CHAPTER-II

REVIEWS OF RELATED LITERATURES

The following section describes several strategies for stress reduction. Although this is not an exhaustive list, it can serve to stimulate ideas that may be appropriate for a given student.

Exercise. Students with PHYSICAL FITNESS can show improved attention to tasks, reduced stereotypic behaviors, and positive responding following exercise bouts. This is a good reason to provide opportunities for exercise every day or several times throughout the day. However, to attain these beneficial effects, exercise must be familiar and sustained: learning a novel skill or trying to participate in a compulsive game or task might have the opposite effect. Walking, jogging, or dancing to music at the beginning of a physical education session can help students with PHYSICAL FITNESS relax and release energy. Taking 15 minute breaks to walk or perform other desired movements during the day can also increase student’s ability to focus during classroom activities. Depending on the learning environment and the size of the class, the teacher may be able to alternate between having them practice a new task. Students can engage in swinging or jumping to calm themselves just before engaging in a more stressful task. In a group instructional setting, teachers may be able to provide a sensory break corner where students can play for a few minutes before returning to the lesson.

Environment. For many people, sensory input from certain lights, sounds, or other stimuli can be bothersome in a learning environment. Because no two people with PHYSICAL FITNESS are alike, understanding each student’s sensory needs and stressors is critical to creating a positive learning environment. Working closely with parents, special education teachers, and occupational therapists can be critical in providing appropriate stress reduction strategies. In order to measure accomplishment in are applied directly to the product in order to measure accomplishment in a hierarchy of objectives that have been agreed upon historically by practically all authorities in the field. These objectives are: (1) Organic development including fitness. (2) Psychomotor development with emphasis on sport skills. (3) Cognitive learning, including knowledge and understandings concerning sport and exercise, and (4) Affective development, including social learning involving sports and participation with emphasis on sportsmanship. Basically a good program of physical education includes skills fitness, knowledge and values to be evaluated.
Measurement Applied to the Process: Second evaluation occurs when special techniques are used to measure the process of physical education directly. The teacher administrator must know the degree to which the program and other aspects of the process met acceptable educational standards. In evaluation of the process, techniques are used to measure the procedures of education and these procedures should be investigated at all educational levels according to the required program, the individual program the intramural program and the interschool program. Process measurement has several approaches, all of which provide the means for an improved service to the product. However, it should be pointed out here that the evaluation of the product is one of the best means of assessing the quality of the process. These approaches should improve the overall process by making instruction and administration more efficient and program more effective and in the final analysis should enhance the growth and development of the student. How Measurements are applied: Measurement can be applied in several ways. In evaluating the product the teacher and coach can do the evaluating or the students may evaluate each other. In some cases the students may evaluate themselves. This student participation in the evaluation procedure is one of the great challenges in the field of teaching. When the process is evaluated, evaluation techniques may be applied by the administrator, by teachers, or by an evaluation team. In some cases, students and parents participate.

Measurement in physical education can be applied for two basis purposes. First it may be used to measure status. However when this same measurement is repeated on the same group I or more times, then progress or achievement may be noted. Generally both status and progress are compared with other values such as norms, standards or criteria. Thus a status measurement repeated at any given time not only reveals how students have progresses, but also how they relate to goals and to other students. In both the product and the process, measurement can show status, changes and significances. In measurement of the product evaluation becomes a temporal matter. For example tests may be given during the ongoing instructional program where they become a part of the procedures of instruction. On the other hand they may be administered at the end of the instructional unit or term where their resulting data can only be used to evaluate the process or to inform the students of their final status or achievement. When tests are Sundering the learning period. They become an integral part of the learning process. Their results are diagnostic and therefore can be used in formative evaluation, whereas tests administered at
the end of a term are useful only for summative evaluation. Formative measures can better serve
the immediate needs of the students because their results are diagnostic and can become
feedback and input into the learning cycle as they provide the means for self-analysis and self-
knowledge. Formative evaluation furnishes students a realistic assessment of their present status
and if given often enough can reveal successive stages of progress. This feedback showing
progress provides the students who having the sense of with the self-knowledge and motivation
required for self-satisfaction and therefore provides more effective reinforcement and
identification of errors leading to correction. Summative measurement at the end of the unit or
period is important for evaluating the final status of the students and the worth of the process, but
it loses much of its value as a feedback mechanism for positive learning on the part of the
students. Since evaluation of the product is perhaps the most viable way to judge the worth of the
process, cumulative results are valuable in process evaluation. If the product is shown to be
satisfactory through cumulative measurement, the need for process measurement directly may
not be necessary.

Selection of appropriate tests is necessary if wise application of results is to be realized.
The little time allotted for measurement activities should be spent wisely. The choices of tests
should be made in light of the objectives sought. If the tester is a researcher a detailed, technical
measurement may be desired. The teacher is just as concerned about the accuracy and honesty of
the results, but needs to find a test that is easy to use and appropriate to the group situation
present in most schools. The theme of this test is centered on helping the teacher get the best
answers with the best tools. The pressure of time probably should not be the deciding factor, but
it must be considered. A test should serve the student directly and indirectly, but it must do so
with efficiency. Some selection has been made in choosing the tests to be included in this book.
Further selections need to be made by the teacher in light of each teaching situation. Judgments
about test selection will continue to be needed as new tests become available.

Reliability is related to the test performance itself. The tester is the same the students are
the same and the test is the same. Assume that the test is administered and then re-administered.
If the students’ scores fall in the same positions the test is reliable. The student who performed
best the first time is still best, the poorest performer is still poorest, and all in between are
approximately in the same order. A test is given to position students on a ladder so to speak. If
their positions are true indications of their skill then the test is said to be valid; if their positions
are dependable and consistent then the test is considered to be reliable. Countless factors influence reliability. The equipment used in the test may not be of sufficient quality to produce consistent results. The instrument recording the measurement may be too gross, such as a 100 pound spring scale to measure flexion of the wrist. The number and length of the trials needed to get a stable measure are important. Usually the best of 3 broad jumps is considered adequate, whereas most accuracy tests require about 20 trials. Actually the longer the test the more reliable it is. The test may be so long, however as to introduce a fatigue factor. Averaging scores usually produce more reliable results than taking only the best score because averaging has a leveling influence on the scores. The directions may be so complicated that the student cannot remember the procedure. The student may be in a different motivational frame from one day to the next. The teacher may present the test in a different way. But if all things are standardized as much as practically possible, the test should prove to be reliable and therefore worthy of confidence.

Reliability is also interpreted by using the statistical technique called a correlation coefficient. The reliability coefficient is obtained by correlating one measure of the test with another measure of the same test and thus is judged by an internal and dependent measure. Consequently, reliability coefficients are generally higher than validity coefficients. Reliability coefficients may be derived either by the interclass method suggested by the product moment correlation or by the intraclass approach employed in analysis of variance. Test-Retest: One method of establishing reliability is to administer the test completely one time and then to give it another time. Usually the second administration is on the next day or two under very similar conditions and certainly before forgetting practicing and learning factors become too influential in the results. This method is time consuming and sacrifices some of the interest factor of the students during the second administration. The scores of the first and second administrations are correlated to determine the coefficient. Split Halves: An alternative time saving method is to administer the test only once and then correlate the total of the even numbered trials with the total of the odd numbered trials. In a 10 trial test, the third, fifth, seventh, and ninth trials totaled provide 1 score and the second, fourth, sixth, eighth, and tenth trials total provide the second score for the correlation problem.

Validity is the most important of the technical standards because it tests the honesty of a test. The teacher wants to have confidence that a test selected to use as measure of the tennis serve, for example is indeed just that and not a test of shoulder girdle strength or of general
motor ability. It must be a measure of a rather specific skill namely, the tennis serve. It would be unfair to use a fitness test as one basis for assigning grades if the test were so complicated that an intelligence factor weighed heavily in the performance score of each student. If a test is presented as a measure of the volleyball volley, then to be valid, it must measure volleying ability and ideally it must measure it to such a degree that other influencing factors such as height and weight are incidental to the final results. A test may be considered valid if it is measuring as accurately as possible what it is described as measuring. Validity is inherent in the purpose of the test. Validity can be ascertained either empirically or statistically. Logical validity usually comes first and is sometimes considered sufficient without the follow-up of either concurrent or construct validity using statistical techniques. Logical validity is a more precise term for what has formerly been referred to as face validity or empirical judgment. The obviousness of what a test is measuring is supplemented by a stated, clear-cut definition of the skill to be measured. Then if the skill test satisfies that definition a logical validity can be inferred. The 50 yard dash is considered to be a measure of running ability if speed in running also means excellence in running. The tester considers the dash and defines it as a measure of running. He she concludes this on the basis of logic, common sense, and judgment; one can see inherently what it is measuring. For example, the basketball wall pass may be measure of shoulder girdle strength, reaction time, ball handling ability, basketball playing ability and height. It is perhaps related to each of these factors to some degree. On the other hand the dash, while influenced by reaction time, weight, and the like, is basically a measure of running ability and there is very little controversy over that definition. It is generally accepted to be such a measure and thus the dash is an example of a test that is said to have logical validity. Logical validity involves no statistical procedure, it is useful at times, and often recommended for use in conjunction with ways of establishing concurrent validity. Concurrent validity measures the degree of relationship between 2 measures taken at approximately the same time. For example, if a group of tennis serve test, the relationship between the 2 performances would be an indication of the concurrent validity of the new test. Did the new test measure about the same thing as the old one at about the same time. There are several ways of ascertaining concurrent validity. Each way involves the comparison of the new test with some external standard, called a criterion which has already been established. These results in 2 sets of scores: 1 for the new test being developed, and 1 for the criterion measure. These sets of scores, I set for each student are
correlated. If the relationship is close, the test is considered valid. If the standard chosen for making the comparison is poor, then the validity reported is often misleading. The standard or criterion used as the comparison factor must be the best possible. Several have been used to establish the validity of various motor tests and each will be discussed. They may be used in combination as well as separately. For example, a new test may be compared with tournament standings as well as with subjective ratings. This multiple use of criterion measures is an attempt by researchers to make doubly sure that the new test is valid.

Subjective Ratings: Subjective Ratings are given by the teacher sometimes to use in grading. When used for establishing validity however, they are given by at least 3 judges and often 5 to 7. Ratings generally involve judgments on the form of a performance. The tennis serve provides an example. The technique of the serve, its execution, force, form accuracy and the like are noted for each student by 3 distinguishing points between a performance worth 5 points and one worth only 2 points, for instance. As a second step, these same students are given a service placement test. Then the composite or average of the 3 judges ratings is compared with the objective service placement test score for each student. Two assessments are available for each student. They are correlated and the resultant coefficient is used as the basis for interpreting the validity of the service placement test. If the scores on the test rank the students in approximately the same order that the judges evaluate them, the coefficient is relatively high and the service test said to be valid on the basis of the criterion of judges ratings. The opinion of experts is often a more accurate measure than a poor test. No apologies need be made for the use of subjective ratings. Care should be taken, however, that the skill is well-defined, that the rating scale is refined, and the raters are competent. Ratings can be poor criteria, but if carefully done they may be relied upon to yield dependable results.

Many of the motor tests reported in the professional literature have been validated on the basis of subjective ratings. Many others have been validated on the basis of other objective measures. The teacher needs to realize that the objective test used as a criterion was probably itself validated by subjective ratings were poorly executed and this emphasizes the need for constant revaluation of the objective test that are available in the measurement literature. There is one other controversial point about the use of subjective ratings: they make a judgment on the process of the skill when the product or result of the skill is what counts in the game. Some would argue that good performance is high related to good form. Others would argue that it does not
matter how the performer looks when executing the skill as long as the results are effective. This might imply that the proper use of subjective ratings would be reserved for establishing test for gymnastics routines or diving. Where a highly objective score is not available. It is not possible to settle the argument here, but only to alert the user of tests about this reservation regarding subjective ratings as a criterion for establishing concurrent validity.

A composite score is achieved by administering a gamut of tests, each supposedly related to the measurement area in question. The scores are put into some type of comparable form, such as T-Scores, and are added to get 1 total or composite score. Other tests or perhaps even some that were in the composite listing are then correlated with the composite score, each in turn, and in various combinations. The composite score is then used to help select the battery of tests that comes closest to measuring whatever all the individual tests collectively were attempting to measure. The composite score uses the “buck shot” theory which implies that if enough related tests are given, some of them will be measures of the skill in question. This particular standard for establishing validity is somewhat in question for this reason. It may encompass too broad a base of skills to identify anything but very general kinds of ability. If, on the other hand, the test items are carefully selected, the composite score theory has merit.

Review suggests a method and a Control. When students have control over their environment, they typically feel safe; for example, at home they know what to expect, know who is there, and can control things such as whether the TV is on. However, a noisy gym crowded with other people is a much more unpredictable environment. Students don’t know who will come up and talk to them or what others might do or say, and they typically cannot control the timing, noise level, or sequence of events. Before completing a plan for a research undertaking, a person needs to conduct a literature search in the area of the proposed investigation. In fact, the student should become a scholar in that area.

Keeping the previous references as guidelines, efforts were made to find out the researchers completed related to the present study by giving visit to the libraries of the following colleges and institutions:

1. S.G.B. Amravati University Amravati.
2. Degree College of Physical Education, Amravati.

It was found that some studies in the area of development of norms were undertaken in some of the universities, but they were related to the development of norms of other tests. The scholar found no study which was directly related to the present study. Some of the studies which are related to the present study are discussed here in brief.

