Ser.* 947 012043

Kim and J.S. Park (2006) The effect of an exercise program on body composition and physical fitness in obese female college students. *Taehan Kanho Hakhoe Chi.*, 36(1):5-14.

Knutson Kaste (1995) A description of trend emerging during years three and four of the Wisconsin comprehensive elementary health education pilot project. <<http://darkwing.uoregon.edu/niishp/>>.

L Mary and Gavin D (2018) Overweight and Obesity. *Kids health Nemours June 2018*.

M. Gandhi, S. Koley and J.S. Sandhu (2010) Association between anthropometric characteristics and physical strength in school going children of Amritsar. *Anthropologist*, 12(1):35-39.

Maria Montessori (1917) Spontaneous activity in education. *Frederick A. Stokes Company Publishers, New York*.

Mahmut Alp and Baris Baydemir (2019) The effect of quick strength training on agility performance in soccer. *Universal Journal of Educational Research* 7(4): 1001-1006.

Malina, R.M., Beunen, G.P., Classens, A.L., Lefevre, J., Eynde, B.V., Renson, R. Vanreusel, B. and Simons, J. (1995) Fatness and physical fitness of girls 7 to 17 years. *Obesity Research*, 3(3):221-231.

Merfat Ayesh Alsubaie (2016) Curriculum Development: Teacher Involvement in Curriculum Development. *Journal of Education and Practice*. ISSN 2222-1735 (Paper) ISSN 2222-288X (Online) Vol.7, No.9.

Monyeki, M.A., Koppes, L.L., Kemper, H.C., Monyeki, K.D., Toriola, A.L., Pienaar, A.E. and Twisk, J.W. (2005) Body composition and physical fitness of undernourished South African rural primary school children. *European Journal of Clinical Nutrition*, 59(7):877-883.

Muhammad Zia ul Haq, Amna Iqbal, Asma Afzal, Muqadus Yaqoob, Hammad Ahmad, Sonia Abbas (2019) Anthropometric characteristics and physical fitness of urban and rural 8-10 years old school girls of Bahawalpur, Pakistan. *International Journal Physiotherapy*. Vol 6 (2), 46-51.

Nathan Heaney (2012) The effect of a 4 week aerobic interval training block using maximal aerobic speed as the intensity measure with elite female hockey players. Published in *Journal of Australian Strength & Conditioning* June 2012 Vol. 20 Issue 2 97.

Oksana Matvienko and Iradge Ahrabi-Fard (2010) The effect of a 4-week after school program on motor skills and fitness of kindergarten and first-grade students. *American Journal of Health Promotion: AJHP*, 10.4278/ajhp.08050146, 24(5):299-303.

Orjan, O. Kristjan and E. Bjorn (2005) Physical performance and body mass index in Swedish children and adolescents. *Scandinavian Journal of Nutrition*, 49(4):172-179.

Ozdirenc, Ozcan, F. Akin and N. Gelecek (2005) Physical fitness in rural children compared with urban children in Turkey. *Pediatrics International*, 47(1):26-31.

Per Morten Fredrikdrn, Angelica Skar and Asgeir Mamen (2018) Waist circumference in 6-12 year old children: The health oriented pedagogical project. *Scandinavian Journal of Public Health. First Published May 2018 Research Article find in pubmed. <https://doi.org/10.1177/1403494818767790>*

Powell, Roberts, A.M., Ross, J.G., Phillips, M.A., Ujamaa, D.A. and Zhou, M. (2009) Low physical fitness among fifth and seventh grade students, Georgia, 2006. *American Journal of Preventive Medicine, 36(4):304-310.*

Ramachandran A.C Snehalatha, R. Vinitha, Megha Tnayil, C.K. Sathish Kumar, L. Sheeba, S. Joseph and V. Vijay (2002) Prevalence of overweight in urban Indian adolescent school children. *Diabetes Research and Clinicd Practice 57:185-190.*

Raghupathi and P.C. Krishnaswamy (2013) Comparative analysis of physical growth and coordinative abilities among rural and urban school boys. *International Journal of Scientific Research, 2(5):525-527.*

Richard S Strauss and Judith Knight (1999) Influence of the home environment on the development of obesity in children. *Pediatrics 103. (6):85.*

Roland Messmer (2018) What is the subject matter of physical education? *German Journal of Exercise and Sports Research volume 48, pages 508-515.*

S. Manikanda (2014) Effect of sac drills on selected motor fitness components among university players. *Indian journal of applied research, volume: 4 issue: 11*

Simons Morton B.G, Taylor W.C, Snidersa and Huang W.I. (1993) The physical activity of fifth grade students during physical education classes. *American Journal of Public Health 1993, volume 83 No.2.*

Shannan E and Gormley (2008) Science in sports and exercise; American College of sports medicine. 40(7); 1336-1343.

Shriver, A.W. Harrist, Hubbs Tait, L.Topham, G. Page and A. Barrett (2011) Weight status, physical activity and fitness among third-grade rural children. *Journal of School Health*, 81(9):536-544.

Shaban N., KA Kenno and KJ Milne (2014) The effects of a 2 week modified high intensity interval training program on the homeostatic model of insulin resistance in adults with type 2 diabetes. Published in *Journal Sports Med Phys Fitness*. 2014 Apr; 54(2):203-9.

Tia T. Tran, Lina Lundgren, Josh Secomb, Oliver R.L. Farley, G. Gregory Haff, Sophia Nimphius, Robert U Newton, Lee E. Brown and Jeremy M. Sheppard (2016) Effect of four weeks detraining on strength, power and sensorimotor ability of adolescent surfers. *The open sports sciences journal* 2017,10 (suppl1:M6) 71-80.

Tinazci and Emiroglu (2008) Assessment of physical fitness levels, gender and age differences of rural and urban elementary school children. *Turkiye Klinikleri Journal of Medical Sciences*, 30(1):1-7.

Tinazci, C. and Emiroglu, O. (2009) Physical fitness of rural children compared with urban children in North Cyprus: a normative study. *Journal of Physical Activity and Health*, 6: 88-92.

Twisk JW, HC Kemper and Van Mechelen (2002) The relationship between physical fitness and physical activity during adolescence and cardiovascular disease risk factors at adult age. Published in *International Journal of Sports Medicine*, 23 Suppl 1:58-14.



U Granacher, A Goesele, K. Roggo, T. Wischer, S. Fischer, C. Zuerny, A. Gollhofer and S. Kriemler (2011) Effect and mechanisms of strength training in children. *International Journal of Sports Medicine* 32(5):357-64.

Ujevic, G. Sporis, Milanovic, S. Pantelic and B. Neljak (2013) Differences between health related physical fitness profiles of Croatian children in urban and rural areas. *Collegium Antropologicum*, 37:75-80.

Varkay Verghese C (1952) Physical education curriculum for higher secondary schools in Mysore state India. *Completed research in health, physical education and recreation*.

Willmore, H. Jack (1996) Increasing physical activity: alternation in body mass and composition. *American Journal of Clinical Nutrition* 63:4565.

Yakuleve Samuel Natagmah (1982) Physical education programmes offered in Iowa high schools, preferred by seniors recommended by professors in Iowa college and universities. *Dissertation abstract international* 43:1080-A.

### **Online References**

1. <https://en.wikipedia.org/wiki/Education> (Pg. No. 1).
2. <https://examplanning.com/definition-of-education-by-different-authors/> (Pg. No. 1).
3. <http://www.unesco.org/new/en/unesco/events/prizes-and-celebrations/celebrations/international-days/international-day-of-sport-for-development-and-peace/> (Pg. No. 1).
4. [https://en.wikipedia.org/wiki/Rabindranath\\_Tagore](https://en.wikipedia.org/wiki/Rabindranath_Tagore) (Pg. No. 3).
5. <https://www.who.int/news-room/fact-sheets/detail/physical-activity> (Pg. No. 8).
6. <https://www.google.com/search?q=Physical+activity+is+defined+as+the+movement+produced+by+the+body%2C+affecting+skeletal+muscles+and+utilize>

s+the+energy&sxsrf=AOaemvLKGf4s76lx\_tNisPwgkC1Hod-  
 mUg%3A1633763222068&ei=lj9hYaLEA4i6rQH1hqrYDQ&ved=0ahUKEw  
 ii5\_2j4rzzAhUIXSsKHXWDCtsQ4dUDCA4&uact=5&oq=Physical+activity+  
 is+defined+as+the+movement+produced+by+the+body%2C+affecting+skelet  
 al+muscles+and+utilizes+the+energy&gs\_lcp=Cgdnd3Mtd2l6EANKBAhBG  
 ABQo6dPWKOnT2CEqk9oAHACeACAAQCIAQCQAQCYAQCgAQKgAQ  
 HAAQE&scient=gws-wiz (Pg. No. 16).