Campbell(2004), designed the Scarborough fitness kit to allow grade nine and ten students to evaluate their level of fitness in seven major areas (agility, flexibility, vital capacity, strength, percentage of body fat and cardio-vascular efficiency) and to provide information that will allow physical education teacher to prescribe a personal fitness programme. Data had been collected from the first year and Scarborough norms for each test have been established.

Zuti et al. (2004), conducted a research on physical fitness norms for college freshmen. The 3000 freshmen of Kansas state University within the age from 16.6 years to 9.6 years. AAHPER youth fitness test was selected as the instrument by which physical fitness performance was evaluated and statistically analyzed and t test was used. It was came to for that there was no importance difference between the groups of weight, height, age and socio-economic level. The black students exceeded the white students significantly on the shuttle run, 50 yard dash, 600 yard run/walk and composite fitness score. The test was conducted for strength test, flexibility, body composition and cardio-vascular fitness. The result appears to indicate that the college freshmen at Kansas state university were about average and that the standards were appropriate for use for Americans.

Veeraswami (2004), conducted a study to evolve physical fitness norms for higher secondary schools of greater Gwalior. 212 male students from four higher secondary schools and 793 male students from remaining 23 schools were selected and AAHPER youth fitness test(i.e. Sit-Ups, Pull-Ups, Standing Broad Jump, Shuttle Run, and 600 Yard Run/Walk was selected in this study, 50 Yard Dash) and ICHPER Physical fitness test were administered on them respectively. The percentile norms for each test items were evolved for the boys of age group 13 to 17 years. It was also concluded that in all items except pull-ups of the AAHPERD youth fitness test, the mean scores of Indian boys in all age groups were lower than the 50th percentile of American Norms. It was such a kind of relationship which consisted on positive but low order
between the physical fitness and participation in physical activities. There was a positive
correlation though low between physical fitness and academic achievement.

Sittmann (2004), developed norms for 372 male and 648 female students enrolled in the
health and physical fitness concept classes of North East Missouri State university. The subjects
were tested for the sum of six skin folds, predicted 1% fat, predicted VO2 max. grip strength, leg
strength, back strength, vertical jump distance and vertical jump power. Means standard
deviations and range for all variables were calculated. Percentiles in increments of five were
constructed for each variable in each classification related fitness test were given to 2,545 six to
fourteen years old boys and girls percentile tables were constructed for each item based on age
and sex. Alabama and national means were compared. Alabama students scored better on event
measuring agility speed and cardiovascular endurance but the national score in abdominal
muscular endurance and flexibility was better.

Vijayakumar (2005), conducted a survey of health related fitness and cultural aspects of
school children of Kerala. For the purpose of this study he has selected 1000 school boys of age
ranging from 14 to 17 years from the schools of five districts of Kerala both urban and rural. 1.
Urban group consists of 642 Boys, 2. Rural group 358 boys. Health related physical fitness were
administered and the social and cultural aspects of their parents. A questionnaire was also
administered to each student. To get out the importance variety in the groups where there were
applied ‘t’ test and ‘F’ test. From the consequences of the research produced that there was no
any statistical significance between rural and urban school boys in health related fitness.

Sirijaruwong et al. (2005), conducted a study to construct health related physical fitness
norms for students of Rajamangala University of Technology Thanyaburi. The population used
in this research was 410 male and 460 female students who were studying in the first semester of
academic year 2006 at Rajamangala University of Technology Thanyaburi. AAHPERD Health-
Related Physical fitness Test was used and conducted the following tests. Sit and Reach, One
minute sit-up, 1.5 mile Run/Walk, and body mass index. The data were analyzed by mean,
standard deviation, percentile norms was constructed based on percentile scores, and the
qualitative grading was used and prepared into five levels, namely excellent, good, moderate,
low and poor. It was found that the health-related physical fitness norms for male and female
students of Rajamangala University of Technology Thanyaburi by using physical fitness tests:
body mass index, sit and reach, one minute sit-up and 1.5 mile run/walk were at moderate level. The researcher constructed health-related physical fitness norms for students of Rajamangala University of Technology Thanyaburi according to the objectives.

**Bitcon (2005),** constructed norms tables for grades 9-12 by taking AAHPER youth fitness test was selected as the instrument by which physical fitness performance was evaluated and statistically analyzed and t test was used. It got to know that there was not any important distinguish between the socio-economic level, height, weight and groups of age. The black students exceeded the white students significantly on the shuttle run, 50 yard dash, 600 yard run/walk and composite fitness score. Pull-ups, two minute sit-ups, standing broad jump and 300 yards shuttle run and showed their validity against the AAHPER youth fitness test validity and reliability coefficients were 0.934 and 0.961 respectively. Characteristics and Comparisons of Various Normative Scales. A word of caution should be stated about norms. They should not be accepted at face value. Norms are representative of some larger population. They should be based on a particular type of group that is well identified. For example, percentile norms on the Basketball Wall Pass for High School Girls, or T- Scores on the AAHPERD Fitness Test for 11 year old boys level the norms. Age and sex are usually the 2 essential classifications. Other factors might be geographic location race and skill level. Norms should be based on large numbers of cases. Sufficient cases alone do not make good norms but coupled with proper sampling, they provide a symmetric distributions.

If the performance of a group is not similar in range and average to the normative group then the norms are not appropriate and should not be used for interpretative purposes. It is far better for the teacher to construct norms based on the scores of his/her own students.

**Churdar (2005),**organized a research study to considerate the fitness status of Navy personnel, a modified four item Physical fitness test for men was developed. The items contained in the test battery were pushups or pull-ups, five minute sit-up, vertical jump or standing broad jump and 300 yards shuttle run. The T-score norms were developed for Navy personnel and the norms for University and high school students were also available. According to the latest statistics of the World Health Organization an estimated number of approximately 2 million people are dying every year just because of not doing enough exercise. The world population to Shum the inactive sedentary life style, as it can be very well almost in all impending causes of
death in the universe. Inactivity doubles the mortality risk of cardiovascular diseases, diabetes obesity and at the same time enhances the risk of high blood pressure, colon cancer osteoporosis lipid disorder anxiety and depression. The other negative aspect of modern lifestyle is the ever increasing stress, tension and anxiety. With the per capita income showing an upward swing ironically the national health graph is dropping gradually. Immediate Thus, the more teachers can give students a sense of control, the more secure they will feel. Schedules, pic tires, routines, preaching skills, and providing choices can all help to create a more comfortable environment. Choices can be as simple as the type of equipment, size of equipment, number of partners, area to play in, or length of time an activity.

Berger et al. (2005), conducted a study to compare the physical fitness scores of white and black students taken for the study were 30 white and 30 black students of equal socioeconomic level. Data was also collected for age, height, weight and socio-economic level. AAHPER youth fitness test was selected as the instrument by which physical fitness performance was evaluated and statistically analyzed and t test was used. It got to know that there was no importancedistinguish between the groups of age, height, weight and socio-economic level. The black students exceeded the white students significantly on the shuttle run, 50 yard dash, 600 yard run/walk and composite fitness score. It was concluded that black male students of similar socio-economic level to white students in the seventh grade have a higher level of physical fitness. To interpret a student’s score by comparing it with scores of other students, nor referenced tests are used. They are used and characterized in various ways.(1) They reflect individual differences in the amount learned. (2) They are used when the amount of content learned varies, but the amount of time allotted for learning is set. (3) They are useful for testing complex material and a broad coverage of content.(4) They tend to encourage open, divergent thinking.(5) They reveal maximum achievement in a content area.(6) They reflect the proportion of students who learned less than each other student.(7) They require a range of scores in order to make the proper statistical applications and interpretations.(8) They are often used for summative evaluation at the completion of a unit of instruction.(9) They produce a scale of scores anchored in the middle of the distribution. Interpretations are made in relation to achievement above and below the average.(10) They are useful when fixed quotas have been set and decisions have to be made about who is to be admitted to the next level, for example, or to the team.
Boespflug (2005), organized a research study to consider the fitness social acceptability, social adjustment, intelligence and academic achievement. In this research where there is the physical fitness of 50 track utilized subjects were measured by AAHPER youth fitness test, social acceptability was assessed by the Herman Nelson test of mental ability and academic achievement was represented by grade point average. Those subjects who obtained high physical fitness score appeared more socially adjusted and also had better academic achievement than those subjects with low physical fitness score. Numerous research studies have demonstrated that to achieve peak physical performance the individual should warm up. Warm-ups have been found to increase speed, strength, muscular endurance and power. The research indicates that vigorous, long warm ups are better than less moderate ones. Related warm ups are preferable to unrelated ones because of the practice effect that also results. Attitudes toward warm up are also related to efficiency in performance. An individual with a positive attitude toward warm up appears to benefit more from such an experience than one who has a negative attitude. It has been determined that combinations of intensity and duration contribute to the desired effect of a warm up. Insufficient warm up does not achieve the high level of muscle strength and temperature desired, and excessive warm up can lead to fatigue and thus decrease the performance level.

Warm ups have been sought to be significant to stop muscle soreness and injury. It appears that muscle injury can result when vigorous exercises are not preceded by a related warm up. An effective quick warm up Also, because too many choices can create chaos and discomfort. Finding the right balance is important. Often, a choice between two things can help to reduce stress. Relaxation. There are many types of relaxation techniques. Exercise was previously mentioned and can be an excellent way to reduce cortisol levels and improve relaxation and focus.

Darthy (2005), evolved norms of Physical fitness for college women from 57 college and the data of 3300 subjects were collected for seven test items. To keep school levels in fact and to utilize the AAHPERD test when applicable the modified tests were recommended for the elementary school and the AAHPERD tests for the secondary school. The modified test battery compose standing long jump, bent knee sit-ups, desk push-ups, are optional secondary school boys and girls at each age from five to eighteen years In order to be consistent with the percentile norms were calculated from 0-100 at an interval of 05. Study was concluded that other physical
activities such as yoga and aerobics can also reduce stress. Yoga can be incorporated into the physical education routine or set up in a corner in the gym. Poses can be posted on the wall, and students can choose to go to the yoga corner when they need a break from the other activities. Another relaxation strategy is a sensory break corner with calming items or sensory toys which is related to the tasks the child must perform the potential for physical effort, and the relationship of physical fitness to the total self. The same extant fitness is not requisite to everybody which seems. It should be sufficient to meet the requirements of the job plus a little extra as a reserve for emergencies. The student who plays football needs a type of physical fitness different from the student who plays in the school orchestra. The question fitness for what must always be asked.

Furthermore, determining the physical fitness of a person must be done in relation to that person’s own human resources and not those of others. It depends on one’s potentialities in the light of individual physical makeup. Finally physical fitness cannot be considered by itself but, instead, as it is affected by mental, emotional and social factors. A human being functions as a whole and not as segmented parts.

Randy (2005), conducted a study on Physical activity among U.S. youth landed to having and making friends: Results from the health behavior in school-age children study. Stress is a part of everyday life and can have a positive or negative influence on behavior. Finding the balance of “just right” stress for people with physical fitness can be challenging because of the variations in neurological development and sports within a nationally representative sample (n=15,686) of school-age children (grades six through ten). Level of involvement in both physical activity and also in sports was found to be significantly related to ease or difficulty in making new friends and number of close friends. The lowest involvement in vigorous physical activity and also in sports participation was found to be among children who found to make new acquaintancewith friends was kind of difficult at the same time there was extreme involvement in those who are been reported that make new friends easily. This trend was also true for the number of close friends, with the lowest involvement among those reporting that they had no close friends and the highest involvement among those reporting that they had no close friends and the highest activity and in sports was lower in girls Learning what forms of sensory information increase or decrease stress for a student can be one of the secrets to setting up a
positive and supportive learning environment and the difference between successful engagement in an activity and a behavioral meltdown.

Simple selection and data collection: The subjects for this study were school-age children who participated in the health conduct of a study. The U.S. participation is the significant associations found for the school ratings of scholastic ability with the two measures of physical activity, together with those with a number of measures of physical fitness and capacity, are consistent with the hypothesis that physical activity enhances academic performance. Both parental and student consent were solicited. Subjects included a growing literature documents multiple physical and mental health benefits of physical activity in young people and adults. It is also hypothesized that physical activity improves social and moral development of children, as well as academic performance. The relation of physical activity and fitness to academic performance is of special concern because school physical education programs can be questioned regarding their contribution to the primary academic mission of schools. Although physical education programs can be justified on the basis of their health benefits alone, it is important to understand any effects on academic achievement. It has been hypothesized that physical activity at school could enhance academic performance by increasing cerebral blood flow, enhancing arousal level, changing hormone secretion, and improving self-esteem, but none of these mechanisms has been adequately documented. Of the 17,000 students who responded, 835 of those cases were getting absent on a large number significant number of key variables were excluded from further analysis yielding a sample of 15,686 students in the U.S. in grades six through 10. A detailed description of sampling and data collection methodology and design is available.