7. <https://www.edglossary.org/curriculum/> (Pg. No. 17).
8. [https://www.google.com/search?q=elementary+means&sxsrf=AOaemvJ1yEgj5das2Zo\\_5tYW5b2tDhYXZA%3A1633765245933&ei=fUdhYf2COKf0rtoPk0C56As&ved=0ahUKEwi9tYTp6bzzAhUnuksFHRJADr0Q4dUDCA4&uact=5&oq=elementary+means&gs\\_lcp=Cgdnd3Mtd2l6EAMyCggAEIAEEIcCEBQyDQgAEIAEEIcCELEDEBQyCwgAEIAEELEDEIsDMgcIABBDEIsDMgsILhCABBCxAxCLAzIICAAQgAQQiwMyCwgAEIAEELEDEIsDMgsIABCABBCxAxCLAzIICAAQgAQQiwMyBQgAEIAEOgcIABBHELADOgQIIxAnOgUIABCRAjoLCAAQgAQQsQMqgwE6EQguEIAEELEDEIMBEMcBEKMCogIABCxAxCDAToECAAAQqzoHCAAQsQMqQzoICAAQgAQQsQM6EQguEIAEELEDEIsDEK\\_gDEKMDOhQILhCABBDHARDRAxCLAxCoAxDSAzoRCC4QgAQQsQMqiwMQowMQqAM6FAguEIAEEMcBENEDIsDENIDEK\\_gDSgQIQRgAUPMWWOQ6YO9GaABwA3gCgAHqD4gB6iuSAQ8yLTiuMS4yLjIuMS45LTGYAQCgAQHIAQi4AQPAAQE&scient=gws-wiz](https://www.google.com/search?q=elementary+means&sxsrf=AOaemvJ1yEgj5das2Zo_5tYW5b2tDhYXZA%3A1633765245933&ei=fUdhYf2COKf0rtoPk0C56As&ved=0ahUKEwi9tYTp6bzzAhUnuksFHRJADr0Q4dUDCA4&uact=5&oq=elementary+means&gs_lcp=Cgdnd3Mtd2l6EAMyCggAEIAEEIcCEBQyDQgAEIAEEIcCELEDEBQyCwgAEIAEELEDEIsDMgcIABBDEIsDMgsILhCABBCxAxCLAzIICAAQgAQQiwMyCwgAEIAEELEDEIsDMgsIABCABBCxAxCLAzIICAAQgAQQiwMyBQgAEIAEOgcIABBHELADOgQIIxAnOgUIABCRAjoLCAAQgAQQsQMqgwE6EQguEIAEELEDEIMBEMcBEKMCogIABCxAxCDAToECAAAQqzoHCAAQsQMqQzoICAAQgAQQsQM6EQguEIAEELEDEIsDEK_gDEKMDOhQILhCABBDHARDRAxCLAxCoAxDSAzoRCC4QgAQQsQMqiwMQowMQqAM6FAguEIAEEMcBENEDIsDENIDEK_gDSgQIQRgAUPMWWOQ6YO9GaABwA3gCgAHqD4gB6iuSAQ8yLTiuMS4yLjIuMS45LTGYAQCgAQHIAQi4AQPAAQE&scient=gws-wiz) (Pg. No. 17).
9. <https://www.merriam-webster.com/dictionary/anthropometry> (Pg. No. 17).
10. <http://coachr.org/fitness.htm> (Pg. No. 17).
11. <https://www.dictionary.com/browse/physiology> (Pg. No. 17).

**Appendix – A (Control Group) Pre Data**

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
1.	144	23	5.98	18.10	45.16	15	22.86	88	11.1
2.	125	29	6.20	15.40	7.20	13	22.86	87	18.6
3.	108	19.5	6.40	16.10	22.06	20	16.15	92	16.7
4.	111	18	5.25	16.05	23.10	25	21.59	92	14.6
5.	121	23	5.55	14.21	7.10	11	22.86	87	15.7
6.	131	23	5.29	15.10	9.11	40	19.05	94	13.4
7.	124	24	4.18	14.25	6.11	14	16.15	85	15.6
8.	115	19	5.33	14.52	1.10.48	39	16.51	92	14.4
9.	126	22	4.50	15.55	26.15	30	17.78	88	13.9
10.	121	26	5.50	13.60	10.20	23	20.32	85	17.8
11.	116	21	4.85	14.65	21.17	11	19.05	87	15.6
12.	125	23	4.70	13.84	1.20.17	41	21.59	92	14.7
13.	121	23	6.25	14.21	29.11	25	12.7	77	15.7
14.	130	27	4.30	14.20	39.04	40	17.78	84	16.0
15.	133	24	4.52	14.45	7.16.14	13	13.97	89	13.6
16.	127	25	5.45	13.21	19.14	10	12.7	91	15.5
17.	136	27	5.10	15.32	1.20.17	35	19.05	92	14.6
18.	131	27	5.45	14.45	13.10.14	37	13.97	80	15.7
19.	129	24	4.98	15.46	10.32.41	100	21.59	82	14.4
20.	133	26	4.30	15.05	15.10	22	12.7	79	14.7
21.	141	35.5	4.78	12.21	8.10	06	11.43	77	17.9
22.	148	35	4.44	13.15	34.10	37	25.4	84	16.0
23.	133	35	4.56	13.21	1.10.11	07	22.86	80	19.8
24.	144	45	4.90	12.75	5.45.10	26	24.13	78	21.7
25.	146	40.2	4.50	11.80	1.29.16	18	10.16	80	18.9
26.	147	40	4.30	14.15	3.14.41	32	19.05	82	18.5
27.	142	33	4.30	11.53	53.16	23	8.89	80	16.4
28.	146	40	3.94	12.49	1.24.15	24	12.7	80	18.8
29.	114	20	6.40	17.21	1.24.11	09	16.51	72	15.4

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
30.	113	16.5	5.45	14.18	40.11	13	20.32	72	12.9
31.	111	16.5	7.10	15.75	8.10	08	15.748	76	13.4
32.	116	19	6.10	14.45	1.03.10	16	20.32	86	14.1
33.	120	24	6.54	14.05	1.44.60	42	25.4	80	16.7
34.	123	25	5.34	13.10	1.25.38	34	12.7	77	16.5
35.	120	23	5.79	13.09	44.10	11	20.32	75	16.0
36.	121	19	5.80	12.56	1.40.10	42	19.05	76	13.0
37.	129	22	6.40	14.00	1.37.48	37	8.89	81	13.2
38.	135	30	6.44	13.55	21.88	12	15.748	75	16.5
39.	132	32	5.57	13.10	2.35.46	48	19.304	75	18.4
40.	136	30	5.78	13.41	1.40.42	50	20.32	79	16.2
41.	135	22	5.46	13.21	3.57.14	42	13.208	78	12.1
42.	139	29.5	6.34	12.52	10.40	58	20.828	80	15.3
43.	135	29	5.91	13.52	4.15.10	39	10.668	74	15.9
44.	146	48	5.01	14.50	28.47	43	13.97	81	22.5
45.	147	42	6.24	13.51	1.47.49	33	21.082	80	19.4
46.	145	45	5.31	12.15	3.55.62	50	15.748	76	21.4
47.	145	40	5.31	12.46	3.37.48	50	16.51	78	19.3
48.	148	38	5.48	13.10	29.08	49	15.24	90	17.3
49.	147	30	5.89	11.65	53.25	38	10.668	78	13.9
50.	139	30	4.72	10.30	4.46.18	100	26.67	79	15.5
51.	139	30	6.60	13.21	2.08.76	128	27.432	80	15.5
52.	142	33	5.40	13.59	1.12.76	150	23.368	80	16.4
53.	163	45	5.90	12.45	6.52.28	29	23.876	80	16.9
54.	154	37	5.25	13.15	1.55.27	40	22.86	87	15.6
55.	163	58	5.08	12.36	35.62	45	15.494	100	21.8
56.	150	34	5.23	10.52	2.45.82	50	22.86	92	15.1
57.	149	45	5.67	10.10	52.06	40	26.924	84	20.3
58.	154	37	6.23	13.41	5.17.10	42	19.558	90	15.6
59.	145	35	5.78	12.15	55.23	50	21.59	81	16.6

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
60.	169	56	4.90	12.14	1.28.36	60	24.13	76	19.6
61.	126	19	6.50	15.21	40.10	12	13.97	110	12.0
62.	127	22	5.20	18.16	1.30.25	18	25.4	90	13.6
63.	146	40	3.95	10.47	1.10.31	88	17.78	80	18.8
64.	167	54.5	4.45	12.09	2.10.21	66	33.02	92	19.5
65.	125	20	6.40	18.13	15.16	09	25.4	100	12.8
66.	117	17.5	6.30	15.05	23.21	20	21.59	88	12.8
67.	119	20	6.36	17.03	11.10	12	20.32	96	14.1
68.	126	26	6.10	16.10	3.15	15	24.13	87	16.4
69.	121	16	5.60	14.10	1.02.05	10	24.13	79	10.9
70.	130	21	5.41	14.51	20.86	13	13.97	80	12.4
71.	133	28	6.59	13.00	1.14.10	35	16.51	95	15.8
72.	145	44	4.91	13.69	5.14.16	60	24.13	81	20.9
73.	135	28	4.90	13.20	40.14	50	25.4	81	15.4
74.	134	23	5.05	12.09	1.55.10	81	24.13	110	12.8
75.	143	30	5.30	13.20	3.10.11	50	21.59	98	14.7
76.	146	28	4.80	13.14	1.05.16	90	19.05	77	13.1
77.	142	25	5.21	13.13	1.10.10	51	22.86	90	12.1
78.	141	35	4.33	13.16	3.10.05	52	25.4	85	17.6
79.	151	38	4.58	10.55	1.20.40	77	24.13	100	16.7
80.	153	36	5.05	13.21	1.35.60	48	27.94	88	15.4
81.	159	54	4.50	12.24	5.10.06	23	26.67	82	24.0
82.	170	42	4.44	11.10	2.10.24	50	11.43	82	14.5
83.	153	44	4.56	12.00	5.10.09	44	21.59	80	18.6
84.	147	29	4.20	11.20	8.14.57	33	20.32	90	13.4
85.	125	23	6.44	18.14	35.16	10	22.86	120	14.1
86.	120	20	5.92	13.94	25.10	16	27.94	116	13.9
87.	124	20.5	5.35	13.63	22.14	06	29.21	108	13.3
88.	121	23	6.56	14.00	4.16	14	20.32	100	15.7
89.	135	22	5.60	13.97	12.16	13	17.78	90	12.1

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
90.	127	23	4.53	12.63	26.48	11	25.4	79	14.3
91.	125	24	5.25	12.88	1.14.11	16	31.75	80	15.4
92.	125	24	5.06	12.41	30.49	10	22.86	110	15.4
93.	127	20	4.94	12.62	1.00.01	18	21.59	102	12.4
94.	131	24	4.59	12.66	1.05.16	09	19.05	106	14.0
95.	121	20	6.09	12.41	1.50.14	20	24.13	106	13.7
96.	127	23	5.25	12.34	1.07.18	21	24.13	112	14.3
97.	136	27	5.06	13.16	36.11	58	25.4	72	14.6
98.	139	35	5.31	13.61	26.16	60	16.15	90	18.1
99.	119	30	5.55	12.03	1.20.11	64	17.78	86	21.2
100.	139	35	4.00	11.60	1.17.16	106	15.24	104	18.1
101.	156	41	5.25	13.50	1.01.22	72	13.97	88	16.8
102.	142	30	4.81	12.15	3.06.11	50	13.97	102	14.9
103.	136	29	4.13	11.00	1.40.52	132	24.13	80	15.7
104.	139	27	4.22	11.22	3.23.14	136	24.31	80	14.0
105.	144	35	3.78	11.65	3.08.11	59	31.75	78	16.9
106.	163	40	4.40	10.30	3.43.98	45	13.97	100	15.1
107.	153	35	4.04	13.21	6.10.16	160	31.75	76	15.0
108.	156	45	4.22	14.10	3.17.10	39	25.4	76	18.5
109.	155	34	4.52	13.32	2.10.47	33	22.86	88	14.2
110.	155	40	3.80	13.14	2.05.16	45	29.21	85	16.6
111.	152	45	4.91	12.68	29.11	45	12.7	108	19.5
112.	145	40	4.45	11.81	40.48	62	19.05	86	19.0
113.	154	41	3.90	10.37	3.22.16	72	19.05	76	17.3
114.	147	40	3.90	10.52	1.25.10	109	19.05	84	18.5
115.	146	41	3.85	12.40	3.10.15	86	19.05	86	19.2
116.	138	40	4.30	11.53	5.00.11	70	21.336	86	21.0
117.	151	42	4.21	11.03	2.11.46	100	29.21	100	18.4
118.	168	55	4.14	10.36	3.45.92	60	30.48	96	19.5
119.	172	70.1	4.17	11.48	1.59.40	47	24.13	100	23.7

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
120.	185	62	3.94	12.49	8.12.14	120	34.29	88	18.1
121.	132	25	4.75	14.22	30.18	23	31.75	76	14.3
122.	131	20	4.97	13.24	1.05.11	46	30.48	96	11.7
123.	140	23	5.15	13.14	1.02.09	60	21.59	87	11.7
124.	120	25	4.86	14.24	55.48	100	31.75	92	17.4
125.	138	27	5.16	12.03	1.20.57	63	21.59	90	14.2
126.	145	32	4.20	12.10	1.58.51	70	13.97	93	15.2
127.	150	29	4.42	12.26	1.50.32	90	16.51	92	12.9
128.	137	29.4	4.10	11.10	1.33.40	88	13.97	80	15.7
129.	140	28	4.23	11.36	59.60	75	3.81	84	14.3
130.	150	39.5	4.60	11.33	2.11.38	33	17.78	89	17.6
131.	154	33.5	4.57	13.20	3.21.16	50	22.86	87	14.1
132.	146	40	4.81	11.37	1.36.48	44	6.35	82	18.8
133.	148	42	3.85	12.01	2.24.14	86	19.05	86	19.2
134.	149	33.8	4.40	12.32	5.10.21	57	19.05	81	15.2
135.	160	56	5.01	11.54	5.10.31	70	25.4	88	21.9
136.	124	24	6.48	18.05	25.18	15	13.97	108	15.6
137.	122	21	5.96	14.05	10.21	20	19.05	109	14.1
138.	125	21	5.50	13.70	31.10	10	29.21	98	13.4
139.	122	23.5	6.52	14.02	5.25	08	20.32	92	15.8
140.	126	23	5.15	12.76	33.10	12	21.59	86	14.5
141.	135	22	6.20	14.35	25.10	15	17.78	92	12.1
142.	126	24	5.30	13.10	1.10.16	15	24.13	92	15.1
143.	126	25	5.30	12.95	57.30	15	31.75	80	15.7
144.	129	23.7	5.10	12.69	1.03.21	16	20.32	86	14.2
145.	133	32	5.20	12.85	45.06	12	19.05	102	18.1
146.	122	22	5.78	12.42	1.02.14	20	24.13	94	14.8
147.	135	33.8	5.01	14.10	1.02.10	17	22.86	95	18.5
148.	121	20	5.20	16.24	46.79	16	29.21	90	13.7
149.	111	18	5.90	15.85	20.18	09	20.32	92	14.6

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
150.	124	22	5.60	13.98	12.15	18	22.86	84	14.3
151.	130	26	6.02	13.45	23.52	22	26.67	86	15.4
152.	125	25	4.18	14.25	16.19	15	16.15	87	16.0
153.	136	35	5.24	14.20	25.10	20	19.05	96	18.9
154.	136	35	4.85	14.03	1.10.24	42	19.05	96	18.9
155.	130	26	4.80	14.08	45.21	45	19.05	86	15.4
156.	131	24	5.57	14.28	20.32	60	12.7	70	14.0
157.	139	32	5.31	13.61	55.48	20	16.15	90	16.6
158.	145	32	5.51	14.24	2.25.58	65	12.7	88	15.2
159.	165	40	4.36	12.10	37.78	23	15.24	80	14.7
160.	139	40	4.70	14.42	26.37	21	17.78	82	20.7
161.	142	30	4.80	12.45	56.43	21	17.78	84	14.9
162.	142	36	4.78	12.50	52.16	10	11.43	77	17.9
163.	146	49	4.70	12.52	36.48	17	16.51	110	23.0
164.	139	30	4.10	11.41	1.20.45	47	15.24	88	15.5
165.	148	40	3.89	12.65	3.10.15	86	19.05	82	18.3
166.	160	49	3.89	11.39	1.02.10	50	16.51	90	19.1
167.	162	44	4.30	11.52	2.10.18	100	19.05	83	16.8
168.	175	57	3.96	12.49	47.52	86	34.29	88	18.6



### Appendix – B (Experimental Group) Pre Data

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
1.	133	25	5.10	14.30	6.10	20	17.78	84	14.1
2.	118	21	6.10	15.21	13.20	21	22.86	86	15.1
3.	113	19	7.11	16.20	5.10	10	16.15	92	14.9
4.	119	19	6.09	15.58	5.55	21	17.78	90	13.4
5.	125	23	5.25	16.00	5.10	29	16.51	86	14.7
6.	131	24	5.97	14.25	8.10	20	21.59	90	14.0
7.	126	36	5.20	13.45	10.16	13	16.51	80	22.7
8.	129	27	4.30	14.44	12.16	33	13.97	88	16.2
9.	124	37	5.22	14.40	20.10	09	19.05	90	24.1
10.	123	22	6.01	14.55	30.10	27	19.05	80	14.5
11.	134	27	4.80	14.10	1.20.16	48	16.63	90	15.0
12.	126	23	5.45	15.25	20.16	43	13.97	91	14.5
13.	130	29	5.25	13.30	27.14	09	11.43	84	17.2
14.	126	23	5.56	13.52	19.16	27	13.97	80	14.5
15.	139	27	5.45	13.47	9.14.16	28	16.51	91	14.0
16.	136	25	5.60	14.42	16.41	27	16.51	90	13.5
17.	131	27	4.44	14.31	35.10	67	17.78	80	15.7
18.	125	23	5.52	15.52	30.14	15	15.24	86	14.7
19.	138	30	4.45	14.51	1.45.41	32	10.16	91	15.8
20.	133	34	5.15	14.49	1.16.10	28	22.86	78	19.2
21.	140	23	4.52	13.21	3.23.16	31	13.97	83	11.7
22.	155	40	4.60	11.56	2.46.41	13	11.43	88	16.6
23.	140	25.5	5.15	12.89	46.10	39	19.05	80	13.0
24.	143	25.5	4.14	13.45	25.14	42	21.59	96	12.5
25.	148	30	4.80	12.55	3.45.16	14	16.51	82	13.7
26.	141	34.5	4.49	13.15	42.10	23	19.05	80	17.4
27.	143	48	4.40	11.53	3.10.16	30	19.05	79	23.5
28.	158	40.3	3.64	11.52	2.10.15	45	19.05	90	16.1
29.	117	23	6.80	16.21	1.27.11	11	16.256	80	16.8

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
30.	125	26	6.51	14.15	10.16	15	20.066	74	16.6
31.	129	25	6.40	15.90	51.65	12	14.224	80	15.0
32.	121	25	5.74	13.92	25.18	17	22.098	89	17.1
33.	124	21.5	6.40	14.00	1.10.11	32	13.97	78	14.0
34.	129	35	6.17	14.20	22.68	20	12.7	82	21.0
35.	124	23	6.68	13.00	7.10	20	19.304	79	15.0
36.	121	20.5	5.91	13.55	35.68	20	15.24	80	14.0
37.	125	21.5	6.10	13.14	28.76	23	15.24	77	13.8
38.	128	23	6.77	13.84	42.47	37	13.97	81	14.0
39.	141	28	5.97	14.00	1.30.41	50	17.78	80	14.1
40.	133	25	5.85	13.77	50.45	40	15.24	83	14.1
41.	137	25.5	5.94	12.22	57.69	57	21.59	74	13.6
42.	138	31.5	5.88	13.10	43.52	55	21.59	74	16.5
43.	134	28	5.27	14.21	44.50	36	12.7	80	15.6
44.	147	28	6.00	13.22	47.48	43	15.24	88	13.0
45.	145	36	6.45	12.46	1.08.27	50	16.002	80	17.1
46.	141	24	6.18	12.54	2.02.28	20	18.288	74	12.1
47.	143	42	5.50	12.10	5.26	49	23.622	80	20.5
48.	137	25	5.41	11.90	33.45	29	15.748	76	13.3
49.	135	25	4.60	11.23	57.08	50	15.24	80	13.7
50.	157	38	6.10	13.12	6.25	26	20.828	80	15.4
51.	145	28	5.21	13.05	4.23.11	45	20.32	80	13.3
52.	144	37	5.24	11.27	2.21.76	55	18.796	80	17.8
53.	159	43	5.67	12.21	6.40.27	39	27.423	86	17.0
54.	145	41	5.44	11.69	1.57.28	35	20.32	80	19.5
55.	157	35	5.41	13.12	1.56.80	45	15.24	88	14.2
56.	145	32	5.51	12.14	18.72	50	26.924	84	15.2
57.	150	29.5	5.55	11.53	1.27.64	25	19.304	88	13.1
58.	158	38	5.54	12.12	3.07.87	45	23.876	82	15.2
59.	166	57	5.00	11.56	25.6	40	13.716	82	20.7