The survey items were consisted on both measurements and theoretical hypotheses related to the social context of adolescents that had been validated in other studies or previous surveys. The major variables of concern in other current study consisted of items concerned with friends and physical activity. The major independent variables for this study were (1) ease or difficulty in making new friends (2) number of close friends. The item used to measure simple or hard in making friends was is it easy or difficult for you to make new friends. The close friend was measured by the question. Dependent variables included (1) vigorous physical activity and (2) sports participation. Vigorous physical activity was determined by summing the responses of the following two items: (1) how often do you usually exercise in your free time so much that
you get out of breath or sweat and (2) how many hours a week do you usually exercise in your free time so much that you get of breath or sweat? Scores on this index could range from activity to 11. Sports participation was determined by summing the responses to the following two items: (1) how often do you typically play or practice an organized or supervised sport such as hockey, football, basketball, volleyball, cheerleading, soccer or swim team and (2) how often do you typically play unorganized sports such as rollerblading tennis, recreational swimming, swimming bicycling or pickup games like football and basketball? Scores on this index could range from 0 to 8.

To describe the relevant variables in this study Descriptive statistics were used. Analysis of covariance was used to test whether levels on the two independent variables ease or difficulty in making new friends and number of close friends differed with respect to vigorous physical activity and sports participation. The following variables were used as covariates and statistically controlled for ANCOVA tests: grade age father’s highest level of education, mother’s highest level of education, primary language spoken at home and race ethnicity. To determine how levels on the independent variables differed from each other Least squares means were calculated. These tests were calculated separately for each gender using appropriate statistical software.

Approximately one half of school age children reported that making new friends was easy and another one third reported that making new friends was very easy. However, 12.7% of boys and 12.0% of girls responded that making new friends was difficult and 4.3% of boys and 3.2% of girls responded that making new friends was very difficult. Having close friends was true for an high proportion of school age children. More than three quarters of school age children reported having three or more close friends (77.5% of boys, 75.6% of girls) and another one fifth reported having one or two close friends. Only 4.2% of boys and 2.4% of girls reported having no close friends.

All correlations were low, but large correlations should not be expected between these variables. Physical activity and fitness would, at best, make a modest contribution to academic performance. Measures of cardiorespiratory endurance, muscular force and power, and physical activity were all related to scholastic ability. Thus, it cannot be concluded that only one component of fitness is related to academic performance. The conclusion that fitness and activity age related to academic performance is enhanced by the consistency with which each measure of
the fitness components or physical activity were correlated with the school assessments of scholastic ability. The multiple measures can be considered as within-study replications of findings. The major exception was PWC. Which is a measure of cardiorespiratory endurance that was not associated with the scholastic ratings.

Although there were some variations in correlations for boys and girls, and at different ages, the variations were less impressive than the similarity of findings across age and sex groups, the pattern of correlations was generally similar for boys and girls.

**Arnett(2006),** conducted a study to develop three item battery (JCR test) component of the vertical jump, chinning and 100 yard shuttle run intended to calculated the capacity of the individual to perform fundamental motor skills. Such as jumping chinning power, speed, agility and endurance. Reliability coefficient ranging from 0.90 was reported for the test. Sigma scale scoring tables for college age men were available. Short motor fitness test source of energy for high school girls which could be economically administered in terms of equipment and class time. The components which might contribute to motor fitness were listed and appropriate items pertaining to the components were selected for their content validity and suitability utilizing appropriate statistical techniques. The modified pull-ups, 600 yard run and standing jump were selected as the items for the batteries. The Purdue motor fitness test batteries recommended over the other three batteries since this battery had a validity coefficient of at test 0.755 and an estimated reliability coefficient of 0.848.

**Mathews(2006),** developed a group of tests and award to help teachers in grades four to twelve (ages eight to eighteen) diagnose the physical weakness of students, identify students with acceptable levels of fitness and motivate all students to achieve excellence in physical fitness as they strive for self-improvement. The programme consists of two test batteries. One designed to evaluate physical fitness (Chin-ups, dips or 90 second conformed arm hang for endurance of the arms and the muscular strength and shoulder girdles, two minute bent leg sit-ups for muscular strength and endurance of abdominal region, twelve minute run/walk or 1.5 mile run for grader seven to twelve and nine minute run/walk or one mile run for grades four to six to measure cardio-respiratory endurance), and another to evaluate motor ability (50 yard dash for speed, 15 second shuttle run for agility, vertical jump or standing broad jump for power).
Sparks(2006), stated that the Vermont governor’s council on Physical fitness had provided a motor fitness test for students from kindergarten to grade twelve for use by schools in the state. To keep school levels in fact and to utilize the AAHPERD test when applicable the modified tests were recommended for the elementary school and the AAHPERD tests for the secondary school. The modified test battery compose standing long jump, bent knee sit-ups, desk push-ups, are optional secondary school boys and girls at each age from five to eighteen years they take the form of performance required for four award levels, known as certificate, 30th percentile, standard, 50th percentile, merit, 80th percentile, governor, 85th percentile.

The underlying assumption of the existence of a trail called motor ability has never been substantiated through a rigorously developed network of scientific evidence. It is evident that the items included in motor ability test can be improved with practice; thus these items cannot measure innate motor ability. Barrow and Mchiese observe that “even though motor ability improves with training, experience and maturity, individual differences in students lend to remain the same throughout the school years.

Sultana (2006), conducted a study on Health and Fitness of college students, in this study one hundred and fifty sports the students whose criteria of age 16 to 20 years of four different colleges of Beed district were selected. For anthropometric data collection the total samples were divided into three groups. Group A consists of fifty samples were supplemented functional food mix I which contained rice flacks, banana and jiggery whereas group B fifty samples were supplemented functional food mix II contained same ingredients as mix I and also raging flour. But group C fifty samples were not supplemented any mix before and after supplementation for ninety days, weight BMI was measured, with the help of biochemical estimation HB level was measured.

It is been disclosed by the study that an increases in body weight by 0.2 to 0.5 kg and 0.3 to 0.6 kg in group A and B and 1.98gm/d/ and 1.68/d/ respectively in the HB level of experimental group A and B was found statistically significant but it could not be changed in group C. The runtime heart rate and blood pressure of the samples were measured before and after supplementation. It was observed that 77% samples of group A and 80% of samples group B were improved in their average runtime and 60% of group A and 63% of group B samples were decreased in heart rate after experimental period. But there was no change in runtime and
heart rate of control group C. Thus it can be proved that supplementation of functional food before the sport training improved physical performance of the sport students. Further more functional food supplementation there was a positive influence on the students’ performance on sport in terms of endurance, speed and Hemoglobin status, increase in body weight was negligible.

Cureton (2006), develop motor fitness criteria recognized six components, as follows endurance, power, strength, agility, flexibility and balance, fourteen items and eighteen items test were developed validating against a thirty items criterion. Subsequently, a seven items motor fitness test was proposed for use when greater administrative simplicity in desired. The item in this battery were, dive and roll, medicine ball put, bar vault, chinning leg lifts and sit-ups breath holding and man lift. Scoring is simplified by using the pass or fail plan. This procedure screens out the subjects poor in ability and does not require a severe effort on the part of the majority of subjects. To discover what the term physical fitness means to elementary, high school and college students, we surveyed 10,000 children and young people throughout the United States. The answers given were then analyzed to determine the most common concepts held by students in regard to their understanding of the term physical fitness.

The implications of the results of this survey include the following:

(1) As an objective of physical education, students do not clearly understand the meaning of physical fitness and its place in educational programs. (2) The meaning of the term physical fitness should be communicated to student’s at all educational levels and to the public in general. (3) Physical educators should assume the responsibility for communicating key concepts to students in regard to physical fitness. This responsibility should be part of the subject matter and the theory underlying their field of endeavor. (4) Communication should be better between professional leaders in physical education and those practitioners functioning in schools, colleges and various agencies at the grass roots level. (5) Physical education cannot be limited to activity alone. Basic concepts underlying the field of physical education should be learned and understood by all persons concerned.

Elder (2006), developed a motor fitness test designed to evaluate the following eighth basic complainants: strength, endurance, power, agility, flexibility, speed balance body size and age. The composite score on fourteen motor fitness items served as the criterion for the selection
of tests to compose the final battery. The tests items selected were: floor push-ups, standing broad jump, trunk flexion forward, cozens dodge run and 20 second squat thrust. Six sigma scale norms were developed for six divisions of the California classification system. Which was based on the boys age, height and weight. The test items and the minimum standards for the physical education programme were pull ups push-ups sit ups fence vault standing broad jump and vertical jump. The Harvard step test was initially included in battery as an endurance measure but was discontinued because of the testing time involved with large numbers. Statistical analysis of scientific authenticity and norms were not available. And this study was compared with the Ikeda(2006) computed the . There was not good evidence that any fitness measure was correlated with academic performance at one age but not another. For example, the standing long jump was not significantly correlated with academic performance among girls, but absence of association at these ages was not confirmed among boys, correlations did not apparently increase or decrease across age for any measure. The only age related trend in correlations was seen with weekly exercise, for which the correlations for boys and girls.

Potheux et al. (2006), established the difference between AAHPER Youth physical fitness and socio-economic status scores. They conducted necessary tests on 329 girls and 304 boys of age 10, 11 and 12 years. Significant relationship was found. However, they did not favor anyone status group in all the components of fitness. It was found that lower status girls were faster, better co-ordinate and had more endurance. The upper status girls were stronger in arm and shoulder girdle strength, abdominal and hip flexor muscles, and muscular explosiveness. The lower status boys scored better in combined agility speed and strength and of abdominal and hip flexor muscle.

Rahmani (2006), conducted Thus, the general conclusion is that physical activity and fitness are weakly correlated with academic performance among girls and boys.

These data were collected on a representative sample of the school aged population, and the response rates were good. It is therefore unlikely that the associations were due to a selection bias. In previous studies where similar findings have been obtained, the issue of selection bias cannot be as readily dismissed because the samples were not population based.

A causal connection between physical activity and academic performance is plausible. Regular physical activity may reduce plasma noradrenaline. It may also increase the transfer fo
the serotonin precursor tryptophan across the blood brain barrier, having a calming effect in children and enabling them to sit and concentrate on academic pursuits. The shape study demonstrated that the classroom behavior of 10-years-olds was improved in association with a program of daily physical activity. Research has also shown that blood flow to the cortex of the brain is increased following bouts of exercise. In a recent review, McAuley concluded that a positive relationship exists between physical activity and self-esteem in children. Enhanced self-esteem may result in better classroom behavior and a greater desire to learn. Nearly all of the studies reviewed by Keays reported significant improvements in the attitudes, discipline, behavior, and creativity of school students following the implementation of physical activity programs.

The assessments of scholastic ability were made by trained teachers qualified to make them and using the same scale of ratings, and we presume that the ratings were based on the students’ academic records and grade reports. There was no national competency testing in place in India at this time to standardize the measurements, but the internal consistency of the data was reassuring. The correlation coefficients for the school assessments with the students’ own perceptions of their scholastic ability were of the order of 0.5, and associations with each of the physical activity/fitness variables were present for the student’s own assessment of academic performance used in place of the principal’s assessment. This allows some confidence that the school assessment were valid. They had not participating any type of regular exercise for the six months prior to the study. Subjects were divided with randomized sampling to two equal experimental and control groups. Five supervised exercise sessions were help weekly (6 weeks) and included a warm up, 20 minutes of running at 60 to 80% of MHR, and a cool down period of walking. The Exerciser were asked to refrain from other exercise during the study. The controls were asked to exclude any physical training in period of the study. We allowed our subjects to eat ad labium, but they were suggested not to change their diet. They all used the canteen foods o the university. Assessment was carried out before training and 6 weeks later at the conclusion of training. Height and weight measurements were taken, followed by triceps, suprailiac and thigh skin fold measurements. Estimated body fat calculations were completed with the method described by Sharkey using each participant’s gender age and skin fold sum. All measurements were made on the right side of the body. Skin fold were measured using the Lang caliper.
Aerobic power was assessed by the 2- km walk test using gender specific equation including age body mass index, performance time and heart rate.

The result are expressed as mean, standard deviation. The independent t- test was used to assess if a particular group had shown any significant differences in the variables. Pearson correlation coefficient was used to examine the relationship between FP and the aerobic power. Characteristics of the subjects within each study group at baseline. There were no significant differences between any variables between groups at baseline. The weight of exercisers decreased mean 1.2 kg, but mean weight of controls increased 0.25 kg. The change in the weight was not significant. The FW in experimental group decreased mean 2.3 kg on test 2, but this change compared with the controls was not significant. The FFW exercisers increased mean 1.5 kg on test 2, although it was not significant. The FP on eight women of the exercisers decreased 1.5 to 7.5% although two of them had little increase. Body fat percent in control group increased mean 0.15%. The decrease of FP in experimental group was significant. And also aerobic power index increased in exercisers 11.3 and was significant. Correlation coefficient between aerobic power and FP on the all subjects was 0.68 and was significant. Therefore we can state there was a significant and reverse relationship between aerobic power and FP.

Results of study suggest an overall improvement in body composition and aerobic power. The subjects of experimental group showed an improvement in FP and aerobic power index but not for weight, FFW and FW. Also aerobic power was inversely related to FP. Significant difference in the mean of aerobic power index is in agreement with prior reports indicating that vo2 max can increase with a similar exercise prescription and initial valued indicating that Vo2 max can increase with a similar exercise prescription and initial valued. Some previous studies pointed out that changing the maximal oxygen uptake is unlikely to short time period programs. Researchers found that the low intensity exercise can increase the average Vo2 max relative to body mass significantly, but Vo2 max/ LBM was negative correlated to the initial levels. Although our training program intensity was low to moderate but the initial aerobic power of our subjects were very low and this is the most important factor to improve aerobic power.