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
60.	180	50	4.58	12.20	1.18.27	33	26.67	84	15.4
61.	120	20	5.10	15.31	1.08.05	10	26.67	105	13.9
62.	152	43	3.78	13.21	1.21.16	140	35.56	80	18.6
63.	184	60	3.92	12.45	4.10.21	105	34.29	90	17.7
64.	153	35	4.17	12.15	5.10.31	90	2286	80	15.0
65.	125	20	6.30	18.47	13.10	12	25.4	95	12.8
66.	123	34.5	7.01	15.56	08.10	10	24.13	97	22.8
67.	118	21	5.69	17.10	32.11	15	13.97	85	15.1
68.	118	22	5.15	12.62	45.21	11	21.59	82	15.8
69.	124	23	4.90	14.15	1.15.20	23	24.13	95	15.0
70.	126	21	6.94	15.10	1.18.11	16	24.13	100	13.2
71.	141	28	5.16	13.16	10.18	45	17.78	88	14.1
72.	126	20	5.55	13.61	50.16	60	25.4	80	12.6
73.	149	50	5.25	13.60	1.43.10	55	21.59	82	22.5
74.	136	25	5.25	11.89	3.21.27	32	16.51	102	13.5
75.	143	33	6.24	11.45	5.11.21	64	21.59	104	16.1
76.	151	32	5.05	12.12	1.25.10	45	24.13	79	13.9
77.	150	54	4.65	12.25	2.10.12	56	12.7	86	23.4
78.	151	30	5.11	12.33	4.03.16	72	24.13	100	13.2
79.	150	35	4.80	12.20	2.35.50	44	10.16	80	15.6
80.	151	45	4.67	13.05	5.10.21	56	27.94	85	19.0
81.	155	35.5	4.40	12.31	5.50.51	44	27.94	86	14.8
82.	152	38	4.40	11.25	3.10.21	30	21.59	90	16.4
83.	142	35	4.25	10.21	5.39.48	41	19.05	90	17.4
84.	158	55	4.30	12.10	6.40.32	76	17.78	84	21.2
85.	120	20	5.00	14.38	11.05	09	27.94	100	13.9
86.	125	20	5.85	13.44	50.16	18	27.94	96	12.8
87.	120	20	5.00	15.85	1.25.16	08	25.908	104	13.9
88.	129	23	5.00	13.81	48.60	15	19.05	100	13.8
89.	121	22	5.10	13.81	1.16.22	23	20.32	96	15.0

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
90.	132	25	6.07	14.06	20.44	20	29.21	88	14.3
91.	119	19	4.85	12.00	1.14.10	18	20.32	92	13.4
92.	120	19	5.69	12.37	3.11	24	24.13	100	13.2
93.	127	20	5.13	13.38	56.49	11	20.32	102	12.4
94.	125	25	5.88	15.16	13.14	37	25.4	104	16.0
95.	129	22	5.15	13.25	1.43.10	17	24.13	120	13.2
96.	134	34	4.80	13.84	44.10	16	26.67	108	18.9
97.	140	35.5	4.91	13.69	2.00.11	79	25.4	82	18.1
98.	140	31	5.22	13.14	29.17	30	24.13	76	15.8
99.	140	30	4.63	11.66	1.17.16	46	16.51	90	15.3
100.	155	37	4.19	11.82	48.51	99	21.59	94	15.4
101.	149	27	4.40	12.25	1.50.11	98	16.51	90	12.2
102.	155	37	4.16	11.40	19.25	50	3.81	92	15.4
103.	144	31	4.19	11.59	2.17.11	140	21.59	92	14.9
104.	149	30	4.58	12.54	3.37	120	27.94	110	13.3
105.	148	38.5	4.87	11.88	3.18	50	17.78	84	17.6
106.	140	27	4.28	11.19	1.59.11	100	31.75	84	13.8
107.	146	25.5	3.88	12.21	4.4.10	150	31.75	88	12.0
108.	152	50.2	4.57	11.27	3.17.16	48	22.86	87	21.7
109.	152	34	4.24	13.30	3.15.21	130	29.21	86	14.7
110.	151	44	4.58	11.28	1.04.16	100	25.4	92	19.3
111.	152	51	3.57	11.69	57.11	58	31.75	80	22.1
112.	155	44	3.67	13.12	1.04.10	156	31.75	80	18.3
113.	155	43	4.47	12.14	27.18	50	6.35	88	17.9
114.	154	44	4.27	10.10	59.10	75	27.94	75	18.6
115.	160	47	4.40	11.53	1.15.18	50	21.59	84	18.4
116.	161	65	4.58	11.35	23.16	35	24.13	104	25.1
117.	175	65	3.88	10.21	7.07.11	52	5.08	88	21.2
118.	151	35.5	4.17	12.14	6.16.16	95	16.51	80	15.6
119.	167	48	3.64	11.52	7.10.14	150	26.67	76	17.2

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
120.	170	60	4.20	12.10	2.59.40	55	24.13	89	20.8
121.	148	36	4.70	13.55	20.25	35	25.4	91	16.4
122.	130	21	4.93	13.25	1.10.16	40	21.59	90	12.4
123.	139	35	5.10	13.55	5.06.15	43	30.48	82	18.1
124.	139	26	4.58	11.70	29.14	79	22.86	101	13.5
125.	140	33	4.90	12.20	2.10.11	55	13.97	102	16.8
126.	142	30	5.25	13.52	1.05.02	45	21.59	90	14.9
127.	153	38	4.20	11.56	24.59	52	24.13	94	16.2
128.	143	32	4.21	11.72	5.16.10	110	21.59	90	15.6
129.	147	38	4.80	11.90	25.12	51	20.32	85	17.6
130.	152	41	3.88	13.14	3.10.33	110	29.21	86	17.7
131.	152	44.8	4.46	11.31	58.10	98	27.94	90	19.4
132.	153	43	4.40	12.21	47.10	77	19.05	89	18.4
133.	152	44	3.80	11.05	56.47	85	27.94	80	19.0
134.	150	35	3.60	11.45	56.46	110	19.05	88	15.6
135.	157	64	4.50	11.51	28.16	50	30.48	84	26.0
136.	119	19	5.05	14.33	16.09	12	27.94	101	13.4
137.	120	19	5.31	14.60	11.21	12	27.94	98	13.2
138.	122	19	5.95	13.55	40.15	11	27.94	97	12.8
139.	120	20	6.10	15.78	46.30	10	25.4	96	13.9
140.	122	22.2	5.36	14.12	1.08.16	15	20.32	96	14.9
141.	131	24.2	6.23	14.25	21.56	20	29.21	89	14.1
142.	125	23	5.52	13.31	1.02.03	20	20.32	96	14.7
143.	121	20	6.05	13.10	21.14	16	24.13	98	13.7
144.	126	21	5.30	13.46	1.47.48	13	19.05	98	13.2
145.	124	25	5.90	15.20	21.31	28	25.4	100	16.3
146.	133	33.6	5.10	13.85	52.16	15	24.13	90	19.0
147.	126	23	5.15	13.28	56.47	12	24.13	102	14.5
148.	111	17	6.40	17.23	37.10	10	22.86	96	13.8
149.	116	22	6.30	16.80	49.45	12	20.32	100	16.3

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
150.	125	18	6.30	13.21	49.47	16	27.94	95	11.5
151.	132	29	5.35	13.46	19.20	20	31.75	90	16.6
152.	136	45	6.10	14.31	1.03.21	25	31.75	79	24.3
153.	126	24	5.10	13.21	1.02.16	23	20.32	84	15.1
154.	130	29	5.10	14.33	21.10	27	17.78	90	17.2
155.	136	28	4.80	14.10	1.20.16	48	16.63	90	15.1
156.	124	24	5.45	13.36	57.41	38	16.51	100	15.6
157.	145	31	5.67	14.36	1.18.24	50	10.16	80	14.7
158.	137	29	5.60	14.30	23.21	20	11.43	82	15.5
159.	135	31	4.18	11.50	19.34	49	20.32	84	17.0
160.	137	31.2	4.52	14.45	5.06.18	25	10.16	83	16.6
161.	147	40	4.65	14.30	6.10.24	36	16.51	96	18.5
162.	145	35	4.75	12.10	25.16	39	12.7	80	16.6
163.	151	40	4.75	12.60	31.56	24	12.7	100	17.5
164.	139	43	4.59	13.20	24.15	44	12.7	100	22.3
165.	153	43	4.32	11.08	1.02.10	80	27.94	80	18.4
166.	158	55	4.20	12.43	29.31	56	21.59	84	22.0
167.	164	50	3.88	10.31	1.47.30	81	10.16	81	18.6
168.	165	49	4.21	11.60	1.05.16	120	26.67	77	18.0

<b>Appendix – C (Control Group) Post Data</b>									
Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
1.	144	23	5.85	18.02	1.05.14	22	24.13	84	11.1
2.	125	28	6.05	15.25	8.16	12	21.59	84	17.9
3.	108	20	6.44	16.00	19.16	19	20.32	88	13.7
4.	112	16	5.02	16.20	24.15	22	21.59	90	12.8
5.	121	24	5.38	14.35	8.16	13	21.59	80	16.4
6.	132	23	5.38	15.50	20.49	56	16.51	80	13.2
7.	125	24	4.14	14.17	31.48	29	13.97	80	15.4
8.	117	19.5	5.38	14.30	1.03.52	42	16.51	90	14.2
9.	127	23	4.75	15.50	38.37	34	15.24	72	14.3
10.	123	25	5.47	13.55	12.30	21	17.78	83	16.5
11.	117	18	4.94	14.40	22.49	18	20.32	88	13.1
12.	126	21	4.64	13.80	59.55	50	21.59	80	13.2
13.	123	24	6.11	14.35	1.42.14	31	11.43	80	15.9
14.	131	28	4.25	14.22	48.16	36	21.59	77	16.3
15.	137	23	4.45	14.47	8.10.16	51	11.43	70	12.3
16.	132	23	5.48	13.15	40.10	20	12.7	68	13.2
17.	137	25	4.80	15.46	36.47	36	15.24	75	13.3
18.	133	27	5.78	14.30	4.27.30	40	12.7	77	15.3
19.	130	24	4.88	15.10	24.10	73	20.32	80	14.2
20.	134	27	4.41	14.80	25.18	29	12.7	71	15.0
21.	145	36	4.70	12.45	49.50	15	15.24	64	17.1
22.	151	33	4.40	13.17	47.40	34	21.59	75	14.5
23.	135	35	4.60	13.15	1.21.20	24	13.97	79	19.2
24.	146	46.5	4.92	12.50	5.19.16	35	27.94	80	21.8
25.	148	43	4.52	11.57	1.37.38	13	12.7	84	19.6
26.	148	40	4.45	14.10	3.47.38	50	19.05	84	18.3
27.	144	34	5.00	11.60	23.24	12	8.89	75	16.4
28.	146	40	3.90	12.40	2.30.10	25	10.16	77	18.8
29.	116	20	6.38	17.15	49.92	38	22.86	78	14.9

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
30.	114	16	6.71	14.30	15.00	40	16.256	82	12.3
31.	113	15.5	6.74	15.85	37.09	39	11.938	77	12.1
32.	116	17	6.75	14.52	54.78	40	16.764	74	12.6
33.	122	24.8	6.58	15.10	15.28	45	16.256	85	16.7
34.	124	25.3	6.53	13.40	1.22.38	45	18.288	84	16.5
35.	121	22	4.97	13.52	41.35	28	19.05	89	15.0
36.	121	20	4.55	13.10	25.69	35	21.844	80	13.7
37.	129	22	7.01	14.10	1.51.92	46	12.7	80	13.2
38.	135	31	6.79	13.60	18.20	22	19.05	80	17.0
39.	133	30	6.19	13.20	1.28.47	50	22.86	76	17.0
40.	136	29.9	5.41	13.05	1.15.29	61	17.78	81	16.2
41.	135	22	5.64	13.45	2.30.45	69	17.78	81	12.1
42.	139	30	6.10	12.39	18.20	77	20.828	81	15.5
43.	135	33	4.69	13.40	1.29.30	41	20.828	82	18.1
44.	148	49.5	5.27	14.33	2.40.89	35	21.336	83	22.6
45.	148	41	5.75	14.20	1.47.40	25	24.13	80	18.7
46.	146	47	5.54	12.20	5.19.13	41	26.67	92	22.0
47.	145	40.5	5.53	12.41	37.40	50	17.78	87	19.3
48.	149	39.5	5.91	12.26	22.80	55	24.13	82	17.8
49.	150	33	6.68	11.51	12.16	17	16.51	94	13.7
50.	141	28	4.71	12.34	4.30.45	60	31.75	96	14.1
51.	140	29.5	5.14	14.51	4.50.10	90	29.21	80	15.1
52.	144	34.5	5.52	13.25	1.43.12	142	26.67	90	16.6
53.	163	45	6.51	12.30	8.20.10	42	31.75	86	16.9
54.	155	35.5	6.20	13.22	1.13.90	53	26.67	90	14.8
55.	163	59	5.73	12.44	1.42.40	42	24.13	96	22.2
56.	150	34.5	5.11	11.05	1.19.20	45	26.67	96	15.3
57.	149	45	5.48	12.48	1.37.47	71	27.94	84	20.3
58.	154	38	6.44	14.10	1.44.80	51	21.59	96	16.0
59.	145	35.5	5.67	13.21	1.04.10	61	28.448	82	16.9



Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
60.	169	55.5	5.10	12.44	1.05.20	56	29.21	84	19.4
61.	127	20	6.56	12.12	45.21	16	13.97	110	12.4
62.	128	24	5.90	23.21	2.05.11	24	24.13	96	14.6
63.	147	38	3.90	11.21	59.57	90	17.78	78	17.6
64.	168	55	4.51	12.15	3.15.24	80	33.02	92	19.5
65.	127	20.2	6.20	18.20	20.02	19	25.4	98	12.5
66.	118	18	6.32	15.10	30.14	22	21.59	89	12.9
67.	121	20.3	6.30	17.05	24.21	16	20.32	96	13.9
68.	128	26.2	6.12	16.00	16.28	21	24.13	85	16.0
69.	122	17.8	5.65	13.59	47.10	12	25.4	77	12.0
70.	131	25	5.45	14.44	1.15.14	16	24.13	78	14.6
71.	133	30.1	6.52	13.05	1.02.24	30	21.59	89	17.0
72.	147	45	4.86	13.59	7.10.18	67	25.4	85	20.8
73.	135	28.9	4.80	13.40	30.57	38	25.4	85	15.9
74.	134	27	5.00	13.15	59.12	65	25.4	80	15.0
75.	145	29.8	5.25	13.05	1.05.23	53	22.86	89	14.2
76.	146	28.5	5.01	13.40	5.10.16	92	19.05	80	13.4
77.	142	25.2	5.15	13.21	2.48.10	30	30.48	79	12.5
78.	141	33	4.30	13.10	11.40	21	23.622	85	16.6
79.	154	38.7	5.10	11.05	2.10.05	79	27.94	84	16.3
80.	154	39.8	5.03	13.10	2.10.05	21	31.75	90	16.8
81.	159	55	4.30	12.10	3.21.03	37	17.78	79	24.8
82.	170	44.9	4.47	11.21	1.05.49	52	13.97	82	15.3
83.	153	39.7	4.41	12.03	7.10.48	50	20.32	86	17.0
84.	149	28.2	4.25	11.17	7.12.16	29	22.86	88	12.7
85.	127	24	6.56	18.19	40.16	14	13.97	100	14.9
86.	121	20	5.46	13.10	58.97	20	19.05	110	13.7
87.	125	23.5	5.09	13.70	5.97	07	27.94	84	15.0
88.	123	23.5	5.19	14.10	5.98	16	19.05	88	15.5
89.	136	22	5.25	13.55	25.10	17	19.05	88	11.9

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
90.	128	24	4.25	12.70	7.10	13	20.32	78	14.6
91.	127	23.5	4.72	12.80	1.15.08	12	31.75	82	14.6
92.	126	24.5	4.93	12.47	25.18	12	17.78	95	15.4
93.	127	20	4.78	12.55	1.10.14	15	24.13	98	12.4
94.	131	25	4.56	12.69	59.55	12	20.32	84	14.6
95.	121	22	6.12	12.35	1.29.40	24	24.13	95	15.0
96.	128	23	4.65	12.40	56.38	23	25.4	80	14.0
97.	136	27	5.16	13.45	1.05.10	40	30.48	80	14.6
98.	140	34.5	4.72	13.56	55.48	50	21.59	88	17.6
99.	121	29.5	4.84	12.10	1.15.21	50	19.05	80	20.1
100.	140	35	4.54	11.58	1.12.21	90	22.86	100	17.9
101.	156	42	5.30	13.40	1.05.20	65	13.97	85	17.3
102.	143	32	4.76	12.32	2.10.55	46	22.86	76	15.6
103.	138	31	3.97	10.59	1.10.14	100	30.48	76	16.3
104.	139	27	3.91	10.56	2.55.34	110	25.4	79	14.0
105.	145	36	3.80	11.70	3.15.21	62	31.75	81	17.1
106.	163	41	4.38	11.36	2.75.10	52	13.97	95	15.4
107.	153	33.5	4.22	13.10	1.50.40	162	30.48	74	14.3
108.	156	45	3.55	14.21	3.20.40	45	26.67	76	18.5
109.	155	34.5	4.54	13.23	3.52.21	45	22.86	84	14.4
110.	155	41	3.84	13.20	3.10.21	50	29.21	82	17.1
111.	152	46.5	5.01	12.59	1.04.02	47	12.7	95	20.1
112.	147	39	4.72	11.70	47.25	40	17.78	76	18.0
113.	154	42	3.85	10.45	3.00.10	65	19.05	80	17.7
114.	148	37	3.97	11.41	2.50.10	95	17.78	75	16.9
115.	147	42	3.69	12.01	1.10.31	87	19.05	79	19.4
116.	139	39	5.00	11.60	5.01.10	55	24.13	88	20.2
117.	152	44	4.15	11.10	1.15.48	105	29.21	102	19.0
118.	169	55	4.40	10.52	2.50.10	64	33.02	96	19.3
119.	173	71	4.60	11.52	2.28.40	35	33.02	86	23.7