The weight of exercisers may not have significantly decreased due to increase FFW that can contribute to weight maintenance or weight gain. A decrease in FP may have been expected
in this study as energy expenditure increased during the 6 week training period. In interpretation of differences observed between our findings and others many important factors affecting body composition and aerobic power must be considered. Nutrition is a very important factor that was affected by psychological and social factors. Secondary school students displayed only slightly positive attitudes toward fitness testing. With a large sample the range of scores and relatively large standard deviations suggest that these mostly neutral overall attitudes are likely composed of students with both highly positive and highly negative attitudes. Although study results were promising it should be noted that there were several limitations in this study. Dietary factors which are likely to affect body composition were not controlled in this study. Furthermore our volunteer subjects were not randomly selected and results may, therefore not apply to the general population. It must point out that various factors could act simultaneously or in mutual opposition to determine the individual body composition. In conclusion the present results indicate that whether the FP and aerobic power of sedentary young college age females can be modified by the exercise regimen eliciting 60 to 80% of MHR depends on their initial levels. Also we found significant and reverse relationship between aerobic power and FP.

Blesh et al., (2007), devised a test was devised at Yale University appraise the motor fitness of freshmen students. The six item test was selected on a two-fold basis capable of being administered accurately with little equipment and significant in indicating the overall strength of different body parts. The test items and the minimum standards for the physical education programme were pull ups, pushups, sit ups fence vault standing broad jump and vertical jump. The Harvard step test was initially included in battery as an endurance measure but was discontinued because of the testing time involved with large numbers. Statistical analysis of scientific authenticity and norms were not available. Blesh and scholz compared this study to Australian council of health physical education and recreation survey, the result were used to establish sex and age norms for a cross section of the school based population. Information gathered was intended to aid future planning and evaluation of school physical education programmes. The physical performance test would provide the basis for a fitness award scheme to be introduced for school children.

Cozens (2007), divided a test of common motor capacity for college men through a thorough study utilizing the fundamental elements underlying the skill approach to the
measurement of motor ability. After more than 40 tests were analyzed and classified under the seven basic elements one test was selected for each component. The test thus selected were baseball throw for distance, football punt of distance, bar snap, standing broad jump, dips, dodging run and quarter mile run. The raw score for an event provide the data to enter the proper achievement table and find the sigma scale score. The weighed sigma score for each event was readily derived from a conversion chart.

Latchaw (2007), developed ingenious and interrelated tests purporting to calculate general motor capacity, singly and together for both boys and girls. The general motor ability test for boys consisted of pull up sprint varying from 50 to 100 yard broad jump, running high jump and weight throwing for girl’s push-up sprint broad jump and weight throw. In both sexes, events were scored on Latchaw scoring tables, the sum of which was combined by special formula. In the development of the general motor ability tests, results on individual test elements were correlated with the total score on a large battery of achievement tests.

Hatler (2007), study physical fitness test scores obtained on 128 students at San Diego Military academy, were compared with national state and local norms by use of chi-square with compared with significance determined at the five percent level of confidence of thirty six age test comparisons favored the academy over national norms one did not in five the academy performance was less than state norms and one exceeded state norms. In five of fifteen possible comparisons, the academy performance was less than San Diego city school norms. A physical education programme to complement the military programme of the San Diego Military academy was recommended.

Mistikawi (2007), in his study prepared the national norms for the one minute basketball throw for goal, pull-ups, potato race standing hop-step and jump, push-ups, standing broad jump and softball target throw items of the YMCA national athletic achievement programme. YMCA throughout the United States tested 2000 boys in each group, and the author obtained five percent of the scores at the Salem YMCA Oregon.

Russmassen (2007), had conducted the survey in the state of South Dakota to ascertain the current levels of fitness, health and physical performance of school children between the ages of seven and fifteen years. The result were used to establish sex and age norms for a cross-section of the school based population. Information gathered was intended to aid future planning
and evaluation of school physical education programmes. The physical performance tests would provide the basis for a fitness award scheme to be introduced for school children.

Das (2007), conducted a study of Norms in physical fitness tests for boys of class 9-11 of government school of Delhi with the purpose of computing a norm for evaluating performance in physical fitness as required in the curriculum for the required programme of physical education. AAHPERD youth fitness test and N.P.F.D. battery A were administered and norms were worked out. A comparison of obtained data with American students shows that Indian students seem to be poor in abdominal strength and shoulder girdle strength.

Khan (2008), conducted a study on “Development of Physical fitness Norms for the Ashram Shala Boys of Yavatmal District. Required data for present study were collected by conducting the AAHPERD Youth Fitness Test on 14 and 15 age groups of male subjects of Ashram shala from selective Tahsils of Yavamal district. Among the selected Tahsils One Ashram shala taken on the basis of random sampling total ten ashram shala taken on the basis of randomly. From each age group 333 boys were selected randomly. The total numbers of subjects were 666(Six hundred sixty six.).

The percentile where calculated for each item under two age groups. The percentile with the help of a IBM-PC and the further statistical analysis where make to prepared the percentile norms. On the basis of the performance of 333 boys they are classified into four performance percentile scores in the form of percentage. They are categories into four 25%, 25 to 50%, 50 to 75% and 75 to 100%. Percentile score. In the finding of the result, In the Pull-ups it is cleared that under the age group of 14 years totally 104 boys of the ample have secured minimum 25% of score, however 66 boys have secured maximum score which ranges from 75% to 100% which seems to be very low score. In the Sit-ups item there were 98 of the boys have secured minimum level of percentile score, however there are 74 boys were able to place themselves in between the range of 75 to 100% of percentile which seems to be an average performance.

In Shuttle run we find that 95 of the boys have secured minimum level of percentile score however there are 29 boys were able to place themselves in between the range of 75 to 100% of percentile score which seems to be an average performance of the boys. In standing broad jump 81 of the boys have secured minimum level of percentile score, however there are 73 boys were
able to place themselves in between the range of 75 to 100% of percentile score which seems to be an average performance.

In 50 yard dash we find that 99 of the boys have secured minimum level of percentile score, however there are 77 boys were able to place themselves in between the range of 75 to 100% of percentile score. This achievement of the boys at this particular level is comparatively higher, which is a good mark of better performance. In 600 yard Run/Walk 96 boys have secured minimum level of percentile score, however there are 70 boys were able to place themselves in between the range of 75 to 100% of percentile score. Which is a good mark of better performance.

Rat (2008), compared the physical fitness of urban and tribal students of Agartala. Sixty male students were randomly select as subjects. from each age group ranged from 16 to 20 years. Data was obtained by administering the AAHPER youth fitness test and was statistically analyzed by using percentile scale. It was concluded that the performance of urban students in pull-ups and softball throw for distance was significantly greater than the tribal subjects and also there was no significant difference between the urban and tribal students in standing broad jump, shuttle run, 600 meter run/walk, 50 meter dash and sit-ups. Results also showed that there was no significant difference in physical fitness level between urban and tribal college students of Agartala. Conclusion of the study was (1) Health education is not the same as Physical education. Although closely allied, health and physical education are separate fields of specialization. Whereas physical education is concerned primarily with education of and through the physical, the school health program is concerned with teaching for health, living healthfully at home and providing services for health improvement. (2)Physical education contributes to physical fitness. The student needs to engage in regular physical activity but, in addition, needs to understand the impact this activity that has on the body and mind. The student not only needs to have activities fitted to individual requirements but also to have these activities conducted in a safe and healthful environment. The students should develop skill in various sports as well as in first aid. How the physical education program helps to achieve the objective of physical fitness few examples are cited. (3)Physical education must be an integral part of the educational program to achieve the goal of physical fitnessmost effectively. This subject is not a frill or appendage of the school’s curriculum or a means for entertaining studentswhich must be a vital
part of every educational program in this country. Furthermore, such a concept must repeatedly be injected into programming, scheduling and other practices that reflect the true educational philosophy of each school.

SreeDevi(2008), constructed motor fitness norms for secondary school girls, for this purpose she selected eighty students of central school no.1, Gwalior, from grades eight and nine as subjects. Based on mean and standard deviation values, T scale, 6 sigma scale and Jull scale were prepared for each test items. Also it was concluded that a common scale of AAHPER youth fitness test could be used for the grades eight and nine and 6 sigma scale and Jull scale were more suitable than T-scale. The test battery was practicable and simpler than the existing physical fitness test and measures most of the essential motor qualities of elementary school children. The norms were prepared for the selected items and can be used for classifying the children into ability groups by assessing their physical fitness. It was concluded that (1) The limitations of this study’s design are such that inference about a causal pathway is speculative if based on these data. The cross sectional nature of the observations limits the extent to which causality can be inferred. In addition the disparity for PWC gives reason to question whether the link between the school ratings and the physical activity and fitness measures was due to some form of measurement bias or to confounding.

The field tests that were associated with the school rating could have been influenced by the motivation of the subject. The only test with an objective component was the physical work capacity test on the cycle ergometer, PWC, which involved heart rate monitoring by the research team member at each level of effort expended. It may not have been associated with the school ratings in the absence of a putative motivation related bias. Alternatively, the lack of any association may have resulted from the removal of confounding by body fatness. The measure used in analysis, PWC per kg lean body mass, was adjusted for body mass to remove of confounding.

Elizabeth (2008), prepared percentile norms for girls age 12 to 15 years on the North Carolina AAHPER Test. The norms were prepared for each of the five test items, sit-ups, side stepping standing broad jump, modified pull-ups and squat thrust. The sit ups item provided effective differentiation on the percentile scale for each age group. The concentration of scores in the middle of the distribution for the side stepping test and the squat thrust test resulted in effective discrimination in the center of the ranges for all age groups. The standing broad jump
test provided the greatest ranges and the test differentiated the lower end of the distribution for all age groups but did discriminate above the 20th percentile. It was concluded that (1) The development of physical skills is a major contribution to long-term physical fitness of students. Obstacle In contrast, performances in the 1.6 kgm. Run, 50 meter by body fitness. Supporting the contention that the observed association of scholastic rating with physical fitness and activity might be due to confounding by body fatness is the finding that the school ratings were not consistently associated with measurements of hand, shoulder, or leg muscle force made with a dynamometer. Against this contention is the finding that adjusting for BMI had only minor effects on the parameter estimates for the relationship between school rating and sit-ups.

There are other potential causal pathways that should be considered to be possible sources of confounding. Genetic factors or fetal nutrition, for example, could be responsible for poor development of both the musculoskeletal and nervous systems.

**Backford (2008),** Conducted a research to evaluate the physical fitness level of Navajo girls through AAHPER youth fitness test. The Navajo girls of 14-16 years were selected from seven schools to measure physical fitness level. Also percentile norms were built on the stake of scores obtained from test results. These norms were compared to national norms found in the manual complaining the AAHPER youth fitness test. The results gave an indication of the overall fitness level of 14, 15, and 16 years old Navajo girls of the seven test items. The Navajo norms were found to be below the national norms on 5 items and above on the softball throw and 600 yard run/walk.

**Anyawu (2008),** conducted a study on Physical fitness norms for Nigerian boys and girls of 11 to 18 years of age were constructed. The test items included were shuttle run, Push-ups, Chair push-ups (for girls), flexed knee sit-ups, 50 meter dash, standing long jump, pull-ups flexed-arm hang, in minute run for subjects 11 to 12 years and 12 minute run for subjects 13 to 18 years. A comparison of the mean score of the United States and the Nigerian youth showed that at the upper age levels, the US youth had better physical fitness status than their Nigerian counter parts, whereas at the lower age level there was not much difference. Clark and Clarke explain that the basic physical fitness components are muscular strength, Circulatory-repertoary endurance and Muscular endurance. Muscular Agility, speed, flexibility and Power are added to create motor fitness; foot-eye co-ordination and kinesthetic arm-eye are needed for common
motor capability. However, as our objective was to measure and reflect to reliable degree the status of students in terms of fitness, the researcher notes in a more precise manner the tangible component such as muscular strength muscular endurance, power speed and agility that can be used in construction of physical fitness norms. The time we are living in can be justly, called the golden age of physical training and sports. Never before have had people enjoyed such actual opportunities for the development of their strength and capabilities, nor have they realized so distinctly that a physical weak person can hardly expect to keep abreast with the accelerating pace of today.

**Glover (2009)**, conducted a study with a range of twenty two fitness tests and related measures was evaluated for use in secondary schools (2500 pupils, aged 11-16 years) with most tests taken from the Eurofit provisional battery. The test results from each battery were accumulated on a data base; the pupils undertaking the school battery were grouped by year and sex. Norms were calculated for each group from the accumulated results and each subjects obtained a printed summary sheet giving the norms, individual scores and a grading for each test. Investigated Motor performance items which could be adopted to physical fitness measures of primary grade children. Nine Judges evaluated 18 test items twice and chose seven fitness items for administration to boys and girls in the primary grades. The seven items were treated statistically to as certain reliabilities, mean and standard deviation inter correlation and tentative percentile norms. The validity of the test items was based on the literature reviewed and the empirical judgments of the nine judges. The standing broad jump the shuttle race, the seal crawl test and sit ups appeared to be the best test items.