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
120.	187	63	3.90	12.40	3.50.10	110	34.29	82	18.0
121.	133	26	4.69	14.25	59.56	29	31.75	82	14.7
122.	131	21	4.90	13.15	59.16	50	30.48	92	12.2
123.	140	23.8	5.09	13.08	2.10.21	52	24.13	89	12.1
124.	122	26	4.89	14.08	50.12	88	31.75	87	17.5
125.	140	26.8	5.20	12.11	1.05.10	64	24.13	86	13.7
126.	145	32	4.23	12.12	2.10.24	60	13.97	89	15.2
127.	151	29.5	4.44	12.23	1.10.14	88	20.32	87	12.9
128.	138	30.2	4.12	10.59	1.10.14	91	13.97	78	15.9
129.	140	28	4.01	11.32	1.05.10	45	5.08	81	14.3
130.	150	39.2	4.48	11.45	10.12.16	45	17.78	89	17.4
131.	154	33.8	4.52	13.23	3.14.15	33	22.86	87	14.3
132.	147	39.8	4.30	12.01	2.30.35	61	7.62	79	18.4
133.	149	43	3.69	11.52	1.10.31	87	19.05	85	19.4
134.	150	34	4.43	12.40	14.10.21	60	19.05	87	15.1
135.	161	56	5.04	11.41	12.10.21	55	25.4	91	21.6
136.	126	24.6	6.56	17.60	40.10	11	22.86	110	15.5
137.	124	21.6	6.05	13.76	21.10	25	19.05	110	14.0
138.	126	21.2	5.41	13.59	10.16	14	27.94	84	13.4
139.	124	23.8	6.11	14.16	5.20	11	20.32	93	15.5
140.	127	24.7	5.05	12.69	20.18	15	20.32	82	15.3
141.	135	23	5.95	14.30	13.21	18	17.78	91	12.6
142.	127	24.7	5.32	13.24	59.52	19	24.13	88	15.3
143.	127	24.5	5.28	13.02	1.02.03	18	31.75	82	15.2
144.	129	24.2	4.95	12.62	52.10	13	22.86	89	14.5
145.	133	31.8	5.25	12.83	1.21.10	18	20.32	104	18.0
146.	123	21.8	6.11	12.35	42.15	24	22.86	94	14.4
147.	135	34.5	4.88	13.88	52.21	20	30.48	91	18.9
148.	122	21	5.25	16.30	1.10.02	18	29.21	95	14.1
149.	113	18.5	5.92	15.78	35.10	12	20.32	94	14.5

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
150.	126	23.2	5.62	13.71	25.29	30	22.86	96	14.6
151.	130	26	5.80	13.41	1.02.09	30	29.21	89	15.4
152.	126	25	4.14	14.17	31.48	10	13.97	83	15.7
153.	137	35.9	5.30	14.55	30.45	35	16.63	91	19.1
154.	137	35.8	4.43	13.60	2.33.25	23	20.32	90	19.6
155.	131	26.3	4.52	14.13	1.02.10	51	19.05	89	15.3
156.	132	25	5.80	14.30	57.51	66	12.7	85	14.3
157.	140	32.6	5.45	13.56	1.12.05	15	21.59	88	16.6
158.	145	32.6	5.21	14.15	1.47.63	47	12.7	82	15.5
159.	165	39.5	4.20	12.12	1.24.23	39	17.78	84	14.5
160.	140	41	4.72	14.21	1.02.13	29	17.78	86	20.9
161.	143	31	4.75	12.32	3.11.16	18	17.78	84	15.2
162.	144	36.5	4.74	12.33	33.21	18	11.43	80	17.6
163.	147	48.6	4.65	12.53	1.02.09	24	16.51	90	22.5
164.	141	32	3.98	11.45	4.21.18	53	12.7	82	16.1
165.	148	40.8	3.75	12.50	1.10.31	87	19.05	78	18.6
166.	161	48.6	3.67	11.32	7.05.09	58	19.05	86	18.7
167.	162	45.6	4.01	11.30	59.52	110	19.05	87	17.4
168.	175	58.2	3.99	12.52	4.51.43	102	34.29	88	19.0

<b>Appendix – D (Experimental Group) Post Data</b>									
Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
1.	133	25	5.05	14.18	59.10	21	21.59	80	14.1
2.	119	20	5.54	15.15	40.10	30	25.4	78	14.1
3.	113	18	6.56	15.60	20.10	20	19.05	80	14.1
4.	119	18	5.85	15.40	20.14	24	21.59	79	12.7
5.	126	23	5.08	15.57	29.12	35	17.78	77	14.5
6.	133	23	5.50	14.00	47.10	29	23.87	79	13.0
7.	128	35	5.10	13.21	1.12.16	22	24.13	79	21.4
8.	129	28	4.19	14.50	35.14	40	15.24	82	16.8
9.	129	38	5.10	14.55	1.21.14	20	19.05	81	22.8
10.	125	22	5.87	14.10	1.36.10	36	21.59	78	14.1
11.	136	25	4.70	13.55	2.25.10	53	20.32	86	13.5
12.	128	22	5.01	15.05	1.21.13	50	13.97	82	13.4
13.	131	28	5.10	13.14	1.33.08	21	11.43	80	16.3
14.	126	20.5	5.45	13.21	1.10.14	39	16.51	72	12.9
15.	140	26	5.41	13.02	10.18.00	42	13.97	78	13.3
16.	139	24	5.45	14.13	1.25.11	35	16.51	84	12.4
17.	132	26	4.34	14.15	13.10.14	87	20.32	80	14.9
18.	126	24.5	5.41	15.30	1.36.32	22	15.24	84	15.4
19.	139	29	4.10	14.30	2.40.10	41	12.7	78	15.0
20.	135	31	4.56	14.10	1.42.14	45	22.86	74	17.0
21.	142	22.9	4.24	13.01	5.10.16	45	15.24	80	11.4
22.	156	36	4.32	11.37	3.57.10	15	27.94	80	14.8
23.	141	26	4.70	12.45	1.40.10	40	11.43	82	13.1
24.	144	26	4.01	13.10	35.26	45	22.86	82	12.5
25.	149	30.5	4.35	12.40	4.56.92	22	16.51	80	13.7
26.	144	33	4.10	13.01	2.23.70	31	15.24	75	15.9
27.	145	43	4.12	11.40	5.05.16	42	22.86	80	20.5
28.	161	43	4.14	11.40	2.20.60	33	15.24	85	16.6
29.	119	22.5	6.10	16.15	15.00	36	17.78	78	15.9

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
30.	126	26	7.98	14.10	28.10	37	21.884	74	16.4
31.	129	25	5.61	14.90	1.10.05	50	18.796	82	15.0
32.	121	25	5.23	13.10	2.20.10	41	25.4	76	17.1
33.	124	21	6.28	13.95	1.25.37	90	16.51	75	13.7
34.	131	37	4.50	14.05	51.29	59	17.526	78	21.6
35.	124	23	5.55	12.59	25.70	68	20.32	79	15.0
36.	121	21	5.75	13.45	51.29	59	17.526	78	14.3
37.	126	21	5.74	13.10	1.18.23	32	16.51	74	13.2
38.	128	24	7.47	13.40	1.02.46	52	15.24	78	14.6
39.	144	29.8	5.90	14.10	1.36.52	56	20.32	80	14.4
40.	135	25.5	5.45	13.51	1.05.09	56	21.59	78	14.0
41.	137	25	5.31	12.14	3.05.16	65	24.13	79	13.3
42.	138	30.3	5.81	12.59	2.00.10	86	27.178	85	15.9
43.	136	27.2	5.10	14.40	1.10.16	49	16.51	77	14.7
44.	147	27	4.80	12.57	3.04.10	62	21.844	88	12.5
45.	145	35.5	5.41	12.50	2.29.40	51	16.51	75	16.9
46.	142	24.5	6.13	12.24	3.28.40	51	20.32	76	12.2
47.	145	43.5	5.21	11.58	2.46.47	54	18.034	84	20.7
48.	140	25	5.20	11.56	1.43.10	40	23.368	80	12.8
49.	137	24	4.51	11.24	1.12.18	64	15.24	76	12.8
50.	158	37.5	5.66	12.56	35.52	44	29.21	74	15.0
51.	145	28.5	4.55	12.51	5.02.11	97	21.59	77	13.6
52.	145	37	5.05	11.06	7.30.14	65	24.13	78	17.6
53.	160	43.5	5.10	11.10	9.40.10	49	27.94	80	17.0
54.	146	40	5.10	11.41	2.06.91	46	22.86	77	18.8
55.	157	35	4.87	12.55	4.50.26	57	16.51	82	14.2
56.	145	33	4.75	11.56	1.34.68	96	31.75	80	15.7
57.	152	29	5.10	11.09	4.18.17	62	22.86	82	12.6
58.	158	38.8	5.10	11.56	6.15.19	79	25.4	78	15.5
59.	166	57	4.90	11.10	3.32.28	72	21.59	80	20.7