**Verma (2009)**, stated that the present study is an effort to develop a fitness assessment and monitoring system for school going children and youth of India. Two thousand children and youth were selected in the age category of 7 to 20 years, which constitute the sample. Subjects were drawn from various schools and colleges of India using stratified sampling technique. These subject were tested on different health related fitness parameters visa muscular strength, fat percentage, muscular endurance, flexibility and cardio respiratory endurance. Statistical modeling were developed for computing the single index of muscular strength and muscular endurance whereas cardio respiratory endurance was assessed by estimating the Vo2 max and fat percentage was computed by means of skin fold measurement and flexibility was measured by
sing the direct data obtained on sit and reach test. Standards on these fitness parameters were constructed on collected data by using the weighted scale method. Thus one can secure marks in between 0 and 100 based on the performance on each of the test items. Weight of each of the five parameters were decided y using the factor analysis techniques. These weights of all the five parameters were used to compute a single index of fitness. Further improvement system was developed to categorize an individual into either of three zones like need improvement zone, healthy fitness zone and excellent zone on each of the five parameters. Overall fitness status was also shown on any of these three zones based on the total fitness score, every individual about possible impacts on his health for being in the different fitness zone. All generate all the reports of an individual based on his current fitness status. The system is named as Fitness watch and generates four different outputs of an individual namely; Performance sheet main score sheet graphic sheet and statement on present profile.

Two thousand children and youth were elected in the age categories of 7 to 20 years, which constitute the sample. These subjects were drawn from various schools and colleges of India using stratified sampling. These subjects were tested on different parameters of health related fitness viz: cardio respiratory endurance, muscular strength, muscular endurance, flexibility and fat percentage. Cardio-respiratory endurance was measured by “One mile run/walk test” as well as “three minutes step up” test. Timing and pulse rate were measured for each of the subject after one mile run/walk test whereas only pulse rate was measured after three minute step up test. Muscular strength was measured by measuring the right and left hand grip strength arm lift arm press, back life for each of the individual. Muscular strength was measured by sit up. Pouch and modified pushups, flexibility was measured by sit and reach test. Fat percentage was measured by using skin fold measurements at different sites. For male skin fold of chest abdomen and thigh were taken whereas for female skin fold of triceps, suprailium and thigh were taken. Vo2 max was computed for assessing the cardio respiratory endurance from one mile run/ walk test as well as from three minute step up test. Statistical modeling was developed for computing single index of muscular strength and muscular endurance. Fat percentage was estimated with the help of skin fold measurements whereas flexibility was measured by using the direct data obtained on sit and reach test.
Standards on these fitness parameters were constructed on collected data by using the weighted scale method. Thus one can secure marks in the range of 0 to 100 based on his/her performance on each of the test items. Further weights of each of the five parameters of health related fitness were decided by using the factor analysis techniques. These weights of different parameters were used to compute a single index of fitness. For each of the four parameters viz, cardio respiratory endurance muscular strength muscular endurance and flexibility, seven point classification criteria viz. Excellent, very Good, Good, Average, Satisfactory, Poor and very poor was developed whereas for fat percentage a five point scale namely obese, Moderately over fat healthy lean excessive lean was constructed. Considering data to be normally distributed as it was obtained for normal population randomly, grading limits were obtained by using normal distribution. A graphical system was also developed to categorize an individual into either of three zones viz: Need improvement zone, Healthy fitness zone and excellent zone on each of the five parameters. Anybody who scored less than 50% marks on any of the parameters was classified in the need improvement zone on that parameters, greater than or equals to 50% but less than 80% marks was classified in the healthy fitness zone whereas more than or equal to 80% marks was classified in the excellent fitness zone. Further overall fitness was also shown in any of these three zones based on the total fitness score. Based on the fitness status in the graphical sheet an automatic customized story is generated for every individual about the possible impacts on his/her health for being in the different fitness zone.

Further based on the present status of an individual, a fitness prescription could be developed in the age categories like 7-10 years, 11-14 years and 15-20 years for male and female separately. The author is working on this aspect as well so that such prescription schedule could be provided after assessing the present level of fitness of an individual. All the above mentioned functionality was imbedded in the expert system developed by the author to generate all the reports of an individual based on his/her current fitness status. If the system is implemented in a school, record of fitness status is automatically generated for all the children in that school which could be used to generate a consolidated report on school fitness.

The performance is given in terms of marks out of 100 as well as in grading. Total fitness score shown on this study an indication of overall fitness status of an individual. It has been worked out by using a statistical model by giving different weights to each of the fitness
parameters and is not merely an average of the scores on all the fitness parameters. This total fitness score is a kind of motivation to the young people to maintain and enhance their fitness level. One should try to get good and above grade on all the fitness parameters and healthy grade on fat percentage so as to maintain good health for maximum efficiency. After looking the fitness status, the fitness professional trainer could prescribe the fitness schedule to an individual. After following the schedule for some period of time, the system could be used to generate the comparative analysis of fitness performance on two different dates. This comparative fitness results shown in report5, may be used to evaluate the effectiveness of the fitness schedule prescribed by the fitness trainer. It would also be helpful for an individual to observe the schedule given by the trainer more seriously.

Morrison (2009) administered a twenty items criterion battery to 120 college women at Madison college during a four week period. T-score were summed for each category of test items (Body impetus giving impetus to an object, and using an implement to give impetus to an object) and for the battery of twenty items. The data were treated by means of the BIMD 34 programme. A three item and a five item battery were selected to predict basic sport ability. The validity coefficient reliability and objectivity coefficient were calculated and norms for five groups of ability were developed for both tests. It was concluded, that the development of physical skills is a major contribution to long-term physical fitness of students. Obstacle It is also possible that parents and families exert an influence in the development of physical and intellectual capacities. We were able to examine the latter possibility, albeit only indirectly, by controlling for various indicators of parental involvement including socioeconomic status estimated from residential address. Adjustment for each of these made little difference to the parameter estimate, but it is unlikely that these indicators captured adequately all the elements that we might wish to include. Only a randomized trial with blinding could completely remove such possible confounding effects. The results of the only randomized trial conducted to date proved inconclusive, but increasing curricular time of physical education did not suppress academic achievement in that study, a study of similar design but of longer duration is needed before it would be possible to confidently assert that a pathway involving physical activity and fitness might contribute in an important way to scholastic performance.
Florence (2009), study to set up a battery of test which may be used to classify Freshmen college women according to their motor ability. For purpose of administration, a short battery of test (40 yards matzo run, Ball change, Trunk bend, jump and Reach) was set up. This battery consisted of those tests which had the highest self-correlation, the highest correlation with the criterion. The raw scores on each test were changed to a percentile rank score so that it might be possible later to make comparisons between individuals on a common basis for the entire battery. It seems that there could hardly be any compromise about the standardization of the term physical fitness among the authorities working in this field. The simplest definition of physical fitness is the ability of an individual to perform given physical tasks involving muscular effort. Physical fitness is considered to be a part of the total fitness. The term Physical fitness is included in many familiar test batteries commonly used in the schools, but present researcher feels that many of these tests in these batteries were not actually tests of physical fitness. Part of this misconception about physical fitness may stem from the lack of agreement among experts as to exactly what elements constitute physical fitness. Johnson and his associates placed the common test parameters into two basic categories. (a) Physical fitness parameters (those that are actually essential for health and functional fitness; Muscular strength, Muscular endurance, Cardio-respiratory capacity and flexibility), and (b) Motor performance parameter (adds to the physical fitness parameters power, Agility, Speed, Balance, co-ordination and Reaction time). Mayers in his book measurement in Physical Education has explained physical fitness to be the function ability of the individual for a specific task or mode of living.

Coutts (2009), conducted a study to establish norms for the cooper’s 12 minute run/wake test applicable to young males; eighty boys, eleven to fourteen years of age, served as the subjects. The difference between the two groups was statistically importance. The correlation coefficient between aerobic capacity and run/walk performance was 0.65, while the correlation was statistically significant caution was advised in attempting to predict aerobic capacity from run/walk performance with young urban subjects. Despite recent reports of global declines in pediatric aerobic test performance, equivalent to about 4-5% per decade since 1970. There was no change in aerobic performance of Estonian children, and a decline nearly double that of the global decline in Lithuania children. However, in line with global changes, there has been little recent change in anaerobic performance of Estonian and Lithuanian children. Secular changes,
while remarkably consistent for children of different ages and for boys and girls, were not consistent among different Euro fit tests and between Estonians and Lithuanians.

**Humphrey (2009)**, conducted a comparative study to investigate the physical fitness level of third grade pupils taught by specialists and non-specialists. 100 specialists and 100 non-specialists were selected randomly from 20 schools in Greenly, Colorado. The AAHPERD Youth fitness test was administered; the test consists of the items sit-ups, sit and reach, skin fold measurement one mile run/walk. The t test was used to compare the two groups i.e. subjects taught by specialists and those taught by non-specialists. The result indicated that specialist group had significantly higher scores on none of the twelve tested components. The specialist males scored scores significantly higher on the sit-ups sit and reach skin fold measurement and one mile run/walk than non-specialist males. The specialist females scored significantly higher on the skin fold measurements than the non-specialist females.

**Taddni (2009)**, constructed national norms based on the National survey of youth fitness. The measure of physical fitness was the AAHPERD youth fitness test (i.e. Pull-ups, Sit-Ups, Shuttle Run, Standing Broad Jump, 50 yard Dash and 600 yard Run and Walk). Twelve school districts participated in the study from which 75 schools, 146 classrooms and 779 students were selected. The study concluded that there was no distinguishes in the physical fitness of boys and girls from the economically deprived sample and boys and girls represented by the national norms and within the sample there was no distinguishes in physical fitness of boys and girls from high poverty areas and boys and girls from low poverty areas and compared with Safrit, the provincial authority of Manitaba had conducted a project on leadership in Canada by developing the “Manitoba physical and motor fitness test. Desirable fitness and life style objectives were identified for Canadian school children and teachers. The following test items were selected to measure the fitness objectives body weight, standing height, Agility run, Sit and reach, sit-ups, flexed arm hang, Skin fold measurements and the meter run. A unique aspect of the test manual was the inclusion of criterion reference standards for students aged five to nineteen and teachers aged twenty to sixty plus. Table of percentile norms were also available for students.

The issue may be raised as to whether standards on each of the health related parameters should be developed on the basis of the sample obtained from a particular country or it should be based on the physiologically viable limits of an individual in different age categories. If the
standards are developed on the basis of the data obtained from a particular country than this system may be viable only for that country. It is because of the fact that the fitness performance of an individual in different age category depends on the race of the community and geographical location. However if the standards are developed on the basis of physiologically viable limits, than a consensus has to be developed among the fitness scientists and exercise physiologists about the maximum possible performance on different parameters given by an individual in different age categories. In that case universal standards could be developed which may be applicable for the individuals of any country.

Another issue which is open for debate as to who should be the limits of three different zones? i.e. need improvement zone, healthy fitness zone and excellent fitness zone. In this pear the author has taken 0 to 50% marks in the need improvement zone, 50% to 80% in the healthy fitness zone and 80% to 100% in the excellent fitness zone. Upper limit is excluded from each category. Such limits shall encourage the meaner to maintain to fitness index on the higher side. This kind of limits is essential for those countries where not much awareness towards fitness exists. However for the countries where people are much conscious about their fitness and people in general are healthier may adopt different classification strategy.

William (2010), organized a study to compare the physical fitness scores of white and black students. The subjects taken for the study were 30 white and 30 black students of equal socio economic level. Data was also collected for age height, weight and socio economic level. AAHPERD youth fitness test was selected as the instrument by which physical fitness performance was evaluated and statistically analyzed and t test was used. It was found that there was no importance difference between the groups of age height weight and socio economic level. The black students exceeded the white students significantly on the shuttle run, 50 yard dash, 600 yard run/walk and composite fitness score. It was concluded that black male students of similar socio economic level to white students in the seventh grade have a higher level of physical fitness test as another early cardiovascular test was based on the fact that exercise increases the heart rate almost indirect proportion to the exercise intensity conducted a comparative study of physical fitness of white and black female students at Northern high school. AAHPER youth fitness test was administered on randomly selected 50 black and 50 white female 10th grade students. Statistical analysis showed It is important to note that the main
aim of this study was to quantify the secular changes in Euro fit test performances of Baltic children, rather than the mechanistic factors underlying those performances. William standardized the exercise determined and constructed norms of condition. The test consists of,(1) recording normal standing pulse,(2) running in place for 30 seconds at the rate of three steps per second,(3) counting the pulse for 5 seconds and converting it to the minute rate, both immediately after running and again after subject had stood at ease for 45 seconds, and (4) computing efficiency rating from the scoring table.

**Yadav (2010),** conducted a study on standardization of physical fitness norms of the school children of Haryana (13 to 16 years of age) with the purpose of estimating the fitness level, establishing the norms for physical fitness and comparing the standard of physical fitness of rural and urban boys of Haryana. The subjectsof this study were3600 school boys of the twelve districts of Haryana were randomly selected and the performance of the boys was recorded on 50 mt dash, shot put, standing broad jump, zig-zag run, sit-ups and step test. The norms in terms of percentile rank of said group were developed. And compared to the AAHPERD youth fitness test (ie. Pull-ups, Sit-Ups, Shuttle Run, Standing Broad Jump, 50 yard Dash and 600 yard Run and Walk) to 100 rural and 100 urban schools going male students in Delhi. The age of the subjects ranged from 14-17 years. He had concluded that the mean scores on AAHPERD youth fitness test were slightly higher in the case of urban high school students. The mean scores were found satisfactorily significant at 0.05 level of confidence.