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
60.	180	50	4.40	12.10	5.30.40	96	31.75	80	15.4
61.	123	20.5	5.00	20.16	58.65	19	26.67	95	13.6
62.	153	42.5	3.70	13.10	2.35.31	156	35.56	80	18.2
63.	186	61.5	3.90	11.56	8.16.25	90	34.29	86	17.8
64.	153	34.3	4.10	12.05	12.15.16	92	22.86	78	14.7
65.	126	20	6.28	18.40	43.05	15	25.908	95	12.6
66.	125	35	6.28	15.50	36.41	21	25.4	93	22.4
67.	121	23	4.80	17.00	53.10	22	20.32	81	15.7
68.	120	23	5.33	12.60	1.20.41	19	21.59	80	16.0
69.	125	23.5	4.85	14.12	2.10.44	36	25.4	89	15.0
70.	128	22.5	6.96	14.40	3.10.16	19	25.4	80	13.7
71.	142	29.8	5.09	12.80	1.32.03	47	17.78	83	14.8
72.	128	20	5.50	13.52	4.33.21	52	27.94	75	12.2
73.	151	49.9	5.31	12.56	1.48.27	60	24.13	79	21.9
74.	136	33.4	5.19	11.80	5.08.10	51	17.78	84	18.1
75.	145	33.9	6.20	11.40	2.10.16	67	25.4	92	16.1
76.	151	30	4.80	12.01	8.10.6	56	24.13	70	13.2
77.	150	54.9	4.50	12.20	3.17.40	41	13.97	80	24.4
78.	152	30	4.85	12.20	7.10.15	80	24.13	84	13.0
79.	152	34.9	4.56	12.05	8.10.16	59	17.78	80	15.1
80.	152	45.2	4.44	12.20	7.40.21	70	27.94	90	19.6
81.	154	36	4.20	12.20	9.10.16	61	29.21	80	15.2
82.	153	37	4.33	11.10	7.06.11	56	21.59	86	15.8
83.	143	35.3	4.34	11.24	10.16.24	56	22.86	85	17.3
84.	158	55.2	4.20	11.51	11.10.16	81	20.32	88	22.1
85.	122	20	4.93	14.10	20.18	13	29.21	98	13.9
86.	126	19	5.75	13.10	1.10.16	20	29.21	92	12.0
87.	123	20	5.00	15.10	1.40.16	12	26.67	80	13.2
88.	129	22.5	4.72	13.21	52.40	19	20.32	88	13.5
89.	122	23	5.00	13.60	1.19.50	25	20.32	92	15.5

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
90.	133	25.5	5.50	13.55	30.16	22	30.48	85	14.4
91.	120	19.5	4.75	11.60	40.16	25	21.59	88	13.5
92.	123	19	4.78	12.25	30.16	35	26.67	95	12.6
93.	127	19.5	5.25	13.00	2.10.16	17	20.32	76	12.1
94.	126	25	5.69	15.10	1.10.24	40	22.86	80	15.7
95.	130	23	5.90	13.10	2.10.16	22	25.4	74	13.6
96.	134	34	5.00	13.90	1.10.15	22	30.48	85	18.9
97.	140	35	4.85	13.55	3.11.16	85	25.4	80	17.9
98.	142	30	5.10	13.10	1.05.16	40	27.94	80	14.9
99.	140	29.5	4.50	11.32	1.25.40	52	25.908	78	15.1
100.	155	36	4.17	11.70	1.10.16	102	21.59	90	15.0
101.	149	27	4.30	12.21	5.10.24	102	20.32	87	12.2
102.	157	37	3.97	11.35	1.58.60	60	5.08	80	15.0
103.	144	30	4.10	11.40	5.15.10	160	24.13	92	14.5
104.	150	30	4.41	11.48	3.11.16	129	29.21	84	13.3
105.	150	38.5	4.28	11.80	1.24.10	60	20.32	79	17.1
106.	140	26	4.20	11.15	2.45.10	110	31.75	76	13.3
107.	146	25	4.19	11.52	7.25.11	160	31.75	82	11.7
108.	152	50	4.47	11.20	5.03.14	65	30.48	74	21.6
109.	152	33	4.05	13.16	7.11.14	162	31.75	78	14.3
110.	151	43	4.13	11.15	2.24.10	105	27.94	80	18.9
111.	152	50	3.55	11.50	4.10.47	72	31.75	78	21.6
112.	156	43	3.63	12.14	2.40.41	165	35.56	79	17.7
113.	156	41	4.07	12.00	2.00.10	72	7.62	81	16.8
114.	155	44	4.19	10.02	1.10.56	65	30.48	60	18.3
115.	161	45	4.12	11.40	2.25.48	60	22.86	79	17.4
116.	162	63	4.25	11.25	2.34.10	45	25.4	100	24.0
117.	175	65	3.80	10.24	8.10.15	60	10.16	84	21.2
118.	152	35	4.00	12.09	10.54.26	102	22.86	77	15.1
119.	167	46	4.14	11.40	8.11.16	155	27.94	82	16.5



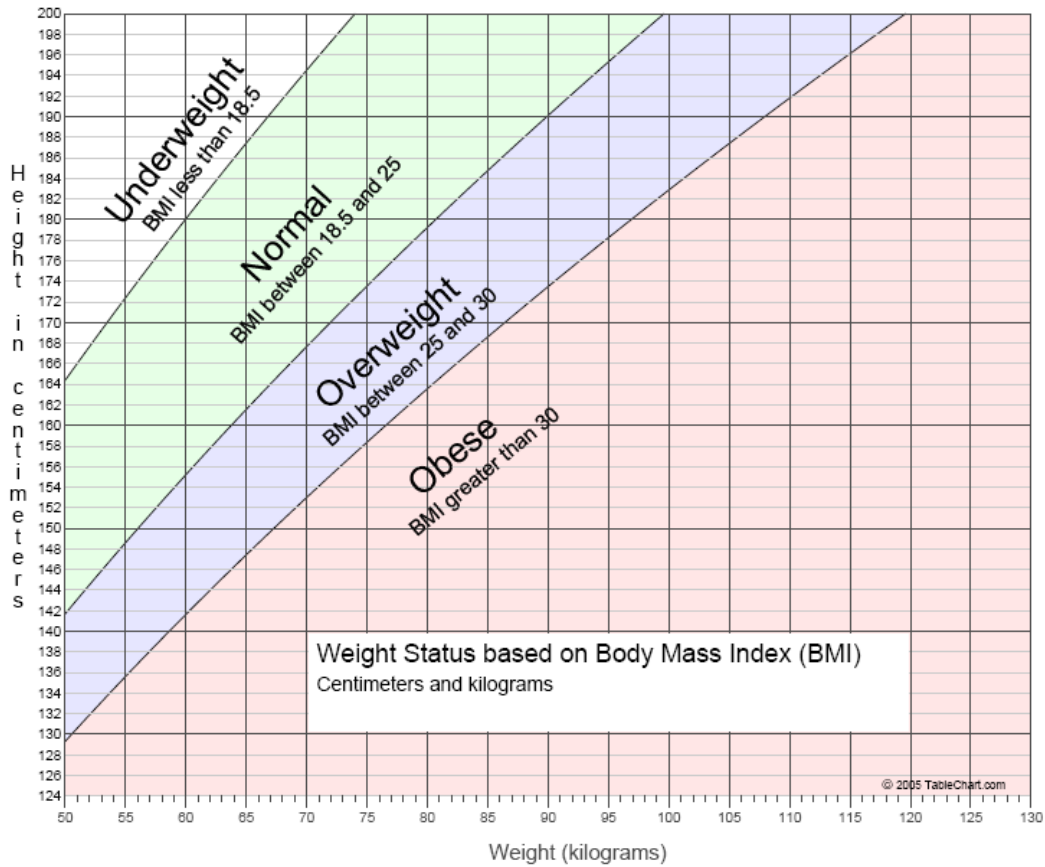
Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
120.	172	61	4.10	11.58	9.10.16	75	33.02	80	20.6
121.	149	36.5	4.50	13.35	1.10.56	45	25.4	89	16.4
122.	131	20.8	4.80	13.10	2.30.21	52	30.48	82	12.1
123.	139	34.8	4.58	13.10	7.08.21	56	31.75	82	18.0
124.	140	25.2	4.50	11.56	1.20.43	86	25.4	90	12.9
125.	142	32.8	4.81	12.32	6.10.55	60	22.86	76	16.3
126.	143	30.2	5.02	13.41	1.08.10	70	21.59	85	14.8
127.	155	37.9	4.00	11.41	2.54.60	56	30.48	94	15.8
128.	143	31.8	4.15	11.48	3.10.24	145	25.4	81	15.6
129.	147	37.8	4.60	11.81	2.10.16	57	22.86	76	17.5
130.	153	40.5	3.90	13.20	8.10.21	130	31.75	84	17.3
131.	152	44	4.15	11.37	3.10.29	94	27.94	88	19
132.	153	41	4.21	12.15	2.32.49	89	17.78	83	17.5
133.	153	44	3.60	10.39	3.14.01	36	30.48	75	18.8
134.	151	35	3.56	10.58	2.17.15	125	24.13	80	15.4
135.	158	64	4.43	11.44	1.10.16	60	31.75	80	25.6
136.	120	19.8	5.02	14.25	21.10	08	29.21	99	13.8
137.	121	19	5.22	15.05	23.09	16	27.94	90	13.0
138.	124	19	6.02	13.40	1.08.06	17	29.21	95	12.4
139.	122	20	6.01	15.24	1.20.24	21	26.67	88	13.4
140.	122	22.8	5.10	14.16	1.30.11	20	21.59	98	15.3
141.	132	25	6.02	14.05	30.45	23	30.48	86	14.3
142.	127	22.8	5.50	12.60	56.47	27	21.59	89	14.1
143.	123	20	5.45	12.86	30.16	20	26.67	98	13.2
144.	126	20.8	5.25	13.42	2.15.20	18	20.32	86	13.1
145.	125	25	5.75	14.90	1.09.18	35	22.86	89	16.0
146.	134	34	5.18	13.60	1.33.15	24	26.67	92	18.9
147.	128	23	5.90	13.10	2.10.16	26	25.4	96	14.0
148.	112	17.5	6.38	17.20	1.23.28	12	22.86	97	14.0
149.	118	23	6.29	17.02	1.02.31	15	20.32	95	16.5