**Del (2010),** selected freshmen who had enrolled at the University of North Dakota but did not participate in inter collegiate athletics during their four years college and athletes who participated for three years in collegiate football, basketball, wrestling, cross country etc. The AAHPERD youth fitness test was administered (i.e. Pull-ups, Sit-Ups, Shuttle Run, Standing Broad Jump, 50 yard Dash and 600 yard Run and Walk) and both group were retested during the first semester of some of the conclusion indicated by this study were had the athletes showed significant improvement in all the selected measures of physical fitness excepts the 50 yard dash; the non-athletes showed a significant devoice in the 600 yards run/walk and the athletes were significantly superior to sit ups, standing broad jump and 600 yards run/walk. Data was obtained by administering the AAHPERD youth fitness test and was statistically analyzed by using percentile scale. It was concluded that the performance of urban students in pull ups and softball
throw for distance was significantly greater than the tribal subjects and also there was no importance distinguishes between the urban and tribal students in standing broad jump, shuttle run, 600 meter run/walk, 50 meter dash and sit ups. Results also showed that there was no importance difference in physical fitness level.

**Kosydar (2010),** compared the physical fitness of children studying two elementary schools in Porhand. He administered the organ motor fitness test on children of two schools at the beginning and end of twelve weeks. The experimental group participated in a physical education programme and the control group had a traditional free play period. Girls in the experimental school showed improvement on every item crossed arm curls ups and made a significant gain in hanging in the arm flexed position. Boys in the experimental group increased standing broad jump scores in pushups despite decline scores in some grades. Comparison by grade level showed a slight superiority of the experimental group benefited in physical fitness but lacked sufficient vigor. The test included, standing broad jump, basketball throw, potato race push-ups, pull-ups above floor reverse grasp, sit-ups squat thrust and squat. When limiting factors did not permit to give this 8 item test, a short form consisting of standing broad jump, basketball throw, potato race, squat thrust, sit-ups and push-ups or pull ups may be given in this study.

**Rosentein et al. (2010),** compared the physical fitness senior high school boys and girls participating in selected physical education programme in New York State. The York Physical fitness test was administered in Oct and May to pupils of 13 senior high schools whose physical education programme were rated low by members of the Bureau of Physical education and 16 high schools whose programme were rated high. Export opinion was used in the validation process and eight factors of test and twenty nine items measuring those factors were chosen the selected tests were administered and statistical analysis covered item reliability and objectivity correlation. The following test items were used Zigzag running medicine ball put, standing broad jump, 60 yards dash, soft ball throw and wall pass. The standard motor ability rating was found. The low parte score card was utilized to validate these ratings. The amount of physical activity outside of class as recorded by each pupil and effect analyzed pupils participating in good programme improve significant in poor programmes. The greatest improvement was in strength with some gain agility balance and endurance.
George et al. (2010), studied that the Break in Training for short duration would not affect the selected motor components for that thirty male students of Bachelor of physical education of Laxmibai National physical education college. Gwalior were selected a random as subjects for this study. The overage of the subjects were 18 years data was collected on the following variables’ (1) Muscular Strength, it was measured by bend knees sit ups for 30 seconds and record. (2) Speak the speed was measured by 50 meter dash and record in seconds. (3) Explosive power. It was measured by vertical jump and recorded. (4) Shuttle run and recorded by seconds. (5) Cardio respiratory endurance. It was measure by cooper run or walk test was measured by meter.

The analysis of data reveals that physical fitness components were not affected significantly due to break of shorter duration probably the reason was the physiological adoption which was mode in course of 10 weeks, a break of 3 weeks was not sufficient for significance decline. Moreover the physical adaptation which in normally achieved by an individual slowly over a long period of time, remain effective for a considerable time even when no activity in done by the individual for quite some time. The finding of the study also showed negligible but insignificant decline of all the components. It can be said that a short duration break in not sufficient to effect the physical fitness components.

Alston (2011), prepared percentile norms for girls age 12 to 15 years. The norms were prepared for each of the five test items, sit ups side stepping standing broad jump modified pull ups and squat thrust. The sit up item provided effective differentiation on the percentile scale for each age group. The concentration of scores in the middle of the distribution for the side stepping test and the squat thrust test resulted in effective discrimination in the centre of the ranges for all age groups. The standing broad jump test provided the greatest ranges and the test differentiated the lower end of the distribution for all age groups but did discriminate above the 20th percentile made a comparison between the performance of girls on the Virginia Physical fitness Test, AAHPERD youth physical fitness test and the north canadian physical fitness test. He found that correlation between virginia and AAHPERD test was 89, between AAHPERD test and the north carolina test has assessing physical fitness of high school girls.

Haley (2011), studied the effect of age on physical performance of elementary school boys in grades one through six. Thirty subjects were randomly selected from each class. The age
of subjects ranged from 5 year 9 months to 12 year 2 months. Twelve tests were conducted to judge the motor performance of the subjects. The study showed that motor performance score increased with age and flexibility tended to decrease with age. Researchers conducted a study to investigate the relationship between the Korean Youth Fitness Test and the AAHPER health related physical fitness test for male Korean Middle and High School children. Eleven experimental test items were administered on three hundred male Korean students of grades 7 to 11. The analysis indicated that the KYFT and AAHPER were significantly related AAHPER can be substituted for KYFT, since this test has fewer and easier test items. It was also concluded that correlation between KYFT and AAHPER were higher for the middle school students than for the high school students. There was a significant relationship between KYFT and AAHPER for the middle and high school students computed physical fitness norms for boys of the junior colleges in Sholapur district. 20 boys from classes XI and XII of fifteen randomly selected junior colleges, were taken as subjects for this study. AAHPER youth fitness test was administered on them. The two scales namely T-scale and Hull Scale, were constructed for the combined samples of the junior colleges and separately for classes XI and XII.

Deve (2011), had undertaken a comparative study of the physical fitness of primary school children of Imphal and Amravati. The main objectives for the study was comparative evaluation of the physical fitness of the boys of Manipur and Maharashtra. She administered the Glover physical fitness item to 40 subjects from Govt. Schools of Imphal and 40 subjects from public schools of Amravati randomly with their age limit between 6 to 9 years. It was concluded that the boys of the city schools Imphal and the boys of public schools Amravati were similar in their physical fitness ability, and then compared with the research of Busch conducted a study in order to develop norms for the Wingate test for physically active young men and women and also to compare mean power measures obtained from another similar cycle ergometer test percentile norms and descriptive statistics were generated as were multiple regression equation for prediction of mean power between the two different tests. The rate of stepping was 24 steps per minute the height of the bench was 18 inches. Following exercise the subject rested for one minute in sitting position the pulse was then counted for thirty seconds at the carotid artery by palpitation.
Kawai (2011), selected a battery of 30 test items generally considered to be measure of strength and another battery of 30 test items hypothesized to be measure of speed, flexibility, balance and co-ordination. Norms or standards performance scores, were developed for boys and girls between the ages of 15 to 18 years on the basic of the score scores for more than 2,000 students for most of the tests conducted a study with the purpose was to find out the level of physical fitness level of the students of Nepal. The test item consist of side step, vertical jump, Back and Grip strength, Tragic extension and flexion and stepping up and down. The test score had been interpreted on the basis of judgment table used in Japan and mean standard deviation was calculated. The researcher of the above study in his report accepted various weaknesses of his research. His acceptance of the drawback of the present research and critical analysis o the report indicated that the report was not authentic and reliable due to the small sample size and the procedure used while administering the test.

Parthiban (2011), investigated to find out the relative effects of isolated and combined aerobic and anaerobic interval training on selected speed related components of college women Footballers. To achieve this purpose, forty five women football players who participated in the Bharathidasan University Intercollegiate Tournament of Department of Physical Education, Health education and Sports, H.H. The rajah’s college, Pudukkottai, Tamil Nadu, India were selected as subject randomly. It is the capability to balance and bend the body, move it faster and for longer, and lift and support it off the ground which expands a child’s play potential and is important for children’s physical activity levels, irrespective of the underlying causal mechanisms. Given that few studies have explicitly reported on secular changes in pediatric fitness test performance, secular comparisons among countries are extremely rare. Such comparisons are undoubtedly affected by differences in the time periods over which the changes were calculated. The concepts of dependent ‘t’ test was employed to find out the significant improvement due to the influence of training programmes on all the selected criterion variables. The magnitude of improvement was also calculated to find out the percentage of improvements of all criterion variables separately. The analysis of covariance was also used to analyze the significant difference, if any among the experimental groups. The obtained F ratio for adjusted post-test was found to be significant; Schaffer’s test was used to find out the paired mean differences. The level of significance to test the F ratio obtained by the analysis of covariance
was fixed at 0.05 level of confidence which was considered as an appropriate. The results of the study showed that there were a significant differences found among all the experimental groups.

Forty five women football players who participated in the Bharathidasan University intercollegiate tournament of department of physical education, health education and sports, H.H. The Rajah’s college, Pudukkottai, Tamil Nadu, India. It has been estimated that there have been global declines in pediatric power, speed and aerobic performance. However, the Baltic changes are not always consistent with global changes. 1. Power test performances of Estonian children have changed little, and those of Lithuanian children have declined in line with the global change; 2. Speed test performances of both Estonian and Lithuanian children have changed little and are in line with the global change, and 3. Aerobic test performances of Estonian children have changed little, and those of Lithuanian children have declined at a rate greater than the global change.

The data collected from the aerobic interval training group, anaerobic interval training group and combined aerobic anaerobic interval training group prior and after experimentation on selected variables were statistically examined by analysis of covariance to determine differences, if any among the adjusted post test means on selected criterion variables separately. The level of significance was fixed at 0.05 level of confidence to test the ‘f’ ratio obtained by analysis of covariance. After analysis the dependent ‘t’ test value among aerobic interval training group, anaerobic interval training group and combined aerobic anaerobic interval training group on Speed, Stride length and stride frequency were 5.50, 3.15, 7.85, 4.84, 2.65, 10.54, 6.84, 3.15 and 6.60 respectively. Since the obtained ‘t’ test value of the experimental groups were greater than the table value 2.15 with df 14 at .05 level of confidence, it is concluded that aerobic interval training group, anaerobic interval training group and combined aerobic anaerobic interval training group had registered significant improvement in performance of speed, stride length and stride frequency. It is also observed that the magnitude of improvement of speed, stride length and stride frequency due to the influence of aerobic interval training, anaerobic interval training and combined aerobic anaerobic interval training are 2.58%, 2.63%, 1.87%, 3.61%, 3.96%, 4.66%, 4.59%, 6.45%, and 7.65% respectively. It indicates that the combined aerobic anaerobic interval training programme had registered better percentage of improvement in developing the speed, stride length and stride frequency.
The result of the study revealed that all the experimental groups have significantly improved the selected dependent variables due to the influence of the selected training means. It implies that to selected training programmes namely aerobic interval training, anaerobic interval training and combined aerobic anaerobic interval training have significantly improved the selected dependent variables namely sped, stride length and stride frequency which are very essential for to soccer players to put up their maximum effort during practice and competition. Further it is found that the combined aerobic anaerobic interval training has significantly improved the selected dependent variables when compared to the isolated aerobic interval training and anaerobic interval training programmes. Soccer is a sport which is difficult because most of the running done is not one specific type aerobic or anaerobic, hence the coaching staff needs to work on program that develops both. The information for pre season does show a trend that coaches do not time their players, but do expect their players to have endurance both aerobic and anaerobic running during pre season. Improving conditioning will help teams work more effectively on the field to produce better results. From the findings of this study and the reference cited it is clearly understood that interval training is the best method to improve both speed parameters. In India most of the soccer players are concentrating only on developing the soccer specific skills rather than developing the physical fitness qualities. This may be one of the reasons by which the Indian Football team would not have been able to perform well in the International arena. Hence, it is recommended that systematically and scientifically designed programme of interval training with both aerobic and anaerobic types shall be incorporated in the preparation of soccer players for developing basic physical fitness qualities which in turn increase the soccer performance.

Gross et al. (2012), utilized data from over 13000 students to determine the value of age height and weight as a classification device for the AAHPERD youth fitness test (ie. Pull-ups, Sit-Ups, Shuttle Run, Standing Broad Jump, 50 yard Dash and 600 yard Run and Walk). They reported that in all four groups senior and junior high school girls, senior and junior high school boys his factor of age height and weight had practically no value, singly or in combination as classifiers for the seven test items. In other words each group could be considered as a homogeneous group with respect to the effects of these factors on the fitness measures. Undertook a normative study of the physical fitness of male Teenagers of Jammu and Kashmir State in the ages 13 through 19 years. The variables considered were, pull-ups, bent knee sit-ups,
50-yard dash, shuttle run and 600 yard run/walk. He concluded that the subjects belonging to age group 16 through 19 years showed better performance in all variables over the other age group of 13 through 15 years.