Sr. No.	Height	Weight	Speed	Agility	Balance	Leg Strength	Flexibility	Pulse Rate	BMI
150.	126	19	6.00	13.01	1.05.02	19	29.21	91	12.0
151.	133	29.4	5.25	13.25	58.96	25	31.75	86	16.6
152.	137	45.5	5.90	14.09	1.15.06	19	31.75	82	24.2
153.	127	25	5.02	13.01	2.03.15	31	22.86	80	15.5
154.	132	28.7	5.05	14.05	1.05.19	32	17.78	83	16.5
155.	138	29	4.70	13.55	2.25.10	53	20.32	86	15.2
156.	124	24.1	5.21	13.22	1.30.24	43	16.51	88	15.7
157.	147	32	5.57	14.10	2.10.17	67	16.63	82	14.8
158.	137	28.9	5.55	14.14	47.76	35	12.7	80	15.4
159.	137	31	3.95	11.40	1.57.19	56	20.32	80	16.5
160.	138	31	4.30	14.30	56.44	42	12.7	80	16.3
161.	147	39.9	4.68	14.38	4.08.17	41	15.24	83	18.5
162.	145	34.8	4.47	11.70	3.15.21	62	12.7	81	16.6
163.	151	39.5	4.33	12.31	1.10.33	38	15.24	83	17.3
164.	139	43.2	4.36	13.05	8.10.21	52	15.24	82	22.4
165.	154	43	4.41	11.02	1.21.10	92	30.48	76	18.1
166.	159	55.9	4.15	12.31	3.05.14	57	21.59	86	22.1
167.	164	50	3.56	10.24	8.10.16	100	16.51	77	18.6
168.	165	48.1	4.10	11.33	9.10.21	129	27.94	81	17.7

## Appendix – E

### Body Mass Index Chart

Formula to calculate body mass index is  $\text{Body weight in kgs} / \text{height in (m)}^2$



## Appendix – F

### Suggestions by Expert 1

Dr. Rupa Saini

Retd. Principal Govt. College of Physical Education, Patiala

<b>Research Topic:-</b> Development of physical activity curriculum and its effect of anthropometric biomotor and physiological variables of elementary school students	
Suggestions for the developed Physical Activity curriculum	
Name:-	Dr. RUPA SAINI
Designation:-	Ex. Principal, Govt. Mohindra College Patiala
Department/ College/University:-	Education, (Higher Education) Physical Education College, Punjab Univ., Patiala.
Contact No.:-	9814807976
E-mail:-	
<b>Suggestions:-</b> <u>Phy. act., class-I. (in running &amp; jump):</u> specify the no. in each group & time of activity. To help the instructor it would be more of help if <u>Diagram of each test</u> "how to conduct" is drawn.	
2. <u>Test no. 3:</u> specify how much steps they have to walk short & long, in short or long circle how way it will be? beginning low & finishing high, they have to jump or simply perform? how many times is there any repetition?	
<u>Test no. 5:</u> - how many balloons the teacher will have in one set, only two! we can make it up to four to make it interesting!	
<u>Test no. 7:</u> - go it only once, or any repetition is expected? draw diagram too.	
<u>Test no. 8:</u> - specify the minimum & maximum time of activity.	
<u>Test no. 9:</u> - scarf will be thrown in a fixed area or anywhere?	
<u>Class II</u> 1. - specify the standing position of students & teacher's distance from class while throwing the ring, I think 3 meter distance is too much in starting practically for student of 7 years to catch the ring.	
3. - for swimming - crawling is difficult, they can be hurt, select any other sport or any other ball.	
<u>Focyclist:</u> children can only perform while lying down cycling motion.	
4. specify the distance of Poles or balloons on the wire, height of wire in starting & SD on.	
5. how much time to throw the rings?	
<b>Note:-</b> Extra sheet may be attached for more suggestions/recommendations.	
1. - specify the distance of each pathway.	
<u>Class III:</u> - 1. Every student may not be able to tip the ball, it needs practice more or take only P. Ball Players for the test, or make it only for P. Balls.	
3. go it against time or not ticks?	
5. specify the name of activity!	
Signature _____	

## Appendix – G

### Suggestions by Expert 2

Mr. Mohinder Singh

Retd. District Sports Officer, Mansa

Research Topic:-	Development of physical activity curriculum and its effect on anthropometric biomotor and physiological variables of elementary school students
Suggestions for the developed Physical Activity curriculum	
Name:-	Mohinder Singh
Designation:-	Retd. DIST. SPORTS OFFICER - MANSA
Department/ College/University:-	Punjab Sports Department
Contact No.:-	98143 27641
E-mail:-	singh mohinder 302 @ gmail. com
Suggestions:-	<ol style="list-style-type: none"><li>1. Grammatically errors needs to be corrected</li><li>2. Add few exercises for primary classes and yoga asans for Vth and VIth class.</li><li>3. Describe the effects of all exercise.</li><li>4. Recreational games are part of physical activity add some recreational games in this curriculum.</li></ol> <p>All exercises recommended for various classes and activity plan should be implemented in all the Indian schools.</p>
Note:-	Extra sheet may be attached for more suggestions/recommendations.

  
Signature

## Appendix – H

### Suggestions by Expert 3

Mr. Ramandeep Singh Gill

Principal Govt. Sports School, Ghudda Bathinda

Research Topic:-	Development of physical activity curriculum and its effect on anthropometric biomotor and physiological variables of elementary school students
Suggestions for the developed Physical Activity curriculum	
Name:-	RAMANDEEP SINGH GILL
Designation:-	PRINCIPAL
Department/ College/University:-	Govt SPORTS Sr. Sec. School Ghudda
Contact No.:-	9855782206
E-mail:-	ramandeep.gill3@gmail.com
Suggestions:-	<ol style="list-style-type: none"><li>1. Recreational games to be added for all most all the exercises</li><li>2. Outcomes to be mention in every exercise.</li></ol> <p>Note - Suggested to add as curriculum for CBSE &amp; PSEB to get better results regarding physical fitness of school students.</p>
Note: - Extra sheet may be attached for more suggestions/recommendations.	

  
Signature

## Appendix – I

### Suggestions by Expert 4

Mr. Sukhmander Singh

Wrestling Coach Punjab and Chandigarh Sports Department

Research Topic:-	Development of physical activity curriculum and its effect on anthropometric biomotor and physiological variables of elementary school students
Suggestions for the developed Physical Activity curriculum	
Name:-	Sukhmander Singh.
Designation:-	wrestling coach.
Department/ College/University:-	Punjab Sports Department
Contact No.:-	98731-22122
E-mail:-	Sukhmanderbhagta@yahoo.com
Suggestions:-	<ol style="list-style-type: none"><li>1. Illustrations to be added.</li><li>2. Add speed drills in curriculum.</li><li>3. Recreational games add for relaxations.</li></ol>
Note: - Extra sheet may be attached for more suggestions/recommendations.	

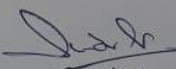
Sukhmander Singh  
Signature

## Appendix – J

### Suggestions by Expert 5

Dr. Sunder Singh

Asst. Prof. of Physical Education Arya College, Ludhiana

<b>Research Topic:-</b> Development of physical activity curriculum and its effect on anthropometric biomotor and physiological variables of elementary school students
Suggestions for the developed Physical Activity curriculum
Name:- SUNDER SINGH
Designation:- ASSISTANT PROFESSOR
Department/ College/University:- ARYA COLLEGE, LUDHIANA
Contact No.:- 94646-87654
E-mail:-
Suggestions:- CLASS-I <sup>A</sup> - A- In one set has MANY balloons to blow. a- Number of papers. c- which key to stand and time. CLASS-II <sup>A</sup> - A- Type of Ring, Timing of Rings, No of times. a- Safety measures of students during Activity. CLASS-III <sup>A</sup> - Time schedule or No of times Name the ball game and 'Specification'. CLASS-IV <sup>A</sup> - Method of Throwing to be specific. No. of skipping. CLASS-V <sup>A</sup> - Types of movement. Number of balloon of a time.
Rest all the variables are test and their implication on the students are seems to be correct.
Note: - Extra sheet may be attached for more suggestions/recommendations.
 Signature



I strongly recommend that after the research work is done and approved by the authority. This must be published and circulated among the P.S.E.B and C.B.S.E. schools with the approval of concerned authorities.

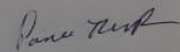
Meanwhile it is to be mentioned that there is a dire need of physical education curriculum at the Middle and Higher schools in Punjab as no curriculum is developed by the boards at present.

All the very best and  
my good wishes to the  
Researcher

Jinder Kumar

**Appendix – K**  
**Suggestions by Expert 6**  
**Mr. Parveen Thakur**  
**Judo Coach, Punjab Sports Department**

<b>Research Topic:-</b> Development of physical activity curriculum and its effect on anthropometric biomotor and physiological variables of elementary school students
Suggestions for the developed Physical Activity curriculum
<b>Name:-</b> PARVEEN THAKUR
<b>Designation:-</b> JUDO COACH
<b>Department/ College/University:-</b> Punjab Sports Department, Posty of Ludhiana Gurus Nanak Stadium Ludhiana
<b>Contact No.:-</b> 9815730111
<b>E-mail:-</b>
<b>Suggestions:-</b> class I (a) No of Ballon to be mentroned and their plantation. (b) scarf. throwing area class II (a) Type of crawling and its specification. (b) Type of activity and motion, (c) Time and specification of ring class III (a) Type of ball, time and specification of picking. class IV (a) Method of passing the basket ball (b) size of basket ball (c) Hops specification and specification of jumps (d) skipping timing to be mentroned clearly class V (a) Distance specification class VI (a) No. of steps and specification. (b) No of ballon in one set.
<b>Note: -</b> Extra sheet may be attached for more suggestions/recommendations.

  
 Signature