**Avenl(2012),** conducted a study on Test of Static and Dynamic strength for girls nine to twelve year old. Regression equations were set up for estimating the following general static strength based on McCloy’s un weighted strength score and dynamometrical measures general dynamic strength based on the average of T-scores of five dynamic strength measures and ten dynamic strength variables and total static and dynamic strength based on the average of T-scores derived from dynamometrical measures and the five item dynamic strength measures. Norms were established. Height, weight and twenty eight tests commonly used to measure strength were administered to 101 nine and ten year old and 100 eleven and twelve year old Caucasian girls. Regression equations were set up for estimating the following: general static strength based on McCloy’s un weighted strength score and dynamometrical measures general dynamic strength based on the average of T-scores of five dynamic strength measures and ten dynamic strength variables and total static and dynamic strength based on the average of T-scores derived from dynamometrical measured and the five item dynamic strength measures. Norms were established.

**Sloan (2012),** in a subsequent study in which the same test items and two additional ones were administered to third and fourth grade subjects again identified six factors these were not exactly same as those for the other. The factor were balancing objects speed of change of direction in the non vertical plane total body quick change of direction in the vertical plane, sport skills and total body balance. For the third and fourth grades two items loaded on five factors two test items loaded on three factors two test items loaded on four factors and seven test item loaded on two factors. This means that any test item which appears for more than one factor cannot be considered as a measure of only one factor. Variation in the identification of factors due to selection of test items for study and to the logical interpretations used in the identification of factors those are statistically obtained.

**Basheer(2012),** conducted a study “An analytical study of selected Physical fitness variables among the students of Andhra Pradesh and Kashmir”. The purpose of this study was to compare selected physical fitness variables among the students of Andhra Pradesh and
To accomplish the present study was conducted on 60 male students which were randomly selected from Dr. Babasaheb Nandurkar College of Physical Education, Yavatmal, Maharashtra, those who have admitted in the physical education courses during the session 2011-2012. The sample of the study consisted of 30 students from Andhra Pradesh and 30 students from Kashmir, between the age ranges of 22 to 30 years. Physical fitness variables selected for this study were muscular endurance, cardiovascular endurance, Body fat percentage and Flexibility Muscular strength. The subjects were tested on the selected physical fitness variables as per the standard procedures. (a) Cardiovascular endurance was assessed with the help of 600 yards Run-Walk test and the score was recorded nearest to 0.5 second. (b) Muscular strength was measured with the help of grip Dynamometer and the score was recorded nearest to 0.5 Kg. (c) Body fat percentage was assessed with the help of skin fold caliper and the score was recorded in millimeters. (d) Muscular endurance was measured by using Bent knee sit-ups test and the score was recorded in number of sit-ups perform in one minute. (e) Flexibility was assessed by administering modified sit and Reach test and the score was recorded nearest to 0.5 Inch.

The finding of the results is there was significant differences of mean scores in all physical fitness variables (Cardiovascular endurance, Muscular endurance, Flexibility Muscular strength and Body fat %) between the students of Andhra Pradesh and Kashmir as the calculated ‘t’ values of 3.16, 3.31, 3.01, 5.02 and 3.01 are respectively greater than tabulated value ‘t’ .05 df is 2.00. The data provide significant evidence to ensure that mean scores of cardiovascular endurance, Muscular endurance, Flexibility Muscular strength are significantly higher for the students of Andhra Pradesh in comparison to Kashmir. The percentage of body fat also less in the students of Andhra Pradesh in comparison to Kashmir. On the basis of findings I is evident that Andhra Pradesh students are better physical fitness variables than the students of Kashmir.

Kanungsukkasem (2012), administered AAHPERD youth fitness test on 319 male and 319 females, Danish School children to discussed their fitness. The result of the testing were compared with the American students which were compiled in term of both age and Nelson Coens classification index. It was found that approximately 70% of boys scores and 36% of scores of the girls exceed the various American means scores, proposed a three minute step test for girls and women. The rate of stepping was 24 steps per minute the height of the bench was 18 inches. Following exercise, the subject rested for one minute in sitting position the pulse was
then counted for thirty seconds at the carotid artery by palpitation. In subsequent studies, Skubic and Hodgkins developed national norms for their cardio-vascular efficiency test.

Shultz et al. (2012), However, by describing in the time periods over which the changes and time-related patterns of performance, the large meta-analyses of Tomkinson and olds and Tomkinson provide a global context for changes in power, speed and aerobic performance of Estonian and Lithuanian children. The programme consists of two test batteries. One designed to evaluate physical fitness (chin-ups, dips or 90 second flexed arm hang for the muscular strength and endurance of the arms and shoulder girdles, two minute bent leg sit-ups for muscular strength and endurance of abdominal region, twelve-minute run/walk or 1.5 mile run for grade seven to twelve and nine-minute run/walk or one mile run for grades four to six to measure cardio-respiratory endurance) and another to evaluate motor ability (50 yard dash for speed, 15 second shuttle run for agility, vertical jump or standing broad jump for power.

Gross et al. (2013), utilized data from over 13000 students to determine the value of age, height and weight as a classification device for the AAHPERD youth fitness test (ie. Pull-ups, Sit-Ups, Shuttle Run, Standing Broad Jump, 50 yard Dash and 600 yard Run and Walk). They reported that in all four groups senior and junior high school girls, senior and junior high school boys the factor of age height and weight had practically no value, singly or in combination as classifiers for the seven test items. In other words, each group could be considered as a homogeneous group with respect to the effects of these factors on the fitness measures.

Singh (2013), prepared physical fitness norms for high school boys of Punjab state. Data were collected on 5000 subjects from various schools in the state. The test was administered consisted of eight items viz standing broad jump, sit and reach test, agility run sit-ups bent knee, 50 meters dash push-ups, Cricket Ball throw and 600 meters run and walk. The percentile norms for physical fitness tests were found to be valid and suitable to assess the physical fitness level of the high school boys in the age group of 12 through 15 years.

From the literature reviewed in this chapter, it is quite evident that in the area of evaluation of physical fitness a lot of research has been done in United States of America and some other countries. Both the individuals as well as professional organizations have contributed to a greater extent in the construction of physical fitness test and development of norms for different types of population. The review of literature further reveals that in India very few
studies have been reported with regard to measurement of physical fitness and its evaluation. Out of these most of the studies on construction of physical fitness norms for different age groups were conducted in nineteen hundred and seventies and eighteen. A scrutiny of these studies apparently reveals that the physical fitness norms were mainly constructed for male population and for testing the physical fitness, most of the research scholars have used AAHPER Youth fitness Test.

Upadhyay(2013), conducted a study on construction and development of norms of basic motor fitness test. The main purpose of the study was to construct an ideal motor fitness test with standard norms for the Art commerce and science graduate students. The study was delimited to 4000 male students of Nagpur and Amravati University only. The age of the selected subjects was ranging from 16 to 25 years. The motor fitness test items were restricted to the following components i.e. Muscular strength, cardio respiratory endurance, speed, Agility, Neuromuscular co-ordination, balance. Six test are Back sit-ups, Sargent Jump, Clapping push-ups, 50 mtrs. Sprint, Restricted Zig-zag running, 4 minutes pope-Skipping. To establish the validity of the test, the researcher had also administered the JCR test on the same subjects. The data pertaining to this study were examined by Pearson’s Product Moment correlation of Co-efficient to establish the validity of the newly constructed test. For the establishment of reliability and objectivity of the test same statistical technique was employed but to develop the norms of this test, percentile scale was used. On the basis of the raw data, the statistical technique co-efficient of correlation was employed in analyzing the data. The validity was stabilized which is 0.81. The test and re-test method was utilized to stabilized the reliability of test which is 0.97 and objectivity of the test was stabilized which is 0.96. Thus the finding shows that the newly constructed test is accepted. This test can be used for the selection of team or to check the status of the players because it includes the fitness which is very important for players. The norms for the motor fitness test items were established. The data were converted in percentile score.

After analysis the norms of the Back sit-ups percentile obtained value is quite comprehensive that if a player score 3.5 and below 17.28 he will score 0 point. If the player score 17.28 than he will be given 10 points. If he scores 20.27 than 30 points will be given If he scores 22.22 then 40 points will be given, In the same way if the player scores 2394, 25.7, 26.47,30.30,34.19, 43.05 than he will be given 50,60,70,80,90 and 100 points respectively. On
the basis of the norms the player’s performance were classified in grade according to the percentile. The players who obtained 17-20 score were given poor grade. The players who obtained in between 21-23 were come under below average. The players who obtained between 24-26 were given good grade and he player who scored 32 and above fall under excellent grade.

In case of Clapped Push-ups percentile the obtained value is quite comprehensive that if a player score 2.5 and below 5.46 he will score 0 point. If the player score 5.46 than he will be given 10 points. If he scores 7.46 than he will be given 20 points. And if he scores 8.97 than 30 points. In the same way if the player scores 10.95, 12.15, 13.58, 16.00, 21.95, 35.05 than he will be given 50,60,70,80,90 and 100 points respectively. On the basis of the norms the player’s performance were classified in grade according to percentile. The players who obtained 5-8 were given poor grade. The players who obtained in between 9-10 come under below average. The players who obtained between 13-16 ranked good grade and the player who scored 17 and above fall under excellent grade.

In case of Sargent Jump percentile the obtained value is quite comprehensive that if a player score below 27 he will score 0 point. If the player score 27.63 than he will be given 10 points. If he scores 30.10 than he will be given 20 points. And if he scores 35.68 than 30 points will be given. If he scores 37.31 than 40 points will be given. In the same way if the player scores 38.94, 38.96, 40.51, 42.68, 45.62, 50.05 than he will be given 50, 60, 70, 80, 90 and 100 points respectively. On the basis of the norms the player’s performance were classified in grade. The players who obtained 27-30 given poor grade. The players who obtained in between 31-35 will come under below average. The players who obtained between 40-44 given good grade and the player who scored 45 and above fall under excellent grade.

In case of Restricted Zig-Zag Run percentile the obtained value is quite comprehensive that if a player score below 21 he will score 0 point. If the player score 21.02 than he will be given 10 points. If he scores 14.87 than he will be given 20 points. And if he scores 13.88 than 30 points will be given. If he scores 13.37 than 40 points will be given. In the same way if the player scores 12.84, 12.43, 11.97, 11.63, 10.19, 9.61 than he will be given 50, 60, 70, 80, 90 and 100 points respectively. On the basis of the norms the player’s performance were classified in grade. The players who obtained 22.00-14.87 given poor grade. The players who obtained in
between 14.86-13.37 will come under below average. The players who obtained between 12.42-11.63 given good grade and the player who scored 11.62 and above fall under excellent grade.

In case of Restricted 50 Meter Sprint percentile the obtained value is quite comprehensive that if a player score below 12.00 he will score 0 point. If the player score 11.40 than he will be given 10 points. If he scores 9.22 than he will be given 20 points. And if he scores 8.62 than 30 points will be given. If he scores 8.32 than 40 points will be given. In the same way if the player scores 8.01, 7.63, 7.36, 7.08, 6.62, 6.50 than he will be given 50, 60, 70, 80, 90 and 100 points respectively. On the basis of the norms the players performance were classified in grade. The players who obtained 12.00-9.22 given poor grade. The players who obtained in between 9.21-8.32 will come under below average. The players who obtained between 7.62-7.08 given good grade and the player who scored 7.07 and above fall under excellent grade.

In case of 4 Min. Rope Skipping percentile the obtained value is quite comprehensive that if a player score 49.5 and below 90.23 he will score 0 point. If the player score 90.23 than he will be given 10 points. If he scores 114.18 than he will be given 20 points. And if he scores 133.19 than 30 points will be given. If he scores 151.99 than 40 points will be given. In the same way if the player scores 169.47, 186.95, 205.5, 227.14, 248.69, 599.5 than he will be given 50, 60, 70, 80, 90 and 100 points respectively. On the basis of the norms the player’s performance were classified in grade. The players who obtained 49-114 given poor grade. The players who obtained in between 115-152 will come under below average. The players who obtained between 188-228 given good grade and the player who scored 229 and above fall under excellent grade.

Dhokrat (2013), undertake the present study to find the main techniques of karate in systematic form. Individual training in basic techniques, applied training with an opponent, and auxiliary exercises to increase skills required to perform the various techniques at unless he builds a firm foundation in the basic techniques, his progress will eventually be hampered and his lack of skill in the fundamentals will prove to be a bitter handicap. Karate techniques can be performed both singly and in combination, and it has been proved that the most effective and well-rounded practice session. The formal exercise 2 is composed of all four techniques in combination, plus such body shifting and changes in stance as are required for their smooth performance. These formal exercises give valuable training in mastering the various techniques
Sparring is a practice method in the form of simulated fighting which gives concrete training in choosing and executing the proper techniques. Especially, it gives training in those techniques which cannot be performed by one person alone. Basic sparring consists of practice with an opponent in which the mode of attack is prearranged. In free-style sparring, neither the attack nor the defense is prearranged, and contestants are allowed to punch, strike, block, and kick in the manner of their choosing, taking care, of course, to pull their punches and kicks just short of contact. It is performance of this free-style sparring that constitutes competitive karate, and for practice in the combined use of a large number of techniques, it is unsurpassed. Needless to say, free-style sparring is advanced karate and can be engaged in only after thorough grounding in all the fundamentals. Semi-free sparring is an important intermediate step between basic and free-style sparring.

Stances may be broken into natural stances, in which the muscles are relaxed, stances where the legs are put under tension by forcing the knees outward. These are adapted to specific purposes; they become specific kinds of stances there are postures in which the upper part of the body is vertical to the ground and those where it is not vertical. Karate techniques, like the techniques of any other highly developed sport or physical art have been organized over the years into a distinct system. The data was analyzed by using a paired sample ‘t’ test.

After the analysis and interpretation of the data the findings are (a) The Plyometric training programme helps to improve the Playing Ability in Karate significantly. (b) The Plyometric training programme improves the Muscular power significantly. (c) The Plyometric training programme contributes to improve the Speed significantly.

Yogesh (2013), investigated in this study to determine the relationship of selected motor fitness components with the performance in swimming. For the purpose of this study 20 male inter-collegiate swimmers of S.G.B. Amravati University were selected as the subjects. The data were collected on selected motor fitness components, i.e., (Shuttle Run, vertical Jump, and Chin-ups). The level of significance was set at .05 to check the relationship obtained by person’s Product Moment Correlation. The finding of Statistical analysis revealed that there was significant correlation. The finding of statistical analysis revealed that there was significant correlation between swimming performance with chin ups (r=0.829), Vertical jump (r=0.466)
but there was no significant correlation between swimming performance with shuttle run (r=0.186) because the calculated R-value is less than the tabulated r value of 0.444 at 0.05 level of confidence with 18 degree of freedom. For the present study the data was collected from participated inter collegiate swimmers of SantGadge Baba Amravati University, Amravati, all those selected subjects were sources of data. For the purpose of this study, 20 male inter collegiate swimmers of SantGadge Baba Amravati University. Were selected as subjects. The age of the subjects were ranging from 18-28 years. Twenty male swimmers were selected as subjects by using sampling random method. The level of significance to check the relationship obtained by Pearson’s product moment correlation was set at 0.05 level which was considered appropriate because the research processes adopted did not involve highly sophisticated equipment, demanding the application of more stringent levels of significance. While using the product moment correlation a value of 0.444 was needed for being significant at 0.05 level of confidence for (N-2) 18 degrees of freedom.

To establish the relationship of selected motor fitness components with performance in swimming, Product Moment Correlation Statistical Technique was used. It is observed that, coefficient of correlation between Shuttle Run and Swimming performance is 0.186 which is less than the tabulated R-value of 0.444 at 0.05 level needed to be signified for 18 degrees of freedom. Hence it is evident that, there is no significant correlation between the shuttle run and performance of swimmers. It is also observed that in case of Coefficient of correlation value for the Chin ups and Swimming performance is 0.829 which is greater than the tabulated r value of 0.444 at 0.05 level of confidence for the 18 degree of freedom. Hence it is evident that, there is significant correlation between the Chin ups and performance of swimmers. In case of Vertical jump and swimming performance the coefficient of correlation value is 0.466 which is greater than the tabulated R-value of 0.444 at 0.05 level of confidence for the degree of freedom. Hence it is evident that there is significant correlation between the vertical jump and performance of swimmers.

The result of the present study showed the swimming performance with Chin ups (r=0.829) and Vertical jump (r=0.466) were significantly correlated. It may be attributed to the fact that the maximum shoulder strength will help in pulling water; vertical jump will enhance the explosive leg strength. So all the significant variables will attribute in enhancing the performance of the swimmers. After statistical analysis the coefficient of correlation between
swimming performance with Shuttle Run (r= 0.186) which is less than tabulated r= 0.444 at
n=18. Hence there is no significant correlation between them.

**Upadhyay(2013),** conducted a study on “Study of Minimum Muscular Fitness of Tribal
School Girls in Vidarbha Region of Maharashtra, in this study there are eleven districts namely
Amravati, Akola, Buldand, Chandrapur, Nagpur, Wardha, Washim and Yavatmal were
considered to have a random sample of 2000 trials’ girls. Deeping in mind the age factors of girls
the middle school classes i.e. 5th, 6th, 7th and 8th were chosen for the study. The Kraus-Weber test
of minimum muscular fitness was taken as the criterion measures to survey the minimum
muscular fitness of the subjects. The Kraus Weber minimum Muscular fitness test consists of a
battery of six items i.e. Abdominal plus psoas or A, Abdominal minus psoas or A, Psoas or P,
Upper Back or UB lower Back or LB and Back and Hamstring or BH, Failures on any test items
were interpreted as a test failure. One trial was given on each item of the test to each subject. For
testing the significance of difference among different grade tribal’s girls Chi- Square was
applied. The level of significance chosen was .05 for testing the hypothesis.

The Chi-Square value obtained from the calculation showed that the 5th, 6th, 7th and 8th
standard tribal girls were significantly high in the abdominals plus psoas item of the Kraus weber
test of minimum muscular fitness, but failures percentage of 5th grade (19.4%) is higher than that
of 6th (13.6%). 7th (14.2%) and 8th grade (14%) or 6th grade tribal girls were having better
performance compare to 5th, 7th, and 8th grade girls and 8th grade girls were superior to 7th and 5th
grade tribal girls. It is also observed that significant performance of tribal girls of 5th, 6th, 7th, and
8th standard in abdominals minims 5th standard (4.2%) failure was also high than that of 6th
(2.2%), 7th (1.4%) and 8th standard in abdominals minus 5th standard (4.2%) failure was also
higher than that of 6th (2.2%), 7th (1.4%) and 8th standard (1.6%).

Calculation shows progressive performance with increasing age of 5th to 8th grade tribal
girls, except 7th grade girls who were slightly superior to 8th grade girls. Psoas test item reflected
significant performance of 5th to 8th grade girls, when failures percentage comparison was made
again 5th grade failures (3.6%) was more than 6th (1.6%), 7th (1.2%) and 8th (1.4%), whereas 8th
standard girls failure was higher than 7th standard girls. In upper back test item of Kraus-Weber
Minimum Muscular Fitness the Chi-Square value revealed significant performance by tribal girls
of 5th, 6th, 7th and 8th grade. In failure percentage comparison the failure percentage of 5th grade
3.9% was higher than of 6th 2.2%, 7th 1.4% and 8th rage 1.8%, whereas 7th grade girls were more
fit than 8th grade girls in this item of test. In lower back again chi-Square value shows significant performance of 5th, 6th, 7th and 8th grade tribal girls but in failure percentage 7th standard 11% performance was better than that of 5th 18.8%, 6th 18.2% syoeruir than 6th and 5th standard girls. Whereas in back and hamstring item also girls of all selected grade had a significant results, but in failure percentage in comparison 7th standard girls 3.4%, were better than that of 5th 10.2%, 6th 4% and 8th standard 4.2%. Over all failure percentage of tribal girls in Kraus Weber test of Minimum Muscular Fitness was very alarming. Whereas percentage of failure of tribal girls in abdominals plus psoas and lower back tes item of Kraus Weber test of Minimum Muscular Fitness was very high.

Suniti,(2013), investigated and studied on “Effect of Physical Education programme on Physical fitness and Body Composition Variables of Female C.P.EdStudents of CDLU Sirsa, Haryana. The subjects for this study were twenty female students randomly selected. The age of the subjects ranged between 18-22 years. Two months physical education programme was provided to female subjects. Re test of 20 female subjects was administered immediately on the commencement of classes and data of pre-test was collected. Post test data of 20 female subjects was collected after two months of physical education programme. Physical fitness i.e. Strength, Endurance, Speed, Flexibility and Agility and Body composition i.e. total body fat were chosen as criterion variables. AAHPERD Youth fitness test variables namely Pull-Ups, Bent knee Sit Ups, Shuttle Run, Standing Broad Jump, 50 Yard Dash and 12 minutes Run/Walk and Body composition (Sum of triceps and Calf Skinfolds) were used in the study. In order to find out distinguishes between post-test and the pre-tests traitor was applied. The results of the study showed beneficial effects on the selected fitness variables of female subjects by improvement in their physical fitness variables and there was decrease in body weight whereas lean body mass remained unaltered.

After analysis and interpretation of the data, It is observed that significant of difference between the pre-test and post-test means of female subjects in Pull-Ups performance the mean of pre-test was 10.48 and mean of post-test was 12.80. Subjects performance in Pull-Ups indicates t-ratio of 3.08. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in Pull-Ups performance from pre to post test.
It is also observed that significant variation between the post and pre-test means of female subjects in Bent-Knee Sit-Ups performance; the mean of pre-test was 22.36 and mean of post-test was 25.28. Subjects performance in Bent-Knee Sit-Ups indicates t-ratio of 2.14. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in Bent-Knee Sit-Ups performance from pre to post test.

It is also observed that significant difference between the pre-test and post-test means of female subjects in Shuttle Run performance; the mean of pre-test was 10.07 and mean of post-test was 9.76. Subjects performance in Shuttle Run indicates t-ratio of 2.97. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in Shuttle Run performance from pre to post test.

It is also observed that significant difference between the pre-test and post-test means of female subjects in Standing Broad Jump performance; the mean of pre-test was 6.03 and mean of post-test was 6.53. Subjects performance in Standing Broad Jump indicates t-ratio of 2.74. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in Standing Broad Jump performance from pre to post test.

It is also observed that significant difference between the pre-test and post-test means of female subjects in 50 mts Dash performance; the mean of pre-test was 8.14 and mean of post-test was 7.49. Subjects performance in 50 mtsDash indicates t-ratio of 4.45. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in 50 mtsDash performance from pre to post test.

It is also observed that significant difference between the pre-test and post-test means of female subjects in 12 Minutes Run/Walk performance; the mean of pre-test was 2182.48 and mean of post-test was 2346.08. Subjects performance in 12 Minutes Run/Walk indicates t-ratio of 3.72. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in 12 Minutes Run/Walk performance from pre to post test.
It is also observed that significant difference between the pre test and post test means of female subjects in Total Body Weight performance the mean of pre test was 53.79 and mean of post test was 54.48. Subjects performance in Total Body Weight indicates t-ratio of 2.33. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in Total Body Weight performance from pre to post test.

It is also observed that significant difference between the pre test and post test means of female subjects in Body composition (Sum of Triceps and Calf Skinfolds) performance the mean of pre test was 38.46 and mean of post test was 33.56. Subjects performance in Body composition (Sum of Triceps and Calf Skinfolds) indicates t-ratio of 2.79. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in Body composition (Sum of Triceps and Calf Skinfolds) performance from pre to post test.

It is also observed that significant difference between the pre test and post test means of female subjects in Lean Body Mass performance the mean of pre test was 33.50 and mean of post test was 34.14. Subjects performance in Lean Body Mass indicates t-ratio of 0.53. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in Lean Body Mass performance from pre to post test.

It is also observed that significant difference between the pre-test and post-test means of female subjects in Fat Weight performance the mean of pre-test was 14.09 and mean of post-test was 13.15. Subjects performance in Fat Weight indicates t-ratio of 2.91. The obtained t-ratio was significant since it was greater than the t value of 2.01 required for significance at 0.05 level. The above finding indicates significant improvement in Fat Weight performance from pre to post test.

The conclusion of the study is (a) The two months physical education programmer showed beneficial effects on the selected fitness variables of female subjects by a improvement in their physical fitness variables and decrease in body fat and fat weight. (b) The finding of the study indicates significant reduction of total body weight and body fat, whereas lean body mass remained unaltered as a result of participation in the physical education programme.
Manoj, (2013), conducted a study on concept of fitness of HRPFKT on students in kerala high school and higher secondary school subjects. This study investigated the demention concepts of fitness of the health related physical fitness knowledge among high school and higher secondary school students in kerala. The subjects were 5110 students (2545 boys and 2565 girls) studying in high school and higher secondary schools of kerala with age between 13 to 19 years and were from the rural and urban areas and that to from different syllabus followed by the students namely State Board, C.B.S.E. and I.C.E. Besides, the data collected from 5110 students do represent proportionately the various districts of kerala state.

After analysis the ANOVA results indicate that students indeed differ significantly class wise in their knowledge on the dimension “Concept of Fitness” (p<0.05) and hence the post-hoc analysis was done according to which the students in class X have scored lower on the dimension Concept of Fitness of scores when compared with students in classes VIII, IX, XI and XII. At the same time significant differences were also found between students in classes VIII, Class X and class XI. On th other hand, no significant differences were found between class IX and other classes and this was also seen between class XI and class XII, Besides, significant differences were found between class XI and class XII and the reason for such a poor performance of class X might be because of the fact that they might have lot of pressure from school authorities as well as parents I the light of appearing for the board examination.

The reason for superior performance of class VIII and class IX is not clear. In general, students have a health class either in VIII or IX calssss. This might be the reason for the IX class students superiority in information. (e.g. the best exercise to improve cardiovascular fitness or identification of anaerobic activities). It may be due to the fact that curricular differences are more likely to be present while students are receiving for have reently received instructions. That is although age related effects cannot be ruled out of class level data, students are more likely to remember instruction if the interval is smaller after receiving instruction. Informal comments received from students after taking the test suggest that some of these differences possibly were due to boys lack of knowledge regarding physical fitness as some issues were very specific to girls. A similar lack of knowledge by girls about boys related issues did not appear on the answers of those items related to boys. These results are typical of those detected in the developmental work on the HRPFKT and do indicate significant differences between the physical fitness knowledge of high school boys and girls. Besides, these differences are not so
much related to curriculum in high schools as they are typical experiential male female differences.